NANOMETRICS INC
Form S-4/A
June 08, 2005
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As filed with the Securities and Exchange Commission on June 8, 2005

Registration No. 333-123630

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Amendment No. 1 to

FORM S-4

REGISTRATION STATEMENT

Under

The Securities Act of 1933

NANOMETRICS INCORPORATED

(Exact name of registrant as specified in its charter)

California	**3829**	**94-2276314**
(State or other jurisdiction of incorporation or organization)	**(Primary Standard Industrial Classification Code Number)**	**(I.R.S. Employer Identification Number)**

1550 Buckeye Drive

Milpitas, California 95035

(408) 435-9600

(Address, including zip code, and telephone number, including area code, of registrant s principal executive offices)

Paul B. Nolan

Chief Financial Officer

Nanometrics Incorporated

1550 Buckeye Drive

Milpitas, California 95035

(408) 435-9600

(Name, address, including zip code, and telephone number, including area code, of agent for service)

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Approximate date of commencement of proposed sale to the public: As soon as practicable after the effectiveness of this registration statement and the satisfaction or waiver of all other conditions under the merger agreement described herein.

If the securities being registered on this form are to be offered in connection with the formation of a holding company and there is compliance with General Instruction G, check the following box. ¨

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ¨

If this form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ¨

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment that specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

Subject to completion, dated June 8, 2005

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The information in this joint proxy statement/prospectus is not complete and may be changed. Registrant may not sell these securities until the registration statement filed with the Securities and Exchange Commission, of which this document is a part, is declared effective. This joint proxy statement/prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any jurisdiction where the offer, solicitation or sale is not permitted or would be unlawful prior to registration or qualification under the securities laws of any such jurisdiction. Any representation to the contrary is a criminal offense.

MERGER PROPOSED YOUR VOTE IS VERY IMPORTANT

The respective boards of directors of Nanometrics Incorporated and August Technology Corporation have unanimously approved the merger of August Technology with Nanometrics pursuant to the terms and conditions of a merger agreement, dated as of January 21, 2005, between Nanometrics and August Technology. Following the completion of this merger, which we refer to as the August merger, Nanometrics will be renamed August Nanometrics Inc. We sometimes refer to this combined company as August Nanometrics in this joint proxy statement/prospectus.

If we complete this merger, August Technology shareholders will receive 0.6401 of a share of August Nanometrics common stock for each share of August Technology common stock they own at the completion of the merger and August Technology will become a wholly-owned subsidiary of Nanometrics. Based on the total number of shares of August Technology common stock outstanding on June 7, 2005, the maximum number of shares of August Nanometrics common stock that will be issued to August Technology shareholders in the August merger is 11,548,593. Based on the total number of shares and options of Nanometrics and August Technology outstanding on April 2, 2005, August Technology shareholders will hold approximately 46.4% of the fully-diluted shares of August Nanometrics common stock immediately after this merger, and Nanometrics shareholders will hold approximately 53.6% of the fully-diluted shares of August Nanometrics common stock immediately after this merger.

Nanometrics common stock is quoted on the Nasdaq National Market and traded under the symbol NANO. August Technology common stock is quoted on the Nasdaq National Market and traded under the symbol AUGT. The following table sets forth the closing prices for Nanometrics common stock and August Technology common stock as reported on the Nasdaq National Market on January 20, 2005, the last trading day before Nanometrics and August Technology announced the August merger and June 7, 2005, the last trading day before the date of this joint proxy statement/prospectus. The following table also sets forth historical pro forma equivalent prices which reflect the fluctuating value of the Nanometrics common stock that August Technology shareholders would receive in exchange for each share of August Technology common stock if the August merger was completed on either of these dates, applying the exchange ratio of 0.6401 of a share of August Nanometrics common stock for each share of August Technology common stock.

	Nanometrics Common Stock	August Technology Common Stock	Pro Forma Equivalent Value of August Technology Common Stock
January 20, 2005	$ 13.10	$ 9.15	$ 8.39
June 7, 2005	$ 11.53	$ 11.26	$ 7.38

Nanometrics and August Technology cannot complete the August merger unless Nanometrics shareholders approve the issuance of shares of August Nanometrics common stock in the August merger and August Technology shareholders approve the merger agreement and the August merger. More information about Nanometrics, August Technology and the August merger is contained in this joint proxy statement/prospectus.

We encourage you to read this joint proxy statement/prospectus carefully before voting on the August merger, including the section entitled *Risk Factors* beginning on page 34.

Nanometrics also is taking this opportunity to call and hold its 2005 annual meeting of shareholders. At the Nanometrics annual meeting, Nanometrics is submitting several additional proposals for the consideration and approval of its shareholders including a proposal to reincorporate under the laws of the State of Delaware through a merger with one of its wholly-owned subsidiaries, Minor League Merger Corporation. Throughout this joint proxy statement/prospectus, we refer to this merger as the reincorporation merger. In connection with this proposal, Nanometrics is also proposing to implement several governance-related changes to its certificate of incorporation.

The Nanometrics board of directors unanimously recommends that Nanometrics shareholders vote FOR the proposal to approve the issuance of shares of August Nanometrics common stock in the August merger and FOR each of the other proposals to be considered at the Nanometrics annual meeting.

The August Technology board of directors unanimously recommends that the August Technology shareholders vote FOR August Technology s proposal to approve the merger agreement and the August merger and FOR each of the other proposals to be considered at the August Technology special meeting.

The dates, times and places of the Nanometrics and August Technology shareholder meetings are as follows:

For Nanometrics shareholders:

, , a.m., local time

For August Technology shareholders:

, , a.m., local time

Your vote is very important. Whether or not you plan to attend your respective company s shareholder meeting, please take the time to vote by completing and mailing to us the enclosed proxy card. If your shares are held in street name, you must instruct the record holder of your shares in order to vote.

Sincerely,

John D. Heaton
President and Chief Executive Officer
Nanometrics Incorporated

Jeff L. O Dell
Chairman and Chief Executive Officer
August Technology Corporation

None of the Securities and Exchange Commission, any state securities regulator or any other regulatory authority has approved or disapproved of the transactions described in this joint proxy statement/prospectus or the securities to be issued under this joint proxy statement/prospectus or determined if the disclosure in this joint proxy statement/prospectus is accurate or adequate. Any representation to the contrary is a criminal offense.

This joint proxy statement/prospectus is dated , 2005, and is being mailed to shareholders of Nanometrics and August Technology on or about , 2005.

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ADDITIONAL INFORMATION

This joint proxy statement/prospectus incorporates by reference important business and financial information about Nanometrics and August Technology from documents that are not included in or delivered with this joint proxy statement/prospectus. For a more detailed description of the information incorporated by reference into this joint proxy statement/prospectus and how you may obtain it, see the section of this joint proxy statement/prospectus entitled *Additional Information Where You Can Find More Information* beginning on page 200.

You can obtain any of the documents incorporated by reference into this joint proxy statement/prospectus from Nanometrics or August Technology, as applicable, or from the Securities and Exchange Commission, through its website at www.sec.gov. Documents incorporated by reference are available from Nanometrics and August Technology without charge, excluding any exhibits to those documents, unless the exhibit is specifically incorporated by reference as an exhibit in this joint proxy statement/prospectus. Nanometrics shareholders and August Technology shareholders may request a copy of such documents by contacting either Nanometrics or August Technology, as appropriate, at:

Nanometrics Incorporated	August Technology Corporation
1550 Buckeye Drive	4900 West 78th Street
Milpitas, California 95035	Bloomington, Minnesota 55435
Attn: Investor Relations	Attn: Investor Relations

In addition, you may obtain copies of the information relating to Nanometrics, without charge, by sending an e-mail to investors@nanometrics.com or by calling (408) 435-9600.

You may obtain copies of the information relating to August Technology, without charge, by calling The Proxy Advisory Group of Strategic Surveillance, LLC at (866) 657-8728 or (212) 850-8150.

We are not incorporating the contents of the websites of the Securities and Exchange Commission or any other person into this joint proxy statement/prospectus. We are only providing the information about how you can obtain certain documents that are incorporated by reference into this joint proxy statement/prospectus at the SEC website for your convenience.

In order for you to receive timely delivery of the documents in advance of the Nanometrics annual meeting and August Technology special meeting, Nanometrics or August Technology, as applicable, must receive your request no later than , 2005.

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NANOMETRICS INCORPORATED

NOTICE OF ANNUAL MEETING OF SHAREHOLDERS

TO THE SHAREHOLDERS OF NANOMETRICS INCORPORATED:

NOTICE IS HEREBY GIVEN that the annual meeting of shareholders of Nanometrics Incorporated, a California corporation (Nanometrics), will be held on , , 2005 at a.m., local time, at the principal offices of Nanometrics located at 1550 Buckeye Drive, Milpitas, California 95035. At the annual meeting, Nanometrics shareholders will consider and vote upon the following:

1. A proposal to approve the issuance of shares of August Nanometrics common stock in connection with the merger of August Technology Corporation with Major League Merger Corporation, a wholly-owned subsidiary of Nanometrics, pursuant to an Agreement and Plan of Merger and Reorganization, dated as of January 21, 2005, by and among Nanometrics, Major League Merger Corporation, Minor League Merger Corporation and August Technology Corporation.

2. A proposal to approve the reincorporation of Nanometrics under the laws of the State of Delaware through a merger of Nanometrics with Minor League Merger Corporation, a wholly-owned subsidiary of Nanometrics.

3. Proposals to approve various governance-related provisions in the certificate of incorporation of August Nanometrics (if the August merger described in Proposal 1 is completed) or of Nanometrics (if the August merger described in Proposal 1 is not completed), consisting of the following proposals to be effective upon the completion of the reincorporation merger:

3A a proposal to approve a provision limiting the August Nanometrics (or Nanometrics, if the August merger is not completed) stockholders right to call special meetings of stockholders;

3B a proposal to approve a provision limiting the August Nanometrics (or Nanometrics, if the August merger is not completed) stockholders ability to act by written consent;

3C a proposal to approve a provision requiring a super-majority vote of the August Nanometrics (or Nanometrics, if the August merger is not completed) stockholders to amend certain provisions of its certificate of incorporation;

3D a proposal to approve a provision requiring a super-majority vote of the August Nanometrics (or Nanometrics, if the August merger is not completed) stockholders to amend certain provisions of the August Nanometrics (or Nanometrics, if the August merger is not completed) bylaws;

3E a proposal to approve a provision limiting the August Nanometrics (or Nanometrics, if the August merger is not completed) stockholders right to remove directors from the board without cause; and

3F a proposal to approve a provision limiting cumulative voting rights in connection with the election of directors.

4. A proposal to elect seven director nominees to the Nanometrics board of directors to serve until the next annual meeting of Nanometrics shareholders at which their respective successors are elected and qualified, or until the earlier of their death, resignation or removal.

5. A proposal to ratify the appointment of BDO Seidman, LLP as Nanometrics independent registered public accounting firm for Nanometrics fiscal year ending December 31, 2005.

6. Such other business as may properly come before the annual meeting or any postponements or adjournments thereof.

The foregoing items of business are more fully described in the joint proxy statement/prospectus accompanying this notice of annual meeting of shareholders.

Only Nanometrics shareholders of record at the close of business on , 2005 are entitled to notice of and to vote at the annual meeting and any postponements or adjournments thereof.

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All Nanometrics shareholders are cordially invited to attend the annual meeting in person. However, to ensure representation at the annual meeting, Nanometrics shareholders are urged to mark, sign, date and return the enclosed proxy card as promptly as possible in the postage-prepaid envelope enclosed for that purpose. Any Nanometrics shareholder of record attending the annual meeting may vote in person even if that shareholder previously returned a proxy card for the annual meeting.

BY ORDER OF THE BOARD OF DIRECTORS,

Vincent J. Coates

Chairman of the Board of Directors and Secretary

Milpitas, California

, 2005

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AUGUST TECHNOLOGY CORPORATION

4900 West 78th Street

Bloomington, Minnesota 55435

NOTICE OF SPECIAL MEETING OF SHAREHOLDERS

TO BE HELD ON , 2005

To the Shareholders of August Technology Corporation:

A special meeting of the shareholders of August Technology Corporation (August Technology) will be held at on , 2005 at a.m., local time, for the following purposes:

1. To consider and vote upon a proposal to approve the Agreement and Plan of Merger and Reorganization, dated as of January 21, 2005, by and among Nanometrics Incorporated (Nanometrics), Major League Merger Corporation (Merger Sub 1), Minor League Merger Corporation (Merger Sub 2) and August Technology and the merger contemplated therein. Pursuant to the merger agreement, (a) Nanometrics will be merged with and into Merger Sub 2, a Delaware corporation, to reincorporate Nanometrics under Delaware law, and (b) August Technology will be merged with and into Merger Sub 1 (the August merger), and August Technology will thereby become a wholly-owned subsidiary of Nanometrics. In connection with the August merger, Nanometrics will be renamed August Nanometrics Inc. Holders of August Technology common stock will receive shares of August Nanometrics common stock based upon the exchange ratio described in the accompanying joint proxy statement/prospectus.

2. To consider and vote upon a proposal to approve the governance and other provisions in the post-transaction certificate of incorporation and bylaws of August Nanometrics consisting of the following proposals to be effective upon the completion of the reincorporation merger:

2a: A proposal to approve a provision limiting the August Nanometrics stockholders right to call special meetings of stockholders;

2b: A proposal to approve a provision limiting the August Nanometrics stockholders ability to act by written consent;

2c: A proposal to approve a provision requiring a super-majority vote of the August Nanometrics stockholders to amend certain provisions of the August Nanometrics certificate of incorporation; and

2d: A proposal to approve a provision requiring a super-majority vote of the August Nanometrics stockholders to amend certain provisions of the August Nanometrics bylaws.

3. To consider and vote upon a proposal to adjourn the special meeting, if necessary, to permit further solicitation of proxies if there are not sufficient votes at the time of the special meeting to approve any of the foregoing proposals.

4. To transact such other business as may properly come before the special meeting or any adjournment or postponement thereof.

The record date for the special meeting is the close of business on , 2005. Only August Technology shareholders of record at that time are entitled to notice of and to vote at the special meeting or any adjournment or postponement thereof. To approve the merger agreement and the August merger, the holders of a majority of all the outstanding shares of August Technology common stock must vote in favor of the merger agreement and the August merger. To approve the remaining proposals, the affirmative vote of the holders of a majority of the shares of our common stock present and voting on such proposal, in person or by proxy, at the special meeting is required.

The attached joint proxy statement/prospectus contains more detailed information regarding the August merger and the merger agreement and includes a copy of the merger agreement.

Your vote is very important. Even if you expect to attend the special meeting, please complete, sign, and date the enclosed proxy card and return it promptly in the enclosed postage-paid envelope. If no

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instructions are indicated on your proxy card, your shares will be voted FOR each of the foregoing proposals. If you do not return your proxy card or vote in person, the effect is a vote AGAINST the August merger. You can revoke your proxy at any time before it is exercised by giving written notice to the secretary of August Technology, or filing another proxy, or attending the special meeting and voting in person.

If the merger agreement is approved and the August merger is consummated, you will be sent a letter of transmittal with instructions for surrendering your certificates representing shares of August Technology common stock. Please do not send your share certificates until you receive these materials.

The August Technology board of directors unanimously recommends that you vote FOR the approval of the merger agreement and the August merger and FOR the approval of the governance provisions to be effective following the reincorporation of Nanometrics under Delaware law, and FOR the adjournment of the special meeting, if necessary to solicit additional proxies.

BY ORDER OF THE BOARD OF DIRECTORS,

Stanley D. Piekos, Chief Financial Officer and Secretary

, 2005

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Annex B	Form of Amended and Restated Certificate of Incorporation of August Nanometrics Inc.
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Annex C	Opinion of Adams Harkness, Inc.
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QUESTIONS AND ANSWERS FOR NANOMETRICS SHAREHOLDERS

The following are some questions that shareholders of Nanometrics may have regarding the matters being considered at the annual meeting of Nanometrics shareholders, as well as brief answers to those questions. Nanometrics urges you to read the remainder of this joint proxy statement/prospectus carefully because the information below does not provide all of the information that might be important to you.

Q: Why am I receiving this joint proxy statement/prospectus?

A: The respective boards of directors of Nanometrics and August Technology have unanimously approved the merger of August Technology with Nanometrics in accordance with the terms and conditions of a merger agreement, dated as of January 21, 2005, between Nanometrics and August Technology. Pursuant to the terms of the merger agreement, August Technology will merge with a wholly-owned subsidiary of Nanometrics and August Technology will thereby become a wholly-owned subsidiary of Nanometrics. We refer to this merger herein as the August merger. In connection with the August merger, Nanometrics will be renamed August Nanometrics Inc. If we complete the August merger, August Technology shareholders will receive 0.6401 of a share of August Nanometrics common stock for each share of August Technology common stock they own at the completion of the August merger. Based on the total number of shares and options of Nanometrics and August Technology outstanding on April 2, 2005, August Technology shareholders will hold approximately 46.4% of the fully-diluted shares of August Nanometrics common stock immediately after the August merger, and Nanometrics shareholders will hold approximately 53.6% of the fully-diluted shares of August Nanometrics common stock immediately after the August merger.

Nanometrics and August Technology cannot complete the August merger unless Nanometrics shareholders approve the issuance of shares of August Nanometrics common stock in the August merger. The Nanometrics board of directors is soliciting your proxy to vote FOR Nanometrics proposal to approve the issuance of shares of August Nanometrics common stock in the August merger. This joint proxy statement/prospectus describes Nanometrics, August Technology and the August merger so that you may make an informed decision with respect to this merger proposal.

Nanometrics also is taking this opportunity to call and hold its 2005 annual meeting of shareholders. At the Nanometrics annual meeting, Nanometrics is submitting several additional proposals for the consideration and approval of its shareholders, including a proposal to reincorporate under the laws of the State of Delaware through a merger with one of its wholly-owned subsidiaries, Minor League Merger Corporation. Nanometrics cannot complete the reincorporation merger without the approval of its shareholders, as more fully described in this joint proxy statement/prospectus. *The August merger, however, is not contingent on the completion of the reincorporation merger.* As a result, if Nanometrics and August Technology complete the August merger and the reincorporation merger, August Nanometrics will be a Delaware corporation. However, if Nanometrics and August Technology complete the August merger but not the reincorporation merger, August Nanometrics will be a California corporation.

In connection with the reincorporation merger, Nanometrics is also proposing to implement various governance-related provisions in the certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed) to be effective upon completion of the reincorporation merger.

Nanometrics is also proposing the election of seven directors to its board of directors. If Nanometrics seven director nominees are elected and Nanometrics and August Technology do not complete the August merger, Nanometrics new directors will hold office until the next annual meeting of Nanometrics shareholders. If Nanometrics seven director nominees are elected and Nanometrics and August Technology complete the August merger, however, four of Nanometrics director nominees will resign (leaving three Nanometrics directors on the August Nanometrics

board of directors), August Technology will select three of its directors to join the August

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Nanometrics board of directors and these six directors (the three remaining Nanometrics directors and three directors appointed from the August Technology board of directors) will select a seventh individual to join the August Nanometrics board of directors. Nanometrics has selected Vincent J. Coates and John D. Heaton as two of the three directors who will remain on the August Nanometrics board of directors if the August merger is completed. Nanometrics has not yet selected the third of its directors who will remain on the August Nanometrics board of directors. August Technology selected Jeff L. O Dell as one of the three directors who will join the August Nanometrics board of directors if the August merger is completed. August Technology has not yet selected the other of its directors who will join the August Nanometrics board of directors.

Finally, Nanometrics is proposing that you ratify the appointment of BDO Seidman, LLP as Nanometrics independent registered public accounting firm for Nanometrics fiscal year ending December 31, 2005.

Questions and Answers about the August Merger

Q: Why are Nanometrics and August Technology proposing the August merger? (See page 90)

A: Nanometrics and August Technology believe that by combining the highly complementary, non-overlapping product lines of the two companies, August Nanometrics can generate improved long-term operating and financial results and establish a stronger competitive position in the industry. The boards of directors of Nanometrics and August Technology also believe that August Nanometrics will have the ability to provide a more comprehensive and better integrated set of tools to its customers, gain increased access to capital, create additional opportunities for marketing its products, respond more quickly and effectively to technological change, increased consolidation and industry demands, and provide more effective support coverage to its customers.

In addition, the Nanometrics board of directors believes that August Nanometrics can achieve greater scale and presence in the semiconductor equipment industry, provide an opportunity for increased sales and better integrated and broader product line, as well as provide Nanometrics shareholders with the opportunity to participate in the potential for growth of the combined company after the August merger.

Q: What are the risks of the August merger?

A: The August merger involves numerous risks and uncertainties, including, but not limited to, the following: the expense, time and disruption of Nanometrics business related to integrating the operations of Nanometrics and August Technology; the anticipated benefits and synergies of the August merger may not be realized; the trading price of Nanometrics common stock may decline if the August merger is not completed; and customers, distributors, resellers or others may delay or defer decisions concerning Nanometrics during the pendency, or as a result of, the August merger.

We encourage you to read this joint proxy statement/prospectus carefully, including the section entitled Risk Factors beginning on page 34, for a complete discussion of risks associated with the August merger and August Nanometrics.

Q: What will I receive in the August merger? (See page 118)

A: If Nanometrics and August Technology complete the August merger, you will continue to hold the Nanometrics shares that you currently hold and will not receive any payment or other consideration in the August merger. However, your stock certificates will represent shares of August Nanometrics.

Q: What are the United States federal income tax consequences of the August merger to me? (See page 119)

A: You will not recognize any gain or loss for United States federal income tax purposes in respect of your shares of Nanometrics common stock as a result of the August merger.

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Attached as Exhibits 8.1 and 8.2 to the registration statement of which this joint proxy statement/prospectus forms a part are opinions of tax counsel to Nanometrics and August Technology, respectively, that the August merger will constitute a reorganization within the meaning of Section 368(a) of the Internal Revenue Code. In addition, it is a condition to the August merger that each of August Technology and Nanometrics receive a legal opinion to the effect that the August merger will constitute a reorganization within the meaning of Section 368(a) of the Internal Revenue Code.

The approval or disapproval of the reincorporation merger will have no effect on the material United States federal income tax consequences of the August merger.

Q: When do Nanometrics and August expect to complete the August merger?

A: Nanometrics and August Technology are working to complete the August merger as quickly as possible. Nanometrics and August Technology currently expect to complete the August merger in the third quarter of 2005. Nanometrics and August Technology cannot predict the exact timing of the completion of the August merger, however, because it is subject to several conditions beyond their control, including approval by the shareholders of both Nanometrics and August Technology.

Q: What vote is required by Nanometrics shareholders to proceed with the August merger? (See page 67)

A: Under the applicable rules of the Nasdaq Stock Market, Nanometrics cannot complete the August merger unless the issuance of shares of August Nanometrics common stock in the August merger is approved by the affirmative vote of the holders of a majority of the shares of Nanometrics common stock represented and voting at the Nanometrics annual meeting.

Q: How does the Nanometrics board of directors recommend that I vote on the August merger? (See page 94)

A: The Nanometrics board of directors unanimously recommends that you vote FOR Nanometrics proposal to approve the issuance of shares of August Nanometrics common stock in the August merger.

Q: Did the Nanometrics board of directors obtain a fairness opinion in connection with its determination to proceed with the August merger? (See page 94)

A: Yes. On January 20, 2005, Adams Harkness, Inc., financial advisor to Nanometrics, provided to the Nanometrics board of directors its oral opinion, which was subsequently confirmed by delivery of a written opinion dated January 20, 2005, that, as of the date of such opinion, the exchange ratio for August Technology common stock provided for in the merger agreement was fair, from a financial point of view, to the holders of Nanometrics common stock. The full text of Adams Harkness written opinion is attached to this joint proxy statement/prospectus as Annex C. We encourage you to read this opinion carefully in its entirety for a description of the procedures followed, assumptions made, matters considered and limitations on the review undertaken. Adams Harkness opinion is directed to the Nanometrics board of directors and addresses only the fairness from a financial point of view of the exchange ratio for August Technology common stock provided for in the merger

agreement as of the date of the opinion. Nanometrics was required to pay Adams Harkness a fee upon the delivery by Adams Harkness of the fairness opinion and has agreed to pay an additional fee upon completion of the August merger.

Q: How do the Nanometrics directors and executive officers intend to vote on the August merger? (See page 132)

A: All of the Nanometrics directors and executive officers have entered into voting agreements with August Technology pursuant to which they have agreed to vote all of their respective shares of Nanometrics common

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stock in favor of Nanometrics proposal to approve the issuance of shares of August Nanometrics common stock in the August merger and the other proposals related to the August merger.

At the close of business on January 21, 2005, the date of the merger agreement, directors and executive officers of Nanometrics and their affiliates beneficially owned and were entitled to vote 3,392,274 shares of Nanometrics common stock, collectively representing approximately 26.9% of the shares of Nanometrics common stock outstanding on that date. As of the record date for the Nanometrics annual meeting, directors and executive officers of Nanometrics and their affiliates beneficially owned and were entitled to vote shares of Nanometrics common stock, collectively representing approximately of the shares of Nanometrics common stock outstanding on that date.

Q: Do any of the Nanometrics directors and executive officers have any special interests in the August merger? (See page 101)

A: In considering the recommendation of the Nanometrics board of directors with respect to the issuance of shares of August Nanometrics common stock in the August merger, you should be aware that members of the Nanometrics board of directors and Nanometrics executive officers have interests in the August merger that may be different than, or in addition to, the interests of Nanometrics shareholders generally. These interests include:

the appointment of three current directors of Nanometrics, including Vincent J. Coates and John D. Heaton, as directors of August Nanometrics upon completion of the August merger, and the appointment of certain executive officers of Nanometrics, including Vincent J. Coates and John D. Heaton, as executive officers of August Nanometrics upon completion of the August merger;

the potential receipt of severance payments, payable to the following executive officers in the following respective amounts if they were required to resign from their respective positions with Nanometrics in connection with the August merger:

Name and Title	Total Severance Payment
Vincent J. Coates Chairman of the Board and Secretary	$ 1,024,000
John D. Heaton President and Chief Executive Officer	$ 341,800

and the provision of directors and officers insurance coverage to current directors and officers of Nanometrics following the August merger.

The Nanometrics board of directors was aware of these interests and considered them, among other matters, when making its determination to approve the merger agreement and when making its recommendation that the Nanometrics shareholders approve the issuance of shares of August Nanometrics common stock in the August merger.

Questions and Answers about the Reincorporation Merger

Q: Why is Nanometrics proposing the reincorporation merger? (See page 172)

A: The Nanometrics board of directors has determined that it is prudent to reincorporate under the laws of the State of Delaware because it is important for Nanometrics to be able to draw upon well-established principles of corporate governance in making legal and business decisions. The prominence and predictability of Delaware corporate law provides a reliable foundation on which our governance decisions can be based, and Nanometrics believes that its shareholders will benefit from the responsiveness of Delaware corporate law to their needs and the needs of the corporation they own.

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Q: What will I receive in the reincorporation merger? (See page 171)

A: If Nanometrics completes the reincorporation merger, each share of Nanometrics common stock will be automatically converted into one share of Minor League Merger Corporation, which is currently a wholly-owned subsidiary of Nanometrics incorporated under the laws of the State of Delaware.

Q: What are the United States federal income tax consequences of the reincorporation merger to me? (See page 174)

A: The reincorporation merger will constitute a reorganization within the meaning of Section 368(a) of the Internal Revenue Code of 1986. As a result, you will not recognize any gain or loss for United States federal income tax purposes as a result of the reincorporation merger.

Q: When does Nanometrics expect to complete the reincorporation merger?

A: If Nanometrics shareholders approve the reincorporation merger and the issuance of shares of August Nanometrics common stock in the August merger, Nanometrics will complete the reincorporation merger immediately prior to completing the August merger. If Nanometrics shareholders approve the reincorporation merger but do not approve the August merger, Nanometrics will complete the reincorporation as soon as practicable following the Nanometrics annual meeting.

Q: What vote is required by Nanometrics shareholders to approve the reincorporation merger and the proposed governance-related provisions? (See page 175)

A: Under applicable state law, Nanometrics cannot complete the reincorporation merger unless it is approved by the affirmative vote of the holders of a majority of the outstanding shares of Nanometrics common stock entitled to vote on the record date.

Under applicable state law, stockholder approval of the reincorporation merger is sufficient to implement the proposed governance-related provisions in the certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed). Under rules promulgated by the Securities and Exchange Commission, however, we are required to present each of the proposed governance-related provisions as a separate proposal for stockholder approval. Accordingly, if we complete the reincorporation merger, we have determined that we will not implement any of the proposed governance-related provisions unless such provision is independently approved by the affirmative vote of the holders of a majority of the shares of Nanometrics common stock present and voting on the provision at the Nanometrics annual meeting.

Q: How does the Nanometrics board of directors recommend that I vote on the reincorporation merger and the proposed governance-related provisions? (See page 175)

A: The Nanometrics board of directors unanimously recommends that you vote FOR Nanometrics proposal to approve the reincorporation merger.

The Nanometrics board of directors also unanimously recommends that you vote FOR Nanometrics proposal to approve each of the governance-related provisions described in this joint proxy statement/prospectus to be considered at the Nanometrics annual meeting.

Q: Will Nanometrics proceed with the August merger if the Nanometrics shareholders do not approve the reincorporation merger?

A: Yes. The reincorporation merger is not a condition to completion of the August merger and Nanometrics intends to proceed with the August merger even if Nanometrics does not obtain the requisite shareholder approval to complete the reincorporation merger.

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Q: Will Nanometrics proceed with the reincorporation merger if the Nanometrics shareholders do not approve the August merger?

A: Yes. If Nanometrics obtains the requisite shareholder approval to complete the reincorporation merger, but Nanometrics and August Technology do not proceed with the August merger, Nanometrics still intends to proceed with the reincorporation merger and the proposed governance-related provisions approved by the Nanometrics shareholders.

Q: Will Nanometrics implement any of the proposed governance-related provisions in its articles of incorporation if the Nanometrics shareholders do not approve the reincorporation merger?

A: No. If the Nanometrics shareholders do not approve the reincorporation merger, Nanometrics will not implement any changes to its articles of incorporation, whether or not Nanometrics and August Technology complete the August merger.

Q: What happens if the Nanometrics shareholders approve the reincorporation merger and some, but not all, of the proposed governance-related provisions?

A: We will complete the reincorporation merger and implement only those proposed governance-related provisions that are approved by the Nanometrics shareholders and, if applicable, the August Technology shareholders.

Q: What happens if the Nanometrics shareholders approve the reincorporation merger and a governance-related provision, but the August Technology shareholders do not approve the same governance-related provision?

A: We will complete the reincorporation merger, but we will not implement any governance-related provision that has been proposed to both the Nanometrics shareholders and the August Technology shareholders, but is not approved by the shareholders of both companies.

Additional Questions and Answers

Q: What other matters are Nanometrics shareholders being asked to vote on at the Nanometrics annual meeting? (See page 65)

A: In addition to the August merger, the reincorporation merger and the governance-related proposals, Nanometrics shareholders are being asked to approve:

Nanometrics seven director nominees to the Nanometrics board of directors to serve until the next annual meeting of Nanometrics shareholders at which their respective successors are elected and qualified, or until the earlier of their death, resignation or removal;

and

Nanometrics proposal to ratify the appointment of BDO Seidman, LLP as Nanometrics independent registered public accounting firm for Nanometrics fiscal year ending December 31, 2005.

Q: Will all of the Nanometrics directors elected at the annual meeting continue to serve if the August merger is completed? (See page 127)

A: No. If Nanometrics seven director nominees are elected and Nanometrics and August Technology complete the August merger, four of Nanometrics directors will resign (leaving three Nanometrics directors on the August Nanometrics board of directors), August Technology will select three of its directors to join the August Nanometrics board of directors and these six directors (the three remaining Nanometrics directors and three directors appointed from the August Technology board of directors) will select a seventh individual to join the August Nanometrics board of directors. Nanometrics has selected Vincent J. Coates and John D. Heaton as two of the three directors who will remain on the August Nanometrics

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board of directors if the August merger is completed. Nanometrics has not yet selected the third of its directors who will remain on the August Nanometrics board of directors. August Technology selected Jeff L. O Dell as one of the three directors who will join the August Nanometrics board of directors if the August merger is completed. August Technology has not yet selected the other of its directors who will join the August Nanometrics board of directors.

In addition, the August Nanometrics organizational documents will provide for a classified board of directors consisting of three classes. Class I will be comprised of one director from the Nanometrics board of directors and one director from the August Technology board of directors. Class II will be comprised of one director from the Nanometrics board of directors and one director from the August Technology board of directors. Class III will consist of one director from the Nanometrics board of directors, one director from the August Technology board of directors and the additional director selected by Nanometrics and August Technology. Class I directors will serve for an initial term of one year and for three-year terms thereafter, if re-elected. Class II directors will serve for an initial term of two years and three-year terms thereafter, if re-elected. Class III directors will serve for an initial term of three years and three-year terms thereafter, if re-elected. As noted above, Nanometrics and August Technology have not yet completely determined the composition of the August Nanometrics board of directors, so consequently, they have not yet determined which directors will be in the various classes of directors either.

Q: How does the Nanometrics board of directors recommend that Nanometrics shareholders vote on these proposals?

A: Nanometrics board of directors unanimously recommends that Nanometrics shareholders vote:

FOR Nanometrics seven director nominees to the Nanometrics board of directors to serve until the next annual meeting of Nanometrics shareholders at which their respective successors are elected and qualified, or until the earlier of their death, resignation or removal; and

FOR the proposal to ratify the appointment of BDO Seidman, LLP as Nanometrics independent registered public accounting firm for Nanometrics fiscal year ending December 31, 2005.

Q: What do I need to do now?

A: You should read and consider the information contained in this joint proxy statement/prospectus carefully. You also may want to review the documents referenced under the section of this joint proxy statement/prospectus entitled *Additional Information Where You Can Find More Information* beginning on page 200. You should then vote your shares of Nanometrics common stock in accordance with the instructions in this joint proxy statement/prospectus as soon as possible so that your shares are represented at the Nanometrics annual meeting.

Q: How do I vote or submit my voting instructions? (See page 68)

A: If you are the holder of record of your shares of Nanometrics common stock, you may vote in person at the Nanometrics annual meeting or by submitting a proxy card for the annual meeting. You can vote your shares of Nanometrics common stock by proxy by completing, signing, dating and returning the enclosed proxy card for the annual meeting and returning it in the enclosed pre-paid envelope.

If you hold your shares of Nanometrics common stock through a broker, bank or other nominee (*i.e.*, in street name), you must provide the record holder of your shares with instructions on how to vote your shares at the Nanometrics annual meeting. Please refer to the voting instruction card delivered to you by your broker, bank or other nominee for instructions on how to direct the record holder of your shares to vote your shares at the Nanometrics annual meeting. If you hold your shares of Nanometrics common stock in street name, you must obtain a legal proxy from the record holder of your shares in order to attend the Nanometrics annual meeting and vote in person. If you wish to do so, please contact the broker, bank or other nominee that holds your shares of Nanometrics common stock for instructions on how to obtain a legal proxy for this purpose.

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Q: What happens if I do not vote? (See page 69)

A: If you do not vote in person at the Nanometrics annual meeting or submit a proxy card for the Nanometrics annual meeting, your shares of Nanometrics common stock will not be counted as present at the annual meeting for the purpose of determining the presence of a quorum at the annual meeting, but will have the same effect as a vote ***against*** approval of the reincorporation merger. Furthermore, broker non-votes will be counted as present at the annual meeting for purposes of determining the presence of a quorum at the annual meeting, but will have the same effect as a vote ***against*** approval of the reincorporation merger.

If you submit a proxy card for the Nanometrics annual meeting and affirmatively elect to abstain from voting, your proxy will be counted as present for the purpose of determining the presence of a quorum at the annual meeting but will not be voted at the annual meeting. As a result, your abstention will have the same effect as a vote ***against*** the approval of the issuance of shares of August Nanometrics common stock in the August merger and the approval of the reincorporation merger.

Q: If my shares are held in street name, will my broker, bank, or nominee vote my shares for me on the merger transaction proposals? (See page 69)

A: No. The broker, bank, or other nominee that holds your shares of Nanometrics common stock cannot vote your shares of Nanometrics common stock at the Nanometrics annual meeting unless you provide them with instructions on how to vote your shares in accordance with the information and procedures they provided to you.

Q: Can I change my vote after I have mailed my signed proxy or instruction form? (See page 69)

A: Yes. If you are the record holder of your shares of Nanometrics common stock, you can change your vote at any time before your proxy is voted at the Nanometrics annual meeting by:

- delivering to the Nanometrics corporate secretary a signed notice of revocation;
- granting the Nanometrics proxy holders a new, later-dated proxy, which must be signed and delivered to the Nanometrics corporate secretary in advance of the vote at the Nanometrics annual meeting; or
- attending the Nanometrics annual meeting and voting in person. Your attendance alone, however, will not revoke your previously granted proxy.

If you hold your shares in street name and you have provided voting instructions to the broker, bank or other nominee that holds your shares of Nanometrics common stock for use at the Nanometrics annual meeting, you must follow the instructions of your broker, bank or other nominee in order to change your vote or revoke your proxy for the Nanometrics annual meeting.

Q: Should I send in my stock certificates now? (See page 69)

A: No. You should not submit your stock certificates for Nanometrics shares because your certificates will not be exchanged in connection with the August merger or the reincorporation merger.

Q: What should I do if I receive more than one set of voting materials? (See page 69)

A: You may receive more than one set of voting materials for the Nanometrics annual meeting, including multiple copies of this joint proxy statement/prospectus and multiple proxy cards or voting instruction cards. For example, if you are a record holder of your shares of Nanometrics common stock and your shares are registered in more than one name, you will receive more than one proxy card for the annual meeting. If you hold your shares of Nanometrics common stock in more than one brokerage account, you will receive a separate voting instruction card for each brokerage account in which you hold shares. In addition, if you are a shareholder of Nanometrics and a shareholder of August Technology, you will receive one or more separate proxy cards or

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voting instruction cards for each company. Please complete, sign, date and return each proxy card and voting instruction card that you receive to ensure that your shares will be represented at the Nanometrics annual meeting.

Q: Do I have dissenters or appraisal rights in connection with the August merger or the reincorporation merger? (See page 115)

A: No. Under applicable law, you will not have dissenters or appraisal rights in connection with the August merger or the reincorporation merger.

Q: Whom should I call with questions?

A: If you have any questions about the August merger, the reincorporation merger or any other matters described in this joint proxy statement/prospectus, or if you need additional copies of this joint proxy statement/prospectus or a proxy card for the Nanometrics annual meeting, you should contact:

Nanometrics Incorporated:

1550 Buckeye Drive

Milpitas, California 95035

Attention: Investor Relations

Tel: (408) 435-9600

Fax: (408) 232-5910

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QUESTIONS AND ANSWERS FOR AUGUST TECHNOLOGY SHAREHOLDERS

The following are some questions that shareholders of August Technology may have regarding the matters being considered at the special meeting of August Technology shareholders, as well as brief answers to those questions. August Technology urges you to read the remainder of this joint proxy statement/prospectus carefully because the information below does not provide all of the information that might be important to you.

Q: Why am I receiving this joint proxy statement/prospectus?

A: The respective boards of directors of Nanometrics and August Technology have unanimously approved the merger of August Technology with Nanometrics in accordance with the terms and conditions of a merger agreement, dated as of January 21, 2005, between Nanometrics and August Technology. Pursuant to the terms of the merger agreement, August Technology will merge with a wholly-owned subsidiary of Nanometrics and August Technology will thereby become a wholly-owned subsidiary of Nanometrics. In connection with the August merger, Nanometrics will be renamed August Nanometrics Inc. If we complete the August merger, August Technology shareholders will receive 0.6401 of a share of August Nanometrics common stock for each share of August Technology common stock they own at the completion of the merger. Based on the total number of shares of Nanometrics and August Technology outstanding on April 2, 2005, August Technology shareholders will hold approximately 46.4% of the fully-diluted shares of August Nanometrics common stock immediately after the August merger, and Nanometrics shareholders will hold approximately 53.6% of the fully-diluted shares of August Nanometrics common stock immediately after the August merger.

Nanometrics and August Technology cannot complete the August merger unless August Technology shareholders approve the merger agreement and the August merger. The August Technology board of directors is soliciting your proxy to vote FOR August Technology s proposal to approve the merger agreement and the August merger. The August Technology board of directors is also soliciting your proxy to vote FOR approval of various governance-related provisions in August Nanometrics certificate of incorporation. The August Technology board of directors is also soliciting your proxy to vote FOR adjournment of the special meeting, if necessary, to solicit additional proxies. This joint proxy statement/prospectus describes Nanometrics, August Technology and the August merger so that you may make an informed decision with respect to these proposals.

Q: Why are August Technology and Nanometrics proposing the August merger? (See page 90)

A: Nanometrics and August Technology believe that by combining the highly complementary, non-overlapping product lines of the two companies, August Nanometrics can generate improved long-term operating and financial results and establish a stronger competitive position in the industry. The boards of directors of Nanometrics and August Technology also believe that August Nanometrics will have the ability to provide a more comprehensive and better integrated set of tools to its customers, gain increased access to capital, create additional opportunities for marketing its products, respond more quickly and effectively to technological change, increased consolidation and industry demands, and provide more effective support coverage to its customers.

In addition, the August Technology board of directors believes that August Nanometrics will be able to, among other things, take advantage of cross-selling opportunities, realize cost savings by consolidating certain general and administration functions and eliminating redundant expenses, create growth opportunities, provide economies of scale and marshal greater resources to enable it to compete more effectively with its larger competitors.

Q: What are the risks relating to the August merger?

A: The August merger involves numerous risks and uncertainties, including, but not limited to, the following: the risk that August Technology shareholders will receive less in value for the shares of August Technology common

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stock if the market price of Nanometrics common stock declines; the expense, time and disruption of August Technology s business related to integrating the operations of Nanometrics and August Technology; the anticipated benefits and synergies of the August merger may not be realized; the trading price of August Technology common stock may decline if the August merger is not completed; and customers, distributors, resellers or others may delay or defer decisions concerning August Technology during the pendency, or as a result of, the August merger.

We encourage you to read this joint proxy statement/prospectus carefully, including the section entitled Risk Factors beginning on page 34, for a complete discussion of risks associated with the August merger and August Nanometrics.

Q: What will I receive in the August merger? (See page 118)

A: Each share of August Technology common stock will be converted into the right to receive 0.6401 of a share of August Nanometrics common stock. August Nanometrics will make a cash payment to August Technology shareholders for any fractional shares of August Nanometrics common stock they would otherwise be entitled to receive instead of issuing fractional shares. The number of shares of August Nanometrics common stock to be issued for each share of August Technology common stock is fixed and will not be adjusted for changes in the market values of Nanometrics or August Technology common stock before completion of the August merger. As a result, the value of the August Nanometrics common stock that August Technology shareholders will receive in the transaction will vary as the market price of Nanometrics common stock fluctuates.

Example: If you own 100 shares of August Technology common stock, then as a result of the August merger, you will receive 64 shares of August Nanometrics common stock and the value of 0.01 of a share of August Nanometrics common stock paid out in cash.

Nanometrics common stock is quoted on the Nasdaq National Market and traded under the symbol NANO. August Technology common stock is quoted on the Nasdaq National Market and traded under the symbol AUGT.

The following table sets forth the closing prices for Nanometrics common stock and August Technology common stock as reported on the Nasdaq National Market on January 20, 2005, the last trading day before Nanometrics and August Technology announced the August merger and June 7, 2005, the last trading day before the date of this joint proxy statement/prospectus. These historical and pro forma equivalent sales prices per share reflect the fluctuating value of the Nanometrics common stock that August Technology shareholders would receive in exchange for each share of August Technology common stock if the August merger was completed on either of these dates, applying the exchange ratio of 0.6401 of a share of August Nanometrics common stock for each share of August Technology common stock.

	Nanometrics Common Stock	August Technology Common Stock	Pro Forma Equivalent Value of August Technology Common Stock
January 20, 2005	$ 13.10	$ 9.15	$ 8.39
June 7, 2005	$ 11.53	$ 11.26	$ 7.38

The above tables show only historical comparisons. These comparisons may not provide meaningful information to August Technology shareholders in determining whether to approve the merger agreement and the August merger. We urge you to obtain current market quotations

for Nanometrics and August Technology common stock and to review carefully the other information contained in this joint proxy statement/prospectus, or incorporated by reference into this joint proxy statement/prospectus, when considering whether to approve the merger agreement and the August merger.

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Q: How will August Technology stock options be affected by the August merger? (See page 119)

A: At the completion of the August merger, August Nanometrics will assume all outstanding options to purchase August Technology common stock under the August Technology 1997 Stock Incentive Plan. Each option to purchase a share of August Technology common stock outstanding immediately prior to the effective time of the August merger under this plan will become an option to purchase, on the same terms, 0.6401 of a share of August Nanometrics common stock for each share of August Technology common stock for which the option was exercisable, with the option exercise price adjusted accordingly. In addition, certain outstanding options to purchase August Technology s common stock will become fully vested and immediately exercisable as a result of the August merger. Prior to the completion of the August merger (unless Nanometrics instructs August Technology otherwise), August Technology will terminate the August Technology 2000 Employee Stock Purchase Plan and all outstanding purchase rights will be automatically exercised and no further shares of August Technology will be issued pursuant to such plan.

Q: What are the United States federal income tax consequences of the August merger to me? (See page 112)

A: Attached as Exhibits 8.1 and 8.2 to the registration statement of which this joint proxy statement/prospectus forms a part are opinions of tax counsel to Nanometrics and August Technology, respectively, that the August merger will constitute a reorganization within the meaning of Section 368(a) of the Internal Revenue Code. In addition, it is a condition to the August merger that each of August Technology and Nanometrics receive a legal opinion to the effect that the August merger will constitute a reorganization within the meaning of Section 368(a) of the Internal Revenue Code. Assuming that the August merger so qualifies, August Technology shareholders generally will not recognize gain or loss for United States federal income tax purposes as a result of the August merger, except for gain or loss attributable to cash received by August Technology shareholders instead of fractional shares. The approval or disapproval of the reincorporation merger will have no effect on the material United States federal income tax consequences of the August merger.

The tax consequences of the August merger to August Technology shareholders may vary depending upon each such shareholder s situation. Each August Technology shareholder is urged to consult its own tax advisors with respect to the tax consequences of the August merger.

Q: When do Nanometrics and August expect to complete the August merger?

A: Nanometrics and August Technology are working to complete the August merger as quickly as possible. Nanometrics and August Technology currently expect to complete the August merger in the third quarter of 2005. Nanometrics and August Technology cannot predict the exact timing of the completion of the August merger, however, because it is subject to several conditions beyond their control, including approval by the shareholders of both Nanometrics and August Technology.

Q: What vote is required by August Technology shareholders to approve the August merger? (See page 72)

A: Under applicable state law, August Technology cannot complete the August merger unless the merger agreement and the August merger are approved by the affirmative vote of the holders of a majority of the voting power of all shares of common stock of August Technology entitled to vote on such matters. As of the record date for the August Technology special meeting, there were shares of August Technology common stock outstanding, which means the affirmative vote of the holders of shares of August Technology common stock is required to approve the August merger.

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Q: What vote is required by August Technology shareholders to approve the reincorporation merger?

A: None. Under the terms of the merger agreement, if Nanometrics does not complete the reincorporation, for whatever reason, the August merger may still be completed by August Technology and Nanometrics if all of the conditions to completing that August merger are satisfied or waived.

Although August Technology shareholders are not being asked to vote on Nanometrics reincorporation merger, August Technology shareholders are being asked to approve various governance-related provisions in the August Nanometrics certificate of incorporation. August Nanometrics will not implement these provisions unless they are approved by the affirmative vote of the holders of a majority of the shares of common stock of August Technology present and voting on such matters.

Q: How does the August Technology board of directors recommend that I vote on the August merger? (See page 104)

A: The August Technology board of directors unanimously recommends that you vote FOR August Technology s proposal to approve the merger agreement and the August merger.

Q: Did the August Technology board of directors obtain a fairness opinion in connection with its determination to proceed with the August merger? (See page 104)

A: Yes. On January 20, 2005, Needham & Company, LLC (formerly known as Needham & Company, Inc.), or Needham & Company, financial advisor to August Technology, delivered to the August Technology board of directors its written opinion that, as of that date and based upon and subject to the assumptions and other matters described in the written opinion, the exchange ratio for August Technology common stock provided for in the merger agreement was fair from a financial point of view to the holders of August Technology common stock. The full text of the Needham & Company opinion is attached to this joint proxy statement/prospectus as Annex D. We encourage you to read the Needham & Company opinion carefully in its entirety for a description of the procedures followed, assumptions made, matters considered and limitations on the review undertaken. Needham & Company s opinion is directed to the August Technology board of directors and addresses only the fairness from a financial point of view to the holders of August Technology common stock of the exchange ratio for August Technology common stock provided for in the merger agreement as of the date of the opinion. August Technology has paid or agreed to pay Needham & Company a nonrefundable fee for rendering the Needham & Company opinion and an additional fee for financial advisory services. A substantial portion of Needham & Company s fees, consisting of the fee for financial advisory services, is contingent on consummation of the August merger.

The August Technology board of directors does not currently intend to request an additional fairness opinion from Needham & Company that updates the analysis provided with its original January 20, 2005 fairness opinion as of a more current date. The August Technology board of directors has worked closely with Needham & Company and August Technology management in connection with its consideration of the August merger and the unsolicited acquisition proposals from Rudolph Technologies, Inc., or Rudolph, and KLA-Tencor Corporation, or KLA, as described below. In view of the analysis undertaken and the circumstances as of the date hereof, the material aspects of which are described in this joint proxy statement/prospectus, the board of directors of August Technology does not believe an additional or updated fairness opinion would add substantive information to its analysis. New developments may cause the August Technology board of directors to change its conclusion, however, and seek an additional or updated fairness opinion.

Q: I have heard that Rudolph Technologies, Inc. and KLA-Tencor Corporation have made unsolicited bids to acquire August Technology. What is the status of discussions with these companies?

A: On January 27, 2005, August Technology received a letter from Rudolph stating that Rudolph is prepared to enter into a merger with August Technology based on a share exchange ratio of 0.6239 of a share of Rudolph stock for each share of August Technology common stock (equivalent to $10.50 per share of August Technology

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common stock based on the closing price of Rudolph stock on January 27, 2005). The letter stated that each August Technology shareholder may elect to receive all cash, all stock or a combination of cash and stock, subject to proration based on total cash consideration of $40 million. Pursuant to its obligations under the merger agreement with Nanometrics, August Technology delivered a copy of the letter to Nanometrics. On the same day, Rudolph issued a press release with proposed terms that were slightly different from those described in the letter received by August Technology. The press release stated that Rudolph is prepared to enter into a merger with August Technology whereby each shareholder of August Technology will receive the value of $2.16 per share in cash and 0.4955 per share in Rudolph common stock (equivalent to $10.50 per share of August Technology common stock, based on the closing price of Rudolph stock on January 27, 2005). The press release stated that each August Technology shareholder would have the option to elect to receive all cash, all stock or a combination of cash and stock, subject to proration based on total cash consideration of $40 million. August Technology indicated that it is not for sale but, in accordance with the terms of the merger agreement between Nanometrics and August Technology, it would be willing to discuss a potential transaction with Rudolph once Rudolph executes a confidentiality agreement containing provisions that are no less favorable to August Technology than those contained in August Technology s confidentiality agreement with Nanometrics. On April 4, 2005, August Technology and Rudolph entered into a confidentiality agreement and are currently engaged in discussions and exchanging information with respect to Rudolph s offer. August Technology remains subject to the January 21, 2005 merger agreement with Nanometrics and is conducting the discussions with Rudolph as permitted by the terms of the merger agreement.

On February 9, 2005, August Technology received a letter from KLA, regarding KLA s interest in pursuing a merger with August Technology. The letter stated that KLA proposed to acquire August Technology in a transaction in which the August Technology shareholders would receive $11.50 in cash per share. KLA also stated that it would be willing to consider using stock as consideration. In a press release dated February 11, 2005, August Technology s board of directors reiterated that August Technology is not for sale. August Technology s board of directors also stated that it had no interest in considering KLA s cash offer, but that in order to fulfill its fiduciary obligations it would investigate the alternative of a transaction in which the consideration to August Technology shareholders would consist of KLA stock at an exchange ratio per share which reflects the intrinsic value of August Technology. The board of directors also stated it believes that several issues, including antitrust concerns, would need to be considered and resolved before any transaction with KLA could be completed. For example, the board of directors understood that it would need to consider, among other things, the mechanics of determining how many KLA shares would be issued, anticipated future values of KLA stock based on KLA s plans and projections, what would happen to August Technology s employees and management and the likelihood that a transaction could be completed. August Technology s board of directors was aware of KLA s significant presence in the front end inspection market and that August Technology competes with KLA for sales. The board recognized that these facts presented some risk that a transaction with KLA might be prevented by the Federal Trade Commission, which is referred to as the FTC, or the Antitrust Division of the United States Department of Justice, which is referred to as the Department of Justice, for competitive reasons, a risk later confirmed when the board of directors learned that the Department of Justice was investigating the offers submitted to August Technology by Rudolph and KLA.

With these conditions and concerns in mind, in accordance with the terms of the merger agreement between Nanometrics and August Technology, August Technology s board of directors indicated that it would be willing to discuss a potential transaction with KLA if KLA executes a confidentiality agreement containing provisions that are no less favorable to August Technology than those contained in August Technology s confidentiality agreement with Nanometrics. KLA and August Technology have been unable to reach agreement on the form of confidentiality agreement.

August Technology s board of directors determined, after consulting with August Technology s financial and legal advisors, that, despite the offers from Rudolph and KLA, continuing to pursue the August merger is in the best interests of August Technology and its shareholders because it provides the highest potential long-term

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value for the August Technology shareholders. For a complete discussion of the consideration the August Technology board of directors gave the Rudolph and KLA offers, we encourage you to read the section of this joint proxy statement/prospectus entitled *The August Merger Background of the Merger* beginning on page 75.

On March 15, 2005, August Technology received notification of early termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, or the HSR Act, applicable to the August merger. Termination or expiration of this waiting period is a condition to the August merger.

In addition, the Department of Justice has notified August Technology that it has commenced an investigation into the anti-competitive aspects of the offers submitted to August Technology both by Rudolph and by KLA. In connection with this investigation, the Department of Justice has conducted interviews with senior executives of August Technology and by letter dated April 21, 2005 requested that August Technology voluntarily provide documents and information regarding its products and the markets in which it competes. August Technology is in the process of responding to this request for documents and information. August Technology understands that the Department of Justice has contacted and requested information from others in connection with this investigation as well. No further information regarding the timing or scope of the investigation was made available to August Technology. August Technology and Nanometrics do not anticipate that this investigation will affect the completion of the August merger. If August Technology were to proceed with a transaction with Rudolph or KLA, it would be subject to pre-merger notification requirements under the HSR Act.

Q: Does a vote AGAINST the August merger mean that I am voting for August Technology to complete a deal with Rudolph or KLA?

A: No. Even if the August merger is not approved by August Technology s shareholders or cannot be completed for other reasons, there is no guarantee that any agreement can be reached on acceptable terms with either Rudolph, KLA, or any other party.

Q: How do the August Technology directors and executive officers intend to vote on the August merger? (See page 133)

A: All of the August Technology directors and executive officers have entered into voting agreements with Nanometrics pursuant to which they have agreed to vote all of their respective shares of August Technology common stock in favor of August Technology s proposal to approve the merger agreement (including other actions contemplated by the merger agreement) and the August merger.

At the close of business on January 21, 2005, the date of the merger agreement, directors and executive officers of August Technology and their affiliates beneficially owned and were entitled to vote 1,120,911 shares of August Technology common stock, collectively representing approximately 6.3% of the shares of August Technology common stock outstanding on that date. As of the record date for the August Technology special meeting, directors and executive officers of August Technology and their affiliates beneficially owned and were entitled to vote shares of August Technology common stock, collectively representing approximately of the shares of August Technology common stock outstanding on that date.

Q: Do any of the August Technology directors and executive officers have any special interests in the August merger? (See page 110)

A: In considering the recommendation of the August Technology board of directors with respect to the merger agreement and the August merger, you should be aware that members of the August Technology board of directors and August Technology executive officers have interests in the August merger that may be different than, or in addition to, the interests of August Technology shareholders generally. These interests include:

- the appointment of three current directors of August Technology, including Jeff L. O Dell, as directors of August Nanometrics upon completion of the August merger, and the appointment of certain executive officers of August Technology, including Jeff L. O Dell and Stanley D. Piekos, as executive officers of August Nanometrics upon completion of the August merger;

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the potential receipt of severance payments, payable to the following executive officers in the following respective amounts, if he or she were to be terminated without cause or were to resign pursuant to an involuntary termination at any time within the 18-month period following the completion of the August merger:

Name and Title	Total Severance Payment
Jeff L. O Dell Chief Executive Officer	$ 442,500
David Klenk President and Chief Operating Officer	$ 322,500
Stanley D. Piekos Chief Financial Officer and Secretary	$ 322,500
D. Mayson Brooks Vice President, Sales and Field Operations	$ 315,000
Cory Watkins Chief Technical Officer	$ 300,000
Scott Gabbard Vice President, Finance	$ 262,500
Jeff Nelson Vice President, Manufacturing	$ 41,250

the accelerated vesting of executive officers and directors outstanding stock options of August Technology common stock, as a result of which the following executive officers will hold options as set forth below, assuming the value of the merger consideration paid in the August merger in respect of each share of August Technology as of January 20, 2005 is $8.3851:

Name and Title	Aggregate Shares Subject to Outstanding Options	Aggregate Shares Subject to Unvested Options to be Accelerated in the Merger(1)	Weighted Average Exercise Price of All Options to be Accelerated in the August Merger	Value of Unvested Options to be Accelerated in the August Merger(2)	Weighted Average Exercise Price of All Options	Value of All Options(3)
Jeff L. O Dell Chief Executive Officer	17,250	4,000	$ 4.70	$ 14,741	$ 7.86	$ 36,853
David Klenk President and Chief Operating Officer	138,591	7,791	$ 6.74	$ 16,112	$ 7.85	$ 418,269
Stanley D. Piekos	180,632	127,100	$ 5.83	$ 386,430	$ 7.08	$ 483,037

Chief Financial Officer and Secretary						
D. Mayson Brooks	120,806	26,849	$ 7.55	$ 47,862	$ 9.64	$ 187,521
Vice President, Sales and Field Operations						
Cory Watkins	60,002	27,999	$ 9.09	$ 19,041	$ 10.51	$ 57,107
Chief Technical Officer						
Scott Gabbard	87,165	21,433	$ 8.57	$ 17,406	$ 9.57	$ 113,203
Vice President, Finance						
Jeff Nelson	45,000	45,000	$ 7.62	$ 34,439	$ 7.62	$ 34,439
Vice President, Manufacturing						

(1) Pursuant to the terms of August Technology s 1997 Stock Incentive Plan, certain unvested options will vest at the completion of the August merger.

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(2) Illustrates the economic value of all unvested options held by each executive officer assuming the acceleration of all such unvested options in the August merger and the exercise of such options, immediately upon completion of the August merger. The economic value was calculated for each executive officer by multiplying the shares subject to in-the-money options by the difference between the value of the merger consideration as of January 20, 2005 ($8.3851) and the exercise price of such unvested options.

(3) Illustrates the economic value of all options held by each executive officer assuming the acceleration of all such options in the August merger and the exercise of all options, immediately upon completion of the August merger. The economic value was calculated for each executive officer by multiplying the shares subject to in-the-money options by the difference between the value of the merger consideration as of January 20, 2005 ($8.3851) and the exercise price of such in-the-money options.

and the continued indemnification of, and provision of directors and officers insurance coverage to, current directors and officers of August Technology following the August merger.

The August Technology board of directors was aware of these interests and considered them, among other matters, in making its recommendation that the August Technology shareholders approve the merger agreement and the August merger.

Q: Who will be on the August Nanometrics board of directors if you complete the August merger? (See page 127)

A: If Nanometrics and August Technology complete the August merger, four of Nanometrics directors will resign (leaving three Nanometrics directors, including Vincent J. Coates and John D. Heaton, on the August Nanometrics board of directors), August Technology will select three of its directors, including Jeff L. O Dell, to join the August Nanometrics board of directors and these six directors (the three remaining Nanometrics directors and three directors appointed from the August Technology board of directors) will select a seventh individual to join the August Nanometrics board of directors. Nanometrics has not yet selected the other Nanometrics director who will remain on the August Nanometrics board of directors, and August Technology has not yet selected the other two August Technology directors who will join the August Nanometrics board of directors.

In addition, the August Nanometrics organizational documents will provide for a classified board of directors consisting of three classes. Class I will be comprised of one director from the Nanometrics board of directors and one director from the August Technology board of directors. Class II will be comprised of one director from the Nanometrics board of directors and one director from the August Technology board of directors. Class III will consist of one director from the Nanometrics board of directors, one director from the August Technology board of directors and the additional director selected by Nanometrics and August Technology. Class I directors will serve for an initial term of one year and for three-year terms thereafter, if re-elected. Class II directors will serve for an initial term of two years and three-year terms thereafter, if re-elected. Class III directors will serve for an initial term of three years and three-year terms thereafter, if re-elected. As noted above, Nanometrics and August Technology have not yet completely determined the composition of the August Nanometrics board of directors, so consequently, they have not yet determined which directors will be in the various classes of directors either.

Q: What do I need to do now?

A: You should read and consider the information contained in this joint proxy statement/prospectus carefully. You also may want to review the documents referenced under the section of this joint proxy statement/prospectus entitled *Additional Information Where You Can Find More Information* beginning on page 200. You should then vote your shares of August Technology common stock in accordance with the instructions in this joint proxy statement/prospectus as soon as possible so that your shares are represented at the August Technology special meeting.

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Q: How do I vote or submit my voting instructions? (See page 72)

A: If you are the holder of record of your shares of August Technology common stock, you may vote in person at the August Technology special meeting or by submitting a proxy card for the special meeting. You can vote your shares of August Technology common stock by proxy by completing, signing, dating and returning the enclosed proxy card for the special meeting and returning it in the enclosed pre-paid envelope.

If you hold your shares of August Technology common stock through a broker, bank or other nominee (*i.e.*, in street name), you must provide the record holder of your shares with instructions on how to vote your shares at the August Technology special meeting. Please refer to the voting instruction card delivered to you by your broker, bank or other nominee for instructions on how to direct the record holder of your shares to vote your shares at the August Technology special meeting. If you hold your shares of August Technology common stock in street name, you must obtain a legal proxy in order to attend the August Technology special meeting and vote in person. If you wish to do so, please contact the broker, bank or other nominee that holds your shares of August Technology common stock for instructions on how to obtain a legal proxy for this purpose.

Q: What happens if I do not vote? (See page 73)

A: If you do not submit a proxy card or vote at the August Technology special meeting, your shares will not be counted as present for the purpose of determining the presence of a quorum. If you submit a proxy card and affirmatively elect to abstain from voting, with respect to the proposal to approve the merger agreement and the August merger, your proxy will be counted as present for the purpose of determining the presence of a quorum but will not be voted at the special meeting. As a result, your abstention will have the same effect as a vote AGAINST the August merger.

Q: If my shares are held in street name, will my broker, bank, or nominee vote my shares for me on the merger transaction proposals? (See page 73)

A: No. The broker, bank, or other nominee that holds your shares of August Technology common stock cannot vote your shares of August Technology common stock at the August Technology special meeting unless you provide them with instructions on how to vote your shares in accordance with the information and procedures they provided to you.

Q: Can I change my vote after I have mailed my signed proxy or instruction form? (See page 73)

A: Yes. If you are the record holder of your shares of August Technology common stock, you can change your vote at any time before your proxy is voted at the August Technology special meeting by:

delivering to the August Technology corporate secretary, a signed notice of revocation;

granting a new, later-dated proxy, which must be signed and delivered to the August Technology corporate secretary in advance of the vote at the August Technology special meeting; or

attending the August Technology special meeting and voting in person. Your attendance alone, however, will not revoke your previously granted proxy.

If you hold your shares in street name and you have provided voting instructions to the broker, bank or other nominee that holds your shares of August Technology common stock for use at the August Technology special meeting, you must follow the instructions of your broker, bank or other nominee in order to change your vote or revoke your proxy for the August Technology special meeting.

Q: Should I send in my stock certificates now?

A: No. If you own shares of August Technology common stock, do not send in your stock certificates now. After the August merger is completed, you will be sent written instructions for exchanging your August Technology share certificates for certificates evidencing shares of August Nanometrics common stock.

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Q: What should I do if I receive more than one set of voting materials? (See page 73)

A: You may receive more than one set of voting materials for the August Technology special meeting, including multiple copies of this joint proxy statement/prospectus and multiple proxy cards or voting instruction cards. For example, if you are a record holder of your shares of August Technology common stock and your shares are registered in more than one name, you will receive more than one proxy card for the special meeting. If you hold your shares of August Technology common stock in more than one brokerage account, you will receive a separate voting instruction card for each brokerage account in which you hold shares. In addition, if you are a shareholder of August Technology and a shareholder of Nanometrics, you will receive one or more separate proxy cards or voting instruction cards for each company. Please complete, sign, date and return each proxy card and voting instruction card that you receive to ensure that your shares will be represented at the August Technology special meeting.

Q: Do I have dissenters or appraisal rights in connection with the August merger? (See page 115)

A: No. Under applicable law, you will not have dissenters or appraisal rights in connection with the August merger.

Q: Whom should I call with questions?

A: If you have any questions about the August merger or any other matters described in this joint proxy statement/prospectus, or if you need additional copies of this joint proxy statement/prospectus or a proxy card for the August Technology special meeting, you should contact:

The Proxy Advisory Group of Strategic Stock Surveillance, LLC

331 Madison Avenue, 12th Floor

New York, New York 10017

Tel: (866) 657-8728 or

(212) 850-8150

Fax: (212) 850-8161

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SUMMARY

The following is a summary of other additional information contained in this joint proxy statement/prospectus. The following summary may not contain all of the information that is important to you. We encourage you to read this entire joint proxy statement/prospectus carefully. In addition, we encourage you to read the information incorporated by reference into this joint proxy statement/prospectus, which includes important business and financial information about Nanometrics and August Technology that has been filed with the Securities and Exchange Commission. You may obtain the information incorporated by reference into this joint proxy statement/prospectus without charge by following the instructions in the section of this joint proxy statement/prospectus entitled Additional Information Where You Can Find More Information beginning on page 200.

The Companies

Nanometrics Incorporated

1550 Buckeye Drive

Milpitas, California 95035

(408) 435-9600

Nanometrics is a leader in the design, manufacture, and marketing of high-performance process control metrology systems used in the manufacture of semiconductors/integrated circuits and flat panel displays. Nanometrics metrology systems (i) measure various thin film properties, critical circuit dimensions and layer-to-layer circuit alignment (overlay) and (ii) inspect for surface defects during various steps of the manufacturing process, enabling semiconductor and integrated circuit manufacturers to improve yields, increase productivity and lower their manufacturing costs. The relative alignment of sequentially patterned thin film layers is critical to device production.

Nanometrics has been a pioneer and innovator in the field of metrology for nearly three decades. It has been selling metrology systems since 1977 and has an extensive installed base with industry leading customers worldwide, including Applied Materials Inc., Samsung, Hynix Semiconductor Inc., IBM, Intel Corporation, Micron Technology, Inc., TSMC Ltd., Renesas, Powerchip, UMC, Ebara, Chi Mei, AU Optronics and Hannstar.

Major League Merger Corporation is a transitory acquisition subsidiary that Nanometrics formed solely to effect the August merger. Minor League Merger Corporation is a transitory subsidiary that Nanometrics formed solely to effect the reincorporation merger. Neither Major League Merger Corporation nor Minor League Merger Corporation has ever conducted any business.

August Technology Corporation

4900 West 78th Street

Bloomington, Minnesota 55435

(952) 820-0060

August Technology is a world-class provider of automated defect detection and product characterization systems for microelectronic device manufacturers. August Technology s systems provide these manufacturers with information that enables process-enhancing decisions, ultimately lowering manufacturing costs, improving time-to-market and enhancing the performance of their products. August Technology combines its core competencies in machine vision technology, optics, lighting and precision motion control with its proprietary software and extensive microelectronic-specific applications experience to deliver scalable, modular systems that excel at the automated detection of advanced macro defects, which August Technology defines to be defects

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greater in size than 0.5 micron. August Technology sells its systems to many of the leading microelectronic device manufacturers throughout the world within the markets of semiconductors, advanced packaging applications, optoelectronics MEMS, data storage and other emerging markets.

August Technology has traditionally provided systems to address the automated inspection needs of the early stages of the final manufacturing or back-end of the microelectronic device manufacturing process. These needs were met primarily with August Technology s NSX Series and 3Di Series of products. In 2003, August Technology introduced the AXi Series for frontside advanced macro detection in the front-end of the wafer manufacturing process and within one year, August Technology added the E-20 for wafer edge inspection and the B-20 for wafer backside inspection. When used in combination the AXi/E-20/B-20 is the industry s first true all-surface advanced macro inspection solution allowing device manufacturers to inspect the top, edge and bottom of a wafer s surface. August Technology complements this broad inspection capability with an expanding suite of software tools designed to enhance the speed and effectiveness of the process by which device manufacturers analyze defects and make decisions regarding their manufacturing process to reduce or eliminate such defects. August Technology refers to this process as the detection-to-decision process.

The Merger Agreement *(See page 118)*

On January 21, 2005, Nanometrics and August Technology entered into a merger agreement providing for, among other things, the August merger and the reincorporation merger. We have attached the merger agreement to this joint proxy statement/prospectus as Annex A. We encourage you to carefully read the merger agreement in its entirety because it is the legal document that governs the August merger.

Merger Consideration (See page 118)

August Technology shareholders will receive 0.6401 of a share of August Nanometrics common stock for each share of August Technology common stock they own at the completion of the August merger.

August Nanometrics will not issue fractional shares of August Nanometrics common stock in the August merger. As a result, each August Technology shareholder will receive cash for any fractional share of August Nanometrics common stock the shareholder would otherwise be entitled to receive in the August merger.

Treatment of August Technology Stock Options and ESPP (See page 119)

At the completion of the August merger, each outstanding option to purchase August Technology common stock will be assumed by August Nanometrics and converted into an option to acquire August Nanometrics common stock. Pursuant to the terms of August Technology s 1997 Stock Incentive Plan, approximately 400,000 options of the 1.3 million options to purchase shares of August Technology common stock assumed by August Nanometrics will vest at the completion of the August merger.

Prior to the completion of the August merger, August Technology will terminate its employee stock purchase plan and all outstanding purchase rights will be automatically exercised unless Nanometrics instructs August Technology otherwise, and no further shares of August Technology will be issued pursuant to such plan.

Non-Solicitation Restrictions (See page 124)

The merger agreement contains detailed provisions that prohibit Nanometrics and August Technology and the subsidiaries of each of them, as well as their officers, directors and representatives, from taking any action to solicit or engage in discussions or negotiations with any person or group with respect to certain types of alternative acquisition proposals. The merger agreement does not, however, prohibit either party or its board of directors from considering and recommending to the party s shareholders an unsolicited alternative acquisition proposal from a third party if specified conditions are met.

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Conditions to Completion of August Merger (See page 128)

Under the terms of the merger agreement, Nanometrics and August Technology are not required to complete the August merger until the following conditions have been satisfied:

- the receipt of the approval of the issuance of shares of August Nanometrics common stock in the August merger by Nanometrics shareholders, and the approval of the merger agreement and the August merger by August Technology shareholders;
- the expiration or termination of the waiting period, or any extension of the waiting period, under the HSR Act, (which condition has been satisfied) and receipt of all clearances, consents and approvals necessary for completion of the August merger under United States and foreign antitrust laws;
- the absence of any legal restraints or prohibitions preventing the completion of the August merger;
- the authorization for listing on the Nasdaq National Market of the shares of August Nanometrics common stock to be issued in the August merger;
- the delivery to each party of tax opinions of legal counsel to the effect that the August merger will qualify as a reorganization within the meaning of Section 368(a) of the Internal Revenue Code;
- the representations and warranties of each party contained in the merger agreement being true and correct, except to the extent that breaches of these representations and warranties would not result in a material adverse effect on the representing party;
- the performance or compliance in all material respects of each party with all agreements and covenants contained in the merger agreement at the completion of the August merger; and
- the absence of events or developments since the date of the merger agreement that would reasonably be expected to have a material adverse effect with respect to either party.

Either Nanometrics or August Technology may waive the conditions to the performance of its respective obligations under the merger agreement and complete the August merger even though one or more of these conditions has not been met. Neither Nanometrics nor August Technology can give any assurance that all of the conditions to the August merger will be either satisfied or waived or that the August merger will occur.

The reincorporation is not a condition to completion of the August merger and Nanometrics intends to proceed with the August merger even if Nanometrics does not obtain the requisite shareholder approval to complete the reincorporation merger.

Termination Rights and Fees (See page 130)

Under circumstances specified in the merger agreement, either Nanometrics or August Technology may terminate the merger agreement. Subject to the limitations set forth in the merger agreement, the circumstances generally include if:

- the August merger is not completed by September 30, 2005;
- a non-appealable final order of a court or other action of any governmental authority has the effect of permanently prohibiting completion of the August merger;
- the required approval of the shareholders of each of Nanometrics and August Technology has not been obtained at its respective shareholder meeting;
- the other party breaches its representations, warranties or covenants in the merger agreement such that its conditions to completion of the August merger regarding representations, warranties or covenants would not be satisfied;

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the other party has not complied with the provisions of the merger agreement relating to non-solicitation and board recommendations; or

the other party consents to termination.

If the August merger is not completed under certain circumstances specified in the merger agreement, Nanometrics or August Technology may be required to pay the other $8.3 million, plus expenses.

Accounting Treatment of the August Merger (See page 114)

August Nanometrics will account for the August merger as a purchase business combination under United States generally accepted accounting principles.

Regulatory Matters Relating to the August Merger (See page 114)

The August merger is subject to antitrust laws. Nanometrics and August Technology have made all required filings under applicable antitrust laws with the Department of Justice and the FTC. On March 15, 2005, the FTC informed Nanometrics and August Technology that early termination of the waiting period associated with these filings had been granted.

Listing of August Nanometrics Common Stock (See page 115)

Nanometrics will apply to have the shares of August Nanometrics common stock to be issued in the August merger to holders of August Technology common stock approved for listing on the Nasdaq National Market.

Delisting and Deregistration of August Technology Common Stock (See page 115)

If the August merger is completed, August Technology common stock will no longer be listed on the Nasdaq National Market and will be deregistered under the Securities Exchange Act of 1934, as amended, which is referred to as the Exchange Act, and August Technology will no longer file periodic reports with the Securities and Exchange Commission.

Recent Developments

On January 27, 2005, August Technology received a letter from Rudolph Technologies, Inc., or Rudolph, stating that Rudolph is prepared to enter into a merger with August Technology based on a share exchange ratio of 0.6239 of a share of Rudolph stock for each share of August Technology common stock (equivalent to $10.50 per share of August Technology common stock based on the closing price of Rudolph stock on January 27, 2005). The letter stated that each August Technology shareholder may elect to receive all cash, stock or a combination of cash and stock, subject to proration based on total cash consideration of $40 million. Pursuant to its obligations under the merger agreement with Nanometrics, August Technology delivered a copy of the letter to Nanometrics. On the same day, Rudolph issued a press release with proposed terms that were slightly different from those described in the letter received by August Technology. The press release stated that Rudolph is prepared to enter into a merger with August Technology whereby each shareholder of August Technology will receive the value of $2.16 per share in cash and 0.4955 per share in Rudolph common stock (equivalent to $10.50 per share of August Technology common stock, based on the closing price of Rudolph stock on January 27, 2005). The press release stated that each August Technology shareholder would have the option to elect to receive all cash, stock or a combination of cash and stock, subject to proration based on total cash consideration of $40 million. August Technology has indicated that it is not for sale but, in accordance with the terms of the merger agreement between Nanometrics and August Technology, it would be willing to discuss a potential transaction with Rudolph if Rudolph executes a confidentiality agreement containing provisions that are no less

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favorable to August Technology than those contained in August Technology s confidentiality agreement with Nanometrics. On April 4, 2005, August Technology and Rudolph entered into a confidentiality agreement and are currently engaged in discussions and exchanging information with respect to Rudolph s offer. August Technology remains subject to the January 21, 2005 merger agreement with Nanometrics and is conducting the discussions with Rudolph as permitted by the terms of the merger agreement.

On February 9, 2005, August Technology received a letter from KLA-Tencor Corporation, or KLA, regarding KLA s interest in pursuing a merger with August Technology. The letter stated that KLA proposed to acquire August Technology in a transaction in which the August Technology shareholders would receive $11.50 in cash per share. KLA also stated that it would be willing to consider using stock as consideration. In a press release dated February 11, 2005, August Technology s board of directors reiterated that August Technology is not for sale. August Technology s board of directors also stated that it had no interest in considering KLA s cash offer, but that in order to fulfill its fiduciary obligations it would investigate the alternative of a transaction in which the consideration to August Technology shareholders would consist of KLA stock at an exchange ratio per share which reflects the intrinsic value of August Technology. The board of directors also stated that it believes that several issues, including antitrust concerns, would need to be considered and resolved before any transaction with KLA could be completed. With these conditions and concerns in mind, in accordance with the terms of the merger agreement between Nanometrics and August Technology, August Technology s board of directors indicated that it would be willing to discuss a potential transaction with KLA if KLA executes a confidentiality agreement containing provisions that are no less favorable to August Technology than those contained in August Technology s confidentiality agreement with Nanometrics. KLA and August Technology have unable to reach agreement on the form of such a confidentiality agreement and have had no discussions regarding the confidentiality agreement since early March. KLA announced in a press release on April 5, 2005 that it owns approximately 4.2% of August Technology s outstanding common stock.

August Technology s board of directors determined, after consulting with August Technology s financial and legal advisors, that, despite the offers from Rudolph and KLA, continuing to pursue the August merger is in the best interests of August Technology and its shareholders because it provides the highest potential long-term value for the August Technology shareholders. For a complete discussion of the consideration the August Technology board of directors gave the Rudolph and KLA offers, we encourage you to read the section of this joint proxy statement/prospectus entitled *The August Merger Background of the August Merger* beginning on page 75.

On March 15, 2005, August Technology received notification of early termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, applicable to the August merger. Termination or expiration of this waiting period is a condition to the August merger.

In addition, the Department of Justice has notified August Technology that it has commenced an investigation into the anti-competitive aspects of the offers submitted to August Technology by Rudolph and KLA. In connection with this investigation, the Department of Justice has conducted interviews with senior executives of August Technology and by letter dated April 21, 2005 requested that August Technology voluntarily provide documents and information regarding its products and the markets in which it competes. August Technology is in the process of responding to this request for documents and information. August Technology understands that the Department of Justice has contacted and requested information from others in connection with this investigation as well. No further information regarding the timing or scope of the investigation was made available to August Technology. August Technology and Nanometrics do not anticipate that this investigation will affect the completion of the August merger. If August Technology were to proceed with a transaction with Rudolph or KLA, it would be subject to pre-merger notification requirements under the HSR Act.

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On March 14, 2005, Nanometrics announced that it has received notice of a patent infringement lawsuit brought by Nova Measuring Instruments, Ltd. alleging infringement of United States Patent No. 6,752,689, or the 689 Patent. Nanometrics believes that its products do not infringe any valid claim of the 689 patent and that the lawsuit will not have a material impact on its business and operating results.

Legal Proceedings Regarding the August Merger

On February 4, 2005, a shareholder class action lawsuit was filed in Minnesota state court against August Technology and the August Technology board of directors. The lawsuit claims that the directors breached their fiduciary duties to August Technology s shareholders in connection with their actions in agreeing to the August merger. The plaintiff seeks various forms of injunctive relief including an order enjoining August Technology and the directors from consummating the August merger.

On February 14, 2005, a similar shareholder class action lawsuit was filed in Minnesota state court against August Technology and the August Technology board of directors. The lawsuit also claims that the directors breached their fiduciary duties to August Technology s shareholders in connection with their actions in agreeing to the August merger. The plaintiff seeks various forms of injunctive relief including an order enjoining August Technology and the directors from consummating the August merger.

James A. Bernards, Roger E. Gower, Jeff L. O Dell, Linda Hall Whitman and Michael Wright, the members of the board of directors of August Technology who have been named as individual defendants in the two purported class actions, have collectively retained separate counsel to represent them in connection with the foregoing lawsuits. August Technology and these named individuals believe they have meritorious defenses to these claims and intend to vigorously defend these lawsuits. They have moved to dismiss these lawsuits.

The two proceedings have been consolidated and are being heard as one case. On April 19, 2005, the Court issued a 30 day stay of all proceedings. On April 27, 2005, the plaintiffs scheduled a hearing on a motion to amend the complaint. The hearing was scheduled for June 9, 2005. On May 10, 2005, the court issued an order dismissing the complaint for asserting derivative claims without complying with rules governing derivative actions. Thereafter, the court removed the hearing from the calendar. Therefore, at this time, there are no legal proceedings pending.

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Summary Selected Historical Financial Data

Nanometrics and August Technology are providing the following information to aid you in your analysis of the financial aspects of the August merger.

Nanometrics

Nanometrics has derived the following historical information from its audited consolidated financial statements as of January 1, 2005, January 3, 2004, December 28, 2002, December 29, 2001 and December 30, 2000, and for each of the years then ended and from its unaudited consolidated financial statements as of April 2, 2005 and for each of the three month periods ended April 2, 2005 and April 3, 2004. The information is only a summary and should be read in conjunction with Nanometrics consolidated financial statements, accompanying notes and management s discussion and analysis of results of operations and financial condition incorporated by reference into this joint proxy statement/prospectus.

	Three Months Ended		Year Ended				
	April 2, 2005	April 3, 2004	January 1, 2005	January 3, 2004 (a)	December 28, 2002	December 29, 2001 (b)	December 30, 2000 (b)
	(in thousands, except per share amounts)						
Consolidated Statement of Operations Data:							
Net Revenues:							
Products	$ 21,166	$ 11,663	$ 62,911	$ 34,592	$ 28,669	$ 42,653	$ 63,468
Service	2,325	2,008	7,784	7,010	6,054	4,931	6,023
Total net revenues	23,491	13,671	70,695	41,602	34,723	47,584	69,491
Costs and Expenses:							
Cost of products	9,750	5,403	27,555	17,691	13,237	17,949	25,082
Cost of service	2,573	1,611	8,404	6,620	5,765	5,406	6,022
Research and development	3,179	3,489	12,827	13,399	13,765	10,760	9,238
Selling	3,145	3,066	11,442	11,496	10,862	9,523	10,313
General and administrative	1,998	1,295	5,137	4,689	5,104	4,177	4,258
Goodwill impairment					1,077		
Total costs and expenses	20,645	14,864	65,365	53,895	49,810	47,815	54,913
Income (loss) from operations	2,846	(1,193)	5,330	(12,293)	(15,087)	(231)	14,578
Interest income	130	56	276	397	583	2,576	4,129
Interest expense	(18)	(29)	(110)	(96)	(94)	(86)	(76)
Other, net	(270)	(3)	(44)	385	100	(517)	(150)
Total other income, net	(158)	24	122	686	589	1,973	3,903
Income (loss) before provision (benefit) for income taxes	2,688	(1,169)	5,452	(11,607)	(14,498)	1,742	18,481
Provision (benefit) for income taxes	83	43	426	5,860(c)	(6,230)	782	5,942
Income (loss) before cumulative effect of change in revenue recognition principle	2,605	(1,212)	5,026	(17,467)	(8,268)	960	12,539

Cumulative effect of change in revenue recognition principle							(1,364)
Net income (loss)	$ 2,605	$ (1,212)	$ 5,026	$ (17,467)	$ (8,268)	$ 960	$ 11,175
Basic net income (loss) per share:							
Income (loss) before cumulative effect of change in revenue recognition principle	$ 0.21	$ (0.10)	$ 0.41	$ (1.45)	$ (0.70)	$ 0.08	$ 1.14
Cumulative effect of change in revenue recognition principle			$	$	$	$	$ (0.12)
Net income (loss)	$ 0.21	$ (0.10)	$ 0.41	$ (1.45)	$ (0.70)	$ 0.08	$ 1.02
Diluted net income (loss) per share:							
Income (loss) before cumulative effect of change in revenue recognition principle	$ 0.19	$ (0.10)	$ 0.38	$ (1.45)	$ (0.70)	$ 0.08	$ 1.06
Cumulative effect of change in revenue recognition principle			$	$	$	$	$ (0.12)
Net income (loss)	$ 0.19	$ (0.10)	$ 0.38	$ (1.45)	$ (0.70)	$ 0.08	$ 0.94
Weighted average common shares:							
Basic	12,575	12,189	12,320	12,043	11,878	11,691	10,986
Diluted	13,455	12,189	13,364	12,043	11,878	12,161	11,845

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(a) The fiscal year ended January 3, 2004 included 53 weeks, whereas the other annual periods presented included 52 weeks.

(b) Nanometrics adopted Statement of Financial Accounting Standards No. 142 *Goodwill and Other Intangible Assets* SFAS 142, effective January 1, 2002. The effect of not amortizing goodwill and other intangible assets in periods prior to the adoption of SFAS 142 would have resulted in net income of $1,028 and $11,956 for the years ended December 29, 2001 and December 30, 2000, respectively; basic earnings per common share of $0.09 and $1.09 for the years ended December 29, 2001 and December 30, 2000, respectively; and diluted earnings per common share of $0.09 and $1.01 for the years ended December 29, 2001 and December 30, 2000, respectively.

(c) The income tax provision for the fiscal year ended January 3, 2004 includes a charge of $6,020 relating to an increase in the deferred tax valuation allowance.

	April 2, 2005	January 1, 2005	January 3, 2004	December 28, 2002	December 29, 2001	December 30, 2000
Consolidated Balance Sheet Data:						
Cash, cash equivalents and marketable debt securities	$ 31,148	$ 33,868	$ 29,892	$ 36,866	$ 47,227	$ 69,788
Working capital	72,525	69,915	59,587	74,776	80,171	92,420
Total assets	137,147	133,769	121,740	134,688	142,355	144,796
Debt obligations, less current portion	1,851	2,070	2,648	3,123	3,314	4,236
Total shareholders equity	120,630	118,156	108,441	124,106	129,845	127,009

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August Technology

August Technology has derived the following historical information from its audited consolidated financial statements as of December 31, 2004, 2003, 2002, 2001 and 2000 and for each of the years then ended and August Technology s unaudited consolidated financial statements as of March 31, 2005 and for each of the three month periods ended March 31, 2005 and 2004. The information is only a summary and should be read in conjunction with August Technology s consolidated financial statements and accompanying notes and management s discussion and analysis of results of operations and financial condition incorporated by reference into this joint proxy statement/prospectus.

	Three Months Ended		Year Ended December 31,				
	March 31, 2005	March 31, 2004	2004	2003	2002	2001	2000
	(in thousands, except per share amounts)						
Consolidated Statement of Operations Data:							
Net revenues	$ 18,417	$ 16,400	$ 68,443	$ 40,323	$ 25,058	$ 29,784	$ 31,666
Cost of revenues	8,359	7,058	31,925	18,290	11,068	12,039	12,594
Gross profit	10,058	9,342	36,518	22,033	13,990	17,745	19,072
Selling, general and administrative expenses	6,290	5,189	22,798	14,359	13,013	12,379	10,426
Research and development expenses	3,666	2,908	13,561	10,430	9,847	7,940	6,945
Total operating expenses	9,956	8,097	36,359	24,789	22,860	20,319	17,371
Income (loss) from operations	102	1,245	159	(2,756)	(8,870)	(2,574)	1,701
Interest income	289	201	847	407	624	1,427	978
Merger expenses	(1,234)						
Other income (expense)			73			(17)	
Income (loss) before provision (benefit) for income taxes	(843)	1,446	1,079	(2,349)	(8,246)	(1,164)	2,679
Provision (benefit) for income taxes	55		277		687	(813)	807
Net income (loss)	$ (898)	$ 1,446	$ 802	$ (2,349)	$ (8,933)	$ (351)	$ 1,872
Net income (loss) per share:							
Basic	$ (0.05)	$ 0.08	$ 0.05	$ (0.16)	$ (0.69)	$ (0.03)	$ 0.17
Diluted	$ (0.05)	$ 0.08	$ 0.04	$ (0.16)	$ (0.69)	$ (0.03)	$ 0.16
Weighted average common shares:							
Basic	17,867	17,622	17,755	14,381	13,033	12,723	11,049
Diluted	17,867	18,486	18,211	14,381	13,033	12,723	11,770

	March 31,	As of December 31,				
	2005	2004	2003	2002	2001	2000
Consolidated Balance Sheet Data:						
Cash, cash equivalents and marketable debt securities	$52,222	$ 50,422	$ 63,850	$ 18,777	$ 25,857	$ 29,193

Working capital	56,079	54,962	62,819	29,376	37,171	36,872
Total assets	98,056	95,800	88,947	39,510	47,155	47,897
Retained earnings (accumulated deficit)	(9,674)	(8,776)	(9,578)	(7,229)	1,704	2,055
Shareholders equity	80,929	81,465	78,477	34,867	42,523	41,685

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Selected Unaudited Pro Forma Condensed Combined Financial Data

The following selected pro forma condensed combined financial data for the year ended January 1, 2005 and for the three months ended April 2, 2005 gives effect to Nanometrics acquisition of August Technology as if it had occurred on January 4, 2004, the beginning of Nanometrics fiscal year ended January 1, 2005. The selected pro forma condensed combined financial data as of April 2, 2005 gives effect to the August merger as if it had occurred on April 2, 2005. The pro forma adjustments are based upon available information and assumptions that Nanometrics management believes are reasonable. The selected pro forma condensed combined financial data are presented for illustrative purposes only. Nanometrics and August Technology may have performed differently had they been combined for the periods and on the dates presented. Shareholders of Nanometrics and August Technology should not rely on this information as being indicative of the historical results that would have been achieved had the companies always been combined or the future results that August Nanometrics will experience after the August merger.

The pro forma adjustments are based upon certain assumptions and preliminary available information that Nanometrics believes are reasonable under the circumstances. This data is not intended to represent or to be indicative of the consolidated results of operations or financial condition of Nanometrics that would have been reported had the August merger been completed as of the dates presented, and should not be taken as representative of future consolidated results of operations or financial condition of Nanometrics. A final determination of fair values relating to the August merger, which cannot be made prior to the completion of the August merger, may differ materially from the preliminary estimates and will include management s final valuation of the fair value of assets acquired and liabilities assumed. This final valuation will be based on the actual net tangible and identifiable intangible assets of August Technology that exist as of the date of the completion of the August merger. The final valuation may change the allocations of the purchase price, which could affect the fair value assigned to the assets and liabilities and could result in a change to the unaudited pro forma condensed combined financial statements data. The pro forma adjustments are more fully described in the notes to the unaudited pro forma condensed combined financial statements found elsewhere in this joint proxy statement/prospectus.

The selected pro forma condensed combined financial data (i) have been derived from, and should be read in conjunction with, the unaudited pro forma condensed combined financial statements and accompanying notes included in the section of this joint proxy statement/prospectus entitled *Unaudited Pro Forma Condensed Combined Financial Information* beginning on page 135, and (ii) should be read in conjunction with the consolidated financial statements of Nanometrics and August Technology and other information filed by Nanometrics and August Technology with the Securities and Exchange Commission and incorporated by reference into this joint proxy statement/prospectus (in thousands, except per share amounts).

	Three Months Ended April 2, 2005	For the Year Ended January 1, 2005
Statement of Operations Data:		
Net revenues	$ 41,908	$ 139,656
Income from operations	$ 2,432	$ 2,110
Net income	$ 2,425	$ 2,428
Net income per share:		
Basic	$ 0.10	$ 0.10
Diluted	$ 0.10	$ 0.10

	As of April 2, 2005
Balance Sheet Data:	
Working capital	$ 129,445

Total assets	$	300,177
Total debt, including current portion	$	2,643
Stockholders equity	$	260,527

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Comparative Per Share Information

The following tables set forth historical per share information of Nanometrics and August Technology and unaudited pro forma condensed combined per share information after giving effect to the August merger under the purchase method of accounting, based on an average price per share of Nanometrics common stock of $12.57, for the period beginning two trading days before and ending two trading days after the August merger was announced. The unaudited pro forma combined financial data are not necessarily indicative of the financial position had the August merger occurred on April 2, 2005, or operating results that would have been achieved had the August merger been in effect as of January 4, 2004 and should not be construed as representative of future financial position or operating results. The unaudited pro forma condensed combined per share information is derived from, and should be read in conjunction with, the unaudited pro forma condensed combined financial statements and accompanying notes included in the section of this joint proxy statement/prospectus entitled *Unaudited Pro Forma Condensed Combined Financial Information* beginning on page 135. The historical per share information is derived from the audited financial statements as of and for the year ended January 1, 2005 for Nanometrics and December 31, 2004 for August Technology, and from the unaudited financial statements for the three months ended April 2, 2005 for Nanometrics and March 31, 2005 for August Technology.

	Historical Nanometrics	Historical August Technology	Pro Forma Combined (1)	Pro Forma Equivalent of One August Technology Share (2)
		(shares in thousands)		
Net income per share:				
Year ended January 1, 2005				
Basic	$ 0.41	$ 0.05	$ 0.10	$ 0.07
Diluted	$ 0.38	$ 0.04	$ 0.10	$ 0.06
Net income (loss) per share:				
Three months ended April 2, 2005				
Basic	$ 0.21	$ (0.05)	$ 0.10	$ 0.06
Diluted	$ 0.19	$ (0.05)	$ 0.10	$ 0.06
Cash dividends declared per share	$	$	$	$
Weighted average shares used to compute net income (loss) per share:				
Year ended January 1, 2005				
Basic	12,320	17,755	23,794	
Diluted	13,364	18,211	25,033	
Three months ended April 2, 2005				
Basic	12,575	17,867	24,049	
Diluted	13,455	17,867	25,090	
Book value per share:				
April 2, 2005	$ 9.59	$ 4.51	$ 10.83	$ 6.93
April 2, 2005 shares outstanding used in computing book value per share:	12,585	17,926	24,059	

(1) The combined pro forma data includes the effect of the August merger on the basis as described in the notes to the unaudited pro forma combined financial information included elsewhere in this joint proxy statement/prospectus.

(2) The pro forma equivalent of one August Technology share amounts were calculated by applying the exchange ratio of 0.6401 to the pro forma combined net earnings and book value per share.

This information is only a summary and should be read in conjunction with the financial statements and accompanying notes of Nanometrics and August Technology contained in the annual reports and other information that has been filed with the Securities and Exchange Commission and incorporated by reference into this joint proxy statement/prospectus and with the unaudited pro forma condensed combined financial statements contained in the section of this joint proxy statement/prospectus entitled *Unaudited Pro Forma Condensed Combined Financial Information* beginning on page 135.

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Comparative Per Share Market Price Data

Nanometrics common stock is quoted on the Nasdaq National Market and traded under the symbol NANO. August Technology common stock is quoted on the Nasdaq National Market and traded under the symbol AUGT. The table below sets forth, for the periods indicated, the high and low sale prices per share of Nanometrics common stock and August Technology common stock. For current price information with respect to Nanometrics common stock and August Technology common stock, you are urged to consult publicly available sources. No assurance can be given as to future prices, or markets for shares, of Nanometrics common stock or August Technology common stock.

	Shares of Nanometrics Common Stock		Shares of August Technology Common Stock	
	High	Low	High	Low
2005				
First Quarter	$ 16.39	$ 11.07	$ 12.40	$ 7.19
2004				
First Quarter	$ 23.50	$ 13.86	$ 23.45	$ 12.47
Second Quarter	18.94	10.60	17.24	11.25
Third Quarter	12.20	7.50	12.51	6.87
Fourth Quarter	17.72	11.14	10.53	6.14
2003				
First Quarter	$ 6.11	$ 2.85	$ 5.38	$ 2.20
Second Quarter	7.49	3.88	6.23	3.45
Third Quarter	15.89	6.15	14.40	6.73
Fourth Quarter	17.41	10.63	20.69	13.82
2002				
First Quarter	$ 23.10	$ 14.90	$ 14.59	$ 8.05
Second Quarter	20.35	13.16	16.35	9.35
Third Quarter	16.33	2.60	9.23	3.47
Fourth Quarter	6.30	1.82	7.40	3.89

The following table sets forth the closing prices for Nanometrics common stock and August Technology common stock as reported on the Nasdaq National Market on January 20, 2005, the last trading day before Nanometrics and August Technology announced the August merger and June 7, 2005, the last trading day before the date of this joint proxy statement/prospectus. The following table also sets forth historical pro forma equivalent prices which reflect the fluctuating value of the Nanometrics common stock that August Technology shareholders would receive in exchange for each share of August Technology common stock if the August merger was completed on either of these dates, applying the exchange ratio of 0.6401 of a share of August Nanometrics common stock for each share of August Technology common stock.

	Nanometrics Common Stock	August Technology Common Stock	Pro Forma Equivalent Value of August Technology Common Stock
January 20, 2005	$ 13.10	$ 9.15	$ 8.39
June 7, 2005	$ 11.53	$ 11.26	$ 7.38

The above tables show only historical comparisons. These comparisons may not provide meaningful information to Nanometrics shareholders in determining whether to approve the issuance of shares of August Nanometrics common stock in the August merger or to August Technology shareholders in determining whether to approve the merger agreement and the August merger. Nanometrics and August Technology shareholders are urged to obtain current market quotations for Nanometrics and August Technology common stock and to review carefully the other information contained in this joint proxy statement/prospectus, or incorporated by reference into this joint proxy statement/prospectus, when considering whether to approve the issuance of shares of August Nanometrics common stock in the August merger, in the case of Nanometrics shareholders, or to approve the merger agreement and the August merger, in the case of August Technology shareholders.

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CAUTIONARY STATEMENT CONCERNING FORWARD-LOOKING STATEMENTS

This joint proxy statement/prospectus and the other documents incorporated by reference into this joint proxy statement/prospectus contain or may contain forward-looking statements intended to qualify for the safe harbor from liability established by the Private Securities Litigation Reform Act of 1995. These statements can be identified by the fact that they do not relate strictly to historical or current facts. We have based these forward-looking statements on our current expectations about future events. Further, statements that include words such as may, will, project, might, expect, believe, anticipate, intend, could, would, estimate, continue or pursue, or the negative of these word expressions of similar meaning, may identify forward-looking statements. These forward-looking statements are found at various places throughout this joint proxy statement/prospectus and the other documents incorporated by reference. These forward-looking statements, including, without limitation, those relating to future actions, new projects, strategies, future performance, the outcome of contingencies such as legal proceedings and future financial results, in each case relating to Nanometrics, August Technology or August Nanometrics, respectively, wherever they occur in this joint proxy statement/prospectus or the other documents incorporated by reference herein, are necessarily estimates reflecting the best judgment of the respective management of Nanometrics and August Technology and involve a number of risks and uncertainties that could cause actual results to differ materially from those suggested by the forward-looking statements. These forward-looking statements should, therefore, be considered in light of various important factors, including those set forth in this joint proxy statement/prospectus and incorporated by reference into this joint proxy statement/prospectus. In addition to the risk factors identified elsewhere, important factors that could cause actual results to differ materially from estimates or projections contained in the forward-looking statements include, without limitation:

- the ability to obtain the approvals of each company s shareholders, to obtain or meet the closing conditions in the merger agreement, including applicable tax requirements, and to otherwise complete the August merger in a timely manner;
- the ability to timely and cost-effectively integrate the operations of Nanometrics and August Technology;
- the ability to realize the synergies and other perceived advantages resulting from the August merger;
- the ability to retain key personnel both before and after the August merger;
- the ability of each company to successfully execute its business strategy;
- the extent and timing of market acceptance of new products;
- the ability of Nanometrics, August Technology and August Nanometrics to procure, maintain, enforce and defend their respective patents and other proprietary rights;
- the effects of local, national and global economic, credit and capital market conditions on the economy in general, and on the semiconductor industry in particular, and the effects of foreign exchange rates and interest rates;
- changes in laws, including increased tax rates, regulations or accounting standards, third party relations and approvals, and decisions of courts, regulators and governmental bodies;
- litigation outcomes and judicial actions, including costs and existing or additional litigation associated with the August merger, and legislative action, referenda and taxation;

the ability of Nanometrics, August Technology or August Nanometrics to continue to increase customer loyalty and maintain existing distributor, subcontractor and supplier relationships;

the ability to recoup costs of capital investments through higher revenues;

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environmental restrictions, soil and water conditions, weather and other hazards, site access matters and building permit issues;

the ability of Nanometrics, August Technology and August Nanometrics to successfully complete any future acquisitions and integrate any acquired businesses;

the effects of environmental and structural building conditions relating to our properties;

acts of war or terrorist incidents; and

the effects of competition, including locations of competitors and operating and market competition.

You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this joint proxy statement/prospectus or, in the case of documents incorporated by reference, as of the date of those documents. Neither Nanometrics nor August Technology undertakes any obligation to publicly update or release any revisions to these forward-looking statements to reflect events or circumstances after the date of this joint proxy statement/prospectus or to reflect the occurrence of unanticipated events, except as required by law.

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RISK FACTORS

In addition to the other information in this joint proxy statement/prospectus including the information addressed in the section entitled Cautionary Statement Concerning Forward-Looking Statements, you should carefully consider the risks described below before deciding how to vote your shares.

Risks Relating to the August Merger

Although Nanometrics and August Technology expect that the August merger will result in benefits to the combined company, August Nanometrics may not realize those benefits because of integration and other challenges.

The failure of August Nanometrics to meet the challenges involved in integrating the global operations of Nanometrics and August Technology successfully or otherwise to realize any of the anticipated benefits of the August merger, could seriously harm the results of operations of August Nanometrics. Realizing the benefits of the August merger will depend in part on the successful integration of technology, operations and personnel. The integration of the companies is a complex, time-consuming and expensive process that, without proper planning and implementation, could significantly disrupt the respective businesses of Nanometrics, August Technology and/or August Nanometrics. The challenges involved in this integration include, but are not limited to, the following:

- communicating a strategic vision to the market regarding August Nanometrics and executing on that strategic vision;
- consolidating operations, including rationalizing corporate information technology and administrative infrastructures;
- combining diverse product and service offerings;
- coordinating sales and marketing efforts to effectively communicate the capabilities of August Nanometrics;
- overcoming any perceived adverse changes in business focus, including demonstrating to existing customers of both Nanometrics and August Technology that the August merger will not result in adverse changes in customer service standards or business focus and helping customers conduct business easily with August Nanometrics;
- coordinating and harmonizing research and development activities to accelerate introduction of new products and technologies with reduced cost;
- preserving customer, distribution, reseller, manufacturing, supplier, marketing and other important relationships of both Nanometrics and August Technology and resolving any potential conflicts that may arise;
- minimizing the diversion of management attention from ongoing business concerns;

retaining key employees and maintaining employee morale;

addressing differences in the business cultures of Nanometrics and August Technology;

addressing the effects of August Technology s employment contracts and the differences between Nanometrics and August Technology s employee bonus plans on August Nanometrics employees;

overcoming challenges involved with managing two large groups of employees in geographically disparate areas;

coordinating and combining international operations, relationships and facilities, which may be subject to additional constraints imposed by geographic distance, local laws and regulations;

overcoming any potential challenges involved with August Nanometrics ability to comply with the Sarbanes-Oxley Act of 2002, including its ability to make the certifications required by Section 404 thereof, in a timely manner;

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- reducing the effects of potential litigation diverting the attention of management away from day to day integration issues;

- addressing any challenges involved with August Nanometrics ability to earn profits with the amortization of the fair value of property, plants, equipment and intangible assets; and

- overcoming the challenges involved with integrating August Technology s and Nanometrics diverse enterprise resource planning systems worldwide and minimizing any disruptions that may be caused by such integration.

August Nanometrics may not successfully integrate the operations of Nanometrics and August Technology in a timely manner, or at all, and August Nanometrics may not realize the anticipated benefits and synergies of the August merger to the extent, or in the timeframe, anticipated. The anticipated benefits of the August merger are based on projections and assumptions, including successful integration, not actual experience. The failure to integrate the businesses of Nanometrics and August Technology or to realize any of the anticipated benefits of the August merger could seriously hinder August Nanometrics plans for product development as well as business and market expansion following the August merger.

In addition to the integration risks discussed above, August Nanometrics ability to realize these benefits and synergies could be adversely affected by practical or legal constraints on its ability to combine operations. Even if the integration of Nanometrics and August Technology s operations, products and personnel is successful, it may place a significant burden on management and internal resources. The diversion of management attention and any difficulties encountered in the transition and integration process could harm August Nanometrics business, financial condition and operating results.

August Technology shareholders will receive a fixed ratio of 0.6401 of a share of August Nanometrics common stock for each share of August Technology common stock, and consequently, if Nanometrics stock price decreases for any reason, August Technology shareholders will receive less in value for their August Technology common stock.

Upon completion of the August merger, each holder of shares of August Technology common stock will be entitled to receive 0.6401 of a share of August Nanometrics common stock for each share of August Technology common stock held by such holder at the completion of the August merger. There will be no adjustment (except for adjustments to reflect the effect of any stock split, reverse stock split, stock dividend, reorganization, recapitalization, reclassification or other like change with respect to the common stock of either company) in the number of shares of August Nanometrics common stock issued to August Technology shareholders (or reserved for issuance pursuant to assumed August Technology stock options) because of changes in the market price of either Nanometrics common stock or August Technology common stock. In addition, the parties do not have a right to terminate the merger agreement or refuse to complete the August merger based upon changes in the market price of either Nanometrics common stock or August Technology common stock.

The share prices of Nanometrics common stock and August Technology common stock are subject to the general price fluctuations in the market for publicly-traded equity securities. The prices of both companies common stock have experienced significant volatility in the past and have varied since Nanometrics and August Technology entered into the merger agreement and will continue to vary in the future due to changes in the business, operations or prospects of Nanometrics and August Technology, market assessments of the August merger, regulatory considerations, market and economic considerations and other factors. Please see the risk factor entitled *Nanometrics and August Technology s operating results are subject to fluctuations and are inherently unpredictable; if August Nanometrics fails to meet the expectations of securities analysts or investors, the stock price of August Nanometrics following the August merger may decrease significantly* beginning on page 41. These market fluctuations may adversely affect the market price of Nanometrics common stock.

Accordingly, the then-current dollar value of August Nanometrics common stock that August Technology shareholders will receive upon the completion of the August merger will depend entirely upon the market value

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of Nanometrics common stock at the time the August merger is completed, which may be different from, and lower than, the closing price of Nanometrics common stock on the last full trading day preceding the public announcement of the August merger, the last full trading day prior to the date of this joint proxy statement/prospectus or the date of the Nanometrics annual meeting and August Technology special meeting. Moreover, the completion of the August merger may occur some time after shareholder approval has been obtained. Neither Nanometrics nor August Technology can predict or give any assurances as to the respective market prices of its common stock at any time before or after the completion of the August merger. Nanometrics and August Technology urge you to obtain recent market quotations for Nanometrics common stock and August Technology common stock. However, this value may substantially decrease from the date you submit your proxy.

The market price of the shares of Nanometrics common stock may be affected by factors different from those affecting the shares of August Technology common stock.

Upon completion of the August merger, holders of August Technology common stock will become holders of August Nanometrics common stock. An investment in Nanometrics common stock has different risks than an investment in August Technology common stock. Former holders of August Technology common stock will be subject to additional risks upon exchange of their shares of August Technology common stock for August Nanometrics common stock in the August merger. For a discussion of the businesses of Nanometrics, and August Technology, see the documents incorporated by reference into this document and referred to in the section of this joint proxy statement/prospectus entitled *Additional Information Where You Can Find More Information* beginning on page 200.

The shares of August Nanometrics common stock to be received by August Technology shareholders as a result of the August merger will have different rights than the shares of August Technology common stock.

The rights associated with shares of August Nanometrics common stock are different from the rights of August Technology common stock. The rights of August Nanometrics common stock after the August merger will be governed by August Nanometrics certificate of incorporation and the laws of the State of Delaware, and may be different from the rights under August Technology s articles of incorporation and the laws of the State of Minnesota. See the section of this joint proxy statement/prospectus entitled *Comparison of Rights of Holders and Corporate Governance Matters* beginning on page 146 for a discussion of the different rights associated with August Nanometrics common stock.

Some of the directors and executive officers of Nanometrics and August Technology have interests and arrangements that could have affected their decisions to support or approve the August merger.

The interests of some of the directors and executive officers of Nanometrics and August Technology in the August merger and their participation in arrangements that are different from, or are in addition to, those of Nanometrics and August Technology shareholders generally could have affected their decision to support or approve the August merger. Executive officers of August Technology will receive accelerated vesting of options in connection with the August merger and may be entitled to receive certain severance benefits in the event of such executive officer s actual or constructive termination within 18 months following the August merger. As a result, some of the directors and executive officers of Nanometrics and August Technology may be more likely to recommend the August merger than if they did not have these interests. These interests are described in more detail in the section of this joint proxy statement/prospectus entitled *The August Merger Interests of August Technology Directors and Executive Officers in the August Merger* beginning on page 110.

Nanometrics and August Technology each expect to incur significant costs associated with the August merger which could harm the financial results of August Nanometrics.

Nanometrics estimates that it will incur direct transaction costs of approximately $2.1 million associated with the August merger, which will be included as part of the total purchase price for financial accounting

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purposes. In addition, August Technology estimates that it will incur direct transaction costs of approximately $4.5 million, which will be recognized and expensed as incurred. Nanometrics and August Technology believe August Nanometrics may incur charges to operations, which cannot be reasonably estimated at this time, in the quarter in which the August merger is completed or the following quarters, to reflect costs associated with integrating the two companies. There can be no assurance that August Nanometrics will not incur additional material charges in subsequent quarters to reflect additional costs associated with the August merger and the integration of the two companies.

Charges to earnings resulting from the application of the purchase method of accounting may adversely affect the market value of August Nanometrics common stock following the August merger.

In accordance with United States generally accepted accounting principles, August Nanometrics will account for the August merger using the purchase method of accounting, which may require an increase in intangible assets and inventory and a decrease in deferred revenue to their respective fair values. Further, a portion of the purchase price may be allocated to in-process research and development. Such purchase accounting adjustments may result in material recurring and nonrecurring charges to earnings that could have a material adverse effect on the market value of the common stock of August Nanometrics following completion of the August merger. Under the purchase method of accounting, August Nanometrics will allocate the total estimated purchase price to August Technology s net tangible assets and amortizable intangible assets based on their fair values as of the date of completion of the August merger, and record the excess of the purchase price over those fair values as goodwill. August Nanometrics will incur amortization expense over the useful lives of amortizable intangible assets acquired in connection with the August merger. In addition, to the extent the value of goodwill becomes impaired, August Nanometrics may be required to incur material charges relating to the impairment of that asset. Further, August Nanometrics may be impacted by nonrecurring charges related to the requirement for immediately expensing the portion of the purchase price allocated to August Technology s in- process research and development and reduced gross profit margins from the requirement to adjust August Technology s inventory and deferred revenues to fair value. These charges resulting from the application of purchase accounting could have a material impact on August Nanometrics results of operations.

The stock prices and businesses of Nanometrics may be adversely affected if the August merger is not completed, and, under certain circumstances, Nanometrics or August Technology may be required to pay a termination fee if the August merger is not consummated.

If the August merger is not completed, the trading price of Nanometrics common stock and/or August Technology common stock may decline to the extent that the current market prices reflect a market assumption that the August merger will be completed. In addition, Nanometrics and August Technology s businesses and operations may be harmed to the extent that customers, suppliers and others believe that the companies cannot effectively compete in the marketplace without the August merger, or there is customer or employee uncertainty surrounding the future direction of the product and service offerings and strategy of Nanometrics or August Technology on a standalone basis.

In addition, Nanometrics and August Technology would not derive the strategic benefits expected to result from the August merger if the August merger is not completed, which could adversely affect their respective businesses.

Moreover, under specified circumstances described in the section of this joint proxy statement/prospectus entitled *The Merger Agreement Termination; Termination Fees and Expenses* beginning on page 130, either company may be required to pay the other a termination fee equal to $8.3 million, plus any applicable costs, expenses and interest pursuant to the merger agreement.

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Rudolph and KLA have each publicly expressed interest in merging with August Technology. If these or other companies make competitive offers to merge with August Technology, and if the August Technology board of directors decides to change its recommendation, and the August merger is not completed, the business, operating results and financial condition of August Technology and Nanometrics may be harmed.

On January 27, 2005, Rudolph informed August Technology that it was prepared to enter into a merger with August Technology. On February 9, 2005, KLA informed August Technology of its interest in pursuing a merger with August Technology. In order to discharge its fiduciary obligation to its shareholders, and in accordance with the terms of the merger agreement between Nanometrics and August Technology, August Technology has indicated that it is not for sale, but in accordance with the terms of the merger agreement between Nanometrics and August Technology, August Technology would be willing to discuss a potential transaction with Rudolph and/or with KLA if Rudolph and/or KLA executes a confidentiality agreement containing provisions that are no less favorable to August Technology than those contained in August Technology s confidentiality agreement with Nanometrics. KLA has thus far not executed such a confidentiality agreement. On April 4, 2005, August Technology and Rudolph entered into a confidentiality agreement and are currently engaged in discussions and exchanging information with respect to Rudolph s offer. August Technology remains subject to the January 21, 2005 merger agreement with Nanometrics and is conducting the discussions with Rudolph as permitted by the terms of the merger agreement. If August Technology s board decides to change its recommendation and endorse one of these competing offers and the August merger is not completed, August Technology could (i) be required to pay Nanometrics an $8.3 million termination fee, and (ii) experience a loss of reputation and goodwill and damage to employee relationships. For more detailed information, see the sections of this joint proxy statement/prospectus entitled *The August Merger Recent Developments* beginning on page 116 and *The Merger Agreement Termination; Termination Fees and Expenses* beginning on page 130 and the risk factor entitled *The stock prices and businesses of Nanometrics and August Technology may be adversely affected if the August merger is not completed; and, under certain circumstances, Nanometrics or August Technology may be required to pay a termination fee if the August merger is not consummated*, beginning on page 37.

If August Technology is unsuccessful in certain purported shareholder class action lawsuits recently brought against it in connection with the August merger, the August merger could be enjoined, which may adversely affect the business, operating results and financial condition of August Technology and Nanometrics.

On February 4, 2005 and on February 14, 2005, two separate purported shareholder class action lawsuits were filed in Minnesota state court against August Technology and the August Technology board of directors. These lawsuits each claim that the August Technology directors breached their fiduciary duties to the August Technology shareholders in connection with their actions in agreeing to the August merger. The plaintiffs seek various forms of injunctive relief including an order enjoining August Technology and the directors from consummating the August merger.

The two proceedings have been consolidated and are being heard as one case. On April 19, 2005, the Court issued a 30 day stay of all proceedings. On April 27, 2005, the plaintiffs scheduled a hearing on a motion to amend the complaint. The hearing was scheduled for June 9, 2005. On May 10, 2005, the court issued an order dismissing the complaint for asserting derivative claims without complying with rules governing derivative actions. Thereafter, the court removed the hearing from the calendar. Therefore, at this time, there are no legal proceedings pending.

There can be no assurance that August Technology will be successful in the above-referenced lawsuit if it proceeds. If August Technology is not successful, the August merger could be enjoined, thereby preventing consummation of the August merger which may result in indirect costs and expenses to August Technology and Nanometrics, such as significant diversion of management resources, loss of reputation and goodwill, damage to customer relationships and declines in the respective stock prices of August Technology and Nanometrics. Accordingly, if the above referenced lawsuit is successful, the business, results of operations and financial condition of August Technology and Nanometrics could be significantly harmed. For more detailed information, see the section of this joint proxy statement/prospectus entitled *The August Merger Legal Proceedings Regarding the August Merger* beginning on page 117 and the risk factor entitled *The stock prices and*

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businesses of Nanometrics and August Technology may be adversely affected if the August merger is not completed; and, under certain circumstances, Nanometrics or August Technology may be required to pay a termination fee if the August merger is not consummated beginning on page 37.

Nanometrics and August Technology must continue to retain and motivate executives and key employees and recruit new employees, which may be difficult in light of uncertainty regarding the August merger and offers from Rudolph and KLA, and failure to do so could seriously harm August Nanometrics.

In order to be successful, during the period before the August merger is completed, each of Nanometrics and August Technology must continue to retain and motivate executives and other key employees and recruit new employees. Employees of Nanometrics or August Technology may experience uncertainty about their future role with August Nanometrics until or after strategies with regard to August Nanometrics are announced or executed. These potential distractions related to the August merger, as well as the unsolicited offers from Rudolph and KLA, may adversely affect each company s ability to attract, motivate and retain executives and key employees and keep such executives and key employees focused on the strategies and goals of August Nanometrics. Any failure by Nanometrics or August Technology to retain and motivate executives and key employees during the period prior to the completion of the August merger could seriously harm their respective businesses, as well as the business of August Nanometrics.

Uncertainty regarding the August merger may cause customers, distributors, resellers and others to delay or defer decisions concerning Nanometrics and August Technology which may harm either company s results of operations, and the results of operations of August Nanometrics.

Because the August merger is subject to several closing conditions and because August Technology has received unsolicited offers from Rudolph and KLA, uncertainty exists regarding the completion of the August merger. This uncertainty may cause customers, distributors, resellers and others to delay or defer decisions concerning Nanometrics or August Technology, or elect to switch to other suppliers, which could negatively affect the businesses and results of operations of Nanometrics or August Technology, as well as August Nanometrics. Prospective customers could also be reluctant to purchase August Nanometrics products due to uncertainty about the direction of August Nanometrics products and willingness to support and service existing products. In addition, customers, distributors, resellers and others may also seek to change existing agreements with Nanometrics or August Technology as a result of the August merger. These and other actions by customers, distributors, resellers and others could negatively affect the businesses and results of operations of Nanometrics and August Technology as well as August Nanometrics.

Even though Nanometrics and August Technology have obtained the regulatory approvals required to complete the August merger, governmental authorities could still seek to block or challenge the August merger.

The August merger is subject to review by the Department of Justice and the FTC under the HSR Act. Under the HSR Act, Nanometrics and August Technology are required to make pre-merger notification filings and to await the expiration or early termination of the statutory waiting period prior to completing the August merger. We have made all required regulatory filings and have been notified by the FTC that early termination of the waiting period associated with these filings has been granted. We have therefore obtained all regulatory clearances, consents and approvals required to complete the August merger. However, even after completion of the August merger, governmental authorities could seek to block or challenge the August merger, impose conditions or require asset divestitures as they deem necessary or desirable in the public interest. In addition, in some jurisdictions, a competitor, customer or other third party could initiate a private action under the antitrust laws challenging or seeking to enjoin the August merger, before or after it is completed. Nanometrics, August Technology or August Nanometrics may not prevail, or may incur significant costs, in defending or settling any action under the antitrust laws.

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August Technology and Nanometrics will need to obtain consents to the assignment of certain agreements it has with third parties as a result of the August merger and if either party cannot obtain these consents, August Nanometrics may not be able to maintain these relationships on favorable terms or at all.

August Technology and Nanometrics are currently attempting to obtain third-party consents for some agreements requiring a consent upon a change of control, but if either party is unable to do so, August Nanometrics may be forced to renegotiate these agreements or enter into new agreements with various third parties as a separate, stand-alone entity. The August Technology and Nanometrics agreements requiring consent include lease agreements and other agreements with developers, strategic partners, distributors and suppliers. There can be no assurance that August Nanometrics will be able to negotiate new agreements on terms as favorable to it as those that August Technology and Nanometrics had, or at all.

If August Nanometrics fails to develop and introduce new products and services successfully and in a timely manner, it will not be able to compete effectively and its ability to generate revenues will suffer.

Competition is intense in the markets that will be addressed by August Nanometrics. August Nanometrics future success depends upon its ability to develop and introduce new products and services that customers and end users choose to buy. Several competitors have greater financial, engineering, manufacturing, marketing and customer support resources than August Nanometrics will have after the August merger. As a result, August Nanometrics competitors may be able to respond more quickly to new or emerging technologies or market developments by devoting greater resources to the development, promotion and sale of products, which could impair sales of August Nanometrics products. If August Nanometrics is unsuccessful at developing and introducing new products and services that are appealing to its customers and end users with acceptable prices and terms, August Nanometrics will not be able to compete effectively and its ability to generate revenues will suffer.

The development of new products and services can be very difficult and requires high levels of innovation. The development process is also lengthy and costly. If August Nanometrics fails to anticipate end users needs or technological trends accurately or is unable to complete the development of products and services in a cost- effective and timely fashion, it will be unable to introduce new products and services into the market or successfully compete with other providers. In addition, if August Nanometrics fails to timely develop products that meet its customers product planning cycles, August Nanometrics sales volumes may be negatively impacted. As a result, August Nanometrics revenues and gross margins could be adversely affected.

As August Nanometrics introduces new or enhanced products or integrates new technology into new or existing products, it faces risks relating to such transitions including, among other things, disruption in customers ordering patterns, excessive levels of older product inventories, delivering sufficient supplies of new products to meet customers demand, possible product and technology defects arising from the integration of new technology, and a potentially different sales and support environment relating to any new technology. August Nanometrics failure to manage the transition to newer products or the integration of newer technology into new or existing products could adversely affect its business operating results and financial results.

If August Nanometrics is unable to compete successfully against existing and future competitors on the basis of product offerings or price, August Nanometrics could experience a loss in market share and/or be required to reduce prices, which could result in reduced gross margins, and which could materially and adversely affect its business, operating results and financial condition.

If August Nanometrics does not correctly anticipate demand for its products, August Nanometrics could have costly excess production or inventories or may not be able to secure sufficient quantities or cost-effective production of its products and its cost of revenues could be

adversely impacted.

The demand for August Nanometrics products will depend on many factors, including pricing levels, and it is difficult to forecast demand due in part to competition, variations in economic conditions, seasonality and

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changes in consumer and enterprise preferences. It is particularly difficult to forecast demand by individual product. Significant unanticipated fluctuations in demand could result in costly excess production or inventories or the inability to secure sufficient quantities or cost-effective production of August Nanometrics products. This could adversely impact August Nanometrics cost of revenues.

Nanometrics and August Technology s operating results are subject to fluctuations and are inherently unpredictable; if August Nanometrics fails to meet the expectations of securities analysts or investors, the stock price of August Nanometrics following the August merger may decrease significantly.

Both Nanometrics and August Technology s operating results are difficult to predict, and vary significantly from period to period. As a result, Nanometrics and August Technology each believe that quarter-to-quarter comparisons of their respective operating results are not necessarily good indications of what August Nanometrics future performance will be. The recent and prolonged downturn in the semiconductor industry, combined with the lack of operating history for August Nanometrics, may make it difficult for August Nanometrics to accurately forecast revenue. Future operating results may fluctuate significantly due to several factors, many of which are outside of August Nanometrics control and may not meet the expectations of August Nanometrics or those of securities analysts or investors. If this occurs, the price of common stock of August Nanometrics will likely decline. Factors that may cause fluctuations in August Nanometrics operating results include, but are not limited to, the following:

- changes in customer demand and spending levels and limited visibility into customers spending plans;
- changes in general economic conditions and specific market conditions related to the semiconductor, microelectronic and flat panel display industries;
- changes in customer preferences for August Nanometrics products and services;
- competitive pricing pressures and new product introductions by August Nanometrics competitors;
- inability or failure to respond to changing technology within the semiconductor, microelectronic and flat panel display industries;
- seasonality of demand for August Nanometrics products and services;
- variations in product costs or the mix of products sold;
- the anticipated high selling prices of August Nanometrics products which typically results in a long sales cycle and variations in the length of sales cycles;
- quality issues with August Nanometrics products;
- inability of third party manufacturers to produce quality products on time;

failure to achieve targeted product cost reductions and operating expense reductions;

the timely introduction and market acceptance of new August Nanometrics products and services;

excess inventory or insufficient inventory to meet demand; and

litigation brought against August Nanometrics.

Any of the foregoing factors, or any other factors discussed elsewhere herein, could have a material adverse effect on the business, results of operations and financial condition of August Nanometrics.

August Nanometrics will be dependent on its suppliers, some of which will likely be the sole source for certain components and elements of its technology, and August Nanometrics production or reputation could be seriously harmed if these suppliers were unable to timely meet its demand or technical requirements on a cost effective basis.

August Nanometrics products will contain components and subassemblies that are procured from a variety of suppliers. The cost, quality and availability of components will be essential to the successful production and sale of its products. Some components and subassemblies will likely come from sole or limited source suppliers. Alternative sources are not always available or may be financially prohibitive. If suppliers were unable or unwilling to meet August Nanometrics demand for sole source components and if it is unable to obtain an

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alternative source or if the price for an alternative source is prohibitive, August Nanometrics ability to maintain timely and cost-effective production of its products will be seriously harmed.

August Nanometrics will be dependent on contract manufacturers to manufacture many of the components and subassemblies for its products. August Nanometrics will not have long-term supply contracts with such manufacturers, and changes to those relationships, expected or unexpected, may result in delays or disruptions that could cause August Nanometrics to lose revenue and damage its customer relationships.

August Nanometrics will depend on independent contract manufacturers (each of whom is typically a third party manufacturer for numerous companies) to manufacture many of the components and subassemblies for its products. Neither Nanometrics nor August Technology has long-term supply contracts with such manufacturers and if August Nanometrics should fail to effectively manage its contract manufacturer relationships or if one or more of them should experience delays, disruptions or quality control problems in its manufacturing operations, August Nanometrics ability to ship products to its customers could be delayed which could adversely affect its business and financial results.

A limited number of August Nanometrics customers will comprise a significant portion of its revenues and any decrease in revenue from these customers could have an adverse effect on August Nanometrics.

Even though August Nanometrics customer base is expected to increase as a result of the August merger, a large portion of August Nanometrics net revenues will likely continue to depend on sales to a limited number of customers. During fiscal 2004, sales to Applied Materials accounted for 22% and sales to Samsung Electronics Corporation accounted for 14.6% of Nanometrics net revenues respectively. During fiscal 2004, sales to Samsung Electronics Corporation, STMicroelectronics and Taiwan Semiconductor Manufacturing Co. each accounted for more than 10% of August Technology s net revenues. Any downturn in the business of these customers or potential new customers could significantly decrease sales to such customers which, in turn, could adversely affect August Nanometrics net revenues and results of operations.

The long sales and implementation cycles for August Nanometrics products, as well as its expectation that some customers will sporadically place large orders with short lead times, may cause revenues and operating results to vary significantly from quarter to quarter.

A customer s decision to purchase certain Nanometrics and August Technology products involves a significant commitment of its resources and a lengthy evaluation and product qualification process. As a result, the sales cycle may be lengthy. Throughout the sales cycle, August Nanometrics may spend considerable time and resources educating and providing information to prospective customers regarding the use and benefits of its products. Even after making the decision to purchase, customers may deploy the products slowly and deliberately. Timing of deployment can vary widely and depends on the quality and sophistication of the customer s current processing equipment, the complexity of the customer s needs, the customer s budgetary constraints as well as the internal capabilities and sophistication of the customer. Accordingly, August Nanometrics may receive purchase orders for significant dollar amounts on an irregular basis. These long cycles, as well as the expectation that customers will tend to sporadically place large orders with short lead times, may cause revenues and operating results to vary significantly and unexpectedly from quarter to quarter.

The cyclicality of the semiconductor industry may impact August Nanometrics operating results.

The semiconductor industry is highly cyclical and subject to rapid technological change. From time to time, the semiconductor industry has experienced significant economic downturns, including the recent downturn, characterized by diminished product demand, accelerated erosion of prices and excess production capacity. The industry also periodically experiences increased demand and production capacity constraints. Accordingly, August Nanometrics operating results may vary significantly as a result of general conditions in the semiconductor industry.

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Nanometrics and August Technology s products are highly technical and if they contain undetected errors, the business of August Nanometrics could be adversely affected.

Each of Nanometrics and August Technology s products are, and August Nanometrics products will be, highly technical and complex and may contain undetected errors or defects. Some errors may only be discovered after a product has been installed and used by end customers. Any errors discovered in the products offered by August Nanometrics after commercial release could result in loss of revenue or delay in revenue recognition, loss of customers and increased service and warranty cost, any of which could adversely affect August Nanometrics reputation, business and results of operations.

Due to the global nature of Nanometrics and August Technology s operations, particularly in Asia, economic or social conditions or changes in a particular country or region could adversely affect August Nanometrics sales or increase its costs and expenses, which could have a material adverse impact on its financial condition.

August Nanometrics will conduct significant sales and customer support operations directly and indirectly through its facilities, distributors and resellers in countries outside of the United States and will also depend on the operations of its contract manufacturers and suppliers that are located outside of the United States. During 2004, international sales accounted for 71% of Nanometrics net revenues and 73% of August Technology s net revenues, respectively. In addition, Asia is an important region for the markets served by Nanometrics and August Technology. Nanometrics has operations in Japan, South Korea and Taiwan and August Technology has customer support centers in Taiwan and South Korea. During 2004, sales to Asian countries accounted for 67.1% of Nanometrics net revenues and 68% of August Technology s net revenues, respectively. Accordingly, August Nanometrics future results could be materially adversely affected by a variety of uncontrollable and changing factors including, among others,

- political or social unrest or economic instability in a specific country or region;
- military and terrorism risks;
- trade protection measures and import or export licensing requirements;
- changes in a specific country s or region s political or economic conditions, particularly in emerging markets;
- changes in international relations;
- potentially negative consequences from changes in tax laws;
- difficulty in managing widespread operations; and
- difficulty in managing a geographically dispersed workforce in compliance with diverse local laws and customs.

Any or all of these factors could have a material adverse impact on August Nanometrics revenue, expenses and financial condition.

Third parties have claimed and may claim in the future that Nanometrics, August Technology and/or August Nanometrics is infringing their intellectual property; August Nanometrics could suffer significant litigation or licensing expenses or be prevented from selling its products if these claims are successful.

In the normal course of business, Nanometrics and August Technology have received claims of infringement or otherwise become aware of potentially relevant patents or other intellectual property rights held by other parties. For example, Nanometrics announced on March 14, 2005 that it had received notice of a patent infringement lawsuit brought by Nova Measuring Instruments, Ltd. alleging infringement of United States Patent No. 6,752,689, or the 689 Patent.

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August Nanometrics will evaluate the validity and applicability of its intellectual property rights, and determine in each case whether it must negotiate licenses or cross-licenses to incorporate or use the proprietary technologies in its products. Third parties may claim that Nanometrics, August Technology and/or August Nanometrics or its customers are infringing or contributing to the infringement of their intellectual property rights, and August Nanometrics may be found to infringe or contribute to the infringement of those intellectual property rights and require a license to use those rights. August Nanometrics may be unaware of intellectual property rights of others that may cover some of its technology, products and services.

Any litigation regarding patents or other intellectual property, including the litigation with Nova Measuring Instruments, Ltd. described above, could be costly and time consuming and could divert the attention of management and key personnel from August Nanometrics business operations. The complexity of the technology involved and the uncertainty of litigation generally increase the risks associated with intellectual property litigation. Moreover, patent litigation has increased due to the current uncertainty of the law and the increasing competition and overlap of product functionality in the markets served by Nanometrics and August Technology. Claims of intellectual property infringement might also require August Nanometrics to enter into costly royalty or license agreements or to indemnify its customers. However, August Nanometrics may not be able to obtain royalty or license agreements on terms acceptable to it or at all. August Nanometrics also may be subject to significant damages or injunctions against development and sale of its products.

If third parties infringe the intellectual property of Nanometrics, August Technology and/or August Nanometrics or if August Nanometrics is unable to secure and protect its intellectual property, August Nanometrics may expend significant resources enforcing its rights or suffer competitive injury.

The success of August Nanometrics depends in large part on its proprietary technology and other intellectual property rights. Nanometrics and August Technology each rely on a combination of patents, copyrights, trademarks and trade secrets, confidentiality provisions and licensing arrangements to establish and protect their proprietary rights. August Nanometrics intellectual property, particularly its patents, may not provide it with a significant competitive advantage. If August Nanometrics fails to protect or to enforce its intellectual property rights successfully, August Nanometrics competitive position could suffer, which could harm its operating results.

Nanometrics and August Technology s pending patent and trademark applications for registration may not be allowed, or others may challenge the validity or scope of such patents or trademarks, including the patent or trademark applications or registrations. Even if the patent or trademark registrations are issued and maintained, these patents or trademarks may not be of adequate scope or benefit to August Nanometrics or may be held invalid and unenforceable against third parties.

August Nanometrics may be required to spend significant resources to monitor and police its intellectual property rights. Effective policing of the unauthorized use of August Nanometrics products or intellectual property is difficult and litigation may be necessary in the future to enforce its intellectual property rights. Intellectual property litigation is not only expensive, but time-consuming, regardless of the merits of any claim, and could divert the attention of August Nanometrics management from operating the business. August Nanometrics may not be able to detect infringement despite its efforts and may lose competitive position in the market before it does so. In addition, competitors may design around August Nanometrics technology or develop competing technologies.

Despite the efforts of Nanometrics, August Technology and August Nanometrics to protect their proprietary rights, existing laws, contractual provisions and remedies afford only limited protection. Intellectual property lawsuits are subject to inherent uncertainties due to, among other things, the complexity of the technical issues involved, and there can be no assurance that August Nanometrics will be successful in asserting its intellectual property claims. Attempts may be made to copy or reverse engineer aspects of Nanometrics , August Technology s and/or August Nanometrics products or to obtain and use information that is regarded as

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proprietary. Accordingly, there can be no assurance that August Nanometrics will be able to protect its proprietary rights against unauthorized third-party copying or use. Infringement by others of August Nanometrics proprietary rights could materially harm the business of August Nanometrics.

Nanometrics and August Technology have an international presence in countries whose laws may not provide protection of their intellectual property rights to the same extent as the laws of the United States, which may make it more difficult to protect such intellectual property.

As part of the business strategy of Nanometrics and August Technology, countries with large populations and propensities for adopting new technologies are targeted. However, many of these targeted countries do not have or vigorously enforce laws designed to prevent misappropriation of intellectual property or to deter others from developing similar, competing technologies or intellectual property that otherwise infringe upon existing proprietary technology. Effective protection of patents, copyrights, trademarks, trade secrets and other intellectual property may be unavailable or limited in some foreign countries. In particular, the laws of some foreign countries in which Nanometrics and August Technology are active may not protect their intellectual property rights to the same extent as the laws of the United States. As a result, August Nanometrics may not be able to effectively prevent competitors in these regions from infringing its intellectual property rights, which would reduce August Nanometrics competitive advantage and ability to compete in those regions and could negatively impact its business.

Nanometrics and August Technology are subject to general commercial litigation and other litigation claims as part of their operations, and August Nanometrics could suffer significant litigation expenses in defending these claims and could be subject to significant damages or remedies that would harm its business.

In the normal course of business, Nanometrics and August Technology occasionally receive general commercial claims related to the conduct of their business and the performance of their products and services as well as other litigation claims. Any litigation regarding these consumer, commercial, and other claims could be costly and time-consuming and could divert the attention of August Nanometrics management and key personnel from its business operations. The complexity of the technology involved and the uncertainty of consumer, commercial and other litigation increase these risks. August Nanometrics also may be subject to significant damages or equitable remedies regarding the development and sale of its products and the operation of its business.

If August Nanometrics fails to integrate the respective businesses of Nanometrics and August Technology or to adequately evolve its financial and managerial control and reporting systems and processes, its ability to manage and grow its business will be negatively affected.

August Nanometrics ability to successfully offer its products and implement its business plan in a rapidly evolving market requires an effective planning and management process. August Nanometrics will need to continue to improve its financial and managerial control and its reporting systems and procedures in order to effectively manage its business in the future.

The integration of the respective businesses of Nanometrics and August Technology may present unanticipated challenges, including difficulties arising from (i) the integration of operations located in different physical locations, (ii) coordinating diverse information systems, (iii) integrating management and other personnel and (iv) harmonizing various operating policies. In addition, in connection with the audit conducted by the independent registered accounting firm BDO Seidman, LLP of Nanometrics 2004 consolidated financial statements, BDO Seidman, LLP advised Nanometrics management and its audit committee of certain significant deficiencies in Nanometrics internal controls, which did not individually or in the aggregate rise to the level of a material weakness. BDO Seidman, LLP made certain recommendations to Nanometrics to address these deficiencies. Although Nanometrics is in the process of implementing such recommendations, there can be no assurance that it will

be able to effectively improve its internal controls and procedures and if such significant

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deficiencies are not addressed, it could have a significant negative impact on the integration of Nanometrics and August Technology s control systems. See the risk factor entitled *Nanometrics may have difficulty meeting the requirements described in Section 404 of the Sarbanes-Oxley Act of 2002, including addressing certain significant deficiencies in its internal controls identified in connection with its fiscal 2004 year-end audit, and failure to meet such requirements could materially affect its stock price*, beginning on page 49 for more information.

Future acquisitions or investments that August Nanometrics may make could disrupt its business and harm its financial condition and may dilute the ownership of August Nanometrics stockholders.

Each of Nanometrics and August Technology has made, and August Nanometrics may continue to make, acquisitions in order to enhance its business. Acquisitions involve numerous risks, including problems combining the purchased operations, technologies or products, unanticipated costs, diversion of management s attention from its core businesses, adverse effects on existing business relationships with suppliers and customers, risks associated with entering markets in which August Nanometrics has no or limited prior experience and potential loss of key employees. There can be no assurance that August Nanometrics will be able to successfully integrate any businesses, products, technologies or personnel that it might acquire. The integration of businesses that each of Nanometrics and August Technology has acquired has been, and will continue to be, a complex, time consuming and expensive process. Additionally, if August Nanometrics fails to efficiently operate as a combined organization utilizing common information and communication systems, operating procedures, financial controls and human resources practices, its business and financial condition may be adversely affected. In the event of any such investments or acquisitions, August Nanometrics could issue stock that would dilute its then-current stockholders percentage ownership, incur debt, assume liabilities, incur amortization expenses related to purchases of intangible assets, or incur large and immediate write-offs.

The success of August Nanometrics largely depends on its ability to hire, retain, integrate and motivate a sufficient number of qualified personnel.

The future success of August Nanometrics depends on its ability to attract and retain highly skilled personnel. Nanometrics and August Technology each compensate their employees through a combination of salary, bonuses, benefits and equity compensation. If August Nanometrics fails to provide competitive compensation to its employees, it may be unable to retain them. Volatility or lack of positive performance in August Nanometrics stock price may also affect August Nanometrics ability to retain key employees, many of whom have been granted stock options.

Changes in accounting for stock-based compensation could adversely affect August Nanometrics future operating results.

Nanometrics and August Technology have historically compensated their employees, including many of their key personnel and new hires, through the issuance of options to acquire capital stock. Effective as of the first quarter of fiscal 2006, Nanometrics and August Technology will be required to expense unvested and newly issued employee stock options. This change from current accounting regulations could have a significant impact on August Nanometrics results of operations and could affect the manner in which August Nanometrics conducts business.

War, terrorism, natural disasters, public health issues or other business interruptions could disrupt supply, delivery or demand of products, which could negatively affect August Nanometrics operations and performance.

War, terrorism, natural disasters, public health issues and other business interruptions whether in the United States or abroad, have caused and could continue to cause damage or disruption to international commerce by creating economic and political uncertainties that may have a strong negative impact on the global economy,

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August Nanometrics, and its suppliers or customers. August Nanometrics business operations would be subject to interruption by earthquake, tsunami, fire, power shortages, terrorist attacks and other hostile acts, labor disputes, medical conditions, and other events beyond its control. For example, August Nanometrics transportation costs, insurance costs and sales efforts could become more expensive as a result of geopolitical tension. If this international economic and political instability continues or increases, the business and results of operations of August Nanometrics could be harmed. August Nanometrics will continue to consider, develop, and implement contingency plans to avoid and/or minimize potential disruptions to its business services.

Although it is impossible to predict the nature and consequences of wars, acts of terrorism, natural disasters, public health issues or other business interruptions, such events could (i) result in a decrease in demand for August Nanometrics products, (ii) make it difficult, less cost effective or impossible to deliver products to customers or to receive components from suppliers and contract manufacturers, (iii) cause disruptions resulting in delays and inefficiencies in the August Nanometrics supply and/or distribution chains, and/or (iv) result in restrictions on August Nanometrics employee business travel or product shipments.

Neither August Technology, Nanometrics nor shareholders of either company will have the benefit of any indemnification, escrow, price adjustment or other provisions protecting August Technology or Nanometrics (or their respective shareholders) in the event that any of the representations and warranties made by one company to the other ultimately prove to be inaccurate.

As is the case in the vast majority of mergers between publicly-traded companies, the representations and warranties made by August Technology and Nanometrics to each other in the merger agreement will not survive the completion of the August merger. As a result, neither Nanometrics, August Technology nor their respective shareholders will have the benefit of any indemnification, escrow, price adjustment or other provisions that allow for a post-closing adjustment to be made to the merger consideration if any representation or warranty made by either company in the merger agreement proves to be inaccurate or incorrect.

In connection with the audit conducted by the independent registered accounting firm BDO Seidman, LLP of Nanometrics 2004 consolidated financial statements, BDO Seidman, LLP advised Nanometrics management and its audit committee of certain significant deficiencies in Nanometrics internal controls over financial reporting, which did not individually or in the aggregate rise to the level of a material weakness. BDO Seidman made certain recommendations to correct those deficiencies, which Nanometrics is in the process of implementing. Nanometrics does not expect that the implementation of these recommendations will result in any change to Nanometrics financial statements. See the risk factor entitled *Nanometrics may have difficulty meeting the requirements described in Section 404 of the Sarbanes-Oxley Act of 2002, including addressing certain significant deficiencies in its internal controls identified in connection with its fiscal 2004 year-end audit, and failure to meet such requirements could materially affect its stock price*, beginning on page 49 for more information.

Risks Related to Nanometrics Business

Cyclicality in the semiconductor and flat panel display industries has led to substantial fluctuations in demand for Nanometrics systems and may, from time to time, continue to do so.

Nanometrics operating results have varied significantly from period to period due to the cyclical nature of the semiconductor and flat panel display industries. The majority of Nanometrics business depends upon the capital expenditures of semiconductor device and equipment manufacturers. These manufacturers capital expenditures, in turn, depend upon the current and anticipated market demand for semiconductors and products using semiconductors. The semiconductor industry is cyclical and has historically experienced periodic downturns. These downturns have often resulted in substantial decreases in the demand for semiconductor manufacturing equipment, including metrology systems.

Nanometrics has found that the resulting decrease in capital expenditures has typically been more pronounced than the downturn in semiconductor device industry

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revenues. Nanometrics expects the cyclical nature of the semiconductor industry, and therefore, its business, to continue in the foreseeable future. Recently, the semiconductor industry emerged from a sustained downturn, which had existed for the past few years. Should this trend reverse and the downturn resume, Nanometrics business and results of operations would suffer.

Because Nanometrics derives a significant portion of its revenues from sales in Asia, Nanometrics revenues and results of operations could be adversely affected by the instability of Asian economies.

Nanometrics revenues from customers in Asian markets represented approximately 63.3%, 72.7% and 68.2% of Nanometrics total net revenues in 2002, 2003 and 2004, respectively. Countries in the Asia Pacific region, including Japan, South Korea and Taiwan, each of which accounted for a significant portion of Nanometrics business in that region, had experienced general economic weaknesses in 2002 and 2003, which adversely affected Nanometrics revenues at that time.

Nanometrics depends on Applied Materials and other OEM suppliers for sales of Nanometrics integrated metrology systems, and the loss of Applied Materials or any of Nanometrics other OEM suppliers as a customer could harm Nanometrics business.

Nanometrics believes that sales of integrated metrology systems will continue to be an important source of revenues. Sales of Nanometrics integrated metrology systems depend upon the ability of Applied Materials to sell semiconductor equipment products that include Nanometrics metrology systems as components. If Applied Materials is unable to sell such products, or if Applied Materials chooses to focus its attention on products that do not integrate Nanometrics systems, Nanometrics business could suffer. If Nanometrics were to lose Applied Materials as a customer for any reason, Nanometrics ability to realize sales from integrated metrology systems would be significantly diminished, which would harm Nanometrics business.

Nanometrics largest customers account for a substantial portion of its revenue, and Nanometrics revenue would materially decline if one or more of these customers were to purchase significantly fewer of its systems or if they delayed or cancelled a large order.

Historically, a significant portion of Nanometrics revenues in each quarter and each year has been derived from sales to a relatively small number of customers, and Nanometrics expects this trend to continue. There are only a limited number of large companies operating in the semiconductor and flat panel display industries. Accordingly, Nanometrics expects that it will continue to depend on a small number of large customers for a significant portion of its revenues for at least the next several years. If any of Nanometrics key customers were to purchase significantly fewer systems, or if a large order were delayed or cancelled, Nanometrics revenues would significantly decline. In 2004, sales to Applied Materials accounted for 22.0% and sales to Samsung accounted for 14.6% of Nanometrics total net revenues, respectively. In 2003, sales to Applied Materials accounted for 15.4% and sales to Hynix accounted for 12.0% of Nanometrics total net revenues, respectively. In 2002, sales to Applied Materials accounted for 13.8% and sales to TSMC accounted for 10.9% of Nanometrics total net revenues, respectively.

The success of Nanometrics product development efforts depends on its ability to anticipate market trends and the price, performance and functionality requirements of semiconductor device manufacturers. In order to anticipate these trends and ensure that critical development projects proceed in a coordinated manner, Nanometrics must continue to collaborate closely with its customers. Nanometrics relationships with its customers provide it with access to valuable information regarding industry trends, which enables Nanometrics to better plan its product development activities. If Nanometrics current relationships with its large customers are impaired, or if Nanometrics is unable to develop similar collaborative relationships with important customers in the future, Nanometrics long-term ability to produce commercially successful systems could be adversely affected.

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Nanometrics may have difficulty meeting the requirements described in Section 404 of the Sarbanes-Oxley Act of 2002, including addressing certain significant deficiencies in its internal controls identified in connection with its fiscal 2004 year-end audit, and failure to meet such requirements could materially affect its stock price.

Nanometrics may be required to file a report on internal accounting controls, in accordance with Section 404 of the Sarbanes-Oxley Act, with its Annual Report on Form 10-K for the year ending December 31, 2005. The determination of whether Nanometrics will be required to file such a report in its Form 10-K for its fiscal year ending December 31, 2005 depends on whether the public float of Nanometrics will exceed $75 million as of the end of its second fiscal quarter of 2005. Although such a determination cannot be made at this time, and will not be affected by the consummation of the August merger, which is not expected to occur before the end of Nanometrics s second fiscal quarter, Nanometrics public float at the end of its second fiscal quarter of 2005 may exceed the $75 million threshold, in which event Nanometrics would be required to file the report required by Section 404 of the Sarbanes-Oxley Act in its Form 10-K for its fiscal year ending December 31, 2005.

Accordingly, Nanometrics would be required to increase the amount of documentation surrounding its internal control systems and provide evidence that its systems have been properly tested to support Nanometrics management s conclusions. While Nanometrics continues to improve its internal control systems, including the companywide implementation of a new Enterprise Resource Planning System, or ERP system, there can be no assurance that its report will not disclose a material weakness. Even if Nanometrics does not identify such a material weakness, its auditors may identify a material weakness in their attestation. In the event that a material weakness is identified, Nanometrics stock price may be adversely affected.

In connection with the audit conducted by the independent registered accounting firm BDO Seidman, LLP of Nanometrics 2004 consolidated financial statements, BDO Seidman, LLP advised Nanometrics management and its audit committee of certain significant deficiencies in Nanometrics internal controls (none of which, individually or in the aggregate, constituted a material weakness) and made certain recommendations. Under the auditing standards of the Public Company Accounting Oversight Board, a significant deficiency represents a deficiency in the design or operation of internal controls in which there is a more than remote likelihood that a misstatement that is more than inconsequential but less than material could occur. BDO Seidman, LLP identified the following significant deficiencies: 1) Nanometrics does not have sufficient dedicated accounting and finance staff to keep abreast of developing U.S. GAAP and SEC reporting matters in order to proactively assess the impact of business developments on financial reporting; 2) Nanometrics lacks local U.S. GAAP expertise in Asia and its home office oversight of accounting matters in Asia has limitations; 3) BDO Seidman, LLP proposed and Nanometrics recorded an adjusting entry to properly reflect the elimination of intercompany profit on sales of inventory from the U.S. to Japan and South Korea; and 4) Nanometrics documentation of accounting policies and procedures over revenue recognition and cash receipts is not comprehensive.

Nanometrics is currently in the process of implementing the recommendations of BDO Seidman, LLP. Additionally, Nanometrics is also in the process of augmenting its current control processes, repositioning current finance and accounting personnel and recruiting additional personnel to ensure consistently complete and accurate reporting of financial information. Nanometrics believes it will satisfactorily address most of the significant deficiencies referenced above by the end of the third fiscal quarter of 2005, although there can be no assurance that it will do so, as the proposed August merger will require significant integration efforts by management. Furthermore, remediation of Nanometrics internal controls, required to fully comply with the Section 404 internal control assessment, may require more significant efforts by management than initially anticipated.

Nanometrics current and potential competitors have significantly greater resources than Nanometrics has, and increased competition could impair sales of Nanometrics products.

Nanometrics operates in the highly competitive semiconductor and flat panel display industries and faces competition from a number of companies, many of which have greater financial, engineering, manufacturing, marketing and customer support resources than Nanometrics has.

As a result, Nanometrics competitors may be able to respond more quickly to new or emerging technologies or market developments by devoting greater resources to the development, promotion and sale of products, which could impair sales of Nanometrics

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products. Moreover, there has been merger and acquisition activity among Nanometrics competitors and potential competitors. These transactions by Nanometrics competitors and potential competitors may provide them with a competitive advantage over Nanometrics by enabling them to rapidly expand their product offerings and service capabilities to meet a broader range of customer needs. Many of Nanometrics customers and potential customers in the semiconductor and flat panel display industries are large companies that require global support and service for their metrology systems. Some of Nanometrics larger or more geographically diverse competitors might be better equipped to provide this global support.

If any of Nanometrics systems fail to meet or exceed its internal quality specifications, Nanometrics often does not ship them until such time as they have met such specifications. If Nanometrics experiences significant delays or is unable to ship its products to its customers as a result of its internal processes, or for any other reason, Nanometrics business and reputation may suffer.

Nanometrics products are complex and require technical expertise to design and manufacture properly. Various problems occasionally arise during the manufacturing process that may cause delays and/or impair product quality. Nanometrics must actively monitor its manufacturing processes to ensure that its products meet its internal quality specifications. Any significant delays stemming from the failure of its products to meet or exceed its internal quality specifications, or for any other reasons, would delay its shipments. Shipment delays could harm Nanometrics business and reputation in the industry.

If Nanometrics delivers systems with defects, Nanometrics credibility will be harmed, revenue from and market acceptance of its systems will decrease and Nanometrics could expend significant capital and resources as a result of such defects.

Notwithstanding Nanometrics internal quality specifications, Nanometrics systems have sometimes contained errors, defects or bugs when introduced. If Nanometrics delivers systems with errors, defects or bugs, its credibility and the market acceptance and sales of Nanometrics systems would be harmed. Further, if Nanometrics systems contain errors, defects or bugs, Nanometrics may be required to expend significant capital and resources to alleviate such problems. Defects could also lead to product liability as a result of product liability lawsuits against Nanometrics or against its customers. Nanometrics has agreed to indemnify its customers in some circumstances against liability arising from defects in Nanometrics systems. In the event of a successful product liability claim, Nanometrics could be obligated to pay damages significantly in excess of its product liability insurance limits.

Successful infringement claims by third parties could result in substantial damages, lost product sales and the loss of important intellectual property rights by Nanometrics.

Nanometrics commercial success depends in part on its ability to avoid infringing or misappropriating patents or other proprietary rights owned by third parties. From time to time Nanometrics may receive communications from third parties asserting that its metrology systems may contain design features, which are claimed to infringe on their proprietary rights. For example, Nanometrics announced on March 14, 2005 that it had received notice of a patent infringement lawsuit brought by Nova Measuring Instruments, Ltd. alleging infringement of the 689 Patent. There can be no assurance that Nanometrics new or current products do not infringe any valid intellectual property rights. Even if Nanometrics products do not infringe, Nanometrics may be required to expend significant sums of money to defend itself from infringement claims, as in the Nova Measuring Instruments, Ltd. lawsuit described above, or to actively protect its intellectual property rights through litigation.

Nanometrics obtains some of the components and subassemblies included in its systems from a single source or a limited group of suppliers, and the partial or complete loss of one of these suppliers could cause production delays and significant loss of revenue.

Nanometrics relies on outside vendors to manufacture many components and subassemblies. Certain components, subassemblies and services necessary for the manufacture of Nanometrics systems are obtained

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from a sole supplier or limited group of suppliers. Nanometrics does not maintain any long-term supply agreements with any of its suppliers. Nanometrics has entered into arrangements with J.A. Woollam Company for the purchase of the spectroscopic ellipsometer component incorporated in Nanometrics advanced measurement systems. Nanometrics reliance on a sole or a limited group of suppliers involves several risks, including the following:

- Nanometrics may be unable to obtain an adequate supply of required components;
- Nanometrics has reduced control over pricing and the timely delivery of components and subassemblies; and
- Nanometrics suppliers may be unable to develop technologically advanced products to support Nanometrics growth and development of new systems.

Some of Nanometrics suppliers have relatively limited financial and other resources. Because the manufacturing of certain of these components and subassemblies involves extremely complex processes and requires long lead times, Nanometrics may experience delays or shortages caused by Nanometrics suppliers. If Nanometrics were forced to seek alternative sources of supply or to manufacture such components or subassemblies internally, Nanometrics could be forced to redesign its systems, which could cause production delays and prevent Nanometrics from shipping its systems to customers on a timely basis. Any inability to obtain adequate deliveries from Nanometrics suppliers, or any other circumstance that would restrict Nanometrics ability to ship its products, could damage relationships with current and prospective customers, harm its business and result in significant loss of revenue.

Variations in the amount of time it takes for Nanometrics to sell its systems may cause fluctuations in its operating results, which could adversely affect Nanometrics stock price.

Variations in the length of Nanometrics sales cycles could cause its revenues to fluctuate widely from period to period. Nanometrics customers generally take long periods of time to evaluate Nanometrics metrology systems. Nanometrics expends significant resources educating and providing information to Nanometrics prospective customers regarding the uses and benefits of Nanometrics systems. The length of time that it takes for Nanometrics to complete a sale depends upon many factors, including:

- the efforts of Nanometrics sales force and independent sales representatives;
- the complexity of the customer s metrology needs;
- the internal technical capabilities and sophistication of the customer;
- the customer s budgetary constraints; and
- the quality and sophistication of the customer s current processing equipment.

Because of the number of factors influencing the sales process, the period between Nanometrics initial contact with a customer and the time at which Nanometrics recognizes revenue from that customer, if at all, varies widely. Nanometrics sales cycles, including the time it takes for Nanometrics to build a product to customer specifications after receiving an order, typically range from three to six months. Occasionally Nanometrics sales cycles can be much longer, particularly with customers in Asia who may require longer evaluation periods. During the sales cycles, Nanometrics commits substantial resources to its sales efforts in advance of receiving any revenue, and Nanometrics may never receive any revenue from a customer despite Nanometrics sales efforts.

If Nanometrics does complete a sale, customers often purchase only one of Nanometrics systems and then evaluate its performance for a lengthy period of time before purchasing additional systems. The purchases are generally made through purchase orders rather than through long-term contracts. The number of additional products that a customer purchases, if any, depends on many factors, including a customer s capacity

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requirements. The period between a customer s initial purchase and any subsequent purchases is unpredictable and can vary from three months to a year or longer. Variations in the length of this period could cause fluctuations in Nanometrics operating results, which could adversely affect Nanometrics stock price.

Relatively small fluctuations in Nanometrics system prices may cause Nanometrics operating results to vary significantly each quarter.

During any quarter, a significant portion of Nanometrics revenue is derived from the sale of a relatively small number of systems. Nanometrics automated metrology systems range in price from approximately $200,000 to over $1,000,000 per system; Nanometrics integrated metrology systems range in price from approximately $80,000 to $300,000 per system; and Nanometrics tabletop metrology systems range in price from approximately $50,000 to $200,000 per system. Accordingly, a small change in the number or types of systems that Nanometrics sells could cause significant changes in Nanometrics operating results.

Nanometrics may sometimes experience material payment delays as a result of customer acceptance issues and such delays could negatively affect Nanometrics results of operations.

As a result of customer acceptance issues, Nanometrics may, from time to time, experience payment delays on some of its systems. Because a significant portion of Nanometrics revenue is derived from the sale of a relatively small number of systems, substantial payment delays by its customers could materially and adversely affect its results of operations.

Nanometrics depends on orders that are received and shipped in the same quarter, and therefore Nanometrics results of operations may be subject to significant variability from quarter to quarter.

Nanometrics net sales in any given quarter depend upon a combination of orders received in that quarter for shipment in that quarter and shipments from backlog. Nanometrics backlog at the beginning of each quarter does not include all systems sales needed to achieve expected revenues for that quarter. Consequently, Nanometrics is dependent on obtaining orders for systems to be shipped in the same quarter that the order is received. Moreover, customers may reschedule shipments, and production difficulties could delay shipments. Accordingly, Nanometrics has limited visibility into future product shipments, and its results of operations may be subject to significant variability from quarter to quarter.

Because of the high cost of switching equipment vendors in Nanometrics markets, it is sometimes difficult for Nanometrics to attract customers from its competitors even if Nanometrics metrology systems are superior to theirs.

Nanometrics believes that once a semiconductor or flat panel display customer has selected one vendor s metrology system, the customer generally relies upon that system and, to the extent possible, subsequent generations of the same vendor s system, for the life of the application. Once a vendor s metrology system has been installed, a customer must often make substantial technical modifications and may experience downtime in order to switch to another vendor s metrology system. Accordingly, unless Nanometrics systems offer performance or cost advantages that outweigh a customer s expense of switching to Nanometrics systems, it will be difficult for Nanometrics to achieve significant sales from that customer once it has selected another vendor s system for an application.

If Nanometrics is not successful in developing new and enhanced metrology systems Nanometrics will likely lose market share to its competitors.

Nanometrics operates in an industry that is subject to technological changes, changes in customer demands and the introduction of new, higher performance systems with short product life cycles. To be competitive, Nanometrics must continually design, develop and introduce in a timely manner new metrology systems that

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meet the performance and price demands of semiconductor and flat panel display manufacturers and suppliers. Nanometrics must also continue to refine its current systems so that they remain competitive. Nanometrics may experience difficulties or delays in its development efforts with respect to new systems, and it may not ultimately be successful in developing them. Any significant delay in releasing new systems could adversely affect Nanometrics reputation, give a competitor a first-to-market advantage or cause a competitor to achieve greater market share.

Lack of market acceptance for Nanometrics new products may affect Nanometrics ability to generate revenue and may harm Nanometrics business.

Nanometrics has recently introduced several new products to market including the Nano OCD/DUV 9010, the Nanometrics Atlas, Atlas-M, Orion and the Nano OCD 9010M. Nanometrics has invested substantial time and resources into the development of the products. However, Nanometrics cannot accurately predict the future level of acceptance of its new products by its customers. As a result, Nanometrics may not be able to generate anticipated revenue from sales of these products. While Nanometrics anticipates that its new products will become an increasingly larger component of its business, their failure to gain acceptance with Nanometrics customers could materially harm its business. Additionally, if Nanometrics new products do gain market acceptance, its ability to sell its existing products may be impeded. As a result, there can be no assurance that the introduction of these products will be commercially successful or that these products will result in significant additional revenues or improved operating margins in future periods.

Nanometrics intellectual property may be infringed upon by third parties despite Nanometrics efforts to protect it, which could threaten Nanometrics future success and competitive position and adversely affect its operating results.

Nanometrics future success and competitive position depends in part upon its ability to obtain and maintain proprietary technology for Nanometrics principal product families, and it relies, in part, on patent, trade secret and trademark law to protect that technology. If Nanometrics fails to adequately protect its intellectual property, it will be easier for Nanometrics competitors to sell competing products. Nanometrics owns or has licensed a number of patents relating to its metrology systems, and has filed applications for additional patents. Any of Nanometrics pending patent applications may be rejected, and Nanometrics may not in the future be able to develop additional proprietary technology that is patentable. In addition, the patents Nanometrics does own or that have been issued or licensed to it may not provide Nanometrics with competitive advantages and may be challenged by third parties. Third parties may also design around these patents.

In addition to patent protection, Nanometrics relies upon trade secret protection for its confidential and proprietary information and technology. Nanometrics routinely enters into confidentiality agreements with its employees. However, in the event that these agreements may be breached, Nanometrics may not have adequate remedies. Nanometrics confidential and proprietary information and technology might also be independently developed by or become otherwise known to third parties. Nanometrics may be required to initiate litigation in order to enforce any patents issued to or licensed by Nanometrics, or to determine the scope or validity of a third party s patent or other proprietary rights. Any such litigation, regardless of outcome, could be expensive and time consuming, and could subject Nanometrics to significant liabilities or require Nanometrics to re-engineer its products or obtain expensive licenses from third parties, any of which would adversely affect Nanometrics business and operating results.

If Nanometrics chooses to acquire new and complementary businesses, products or technologies instead of developing them itself, it may be unable to complete these acquisitions or may not be able to successfully integrate an acquired business in a cost-effective and non-disruptive manner.

Nanometrics success depends on its ability to continually enhance and broaden its product offerings in response to changing technologies, customer demands and competitive pressures. To achieve this, from time to

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time Nanometrics has acquired complementary businesses, products, or technologies instead of developing them itself and may choose to do so in the future. For example, Nanometrics recently announced its intent to merge with August Technology, a leader in macro defect inspection. Nanometrics does not know if it will be able to complete any acquisitions, or whether it will be able to successfully integrate any acquired business, operate them profitably or retain their key employees. Integrating any business, product or technology that Nanometrics acquires could be expensive and time consuming, disrupt Nanometrics ongoing business and distract its management. In addition, in order to finance any acquisitions, Nanometrics may be required to raise additional funds through public or private equity or debt financings. In that event, Nanometrics could be forced to obtain financing on terms that are not favorable to it and, in the case of an equity financing, that results in dilution to Nanometrics shareholders. If Nanometrics is unable to integrate any acquired entities, products or technologies effectively, its business will suffer. Nanometrics ability to integrate other businesses, including August Technology, will be challenged further by its newly implemented ERP system.

Nanometrics must attract and retain key personnel with relevant industry knowledge to help support its future growth.

Nanometrics success depends to a significant degree upon the continued contributions of Nanometrics key management, engineering, sales and marketing, customer support, finance and manufacturing personnel. Nanometrics does not generally enter into employment contracts with any of its key personnel. The loss of any of these key personnel, who would be difficult to replace, could harm Nanometrics business and operating results. To support Nanometrics future growth, Nanometrics will need to attract and retain additional qualified employees. Competition for such personnel in Nanometrics industry is ongoing, and Nanometrics may not be successful in attracting and retaining qualified employees.

Nanometrics manufactures all of its systems at a limited number of facilities, and any prolonged disruption in the operations of those facilities could reduce Nanometrics revenues.

Nanometrics produces all of its systems in its manufacturing facilities located in Milpitas, California and through Nanometrics subsidiaries in Japan and South Korea. Nanometrics manufacturing processes are highly complex and require sophisticated, costly equipment and specially designed facilities. As a result, any prolonged disruption in the operations of Nanometrics manufacturing facilities could seriously harm Nanometrics ability to satisfy its customer order deadlines. A significant portion of Nanometrics operations is located in Japan and South Korea, which may be subject to regional political and economic instability.

Nanometrics efforts to protect its intellectual property may be less effective in some foreign countries where intellectual property rights are not as well protected as in the United States.

In 2002, 2003 and 2004, 69.0%, 74.8% and 71.0%, respectively, of Nanometrics total net revenues were derived from sales to customers in foreign countries, including certain countries in Asia, such as Taiwan, South Korea and Japan. The laws of some foreign countries do not protect Nanometrics proprietary rights to as great an extent as do the laws of the United States, and many United States companies have encountered substantial problems in protecting their proprietary rights against infringement in such countries. If Nanometrics fails to adequately protect its intellectual property in these countries, it would be easier for Nanometrics competitors to sell competing products.

Continuing economic and political instability could affect Nanometrics business and results of operations.

The ongoing threat of terrorism targeted at the United States or other regions where Nanometrics conducts business increases the uncertainty in Nanometrics markets and the economy in general. This uncertainty is likely to result in economic stagnation, which would harm Nanometrics business. In addition, increased international political instability may hinder Nanometrics ability to do business by increasing its costs of operations. For example, Nanometrics transportation costs, insurance costs and sales efforts may become more expensive as a result of geopolitical tension. These tensions may also negatively affect Nanometrics suppliers and customers. If

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this international economic and political instability continues or increases, Nanometrics business and results of operations could be harmed.

Nanometrics will incur increased costs as a result of recent changes in laws and regulations affecting public companies.

Compliance with recent changes in laws and regulations affecting public companies, including the provisions of the Sarbanes-Oxley Act of 2002, may result in increased accounting, legal and administrative costs. In particular, Section 404 of the Sarbanes-Oxley Act and the rules of the Securities and Exchange Commission and the Public Company Accounting Oversight Board impose new requirements with respect to the evaluation of the effectiveness of the Company s internal controls. The cost of complying with these new requirements could be substantial.

Nanometrics quarterly operating results have varied in the past and probably will continue to vary significantly in the future, which will cause volatility in Nanometrics stock price.

Nanometrics quarterly operating results have varied significantly in the past and are likely to vary in the future, which volatility could cause Nanometrics stock price to decline. Some of the factors that may influence Nanometrics operating results and subject its stock to extreme price and volume fluctuations include:

- changes in customer demand for Nanometrics systems;
- economic conditions in the semiconductor and flat panel display industries;
- the timing, cancellation or delay of customer orders and shipments;
- market acceptance of Nanometrics products and its customers products;
- competitive pressures on product prices and changes in pricing by Nanometrics customers or suppliers;
- the timing of new product announcements and product releases by Nanometrics or its competitors and Nanometrics ability to design, introduce and manufacture new products on a timely and cost-effective basis;
- the timing of acquisitions of businesses, products or technologies;
- the levels of Nanometrics fixed expenses, including research and development costs associated with product development, relative to its revenue levels; and
- fluctuations in foreign currency exchange rates, particularly the Japanese yen.

If Nanometrics operating results in any period fall below the expectations of securities analysts and investors, the market price of Nanometrics common stock would likely decline.

Nanometrics is highly dependent on international sales and operations, which exposes it to foreign political and economic risks.

Sales to customers in foreign countries accounted for approximately 69.0%, 74.8% and 71.0%, of Nanometrics total net revenues in 2002, 2003 and 2004, respectively. Nanometrics maintains facilities in Japan and South Korea. Nanometrics anticipates that international sales will continue to account for a significant portion of its revenues. International sales and operations carry inherent risks such as: regulatory limitations imposed by foreign governments, obstacles to the protection of Nanometrics intellectual property, political, military and terrorism risks, disruptions or delays in shipments caused by customs brokers or other government agencies, unexpected changes in regulatory requirements, tariffs, customs, duties and other trade barriers, difficulties in staffing and managing foreign operations, and potentially adverse tax consequences resulting from changes in tax laws.

If any of these risks materialize and Nanometrics is unable to manage them, Nanometrics international sales and operations would suffer.

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Nanometrics is subject to various environmental laws and regulations that could impose substantial costs upon it and may adversely affect its business, operating results and financial condition.

Some of Nanometrics operations use substances regulated under various federal, state, local, and international laws governing the environment, including those relating to the storage, use, discharge, disposal, labeling, and human exposure to hazardous and toxic materials. Nanometrics could incur costs, fines and civil or criminal sanctions, third-party property damage or personal injury claims, or could be required to incur substantial investigation or remediation costs, if it were to violate or become liable under environmental laws. Liability under environmental laws can be joint and several and without regard to comparative fault. Compliance with current or future environmental laws and regulations could restrict Nanometrics ability to expand its facilities or require it to acquire additional expensive equipment, modify its manufacturing processes, or incur other significant expenses. There can be no assurance that violations of environmental laws or regulations will not occur in the future as a result of the inability to obtain permits, human error, equipment failure or other causes.

Risks Related to August Technology s Business

The microelectronic industries that August Technology serves are highly cyclical, causing significant variability in August Technology s results of operations.

August Technology primarily serves microelectronic industries and its business depends heavily upon capital expenditures by manufacturers in these industries. Microelectronic industries are highly cyclical, with periods of capacity shortage and periods of excess capacity; this is historically due to sudden changes in demand for microelectronic devices. In periods of excess capacity, there are often drastic changes in the timing and quantity of capital equipment purchases and investments in new technology or capacity needs by August Technology s customers. The timing, length and volatility of these periods are difficult to predict, resulting in pressure on August Technology s revenues, gross margin and net income. In addition to affecting August Technology s customers, downturns also challenge August Technology s suppliers, vendors, other partners, as well as August Technology s management, sales, engineering, manufacturing, customer service and other employees, who are vital to August Technology s success.

During downturns in microelectronic industries, customers typically reduce or delay purchases, and/or delay delivery or cancel orders. As a result, it is imperative that August Technology maintains an organization able to quickly and effectively align with market conditions, including bringing August Technology s cost structures in line with current industry and overall market conditions. At the same time, August Technology must also meet the following objectives:

- continue to serve August Technology s existing customers;
- provide new and improved solutions for new and existing customers;
- operate effectively with August Technology s suppliers; and
- motivate and retain key employees.

If August Technology is, for any reason, unable to achieve any one or more of the above objectives in an efficient, effective and timely manner, there could be a material adverse effect on August Technology s business, financial condition and results of operations. Furthermore, any delays or reductions in future purchases of capital equipment or delays or cancellations of current orders by microelectronic device manufacturers, for any reason, would likely have a material adverse effect on August Technology s business, financial condition and results of operations.

August Technology s future rate of growth is highly dependent on the development and growth of the market for microelectronic device inspection equipment.

August Technology primarily targets its products to address the needs of microelectronic device manufacturers for defect inspection and metrology. If for any reason the market for microelectronic device

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inspection equipment fails to grow in the long term, contrary to August Technology s current expectations August Technology may be unable to maintain current revenue levels in the short term and return to August Technology s historical growth in the long term. Growth in this market is dependent to a large extent upon microelectronic manufacturers replacing manual inspection with automated inspection technology. There is no assurance that manufacturers will undertake this replacement at the rate August Technology expects.

August Technology s sales and operating results can fluctuate significantly from period to period, which may adversely affect the market price of August Technology s stock.

August Technology s quarterly and annual operating results are affected by a wide variety of factors that could adversely affect sales or operating results, or lead to significant variability in August Technology s operating results. In addition, because a significant portion of August Technology s revenue in any particular quarter has historically come from the sale of a relatively small number of systems, the loss of any sale could have a significant negative impact. A variety of factors could cause this variability, including the following:

- order cancellations or delays in orders by customers;
- the long sales cycle of August Technology s products;
- decreases in capital spending by August Technology s customers;
- new product introductions by August Technology s competitors and competitive pricing pressures;
- entrance into, or additional resources focused on, August Technology s markets by larger competitors;
- component shortages resulting in manufacturing delays; and
- delays in the development, introduction and manufacture of August Technology s products.

August Technology cannot predict the impact of these and other factors on August Technology s revenues and operating results in any future period. Results of operations in any period, therefore, should not be considered indicative of the results to be expected for any future period. Because of this difficulty in predicting future performance, August Technology s operating results may fall below expectations of securities analysts or investors in a future quarter or quarters. August Technology s failure to meet these expectations would likely adversely affect the market price of August Technology s common stock.

Global economic and political environments are important to economic conditions, and long-term continued risk or concerns regarding economic and political circumstances could decrease customer demand for August Technology s products.

Future political or related events similar or comparable to the September 11, 2001 terrorist attacks, significant military conflicts, or long term reactions of governments and society to such events, may significantly affect the willingness or ability of August Technology s customers to visit August Technology s facilities or trade shows, review August Technology s systems capabilities and/or purchase or take delivery of August Technology s products. Such events may also affect August Technology s abilities to visit its customers, to perform application studies for its customers, and sell and deliver solutions and to service those solutions. Any decline in the willingness or ability of August Technology s customers to travel and visit August Technology s facilities, or in August Technology s ability to travel and visit its customers, could have a material adverse effect on August Technology s business, financial condition and results of operations. In addition, such events could have an adverse effect on the economy generally, and microelectronic industries in particular, causing August Technology s customers to reduce or delay capital equipment purchases.

The market acceptance of August Technology s products is critical to August Technology s growth.

Microelectronic device manufacturing equipment and processes are subject to rapid technological changes. August Technology continues to expend significant resources developing new systems, new models to existing

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system series and improvements or enhancements on current models. Due to the length of the product development cycles in August Technology s industries, August Technology must make these significant time and resource expenditures well in advance of any prospect of a revenue stream from such new products. If August Technology s customers do not continue to accept its current products and also accept and integrate its new products into their operations, August Technology s revenue, cash flow, operating results or stock price would be negatively and materially impacted.

August Technology s growth expectations are dependent on successfully penetrating the front-end of the microelectronic device manufacturing process.

August Technology continues to enhance its inspection and metrology product offering for the front-end of the microelectronic device manufacturing process, a market segment that August Technology has limited experience in serving. August Technology is not a well-recognized supplier to this market, and will need to establish new customer relationships and win the confidence of these customers to compete effectively in this market. The front-end of the microelectronic device manufacturing market is dominated by large, well-established competitors with significantly greater resources and name recognition than August Technology. In order to compete effectively with these larger competitors, August Technology must develop process and applications expertise to identify the inspection needs of this market and produce cost-effective, technologically advanced solutions addressing these needs. In addition, August Technology must create and execute programs to effectively market to and service these customers. Failure to successfully penetrate the front-end of the microelectronic device manufacturing market would materially adversely affect August Technology s business prospects.

If August Technology is unable to keep pace with rapid technological changes by developing and introducing successful new products and technologies in a timely manner, August Technology s products may become obsolete and its business will suffer.

The microelectronic capital equipment manufacturing business is a highly competitive business and microelectronic device manufacturing equipment and processes are subject to rapid technological changes. August Technology believes that its future success will depend in large part upon its ability to continue to enhance its existing product line to meet customer needs and to develop and introduce new products in a timely manner. August Technology cannot assure you that its product enhancement efforts to improve and advance products, such as the AXi, NSX and 3Di Series, or August Technology s new product development efforts such as E-2O for edge and B-2O for backside inspection systems, will be successful or that it will be able to respond effectively to technological change. In addition, August Technology cannot provide assurance that it will be able to develop new products for the most opportunistic new markets and applications.

August Technology continues to make significant investments in research, development and engineering in new technology and/or businesses with new or complementary products, services and/or technologies, and August Technology is aware of the numerous risks associated therewith, including but not limited to:

- diversion of management s attention from day-to-day operational matters and current products and customers;
- lack of synergy, or the inability to realize expected synergies;
- failure to commercialize the new technology or business;

failure to meet the expected performance of the new technology or business;

lower-than-expected market opportunities or market acceptance of any new products; and

unexpected reduction of sales of existing products by new products.

If August Technology is unsuccessful at developing new products and technologies, its revenue, operating results or stock price would be negatively impacted.

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August Technology s products are complex and any product or process development issues could negatively impact August Technology s operations or financial results.

August Technology s products are complex and often the applications to its customers businesses are unique. August Technology believes that its future success will depend in part upon its ability to meet its customers functionality and reliability requirements in a timely manner. August Technology cannot be sure that its product offerings, application assistance, enhancement efforts, or its new product development efforts will fulfill critical functionality and reliability requirements. In addition, new product offerings that are highly complex in terms of software or hardware may require application or service work such as bug fixing prior to acceptance, thereby delaying revenue recognition. If August Technology is unsuccessful in these areas, its market share, revenue, operating results or stock price could be negatively impacted.

August Technology s market is highly competitive and August Technology may lose business to larger and better-financed competitors.

The microelectronic defect inspection equipment industry is highly competitive in national and international markets. August Technology has many domestic and foreign competitors. August Technology s current primary competitors in final manufacturing, testing and solutions are Camtek Ltd., Hitachi, Ltd., ICOS Vision Systems, Robotic Vision Systems, Inc. and Toray Industries, Inc. As August Technology enters the front-end market, it expects to compete with larger competitors, such as KLA-Tencor Corporation and Rudolph Technologies, Inc., for certain automated macro inspection applications. Most of these competitors, as well as other potential competitors, have substantially greater financial resources and more extensive engineering, manufacturing, marketing and customer support capabilities than does August Technology. Unless August Technology is able to continue to invest significant financial resources in developing products and enhancing customer support worldwide, August Technology will likely not be able to compete effectively.

As August Technology continues to diversify into the evolving and emerging microelectronic markets, including semiconductors, advanced packaging, optoelectronics, MEMS, flat panel display, printheads, data storage, disk drives, medical devices and other similar devices, August Technology will face significantly increased completion.

August Technology s operating results could be negatively impacted if it is unable to obtain the necessary resources to invest in its growth.

August Technology intends to continue to make investments to support business growth and may require additional funds to respond to future business challenges, such as the need to develop new products and enhance existing products, enhance August Technology s operating infrastructure, acquire complementary businesses and technologies and satisfy working capital requirements. Accordingly, August Technology may need to engage in equity or debt financing to secure additional funds. Equity and debt financing, however, might not be available when needed or, if available, might not be available on terms satisfactory to August Technology. If August Technology is unable to obtain adequate financing or financing on terms satisfactory to August Technology, its ability to continue to support its business growth and to respond to business challenges could be significantly limited.

August Technology s success depends on attracting and retaining key personnel.

August Technology s future success will depend in large part upon its ability to recruit and retain highly skilled technical, manufacturing, managerial, financial and marketing personnel. The labor market in which August Technology operates is highly competitive and as a result, August Technology may not be able to retain and recruit key personnel. August Technology s failure to hire, retain, or adequately train key

personnel could have a negative impact on its future financial and business results.

In addition, during the recent microelectronic industry downturn August Technology has had reductions in its work force, reduced or eliminated salary increases and for certain periods, implemented pay cuts at the

management level, and reduced discretionary spending. Any of the above measures may have long term adverse effects on August Technology s ability to retain key personnel.

August Technology s business may be harmed if August Technology fails to obtain and protect its intellectual property rights.

August Technology s ability to obtain intellectual property rights and licenses and to preserve other intellectual property rights covering its products and its products under development is an important component of its ability to compete in the microelectronic defect inspection equipment industry. To protect these rights, August Technology has obtained 14 domestic patents and intends to continue to seek patents on its inventions when appropriate. As of December 31, 2004, August Technology has 53 pending patent applications in the United States and additional international applications and expects its portfolio to increase in the future. The process of seeking intellectual property protection is time-consuming and expensive. August Technology cannot ensure that:

- patents will be issued from currently pending or future applications;
- its existing patents or any new patents will be sufficient in scope or strength to provide meaningful protection or any commercial advantage to August Technology;
- foreign intellectual property laws will protect August Technology s intellectual property rights; or
- others will not independently develop similar products, duplicate August Technology s products or design around August Technology s technology.

If August Technology does not successfully protect and then enforce its intellectual property rights, August Technology s competitive position could suffer, which could harm its operating results.

August Technology also relies on trade secrets, proprietary know-how and confidentiality provisions in agreements with employees, consultants, key customers and vendors to protect its intellectual property. Other parties may not comply with the terms of their agreements with August Technology and August Technology may not be able to adequately enforce its rights against these people.

Third parties may claim that August Technology is infringing upon their intellectual property and August Technology could suffer significant litigation costs, licensing expenses or be prevented from selling August Technology s products.

Intellectual property rights are uncertain and involve complex legal and factual questions. August Technology may be unknowingly infringing upon the intellectual property rights of others and may be liable for that infringement, which could result in significant liability for August Technology. If August Technology does infringe upon the intellectual property rights of others, it could be forced to either seek a license to those intellectual property rights or to alter its products so that they no longer infringe. A license could be very expensive to obtain or may not be available at all. Similarly, changing August Technology s products or processes to avoid infringing upon the rights of others may be costly or impractical.

August Technology may become responsible for patent litigation costs. If August Technology were to become involved in a dispute regarding intellectual property, whether its own or that of another company, it may be required to participate in legal proceedings. These types of proceedings will be costly and time-consuming, even if August Technology eventually prevails. If August Technology does not prevail, it might be forced to pay significant damages, obtain licenses, modify its products or processes, stop making products or stop using processes.

August Technology s dependence on a few significant customers exposes it to operating risks.

Sales to August Technology s ten largest customers accounted for 66%, 73% and 66%, of net revenues in 2004, 2003 and 2002, respectively. August Technology s customers are able to cancel orders, prior to shipment,

with few or no penalties. If a significant customer reduces orders or delays shipments for any reason, August Technology s revenues, operating results and financial condition will be negatively affected. In addition, August Technology s ability to increase its sales will depend in part upon its ability to obtain orders from new customers for whom there is intense competition.

August Technology s dependence on subcontractors and sole or limited source suppliers may prevent it from delivering an acceptable product on a timely basis and could result in disruption of August Technology s operations.

August Technology relies on subcontractors to manufacture many of the components and subassemblies for its products and August Technology depends on single or limited source suppliers for some of its components. August Technology s reliance on subcontractors reduces the level of control it has over the manufacturing process and exposes it to significant risks such as inadequate capacity, late delivery, substandard quality and high costs.

If a supplier were to become unable to provide parts in the volumes needed or at an acceptable price, August Technology would have to identify and qualify acceptable replacements from alternative sources of supply, or manufacture the components internally. Depending on the part, the process of qualifying subcontractors and suppliers generally takes between 60 and 180 days. August Technology generally does not have written supply agreements with its single or limited source suppliers and purchases its custom components through blanket and individual purchase orders. If August Technology were unable to obtain these components in a timely fashion, it may not be able to meet demands for future shipments. August Technology believes that it would be able to find alternative solutions if supplies were unavailable from any of August Technology s sole source suppliers, including the supplier of August Technology s image processing component. This may take time and the disruption would adversely affect August Technology s results of operations.

August Technology assembles and tests all of its products at a single facility and any disruption in the operations of that facility could adversely impact its business and operating results.

August Technology s processes for manufacturing its automated inspection systems requires sophisticated and costly equipment and a specially designed facility. August Technology assembles and tests all of its automated inspection systems at one facility located in Bloomington, Minnesota. Any disruption in the operation of that facility, whether due to technical or labor difficulties, destruction or damage from fire or earthquake, infrastructure failures such as power or water shortage or any other reason, could interrupt August Technology s manufacturing operations, impair critical systems, disrupt communications with its customers and suppliers and cause August Technology to write off inventory and to lose sales.

Failure to adjust August Technology s orders for parts and subcomponents in an accurate and timely manner in response to changing market conditions or customer acceptance of its products could adversely affect August Technology s financial position and earnings.

August Technology s earnings could be negatively affected and August Technology s inventory levels could materially increase if August Technology is unable to predict its inventory needs in an accurate and timely manner and adjust its orders for parts and subcomponents should its needs increase or decrease materially due to unexpected increases or decreases in demand for August Technology s products. Any material increase in August Technology s inventories could result in an adverse effect on August Technology s financial position, while any material decrease in its ability to procure needed inventories could result in an inability to supply customer demand for August Technology s products thus adversely affecting its revenues.

August Technology s dependence upon international customers and suppliers may reduce its revenues or impede its ability to supply products.

International sales have accounted for a significant and growing portion of August Technology s revenues in recent years and August Technology expects that the percentage of sales from international customers will

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continue to increase. Sales outside of the United States accounted for 73%, 76% and 52%, of August Technology s net revenues in 2004, 2003 and 2002, respectively. In addition, August Technology relies on non-United States suppliers for several components of the systems August Technology sells. As a result, a major part of August Technology s revenues and the ability to manufacture its products are subject to the risks associated with international commerce. International sales and August Technology s relationships with suppliers and customers may be hurt by many factors, including:

- changes in law or policy resulting in burdensome government controls, tariffs, restrictions, embargoes or export license requirements;
- political or economic instability in August Technology s target international markets;
- instability caused by infectious disease or other like outbreaks, or the threat or concern thereof;
- longer payment cycles common in foreign markets;
- difficulties in staffing and managing August Technology s international operations;
- less favorable foreign intellectual property laws making it harder to protect August Technology s technology from appropriation by competitors;
- difficulties in collecting August Technology s accounts receivable because of the geographic distance and unfavorable creditor laws; and
- currency fluctuations may increase the relative price of August Technology s products in foreign markets and thereby adversely affect sales.

August Technology is also subject to risks associated with shipping products outside of the United States including shipping delays, varying business conditions, differing business cultures and cultural diversities, among other risks. If August Technology s international sales or relationships with international suppliers and customers are adversely affected by any of these factors, August Technology s financial condition could also be adversely affected.

August Technology s financial performance is highly dependent upon sales to customers in Asia.

Sales to customers in Asia accounted for 68%, 64% and 45%, of August Technology s net revenues in 2004, 2003 and 2002, respectively. August Technology expects its dependence upon the Asian market to increase. In recent years, Asia has experienced serious economic problems including currency devaluations, debt defaults, lack of liquidity and recessions. August Technology s revenues depend upon the capital expenditures of microelectronic manufacturers, many of whom have operations and customers in Asia. Serious economic problems in Asia would likely result in a significant decrease in the sale of equipment to microelectronic industries. If August Technology is unable to maintain its customer relationships in Asia, August Technology s future financial condition, revenues and operating results will be negatively affected.

August Technology will continue to rely upon distributors for a portion of August Technology s future sales, and a disruption in August Technology s relationships with these distributors could have a negative impact on August Technology s international sales.

Sales through August Technology s independent distributors represented 4%, 14% and 8%, of August Technology s net revenues in 2004, 2003 and 2002, respectively. One distributor accounts for a significant portion of these sales. The activities of these distributors are not fully within August Technology s control. Although August Technology believes that it maintains good relations with its independent distributors, the relationships may nevertheless deteriorate in the future. A reduction in the sales or service efforts or financial viability of any of August Technology s independent distributors, or a termination of August Technology s relationships with them, could harm its sales, August Technology s financial results and August Technology s ability to support its customers.

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August Technology has acquired Semiconductor Technologies & Instruments, Inc., or STI, the assets of Counterpoint Solutions, Inc., or CSI, and certain assets of the DMSVision software division of Inspex, Inc., or DMSVision, and August Technology may make other acquisitions; the acquisitions of STI, CSI and DMSVision and any future acquisitions may not be successful and may adversely affect August Technology s business.

August Technology is looking for strategic opportunities to grow and diversify its product offerings through acquisitions. In this regard, August Technology recently completed the acquisitions of STI, CSI and DMSVision. Evaluation of August Technology s business and prospects may be difficult because of August Technology s limited operating history with STI, CSI and DMSVision. There can be no assurance that August Technology will be successful in integrating the operations of STI, CSI and DMSVision, identifying other appropriate candidates, or integrating products and operations with any such candidates that August Technology may acquire.

Any such acquisition could involve the dilutive issuance of equity securities and the incurrence of debt. In addition, the acquisitions of STI, CSI and DMSVision and future acquisitions may involve numerous additional risks, including:

- the diversion of the attention of August Technology s management team from other business concerns;
- risks of entering into markets or producing products where August Technology has limited or no experience, including difficulties in integrating purchased technologies and products with August Technology s technologies and products;
- the potential loss of key customers of an acquired company;
- the potential loss of key personnel of an acquired company;
- exposure to unanticipated liabilities of an acquired company; and
- greater financial requirements for purchase price and added working capital.

Even when an acquired company has already developed and marketed products, there can be no assurance that the products will continue to be successful, that product enhancements will be made in a timely fashion or that pre-acquisition due diligence will have identified all possible issues that might arise with respect to the acquired company or its products.

If a microelectronic device manufacturer is loyal to another microelectronic equipment supplier, August Technology may be unable to sell its products to that potential customer and its sales and market share could suffer as a result.

August Technology believes that once a microelectronic device manufacturer has selected one vendor s capital equipment for a production line application, the manufacturer generally relies upon that capital equipment and, to the extent possible, subsequent generations of the same vendor s equipment, for the life of the application. Once a vendor s equipment has been installed in a production line, a microelectronic device manufacturer must often make substantial technical modifications and may experience production-line downtime in order to switch to another vendor s equipment. Accordingly, unless August Technology s systems offer performance or cost advantages that outweigh a customer s expense

of switching to August Technology s systems, it will be difficult for it to achieve significant sales to that customer once it has selected another vendor s capital equipment for an application.

Changes in accounting for stock-based compensation could adversely affect August Technology s results of operations.

August Technology has historically compensated its employees, including many key personnel and new hires, through the issuance of options to acquire capital stock. Effective as of the first quarter of fiscal year ended 2006, August Technology will be required to expense unvested and newly issued employee stock options.

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This change from current accounting regulations could have a significant impact on August Technology s results of operations and could affect the manner in which August Technology conducts business.

If August Technology cannot effectively manage its growth, August Technology s business may suffer.

August Technology intends to continue to grow by increasing its sales efforts and completing strategic acquisitions. To effectively manage August Technology s growth, August Technology must, among other things:

- engage, train and manage a larger sales force and additional service personnel;
- expand the geographic coverage of August Technology s sales force;
- expand August Technology s information systems;
- identify and successfully integrate acquired businesses into August Technology s operations; and
- administer appropriate financial and administrative control procedures.

August Technology s anticipated growth will likely place a significant strain on its management, financial, operational, technical, sales and administrative resources. Any failure to effectively manage its growth may cause August Technology s business to suffer and its stock price to decline.

Increased competition could impair sales of August Technology s products or cause it to reduce its prices.

August Technology expects its current competitors and other companies to continue to improve the design and performance of their products and to introduce new products with competitive prices and performance characteristics. Competitive pressures may from time to time require August Technology to selectively reduce prices on August Technology s systems in an effort to protect August Technology s market share. Even if August Technology reduce prices, August Technology s potential customers may choose to purchase competing products developed by August Technology s competitors, many of whom have development, production, marketing and distribution resources significantly greater than August Technology s own. Price reductions or lost sales as a result of these competitive pressures would reduce August Technology s total revenues and adversely impact its financial results.

August Technology s operations could be impaired as a result of disasters, business interruptions beyond its control or similar events, including global or regional outbreaks of infectious diseases such as severe acute respiratory syndrome.

Disasters such as earthquakes, flooding, fire, electricity failure, or accidents that affect August Technology s operations, manufacturing facility, or the health of August Technology s employees or customers could adversely affect August Technology s operating results and financial condition. Continued or future outbreaks of infectious diseases such as severe acute respiratory syndrome, or SARS, avian flu, or other similar or comparable outbreaks or fears or concerns of possible outbreaks may significantly affect the willingness or ability of August Technology s customers to visit August Technology s facilities or trade shows, review August Technology s systems capabilities and/or purchase or take delivery of August Technology s products, as well as August Technology s ability to visit its customers, to perform application studies for its customers, to sell and deliver products, and to service those products. Any government mandated or suggested restrictions on travel, quarantines, or declines in the willingness or ability of August Technology s customers to travel and visit August Technology s facilities or August Technology s ability to travel and visit its customers, could have a material adverse effect on August Technology s business, financial condition and results of operations.

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THE NANOMETRICS ANNUAL MEETING

General

This joint proxy statement/prospectus is being provided to Nanometrics shareholders as part of a solicitation of proxies by the Nanometrics board of directors for use at the 2005 annual meeting of Nanometrics shareholders. This joint proxy statement/prospectus provides Nanometrics shareholders with information they need to know to be able to vote or instruct their vote to be cast at the Nanometrics annual meeting.

Date, Time, and Place

The Nanometrics annual meeting will be held on , 2005 at a.m., local time, at .

Purpose; Other Matters

The Nanometrics annual meeting is being held to consider and vote upon the following:

1. A proposal to approve the issuance of shares of August Nanometrics common stock in connection with the merger of August Technology with Major League Merger Corporation, a wholly-owned subsidiary of Nanometrics, pursuant to an Agreement and Plan of Merger and Reorganization dated as of January 21, 2005, by and among Nanometrics, Major League Merger Corporation, Minor League Merger Corporation and August Technology.

2. A proposal to approve the reincorporation of Nanometrics under the laws of the State of Delaware through a merger of Nanometrics with Minor League Merger Corporation, a wholly-owned subsidiary of Nanometrics.

3. Proposals to approve various governance-related provisions in the certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed), consisting of the following proposals to be effective upon the completion of the reincorporation merger:

3A a proposal to approve a provision limiting the August Nanometrics (or Nanometrics, if the August merger is not completed) stockholders right to call special meetings of stockholders;

3B a proposal to approve a provision limiting the August Nanometrics (or Nanometrics, if the August merger is not completed) stockholders ability to act by written consent;

3C a proposal to approve a provision requiring a super-majority vote of the August Nanometrics (or Nanometrics, if the August merger is not completed) stockholders to amend certain provisions of its certificate of incorporation;

3D a proposal to approve a provision requiring a super-majority vote of the August Nanometrics (or Nanometrics, if the August merger is not completed) stockholders to amend certain provisions of the August Nanometrics (or Nanometrics, if the August merger is not completed) bylaws;

3E a proposal to approve a provision limiting the August Nanometrics (or Nanometrics, if the August merger is not completed) stockholders right to remove directors from the board without cause; and

3F a proposal to approve a provision limiting cumulative voting rights in connection with the election of directors.

4. A proposal to elect seven director nominees to the Nanometrics board of directors to serve until the next annual meeting of Nanometrics shareholders at which their respective successors are elected and qualified, or until the earlier of their death, resignation or removal.

5. A proposal to ratify the appointment of BDO Seidman, LLP as Nanometrics independent registered public accounting firm for Nanometrics fiscal year ending December 31, 2005.

Nanometrics shareholders will also be asked to consider and vote upon any other business as may properly come before the annual meeting or any adjournments or postponements of the annual meeting. Nanometrics does not expect that any matter other than the proposals presented in this joint proxy statement/prospectus will be brought before the Nanometrics annual meeting. However, if other matters incident to the conduct of the annual

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meeting are properly presented at the annual meeting or any adjournment or postponement of the annual meeting, the persons named as proxies will vote in accordance with their best judgment with respect to those matters.

Nanometrics shareholders are voting on each proposal separately. Except as described below, the vote of a Nanometrics shareholder on one proposal has no bearing on any of the other proposals, or any other matter that may come before the Nanometrics annual meeting or any adjournment or postponement thereof. In their discretion, the proxies are authorized to vote upon such other business as may properly be presented to the annual meeting or any adjournments or postponements thereof. If you vote AGAINST any of the proposals, the proxy holders will not be authorized to vote for any adjournments or postponements of the annual meeting, including for the purpose of soliciting additional proxies, unless you so indicate by marking the appropriate box on the proxy card for the annual meeting.

Recommendation of the Nanometrics Board of Directors

After careful consideration, the Nanometrics board of directors determined that the August merger is advisable, and is fair to and in the best interests of Nanometrics and its shareholders, and unanimously approved the merger agreement and the transactions contemplated by the merger agreement.

The Nanometrics board of directors unanimously recommends that you vote:

FOR the proposal to approve the issuance of shares of August Nanometrics common stock in connection with the merger of August Technology Corporation with Major League Merger Corporation, a wholly-owned subsidiary of Nanometrics, pursuant to an Agreement and Plan of Merger and Reorganization, dated as of January 21, 2005, by and among Nanometrics, Major League Merger Corporation, Minor League Merger Corporation and August Technology Corporation.

FOR the proposal to approve the reincorporation of Nanometrics under the laws of the State of Delaware through a merger of Nanometrics with Minor League Merger Corporation, a wholly-owned subsidiary of Nanometrics.

FOR the proposals to approve the governance-related provisions in the certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed) to be effective upon completion of the reincorporation merger.

FOR the proposal to elect seven director nominees to the Nanometrics board of directors to serve until the next annual meeting of Nanometrics shareholders at which their respective successors are elected and qualified, or until the earlier of their death, resignation or removal.

FOR the proposal to ratify the appointment of BDO Seidman, LLP as Nanometrics independent registered public accounting firm for Nanometrics fiscal year ending December 31, 2005.

Record Date; Outstanding Shares; Voting Rights

Only holders of record of Nanometrics common stock at the close of business on the Nanometrics record date for the annual meeting, , 2005, are entitled to notice of and to vote at the annual meeting. As of the Nanometrics record date, there were shares of Nanometrics common stock outstanding and entitled to vote at the annual meeting, held by approximately holders of record. Each record holder of Nanometrics common stock on the Nanometrics record date is entitled to one vote for each share of Nanometrics common stock owned as of the Nanometrics record date with respect to all proposals except with respect to the election of directors.

The candidates for the Nanometrics board of directors receiving the seven highest vote totals will be elected to the Nanometrics board of directors. Every shareholder voting for the election of the Nanometrics board of directors may (i) cumulate such shareholder s votes and give any one candidate a number of votes equal to the number of directors to be elected multiplied by the number of shares that such shareholders holds on the record

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date for the annual meeting, or (ii) distribute such shareholder s votes on the same principle among as many candidates as the shareholder may select, provided that votes cannot be cast for more than seven candidates. However, no shareholder will be entitled to cumulate votes for a candidate unless the candidate s name has been placed in nomination prior to the voting and the shareholder, or any other shareholder, has given notice at the annual meeting prior to the voting of the intention to cumulate votes.

A list of Nanometrics shareholders will be available for review at the Nanometrics annual meeting and at the executive offices of Nanometrics during regular business hours for a period of ten days before the Nanometrics annual meeting.

Admission to the Annual Meeting

Only Nanometrics shareholders, their designated proxies and guests of Nanometrics may attend the Nanometrics annual meeting. If you plan to attend the Nanometrics annual meeting and wish to vote in person, you will be given a ballot at the annual meeting. Please note, however, that if your shares are held in street name, which means your shares are held of record by a broker, bank or other nominee, and you wish to vote at the Nanometrics annual meeting, you must bring to the annual meeting a legal proxy from the record holder of your shares authorizing you to attend and vote at the Nanometrics annual meeting.

Quorum and Vote Required

A quorum of shareholders is necessary to hold a valid annual meeting of Nanometrics shareholders. In order to have a quorum for the transaction of business at the Nanometrics annual meeting, a majority of shares of Nanometrics common stock issued and outstanding and entitled to vote on the record date must be present in person or by proxy at the annual meeting. Shares that are voted FOR, AGAINST or WITHHELD FROM a matter are treated as being present at the annual meeting for purposes of establishing a quorum.

Proposal 1

Approval of the issuance of shares of August Nanometrics common stock in the August merger will require the affirmative vote of the holders of a majority of the shares of Nanometrics common stock represented and voting at the Nanometrics annual meeting.

Proposal 2

Approval of the reincorporation merger will require the affirmative vote of the holders of a majority of the outstanding shares of Nanometrics common stock entitled to vote on the record date.

Proposals 3A-F

Under applicable state law, shareholder approval of the reincorporation merger is sufficient to implement the proposed governance-related provisions in the certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed). Under rules promulgated by the Securities and Exchange Commission, however, we are required to present each of the proposed governance-related provisions as a separate proposal for shareholder approval. Accordingly, if we complete the reincorporation merger, we have determined that we will not implement the proposed governance-related provisions unless they are independently approved by the affirmative vote of the holders of a majority of the shares of Nanometrics common stock represented and voting on each proposed governance-related provision at the Nanometrics annual meeting.

Proposal 4

The candidates for the Nanometrics board of directors receiving the seven highest vote totals will be elected to serve as directors of Nanometrics.

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Proposal 5

Approval by the shareholders of the selection of the independent registered public accounting firm is not required, but Nanometrics audit committee believes it is desirable to submit this matter to the shareholders. If holders of a majority of the common stock represented and voting at the Nanometrics annual meeting do not ratify the appointment of BDO Seidman, LLP as Nanometrics independent registered public accounting firm for Nanometrics fiscal year ending December 31, 2005, the audit committee will consider whether it should select another independent registered public accounting firm.

Voting Agreements

All of the Nanometrics directors and executive officers have entered into voting agreements with August Technology pursuant to which they have agreed to vote all of their respective shares of Nanometrics common stock in favor of the Nanometrics proposal to approve the issuance of shares of August Nanometrics common stock in the August merger and in favor of the reincorporation merger.

At the close of business on January 21, 2005, the date of the merger agreement, directors and executive officers of Nanometrics and their affiliates beneficially owned and were entitled to vote 3,392,274 shares of Nanometrics common stock, collectively representing approximately 26.9% of the shares of Nanometrics common stock outstanding on that date.

As of the record date for the Nanometrics annual meeting, directors and executive officers of Nanometrics and their affiliates owned beneficially or were entitled to vote shares of Nanometrics common stock, collectively representing approximately % of the shares of Nanometrics common stock outstanding on that date.

Voting

General

Nanometrics shareholders of record as of the Nanometrics record date may vote their shares by attending the Nanometrics annual meeting and voting their shares in person or by completing, signing and dating their respective proxy cards for the annual meeting and mailing them in the postage pre-paid envelope enclosed for that purpose. Nanometrics shareholders holding shares of Nanometrics common stock in street name, which means that their shares are held of record by a broker, bank, or other nominee, may vote by mail by completing, signing and dating the voting instruction forms for the Nanometrics annual meeting provided by their respective brokers, banks, or other nominees and returning their respective voting instruction forms to the record holders of their shares of Nanometrics common stock. Even if you plan to attend the Nanometrics annual meeting, Nanometrics recommends that you vote by proxy prior to the annual meeting. You can always change your vote as described below.

Voting by Proxy

All properly executed proxies that are received prior to the Nanometrics annual meeting and not revoked will be voted at the annual meeting according to the instructions indicated on the proxies. If you do not specify how you wish Nanometrics to vote your shares, your shares will be voted:

FOR the proposal to approve the issuance of shares of August Nanometrics common stock in connection with the merger of August Technology Corporation with Major League Merger Corporation, a wholly-owned subsidiary of Nanometrics, pursuant to an Agreement and Plan of Merger and Reorganization, dated as of January 21, 2005, by and among Nanometrics, Major League Merger Corporation, Minor League Merger Corporation and August Technology Corporation.

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FOR the proposal to approve the reincorporation of Nanometrics under the laws of the State of Delaware through a merger of Nanometrics with Minor League Merger Corporation, a wholly-owned subsidiary of Nanometrics.

FOR the proposals to approve the governance-related provisions in the certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed), to be effective upon completion of the reincorporation merger.

FOR the proposal to elect seven director nominees to the Nanometrics board of directors to serve until the next annual meeting of Nanometrics shareholders at which their respective successors are elected and qualified, or until the earlier of their death, resignation or removal.

FOR the proposal to ratify the appointment of BDO Seidman, LLP as Nanometrics independent registered public accounting firm for Nanometrics fiscal year ending December 31, 2005.

You may receive more than one proxy card depending on how you hold your shares of Nanometrics common stock. Generally, you need to sign and return all of your proxy cards to vote all of your shares. For example, if you hold shares through someone else, such as a broker, you may get proxy material from that person.

Changing Your Vote

If you are the record holder of your shares of Nanometrics common stock, you can change your vote at any time before your proxy is voted at the Nanometrics annual meeting by:

delivering to the Nanometrics corporate secretary a signed notice of revocation;

granting the Nanometrics proxy holders a new, later-dated proxy, which must be signed and delivered to the Nanometrics corporate secretary in advance of the vote at the annual meeting; or

attending the Nanometrics annual meeting and voting in person.

Your attendance alone, however, will not revoke your previously granted proxy. If you hold your shares in street name and you have provided voting instructions to your broker, bank or other nominee for the Nanometrics annual meeting, you must follow the instructions of your broker, bank or other nominee in order to change your vote or revoke your proxy for the Nanometrics annual meeting.

Abstentions and Broker Non-Votes

An abstention occurs when a shareholder attends a meeting, either in person or by proxy, but abstains from voting. While there is no definitive statutory or case law authority in California as to the proper treatment of abstentions, Nanometrics believes that abstentions should be counted for purposes of determining both (i) the presence or absence of a quorum for the transaction of business and (ii) the total number of shares of

Nanometrics common stock represented and voting with respect to a proposal. In the absence of controlling authority to the contrary, Nanometrics intends to treat abstentions in this manner.

Broker non-votes are shares held by a broker or other nominee that are represented at the annual meeting, but with respect to which the broker or nominee is not instructed by the beneficial owner of the shares to vote on the particular proposal and the broker does not have discretionary voting power on the proposal. Broker non-votes will be counted for purposes of determining the presence or absence of a quorum but will not be counted for purposes of determining the number of shares represented and voting with respect to a proposal.

For proposal 1, abstentions will have the same effect as voting against approval of the issuance of shares of August Nanometrics common stock in the August merger; broker non-votes will have no effect.

For proposal 2, abstentions and broker non-votes will have the same effect as voting against approval of the reincorporation merger.

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For proposals 3A-3F, neither abstentions nor broker non-votes will have any effect on the approvals of the governance-related proposals.

For proposal 4, neither abstentions nor broker non-votes will have any effect on the election of the seven directors.

For proposal 5, abstentions will have the same effect as voting against ratification of the appointment of BDO Seidman, LLP as Nanometrics independent registered public accounting firm for the fiscal year ending December 31, 2005; broker non-votes will have no effect.

Proxy Solicitation

Nanometrics is soliciting proxies for the Nanometrics annual meeting from Nanometrics shareholders. Nanometrics will bear the entire cost of soliciting proxies from Nanometrics shareholders, except that Nanometrics and August Technology have each agreed to share equally all expenses incurred in connection with the filing with the Securities and Exchange Commission of the registration statement of which this joint proxy statement/prospectus forms a part, and the printing and mailing of this joint proxy statement/prospectus and related proxy materials. In addition to the solicitation of proxies by mail, Nanometrics will request that brokers, banks and other nominees send proxies and proxy materials to the beneficial owners of Nanometrics common stock held by them and secure their voting instructions, if necessary. Nanometrics will reimburse those record holders for their reasonable expenses. Nanometrics also may use several of its regular employees, who will not be specially compensated, to solicit proxies from Nanometrics shareholders, either personally or by telephone, internet, telegram, facsimile or special delivery letter.

Please do not send in any Nanometrics stock certificates with your proxy cards or voting instruction forms.

Postponements and Adjournments

Postponements and adjournments may be made for the purpose of, among other things, soliciting additional proxies. An adjournment may be made from time to time by approval of the holders of shares representing a majority of the shares present in person or by proxy at the annual meeting, whether or not a quorum exists, without further notice other than by an announcement made at the annual meeting. Nanometrics does not currently intend to seek a postponement or adjournment of the Nanometrics annual meeting.

Assistance

If you need assistance in completing your proxy card or have questions regarding the Nanometrics annual meeting, please contact Nanometrics Investor Relations at (408) 435-9600 or write to Nanometrics Incorporated, 1550 Buckeye Drive, Milpitas, California 95035, Attn: Investor Relations.

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THE AUGUST TECHNOLOGY SPECIAL MEETING

General

August Technology is sending this joint proxy statement/prospectus to the shareholders of August Technology in connection with the solicitation by the board of directors of August Technology of proxies to be voted at the special meeting. This joint proxy statement/prospectus is first being mailed to shareholders of August Technology on or about , 2005.

Date, Place, and Time

The special meeting will be held at , local time, on , 2005, at .

Purpose; Other Matters

At the special meeting, August Technology shareholders will be asked to vote on a proposal to approve the merger agreement dated as of January 21, 2005 attached to this joint proxy statement/prospectus as Annex A and the merger with Nanometrics contemplated therein. The merger agreement provides for the merger of August Technology with Major League Merger Corporation, a Minnesota corporation and wholly-owned subsidiary of Nanometrics, as a result of which August Technology will become a wholly-owned subsidiary of Nanometrics. Other terms and provisions related to the August merger are contained in the merger agreement.

August Technology shareholders will also be asked to vote on the governance and other provisions in the post-transaction certificate of incorporation and bylaws of August Nanometrics Inc., provided that if the reincorporation merger is not approved by the Nanometrics shareholders or consummated, such proposal will not become effective.

August Technology shareholders may also be asked to vote upon a proposal to adjourn or postpone the special meeting, in order to (among other things) allow additional time for August Technology to solicit additional votes to approve the merger agreement and the August merger. Under Minnesota law, shareholders are permitted to consider only the matters contained in the notice at the special meeting. If other matters are properly presented and are within the purpose of the special meeting, however, the persons named as proxies will vote in accordance with their best judgment with respect to those matters.

Under Minnesota law, shareholders are permitted to consider only the matters contained in the notice at the special meeting.

Recommendation of the August Technology Board of Directors

After careful consideration, the board of directors of August Technology unanimously approved the merger agreement and the August merger and the other transactions contemplated by the merger agreement. August Technology s board of directors has determined that the August merger is advisable and in the best interests of, August Technology and its shareholders and recommends that its shareholders vote FOR the proposal. For more information on these recommendations, see the section of this joint proxy statement/prospectus entitled *The August Merger Additional August Technology Reasons for the August Merger* beginning on page 102.

Record Date; Outstanding Shares; Voting Rights; Quorum; Required Vote

The close of business on is the record date for determining the holders of August Technology common stock who are entitled to receive notice of and to vote at the special meeting or at any adjournment or postponement of the special meeting.

August Technology has one class of common stock outstanding, no par value per share. Each holder of August Technology common stock outstanding on the record date is entitled to one vote for each share held. The

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holders of a majority of the outstanding shares of August Technology capital stock entitled to vote must be present at the special meeting, in person or by proxy, to constitute a quorum to transact business.

The holders of a majority of all the outstanding shares of August Technology common stock must vote in favor of the merger agreement and the August merger in order to approve the proposal to approve the merger agreement and the August merger. On the record date shares of August Technology common stock were outstanding, held by approximately holders of record.

Admission to the Special Meeting

Only August Technology shareholders of record on the record date, their designated proxies and guests of August Technology may attend the August Technology special meeting. If you plan to attend the August Technology special meeting in person, you will be given a ballot at the special meeting. Please note, however, that if your shares are held in street name, which means your shares are held of record by a broker, bank or other nominee, and you wish to vote at the August Technology special meeting, you must bring to the special meeting a legal proxy from the record holder of the shares authorizing you to vote at the August Technology special meeting.

Quorum and Vote Required

A quorum of shareholders is necessary to hold a valid special meeting of August Technology shareholders. The required quorum for the transaction of business at the August Technology special meeting is a majority of shares of August Technology common stock issued and outstanding and entitled to vote on the record date present in person or by proxy. Shares that are voted FOR, AGAINST or WITHHELD FROM a matter are treated as being present at the special meeting for purposes of establishing a quorum.

Voting Agreements

All of the directors and executive officers of August Technology have entered into voting agreements with Nanometrics pursuant to which they have agreed to vote all of their respective shares of August Technology common stock in favor of August Technology s proposal to approve the merger agreement (including actions contemplated by the merger agreement) and the August merger and have executed and delivered to Nanometrics proxies to vote their shares in favor of such proposal. For more information, see the section of this joint proxy statement/prospectus entitled *The Merger Agreement The Voting Agreements* beginning on page 132.

At the close of business on January 21, 2005, the date of the merger agreement, directors and executive officers of August Technology and their affiliates beneficially owned and were entitled to vote 1,120,911 shares of August Technology common stock, collectively representing approximately 6.3% of the shares of August Technology common stock outstanding on that date. As of the record date for the August Technology special meeting, directors and executive officers of August Technology and their affiliates beneficially owned and were entitled to vote shares of August Technology common stock, collectively representing approximately of the shares of August Technology common stock outstanding on that date.

Voting; Proxies, Revocation

General

August Technology shareholders of record as of the August Technology record date may vote their shares by attending the August Technology special meeting and voting their shares in person, by completing, signing and dating their proxy cards and mailing them in the postage pre-paid envelope enclosed for that purpose. August Technology shareholders holding shares of August Technology common stock in street name, which means

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that their shares are held of record by a broker or nominee, may vote by mail by completing, signing and dating the voting instruction forms for the August Technology special meeting provided by their brokers or nominees and returning their voting instruction forms to the record holders of their shares. Even if you plan to attend the special meeting, August Technology recommends that you vote prior to the special meeting. You can always change your vote as described below.

Voting by Proxy

All properly executed proxies that are received prior to the August Technology special meeting and that are not revoked will be voted at the special meeting according to the instructions indicated on the proxies. If you do not specify how you wish August Technology to vote your shares, your shares will be voted FOR the proposal to approve the merger agreement and the August merger. Proxy holders will also vote shares according to their discretion on any other matter properly brought before the special meeting.

You may receive more than one proxy card depending on how you hold your shares. Generally, you need to sign and return all of your proxy cards to vote all of your shares. For example, if you hold shares through someone else, such as a stockbroker, you may get proxy material from that person.

Changing Your Vote

August Technology shareholders may change their votes at any time prior to the vote at the August Technology special meeting. August Technology shareholders of record may change their votes by granting new proxies bearing a later date (which automatically revoke the earlier proxies) or by attending the August Technology special meeting and voting in person. Attendance at the August Technology special meeting in and of itself will not cause previously granted proxies to be revoked, unless August Technology shareholders so request. August Technology shareholders may also revoke their proxies by notifying the secretary of August Technology in writing. Written notices of revocation and other communications with respect to revocation of August Technology proxies should be addressed to:

August Technology Corporation

4900 West 78th Street

Bloomington, Minnesota 55435

Attn: Secretary

(952) 820-0080

August Technology shareholders who hold their August Technology shares in street name may change their votes by submitting new voting instructions to the record holders of their shares or by attending the August Technology special meeting and voting in person, provided that they have obtained a signed legal proxy from the record holders of their shares giving them the right to vote their shares at the August Technology special meeting. August Technology shareholders who hold their shares in street name should contact the record holders of their shares for information about obtaining legal proxies for the August Technology special meeting.

Abstentions and Broker Non-Votes

Any broker non-votes submitted by brokers or nominees in connection with the special meeting will not be counted for purposes of determining the number of votes cast on a proposal but will be treated as present for quorum purposes. Broker non-votes are shares held by brokers or nominees as to which voting instructions have not been received from the beneficial owners or the persons entitled to vote those shares and the broker or nominee does not have discretionary voting power under rules applicable to broker-dealers. Under these rules, the proposal to approve the merger agreement and the August merger, the proposals to approve the governance and other provisions in the post-transaction certificate of incorporation and the proposal to adjourn the special meeting are not items on which brokerage firms may vote in their discretion on behalf of their clients if such

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clients have not furnished voting instructions within ten days of the special meeting. Because the proposal to approve the merger agreement and the August merger is required to be approved by the holders of a majority of the outstanding shares of August Technology common stock, abstentions and broker non-votes will have the same effect as a vote against the proposal to approve the merger agreement and the August merger at the special meeting. And for the same reason, the failure of any August Technology shareholder to vote by proxy or in person at the special meeting will have the effect of a vote against this proposal. Because of the vote required for the proposals to approve the governance and other provisions in the post-transaction certificate of incorporation and the proposal to adjourn the special meeting, abstentions and broker non-votes will have no effect on these proposals.

Proxy Solicitation

August Technology is soliciting proxies for the August Technology special meeting from August Technology shareholders. August Technology will bear the entire cost of soliciting proxies from August Technology shareholders, except that Nanometrics and August Technology have each agreed to share equally all expenses incurred in connection with the filing with the Securities and Exchange Commission of the registration statement of which this joint proxy statement/prospectus forms a part, and the printing and mailing of this joint proxy statement/prospectus and related proxy materials. In addition to the solicitation of proxies by mail, August Technology will request that brokers, banks and other nominees send proxies and proxy materials to the beneficial owners of August Technology common stock held by them and secure their voting instructions, if necessary. August Technology will reimburse those record holders for their reasonable expenses. August Technology has engaged The Proxy Advisory Group of Strategic Stock Surveillance, LLC to assist it in the solicitation of proxies and provide related advice and informational support, for a service fee and the reimbursement of customary disbursements not to exceed $35,000 in the aggregate. August Technology also may use several of its regular employees, who will not be specially compensated, to solicit proxies from August Technology shareholders, either personally or by telephone, internet, telegram, facsimile or special delivery letter.

Please do not send in any August Technology stock certificates with your proxy cards or voting instruction forms.

Postponements and Adjournments

Postponements and adjournments may be made for the purpose of, among other things, soliciting additional proxies. An adjournment may be made from time to time by approval of the holders of shares representing a majority of the votes present in person or by proxy at the special meeting, whether or not a quorum exists, without further notice other than by an announcement made at the special meeting. August Technology does not currently intend to seek an adjournment of the August Technology special meeting.

Assistance

If you need assistance in completing your proxy card or have questions regarding the August Technology special meeting, please call The Proxy Advisory Group of Strategic Stock Surveillance, LLC at (866) 657-8728 or (212) 850-8150.

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NANOMETRICS PROPOSAL 1 AND AUGUST TECHNOLOGY PROPOSAL 1

(THE AUGUST MERGER)

NANOMETRICS

PROPOSAL 1

APPROVAL OF THE ISSUANCE OF SHARES OF AUGUST NANOMETRICS COMMON STOCK IN

THE AUGUST MERGER

AUGUST TECHNOLOGY

PROPOSAL 1

APPROVAL OF THE MERGER

AGREEMENT

AND THE

AUGUST MERGER

THE AUGUST MERGER

The following is a description of the material aspects of the August merger, including the merger agreement. While Nanometrics and August Technology believe that the following description covers the material terms of the August merger, this description may not contain all of the information that is important to you. Nanometrics and August Technology encourage you to carefully read this entire joint proxy statement/prospectus, including the merger agreement attached to this joint proxy statement/prospectus as Annex A, for a more complete understanding of the August merger.

Background of the August Merger

Each of Nanometrics and August Technology continually monitors the marketplace for strategic opportunities to strengthen their respective businesses. The Nanometrics board of directors and members of Nanometrics management team have evaluated, on an ongoing basis, strategies to address the increasing consolidation in the semiconductor manufacturing equipment market. As part of this process, Nanometrics board of directors authorized John D. Heaton, President and Chief Executive Officer of Nanometrics, to contact several semiconductor manufacturing technology companies to discuss industry trends.

Beginning in early 2003, the August Technology board of directors began to consider ways to expand August Technology s market presence as well as enhance shareholder value beyond its ability to grow internally. August Technology was then engaged in a joint development program with Samsung Electronics Corporation, or the Samsung program, to position its advanced macro defect inspection products for application in the front-end or wafer processing market, a market substantially larger than the back-end of the semiconductor manufacturing process where August Technology had historically derived most of its revenues. In order to take advantage of the growing market opportunities presented by the expertise and technology generated through the Samsung program, the August Technology board of directors determined that August Technology should consider external alliances, including possible business combinations.

From April 2003 through July 2004, August Technology completed three small acquisitions adding critical inspection and defect information software systems to its product portfolio. During that time, Jeff L. O Dell, August Technology s Chairman and Chief Executive Officer, and Stan

Piekos, August Technology s Chief Financial Officer, met with industry participants and management of other larger inspection and metrology companies to assess the merits of a strategic merger or alliance that would allow August Technology to add critical mass and shareholder value.

At August Technology s regular second quarter board of directors meeting held on July 23, 2004, its management provided to the board of directors a list of six potential business combination partners, a brief description of the business and financial information regarding each prospect, a commentary on the fit of each prospect with August Technology and a description of any discussions they had previously held with each prospect. The board of directors scheduled a special meeting on September 9, 2004 to meet with management and a senior investment banker for the purpose of identifying a specific business combination candidate to pursue.

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On September 9, 2004, the August Technology board of directors met with representatives of Needham & Company, an investment banking firm, and a senior industry participant to consider business development opportunities in the semiconductor equipment marketplace. The board of directors reviewed six potential strategic business combination partners and evaluated each against the following attributes the board of directors considered desirable in a business combination partner:

- A partner with complementary products and solutions and an established presence in front-end wafer processing applications such as lithography, chemical mechanical polishing, or CMP, and etch, where August Technology products are being introduced;
- A partner with its own growth momentum and with whom August Technology can deliver revenue synergies;
- A partner with no or minimal product and technology overlaps that would have to be rationalized with the customer and employee base;
- A partner with whom August Technology could gain leverage from common technology development investments, like automation platforms, and sales and service infrastructure and increasing costs of being a United States public company;
- A partner with a strong management team operating in a similar culture of growth and innovation; and
- Should the business combination take the form of a merger in which August Technology is not the surviving entity, a partner with a currency in the form of common stock that provides upside and an ownership structure allowing August Technology s shareholders to meaningfully participate in the enhanced shareholder value that August Technology believes will accrue after successful integration.

Based on its review of the candidates against these criteria, the August Technology board of directors concluded that August Technology should initiate discussions with Nanometrics. The August Technology board of directors believed that Nanometrics was an attractive merger candidate because Nanometrics metrology products complemented August Technology s inspection products with essentially no overlap in the product lines. Combining the two companies, the August Technology board of directors believed, would allow the resulting company to offer customers a broader range of products and increase the market presence and financial strength of the company.

On September 20, 2004, Mr. Heaton visited August Technology s facility in Bloomington, Minnesota, to meet with Messrs. O Dell and Piekos. Mr. Heaton discussed with Messrs. O Dell and Piekos the markets and customers served by the respective products produced by Nanometrics and August Technology and the extent to which the two companies product lines would be complementary. All agreed that customers would benefit from one supplier offering both macro defect inspection and metrology solutions. Mr. O Dell and Mr. Piekos identified Nanometrics strength in Japan as an attractive counterbalance to August Technology s relative weakness in the Japanese market. Similarly, August Technology s strength in Taiwan was identified as a counterbalance to Nanometrics relative weakness in that area. Messrs. Heaton, O Dell and Piekos also discussed the potential for market synergies and cost synergies from a business combination. During their discussion, Messrs. Heaton, O Dell and Piekos did not agree to explore any particular relationship or transaction, but did agree to have further discussions.

On October 15, 2004, at August Technology s regular third quarter board of directors meeting, Mr. Piekos reported to the August Technology board of directors on the status of management s discussions with Nanometrics and the advantages that management perceived in a potential business combination with Nanometrics. The August Technology board of directors agreed that conversations with Nanometrics should continue and authorized the engagement of Needham & Company as August Technology s financial advisor to assist in evaluating potential new business development opportunities including the continuing business combination discussions with Nanometrics.

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On October 15, 2004, Needham & Company was formally engaged as August Technology s financial advisor with respect to possible business combinations.

On October 20, 2004, Mr. Heaton received a phone call from Mr. Piekos during which Mr. Piekos indicated that after the visit and various analyses, August Technology would be interested in further exploring a business combination with Nanometrics.

On October 26, 2004, Nanometrics and August Technology entered into a confidentiality agreement to facilitate the exchange of information between the companies. Thereafter, Nanometrics management and other representatives of Nanometrics, including attorneys at the law firm of Wilson Sonsini Goodrich & Rosati, Professional Corporation, outside counsel to Nanometrics, began performing due diligence on August Technology. At the same time, representatives of August Technology and attorneys at the law firm of Fredrikson & Byron, P.A., outside counsel to August Technology, began performing due diligence on Nanometrics.

In November of 2004, Mr. Heaton contacted representatives of Adams Harkness, Inc. and discussed the possibility of Adams Harkness providing financial advisory services to Nanometrics in connection with a possible business combination with August Technology.

On November 11, 2004, Mr. Piekos, Ardelle Johnson, August Technology s Vice President Strategic Marketing, and Cory Watkins, August Technology s Chief Technology Officer, met with Mr. Heaton and the Chairman of the Nanometrics board of directors, Vincent J. Coates, at Nanometrics offices in Milpitas, California. The principal topic of the meeting concerned the technology and customer solutions offered by each of August Technology and Nanometrics and the market synergies that might be realized in a combination of the companies.

On the morning of November 12, 2004, Mr. Piekos met again with Mr. Heaton and discussed specific customers and the possibility that each company might assist the other with regard to particular customers.

On November 16, 2004, at a regularly scheduled meeting of the Nanometrics board of directors, Mr. Heaton updated the board of directors on his discussions with August Technology s representatives. The board of directors authorized Mr. Heaton to continue discussions with representatives of August Technology and to report on the progress of such discussions. Thereafter, Messrs. Heaton and Piekos agreed to the framework for holding continued discussions between the two companies regarding a possible business combination.

On November 28, 2004, Mr. Piekos contacted Mr. Heaton to further discuss the potential for a strategic transaction involving a combination of the two companies. They discussed a merger of equals in which the Nanometrics shareholders and August Technology shareholders would each hold roughly half of the shares of the combined company, Nanometrics and August Technology would have equal representation on the board of directors of the combined company, the brands established by each company would be maintained and key managers of each company would continue to play leadership roles in the combined company.

On November 29, 2004, Mr. Piekos sent to Mr. Heaton a financial analysis regarding a possible business combination between Nanometrics and August Technology. The analysis presented August Technology management s initial estimates of revenue synergies that might be obtained by each company s cross-selling of products to the other company s customers and cost synergies that might result from the consolidation of certain corporate functions. The proposed business combination reflected in the analysis assumed that August Technology shareholders would own between 42.8% and 47.8% of the combined company on a fully diluted basis and that Nanometrics shareholders would own between 52.2% and 57.2% of the combined company on a fully diluted basis.

In an e-mail to Mr. Heaton on November 29, 2004, Mr. Piekos proposed the ownership ranges described above and also discussed the importance of a merger of equals structure, retaining the brand identities of the two companies, and constructing a board of directors with balanced representation from each organization, and discussed who would hold key management positions within the combined company. Mr. Heaton indicated that

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Nanometrics was prepared to move forward on this basis because the proposed ratio reflected the merger of equals structure while accounting for the fact that Nanometrics had historically been more profitable and generated higher revenues than August Technology.

On December 7, 2004, Mr. O Dell visited Nanometrics facility in Milpitas, California to discuss aspects of the proposed business combination with Messrs. Heaton and Coates. The participants also discussed possible structures of the board of directors and management of any combined company, the possible name of the combined company and the location of various corporate activities in Minnesota and California.

At a special meeting of the Nanometrics board of directors on December 9, 2004, the Nanometrics management team updated the board of directors on discussions with August Technology regarding a possible business combination. The Nanometrics board of directors authorized management to continue discussions with August Technology and to engage financial advisors with respect to a possible business combination with August Technology. Thereafter, Nanometrics engaged Adams Harkness to act as its financial advisor.

On December 11, 2004, Mr. Heaton met with Michael Wright, an independent member of the August Technology board of directors, at the Industry Strategy Symposium in Half Moon Bay, California. Messrs. Heaton and Wright discussed the benefits to the shareholders of Nanometrics and August Technology and shared thoughts on the discussions between Nanometrics and August Technology to date.

During the week of December 13, 2004, Mr. Heaton and other members of the Nanometrics management team traveled to August Technology s headquarters in Bloomington, Minnesota to meet with representatives of August Technology and to perform more detailed due diligence. Mr. Heaton also met with members of the August Technology board of directors to discuss the strategic vision of a potential combined company.

On December 14, 2004, during an adjournment from August Technology s regularly scheduled board of directors meeting, Mr. Heaton made a presentation regarding Nanometrics business to the assembled August Technology board members. He reviewed Nanometrics products, customers, markets and industry trends. Following Mr. Heaton s presentation, the August Technology board of directors reconvened its meeting and representatives of Needham & Company discussed with the August Technology board of directors their preliminary financial analysis of a possible business combination between August Technology and Nanometrics. The board of directors discussed the possibility of a merger of equals transaction in which August Technology shareholders would receive approximately 45% of the shares of the resulting combined company on a fully diluted basis and August Technology representatives would have a balanced representation on the board of directors and management of the combined company. The August Technology board of directors concluded that management of August Technology should proceed with discussions with Nanometrics. Representatives of Adams Harkness and Needham & Company discussed the merger of equals structure, including the proposed exchange ratio. After conferring with Adams Harkness, Mr. Heaton indicated that Nanometrics was willing to move forward on that basis.

On December 17, 2004, Roger Gower, an independent member of the August Technology board of directors, visited with Messrs. Heaton and Coates to discuss various aspects of the proposed business combination and how the combined company would provide shareholders of Nanometrics and August Technology with greater value as well as serve each company s customers better. Experiences with mergers and vision for the proposed combined company were also discussed.

Additionally, the board of directors of Nanometrics convened a special meeting to discuss the potential business combination with August Technology. Representatives of Adams Harkness were invited to give the board of directors a presentation regarding the scope of their engagement, the financial aspects of a proposed business combination with August Technology and a calendar of action items. Mr. Heaton also discussed the need to enter into a mutual nondisclosure agreement which would provide for a period of exclusive negotiations between the parties in order to support Nanometrics continued expenditures in exploration of a strategic transaction. The board of directors approved the

mutual nondisclosure agreement and authorized Mr. Heaton to execute the agreement on behalf of Nanometrics.

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Following the meeting, Mr. Heaton called Mr. Piekos to discuss a number of merger-related topics, including further discussion of the need to enter into a mutual confidentiality agreement in accordance with the terms and conditions discussed at the Nanometrics board of directors meeting. Mr. Heaton indicated that execution of such an agreement was essential from the perspective of the Nanometrics board of directors. Mr. Piekos, in consultation with the August Technology board of directors, agreed to execute the mutual confidentiality agreement. Mr. Piekos noted that August Technology s previous investigation of other potential merger candidates had led its management to believe that the Nanometrics transaction would lead to the best opportunity for increased long-term shareholder value. Thereafter, each of Nanometrics and August Technology executed a mutual confidentiality agreement dated December 17, 2004 which incorporated the obligations of the October 26, 2004 confidentiality agreement between the parties. The mutual confidentiality agreement prohibited both August Technology and Nanometrics from soliciting or encouraging alternative transaction proposals from other parties or furnishing any information to, or participating in any discussions with, any alternative counterparty during an exclusive negotiating period that began on December 17, 2004 and ended on January 31, 2005.

Also on December 17, 2004, Mr. Piekos made a presentation to Mr. Heaton and members of Nanometrics board of directors regarding August Technology s business, including its products, markets, management and financial matters.

Also on December 17, 2004, Mr. Wright received the following letter from Ken Schroeder, President and Chief Executive Officer of KLA-Tencor Corporation, indicating interest in a strategic business combination between August Technology and KLA-Tencor. The letter refers to August Technology as Ace and KLA-Tencor as King.

December 17, 2004

Mr. Michael W. Wright

Chief Operating Officer

Entegris, Inc.

3500 Lyman Blvd.

Chaska, MN 55318

Dear Michael:

I am writing to express our strong interest in pursuing a strategic combination between [Ace] and [King]. We recognize [Ace] as a leading provider of process control solutions, and have tremendous respect for the employees and management of [Ace] and their accomplishments. We commend the [Ace] team on its strong execution over the past 18 months, particularly its ability to generate strong financial performance and introduce several new products.

As such, we are enthusiastic about the prospect of putting our respective companies together. We believe the strategic and operational merits of a combination would provide significant benefits to the employees, customers, shareholders, and partners of our organizations. After substantial thought about such a combination we are convinced that, together, we could create value for our customers that will be difficult to deliver as

separate companies. The combined company would be able to leverage complementary products, technology, and core competencies to address different high growth market segments, thus allowing for a strengthened focus on advancing tool performance while eliminating redundant programs. Importantly, due to the complementary nature of our businesses and product portfolios, we believe that we could accomplish this with minimal disruption to our respective companies through a seamless integration.

In response to the guidance that we received from your advisor at Needham & Company, I have requested that Credit Suisse First Boston present a preliminary, non binding indication of interest, which I have attached to this letter. As you will see in those materials, we are pleased to submit a preliminary offer of $11.00-$12.00 for each share of [Ace] common stock outstanding. This proposal has been based solely on

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publicly available information, and is subject to, among other things, the successful completion of a due diligence review of [Ace] and approval of the [King] board.

From a financial perspective, we feel that our proposal presents a very compelling transaction for your shareholders. The proposed offer price represents a 17%-28% premium to the latest closing price of [Ace] common stock, and more appropriately, a 25%-41% premium to [Ace s] current enterprise value, excluding cash.

I understand that the [Ace] Board and management team will need to review our preliminary indication of interest in detail. I hope that this will form the basis for further conversations, as our team is proposed to discuss this with you at your earliest convenience. The terms and existence of this proposal are confidential and are only to be shared with those individuals who need to know in order to evaluate the proposal. I look forward to hearing from you soon, and I hope that we will be able to work together to effect a mutually beneficial transaction.

Sincerely yours,

/s/ KENNETH SCHROEDER

Kenneth Schroeder

President and Chief Executive Officer

On December 21, 2004, August Technology responded by letter to Mr. Schroeder stating that August Technology was not for sale and that the board of directors believed that its current strategic direction would yield substantially more value than the offer submitted by KLA. Pursuant to the terms of its mutual confidentiality agreement with Nanometrics, August Technology forwarded copies of the correspondence to Nanometrics.

Following December 17, 2004, and continuing into early January, Nanometrics and August Technology exchanged and reviewed due diligence information and conducted negotiations regarding a draft merger agreement with respect to a possible business combination.

Between December 20, 2004 and December 31, 2004, Mr. Heaton and Mr. Piekos held a number of meetings both in person and via teleconference in which they continued to discuss various aspects of the possible business combination. Also, in addition, Nanometrics and August Technology continued to exchange due diligence materials during this period, and Nanometrics legal, financial and accounting advisors traveled to Bloomington, Minnesota to perform due diligence on August Technology. Representatives of Nanometrics and August Technology also began to negotiate the terms and conditions of a definitive agreement regarding the possible business combination of Nanometrics and August Technology, including preliminary discussions around an appropriate exchange ratio.

On January 4, 2005, the Nanometrics board of directors convened a special meeting to discuss the possible business combination. Representatives of Adams Harkness and Wilson Sonsini Goodrich & Rosati, Professional Corporation, also attended this meeting. During this meeting, Mr. Heaton updated the Nanometrics board of directors on the status of his discussions with Mr. Piekos regarding a possible 100% stock-for-stock merger between Nanometrics and August Technology, in which Nanometrics shareholders would hold approximately 55% of the fully-diluted shares of the combined company s common stock immediately following the business combination. Mr. Heaton relayed to the board of directors his views on the advantages of the proposed merger, as well as certain related risks. He also discussed the advisability of reincorporating into Delaware and adopting certain charter provisions, including a classified board of directors, due to the fact that the combined company would maintain a higher profile than either of the existing companies. Representatives of Adams Harkness then discussed their

preliminary analysis of potential strategic alternatives for Nanometrics. The Nanometrics board of directors requested additional analysis from Adams Harkness regarding a strategic business combination with August Technology for a subsequent meeting. Representatives of Wilson Sonsini Goodrich & Rosati,

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Professional Corporation, then discussed the board of directors fiduciary duties in connection with the board s consideration of a possible business combination of Nanometrics and August Technology.

During the week of January 4th, 2005, Mr. Piekos, David Klenk, the President and Chief Operating Officer of August Technology, together with a senior August Technology business team, traveled to Nanometrics headquarters in Milpitas, California, to meet with representatives of Nanometrics regarding integration planning and to perform more detailed due diligence.

On January 7, 2005, the Nanometrics board of directors convened a special meeting to receive an update on the proposed business combination. Representatives of Adams Harkness attended portions of this meeting. At this meeting, Mr. Heaton updated the board of directors on the status of the negotiations on a definitive agreement. Mr. Heaton also discussed the due diligence findings with the Nanometrics board of directors, which discussion included an overview of August Technology s market, an analysis of the major competitors in the market and their products. Representatives of Adams Harkness then discussed their updated preliminary analysis and responded to the board of directors earlier request for additional information. The Adams Harkness representatives also discussed their analysis of various exchange ratio alternatives in connection with a possible business combination between Nanometrics and August Technology. The board members and their representatives discussed a number of factors related to the proposed business combination, including the governance and management of the combined company.

Thereafter, Nanometrics, with the assistance of its legal, financial and other advisors, and August Technology, with the assistance of its legal, financial and other advisors, each continued their respective due diligence investigations of the business and operations of the other and of the proposed business combination.

On January 12, 2005, Mr. O Dell and Jim Bernards, August Technology s lead independent director, visited Nanometrics facility in Milpitas, California to discuss aspects of the proposed business combination with Messrs. Heaton and Coates. The participants also discussed possible structures of the board of directors and management of any combined company, the possible name of the combined company and the location of various corporate activities in Minnesota and California. Consistent with earlier discussions, the participants agreed upon a board structure consisting of three directors from the August Technology board, three directors from the Nanometrics board and one new director mutually agreeable to both parties. This board structure was selected to reflect the merger of equals structure and the expectation that approximately half of the shares of the combined company would be held by the shareholders of each company. The participants also agreed that Mr. Coates would serve as Chairman of the board, since he would be the largest shareholder of the combined company; Mr. Heaton would serve as Chief Executive Officer; Mr. Piekos would serve as Chief Financial Officer and Mr. O Dell would serve as a principal executive in the areas of strategic marketing and planning, reporting directly to Mr. Heaton. The management responsibilities were determined based on the perceived strengths of the candidates for these positions.

On January 14, 2005, the board of directors of August Technology met with Fredrikson & Byron to review the status of the due diligence process, integration planning and negotiation of the merger agreement with respect to the proposed transaction with Nanometrics. The August Technology board of directors concluded that more progress on integration planning was necessary before execution of the merger agreement. Representatives of Fredrikson & Byron reviewed with the board of directors the terms of the draft merger agreement and discussed the board of directors fiduciary duties with respect to its consideration of the proposed merger.

On January 17, 2005, the Nanometrics board of directors convened a special meeting that was attended by representatives of Adams Harkness and Wilson Sonsini Goodrich & Rosati, Professional Corporation. During this meeting, a representative of Adams Harkness provided the Nanometrics board of directors with a summary of the current business combination proposal, including information on the proposed exchange ratio. A representative of Adams Harkness then reviewed certain aspects of the proposed business combination. The representatives also summarized Adams Harkness preliminary financial analysis of the business combination based on the proposed exchange ratio described above, after which the Nanometrics board of directors discussed

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the proposal. Thereafter, a representative of Wilson Sonsini Goodrich & Rosati, Professional Corporation, reviewed the terms of the draft merger agreement with the Nanometrics board of directors.

On January 17, 2005, Messrs. O Dell and Heaton met at August Technology s headquarters with an integration consultant and various members of August Technology management to discuss integration planning and specifically management structure for the combined organization.

On January 19, 2005, the parties legal counsel continued negotiations on the draft merger agreement for the proposed business combination throughout the day. Wilson Sonsini Goodrich & Rosati, Professional Corporation, then distributed to the Nanometrics board of directors a revised draft of the merger agreement, reflecting the then-current state of negotiations, and a summary of their legal due diligence process and findings.

On January 19, 2005, the Nanometrics board of directors convened a special meeting. Nanometrics management provided the Nanometrics board of directors with a summary of discussions with August Technology that had taken place since the January 17, 2005 board of directors meeting and Adams Harkness reviewed its updated preliminary financial analyses of the proposed business combination based on a range of proposed exchange ratios. Representatives of Wilson Sonsini Goodrich & Rosati, Professional Corporation, reviewed the proposed merger agreement and provided a summary of the progress in negotiating its definitive terms. The representatives of Wilson Sonsini Goodrich & Rosati, Professional Corporation, also reviewed for the board of directors Nanometrics due diligence review of August Technology. The board of directors, after thorough discussion and review, authorized management to continue to work toward finalizing the merger agreement.

On the afternoon of January 19, 2005, Nanometrics legal counsel delivered a revised draft of the merger agreement to August Technology s legal counsel. The parties legal counsel then continued negotiations on the draft merger agreement throughout the day and into the evening.

On January 19, 2005, August Technology received the following letter from KLA-Tencor Corporation:

January 18, 2005

Mr. David Klenk

President

August Technology

4900 West 78th Street

Dear Mr. Klenk:

I am writing to express our disappointment with the written response that we received from you on December 21, 2004. As you know, KLA Tencor has for some time studied the possibility of a strategic business combination with August Technology. We have the highest regard for your company and employees and are convinced that the strategic, operational and financial merits of a combination are compelling and will provide significant benefits to customers and employees, as well as compelling value to August shareholders.

Following our prior correspondence of December 17, 2004, I had a chance to speak with Michael Wright, who indicated that our valuation range previously set forth was not perceived as warranting further discussions with us. Based on our work to date, which has been limited to public sources, we proposed to acquire August Technology for up to $12 per share in cash, which now represents a 31% premium to market. We are prepared to consider a higher valuation range than set forth in our prior letter and would require a brief period of high level due diligence, principally in the areas of financial, operational and customer aspects of August Technology, in order to do so. KLA Tencor is prepared to consider using stock for some or all of the transaction consideration if that would be attractive to August Technology. Our team can be in Minnesota at your convenience to begin a due diligence review.

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To reiterate, we are committed to moving forward with discussions and due diligence to reach a mutually agreeable transaction, an action supported by KLA Tencor s Executives and Board. To this end, we would appreciate hearing from you no later than January 24, 2005 and we have asked our financial advisors to also contact your representative at Needham and Co. in order to move forward expeditiously.

Sincerely yours,

/s/ KENNETH SCHROEDER
Ken Schroeder

President, Chief Executive Officer

KLA Tencor

cc: James Bernards

Roger Gower

Linda Hall Whitman

Jeff O Dell

Michael Wright

On January 19, 2005, the board of directors of August Technology met with representatives of Fredrikson & Byron and Needham & Company to discuss the letter from KLA-Tencor and the proposed business combination with Nanometrics. The August Technology board of directors considered the references to up to $12 cash price and the potential for a higher valuation range as compared to the opportunities presented by the proposed merger with Nanometrics. The board of directors also considered August Technology s obligations under the mutual confidentiality agreement with Nanometrics. Because the mutual confidentiality agreement prohibited August Technology from entering into discussions with KLA-Tencor and because the August Technology board of directors, with the advice of its financial advisors, believed that the proposed merger with Nanometrics provided a greater opportunity for growth in value than the preliminary proposal from KLA-Tencor, the August Technology board of directors concluded that it would reject the KLA-Tencor proposal and continue with negotiations regarding the merger with Nanometrics.

At the January 19, 2005 meeting, the August Technology board of directors also discussed with its financial advisors the proposed terms of the Nanometrics merger in light of trends in the trading prices of August Technology and Nanometrics common stock. The August Technology board of directors determined, based on the advice of its financial advisor, to propose to Nanometrics that the percentage of fully-diluted shares of the combined company allocated to August Technology shareholders should be increased from 45% to 46.5%, corresponding to an exchange ratio of 0.6401 of a share of the combined company s common stock for each share of August Technology common stock. The position of the August Technology board of directors was communicated by Mr. O Dell to Mr. Heaton during the course of the August Technology board of directors meeting. Representatives of Needham & Company reviewed with the August Technology board of directors its preliminary financial analysis of such a proposed transaction. Representatives of Fredrikson & Byron reviewed the terms of the draft merger agreement, including unresolved issues still subject to negotiation, and the status of Fredrikson & Byron s due diligence review of Nanometrics.

On January 20, 2005, Messrs. Heaton and O Dell discussed via teleconference the remaining open issue on the draft merger agreement, the proposal to increase the exchange ratio. They agreed to an exchange ratio of 0.6401, which would result in Nanometrics shareholders owning

53.5% of the fully-diluted shares of the combined company.

On January 20, 2005, the Nanometrics board of directors convened a special meeting to consider approval of the merger agreement. Prior to the meeting, the members of the Nanometrics board of directors were provided with a substantially final draft of the merger agreement. During the meeting, representatives of Wilson Sonsini

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Goodrich & Rosati, Professional Corporation, advised the directors of their fiduciary duties in considering the business combination and described the structure of the August merger and the provisions of the merger agreement. Representatives of Adams Harkness presented their financial analyses of the business combination and delivered Adams Harkness oral opinion, subsequently confirmed in writing that, as of January 20, 2005 and based upon and subject to the factors and assumptions set forth in its written fairness opinion, the exchange ratio for the August merger is fair from a financial point of view to Nanometrics shareholders. Following a discussion, the Nanometrics board of directors unanimously determined that the merger was advisable, and fair to and in the best interests of Nanometrics and its shareholders, approved the August merger agreement and the proposed merger and resolved to recommend that the Nanometrics shareholders vote to approve the issuance of shares of August Nanometrics common stock in the August merger. Thereafter, legal counsel for both Nanometrics and August Technology continued to work to finalize the merger agreement.

On January 20, 2005, the August Technology board of directors met to approve the proposed merger agreement and related transactions. During the meeting, representatives of Fredrikson & Byron advised the directors of their fiduciary duties with respect to the proposed transaction and discussed with the board of directors the structure of the transaction and the provisions of the merger agreement. In connection with the approval, the August Technology board of directors formed a committee consisting of all of the non-employee directors of August Technology to consider the merger agreement and related transactions for purposes of the business combination statute of the Minnesota Business Corporation Act. Representatives of Needham & Company then reviewed their financial analysis of the business combination and delivered its opinion to the August Technology board of directors that, as of January 20, 2005, and based upon and subject to the assumptions and other matters described in the written opinion delivered to the August Technology board of directors, the exchange ratio pursuant to the proposed merger agreement was fair to the holders of August Technology common stock from a financial point of view. After a discussion, the August Technology special committee approved the proposed merger agreement and related transactions and recommended that the full August Technology board of directors approve the merger agreement and the related transactions. The full August Technology board of directors then also approved the merger agreement and the related transactions.

Following the meetings of the board of directors of each of Nanometrics and August Technology, and prior to the beginning of trading on the Nasdaq National Market, Nanometrics and August Technology executed the merger agreement as of January 21, 2005. On the morning of January 21, 2005, Nanometrics and August Technology issued a joint press release announcing the execution of the merger agreement and describing the August merger.

On January 27, 2005, Mr. O Dell received the following letter from Paul F. McLaughlin, Chairman and Chief Executive Officer of Rudolph Technologies, Inc:

January 27, 2005

Mr. Jeff L. O Dell

Chairman and Chief Executive Officer

August Technology Corporation

4900 West 78th Street

Bloomington, MN 55435

Dear Jeff:

You and I have from time to time discussed how a combination of Rudolph and August would make compelling business sense. Most recently, on January 20th, in an e-mail to you I again reiterated our belief that the business reasons are more compelling than ever and suggested we meet. Despite your recent announcement of an agreement with Nanometrics, we at Rudolph continue to believe that a combination of August with Rudolph remains a much more compelling transaction and therefore we make the following offer.

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Rudolph is prepared to enter into a merger with August based on a share exchange ratio of 0.6239 share of Rudolph stock for each share of August common stock (equivalent to $10.50 per share of August stock, based on the closing price of Rudolph stock on January 27, 2005). Each August shareholder may elect to receive all cash, stock, or a combination of cash and stock, subject to proration based on the total cash consideration of $40 million and shares available in the merger. This reflects an aggregate purchase price of over $185 million. We are prepared to meet with you as early as tomorrow and to move expeditiously to close the transaction.

We are also prepared to enter into a customary and reasonable confidentiality agreement no less favorable to August than the one between August and Nanometrics.

Together, as an integrated company we believe that improvements in operating performance, business creation opportunities and other combination benefits will generate enormous value for the shareholders of both companies. This offer enables August shareholders to realize a substantial premium over market for their shares as well as the potential for further value through continued ownership in the combined company.

The Board of Rudolph has unanimously approved this offer, and has unanimously authorized us to proceed. We look forward to meeting with you as soon as possible to discuss our offer in detail and to achieve a prompt definitive agreement.

Very truly yours,

/s/ PAUL F. MCLAUGHLIN
Paul F. McLaughlin

Chairman and Chief Executive Officer

cc: James Bernards

Roger Gower

Michael Wright

Linda Hall Whitman

John Vasuta, Esq.

Pursuant to its obligations under the merger agreement with Nanometrics, August Technology delivered a copy of the letter to Nanometrics.

Also on January 27, 2005, Rudolph issued a press release with proposed terms slightly different from those described in the letter. The first two paragraphs of the press release stated as follows:

Rudolph Technologies Announces Merger Offer for August Technology

January 27, 2005 6:42 p.m.

FLANDERS, N.J., Jan. 27/PRNewswire-First Call/ Rudolph Technologies, Inc. (Nasdaq: RTEC) a leading provider of process control equipment for thin film measurement and macro defect inspection announced today that it has made a merger offer to the Board of Directors of August Technology Corporation (Nasdaq: AUGT).

Rudolph advised the Board of August today that Rudolph is prepared to enter into a merger with August whereby each shareholder of August will receive the value of $2.16 per share in cash and 0.4955 a share in Rudolph common stock (equivalent to $10.50 per share of August stock, based on the closing price of Rudolph stock on January 27, 2005). The offer would include the option for each August shareholder to elect to receive all cash, stock, or a combination of cash and stock, subject to proration based on the total cash consideration of $40 million and shares available in the merger. This reflects an aggregate purchase price of over $190 million. Rudolph advised the August Board that Rudolph is prepared to meet with August as early as tomorrow and to move expeditiously to close the offering. Rudolph is prepared to close the transaction in the second quarter of 2005.

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On January 28, 2005, the August Technology board of directors met with representatives of Needham & Company and Fredrikson & Byron to discuss the proposal from Rudolph. Representatives of Fredrikson & Byron reviewed with the board of directors the requirements under the merger agreement with Nanometrics that must be satisfied before any discussion or negotiations with Rudolph would be permitted. The board of directors acknowledged that it did not have sufficient information to make accurate projections about the potential operations of Rudolph and August Technology as a combined entity, and that a thorough analysis required information that could be obtained only through a cooperative due diligence process. The board of directors agreed, therefore, that based on the advice of its financial advisors and legal counsel, it would further examine the Rudolph offer provided that Rudolph first executes a confidentiality agreement in the form required by the merger agreement with Nanometrics. On April 4, 2005, August Technology and Rudolph entered into a confidentiality agreement and are currently engaged in discussions and exchanging information with respect to Rudolph s offer. August Technology remains subject to the January 21, 2005 merger agreement with Nanometrics and is conducting the discussions with Rudolph as permitted by the terms of the merger agreement.

Analysis of Rudolph Offer

On February 4, 2005, the board of directors of August Technology met with representatives of Needham & Company and Fredrikson & Byron to further discuss the proposal from Rudolph. Representatives of Fredrikson & Byron discussed with the board of directors its fiduciary duties with respect to the offer and the provisions of the merger agreement with Nanometrics with respect to August Technology s ability to enter into discussions with third party bidders such as Rudolph. Representatives of Needham & Company presented a financial analysis comparing estimates of the equity value per share of August Technology common stock achievable by the end of 2006, first assuming the August merger with Nanometrics and then assuming a merger with Rudolph.

For the analysis assuming the August merger with Nanometrics, Needham & Company used projected 2005 and 2006 financial statements provided by the respective managements of August Technology and Nanometrics and revenue synergies jointly developed by management of August Technology and Nanometrics in connection with their examination of the proposed merger. Both August Technology and Nanometrics anticipate substantial growth in net revenues during 2005 and 2006, based on past growth trends, market acceptance of new products and opportunities that they have identified in their markets. In addition, each of August Technology and Nanometrics believe that net revenues by the combined company in 2006 can be increased by approximately $9 million by cross selling the other party s products to its customers. This estimate assumes that Nanometrics greater market presence in the front end of the semiconductor manufacturing process will enable the combined company to expand sales of August inspection equipment to front end customers. Similarly, the estimate assumes that the combined company will be able to expand sales of Nanometrics metrology products to existing August customers. Each of August Technology and Nanometrics also believes that 2006 operating expenses can be decreased by approximately $7.75 million largely through efficiencies of scale and elimination of overlapping functions. For example, selling, general and administrative expenses are anticipated to decrease by $6 million and research and development expenses are anticipated to decrease by $1.75 million. The amount of these expense savings was estimated by determining Nanometrics expenses as a percentage of Nanometrics annual revenues and applying these percentages against the estimated revenues of the combined company. August Technology and Nanometrics based these estimates on the assumption that the combined company would be able to maintain expenses at the same percentage of revenues as currently achieved by the Nanometrics business model.

Based on estimated 2006 revenues for August Technology and Nanometrics aggregating $236.5 million and assuming synergies that increase revenues by $9 million and decrease expenses (through the application of the Nanometrics business model as described above) by $7.75 million (the middle of the range of synergies presented), pro forma 2006 earnings for August Nanometrics were estimated at $2.14 per share of August Nanometrics stock. Based on an assumed price/earnings multiple of 20, this estimate converted to a projected value of $42.77 per share of August Nanometrics common stock achievable by the end of 2006. Using the exchange ratio of 0.6401 of a share of August Nanometrics common stock for each share of August Technology common stock, this converts to a projected equity value of $27.38 for each share of August Technology common stock achievable by the end of 2006.

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For the analysis assuming a merger with Rudolph, Needham & Company used Rudolph s publicly announced proposal for a merger resulting in August Technology shareholders receiving $2.16 in cash and 0.4955 of a share of Rudolph common stock for each share of August Technology common stock. Needham & Company s analysis used projected financial statements for 2005 and 2006 provided by management of August Technology and projections for Rudolph published by a market analyst that regularly follows Rudolph with estimates consistent with consensus estimates of twelve analysts providing research and estimates on Rudolph stock. Consensus estimates were not used because they only include revenue and earnings per share information. Needham & Company used synergies estimated by August Technology s management, including an assumption that net revenues of the combined company will be less than the sum of the projected net revenues of the separate companies. August Technology management believes that market demand is insufficient to allow both August Technology and Rudolph to achieve their projections, particularly since August Technology and Rudolph sell competing products to the same customers. Assuming negative synergies resulting in loss of net revenues of $24 million and positive synergies that decrease cost of goods sold by $10.6 million and other expenses by $4 million (the middle of the range of synergies presented), pro forma 2006 earnings for the combined entity were estimated at $0.84 per share of combined company stock. Based on an assumed price/earnings multiple of 20, this estimate converted to a projected equity value of $16.89 per share of combined company stock. Using the proposed merger consideration of $2.16 and 0.4955 of a share of Rudolph stock for each share of August Technology common stock, this converts to a projected equity value of $10.53 for each share of August Technology common stock achievable by the end of 2006.

On February 9, 2005, Mr. O Dell received the following letter from Kenneth Schroeder, President and Chief Executive Officer of KLA-Tencor Corporation:

PERSONAL AND CONFIDENTIAL February 8, 2005

Mr. Jeff O Dell

Chairman & CEO

August Technology

4900 West 78th Street

Bloomington, MN 55435

Dear Mr. O Dell:

I am writing to reiterate KLA-Tencor s interest in pursuing a merger with August Technology. As I have expressed in the past, we have the highest regard for August and its employees, and believe that the combination of our two organizations would create a global leader in the process control market. Further, we are convinced that the strategic, operational and financial merits of such a combination are quite compelling and would provide significant benefits to customers and employees, as well as offer a very compelling value proposition to August shareholders.

Following the communications that we have had with your advisors and board members over the past few months, we were disappointed to hear of your decision to enter into a transaction with Nanometrics. We believe that KLA-Tencor is a significantly more compelling merger partner for August and is able to bring a much broader sales and service infrastructure to support the August products and customers than what is possible with Nanometrics.

As our financial advisor indicated to your financial advisor in December and I subsequently reconfirmed to you in my letter dated January 18, we would propose to acquire August in a transaction in which the August shareholders would receive $11.50 in cash per share. We would also be willing to consider using stock as consideration if that would be attractive to you. We believe our offer, which translates to a 34% premium to the value implied by the agreement between August and Nanometrics and a 13% premium to the value implied by the proposal by Rudolph, represents an extremely attractive opportunity for your shareholders. We would propose to finance the transaction through our existing cash balance and thus would not require any contingency or delay traditionally associated with capital raising.

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We are also very interested in retaining key August Technology employees and would like the opportunity to discuss with you ways to ensure a seamless transition.

We and our financial and legal advisors are prepared to proceed expeditiously and are confident that our due diligence, with your cooperation, can be completed in a short period of time. We hope that you and your Board will give our proposal prompt and serious consideration.

Sincerely yours,

/s/ Kenneth Schroeder

Kenneth Schroeder

President and Chief Executive Officer

cc: Michael Wright, Linda Whitman, James Bernards, Roger Gower

Pursuant to its obligations under the merger agreement with Nanometrics, August Technology sent a copy of the letter to Nanometrics.

The August Technology board of directors held a meeting on February 9, 2005 to discuss the letter from KLA. Representatives of Needham & Company, Fredrikson & Byron and the law firm of Wachtell, Lipton, Rosen & Katz participated in the meeting. Legal counsel discussed with the board of directors its fiduciary duties with respect to the offer and the contractual obligations under the merger agreement with Nanometrics. Representatives of Needham & Company agreed to prepare a financial analysis for presentation to the board of directors on February 11, 2005.

Analysis of KLA Offer

On February 11, 2005, the August Technology board of directors held a meeting to review the financial analysis of Needham & Company with respect to the offer from KLA. Representatives of Needham & Company presented a financial analysis to the board of directors similar in format to the presentation made at the February 4, 2005 meeting, comparing estimates of the equity value per share of August Technology common stock achievable by the end of 2006, first assuming the August merger with Nanometrics, then assuming a merger with Rudolph, and then assuming a merger with KLA.

For the analysis assuming the August merger with Nanometrics, Needham & Company presented the same analysis that is discussed above with respect to the February 4, 2005 board of directors meeting, except that pro forma 2006 earnings for the combined August Nanometrics were estimated at $2.13 per share of August Nanometrics common stock instead of $2.14, due to changes in market prices in the intervening period that increased estimated amortization expense. Based on an assumed price/earnings multiple of 20, this estimate converted to a projected value of $42.63 per share of August Nanometrics common stock achievable by the end of 2006. Using the exchange ratio of 0.6401 of a share of August Nanometrics common stock for each share of August Technology common stock, this converts to a projected equity value of $27.28 for each share of August Technology common stock achievable by the end of 2006.

For the analysis assuming a merger with Rudolph, Needham & Company presented the same analysis that is discussed above with respect to the February 4, 2005 board of directors meeting, except that pro forma 2006 earnings for the combined entity were estimated at $0.82 per share of combined company stock instead of $0.84 due to changes in market prices in the intervening period that increased estimated amortization expense. Based on an assumed price/earnings multiple of 20, this estimate converted to a projected equity value of $16.34 per share of combined company stock. Using the proposed merger consideration of $2.16 and 0.4955 of a share of Rudolph stock for each share of August Technology common stock, this converts to a projected equity value of $10.25 for each share of August Technology common stock achievable by the end of 2006.

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In order to evaluate KLA s suggestion that it was willing to use its common stock instead of cash in its proposed transaction, the August Technology board of directors requested that Needham & Company prepare an analysis of a stock-for-stock merger designed to deliver value, based on current market prices, of $11.50 per share of August Technology common stock. Based on the closing price of KLA common stock on February 10, 2005, an exchange ratio of 0.23998 of a share of KLA common stock would be equivalent to $11.50. For the analysis assuming such a merger with KLA, Needham & Company used projected financial statements for 2005 and 2006 provided by management of August Technology and projections for KLA published by John Pitzer, a market analyst at Credit Suisse First Boston who regularly follows KLA with estimates within the range of the consensus estimates. Consensus estimates were not used because they include only revenue and earnings per share information.

The pro forma income statements presented in Needham & Company s analysis included the assumptions made by management of August Technology with respect to cost synergies resulting from the merger. Because KLA is significantly larger than August Technology, management of August Technology assumed that all of August Technology s selling, general and administrative expense would be eliminated and that August Technology s research and development expense would be reduced by approximately $8 million. Because revenues for KLA are so much larger than revenue for August Technology, management of August Technology assumed that the acquisition of August Technology would have no material impact on KLA s operations. The combined revenue was therefore estimated by August Technology management as the sum of the 2006 projections for KLA and August Technology without revenue synergies. Assuming synergies that decrease expenses by $35.3 million (the middle of the range of synergies presented) and assuming all shares of August Technology common stock were converted to KLA shares with no cash payment, pro forma 2006 earnings for the combined entity were estimated at $1.96 per share of combined company stock. Because KLA has historically traded at a higher multiple than August Technology or Rudolph, a price/earnings multiple of 23 was assumed, resulting in a projected equity value of $45.11 per share of combined company stock achievable at the end of 2006. Using an exchange ratio of 0.23998 of a share of KLA stock (implied from the $11.50 per share offer) for each share of August Technology common stock, this converts to a projected equity value of $10.83 for each share of August Technology common stock achievable by the end of 2006.

Based on this financial analysis, Needham & Company recommended that August Technology continue to pursue the completion of the Nanometrics merger because it appears to have the highest long-term value based on the analysis, assumptions and projections described above. Needham & Company noted, however, that the analysis of the August merger was based upon August Technology and Nanometrics management estimates developed after extensive due diligence while the analyses of the Rudolph and KLA merger proposals were based in part upon research analyst estimates and August Technology management estimates of synergies and cost savings that were made without the benefit of extensive due diligence. Legal counsel recommended that August Technology perform due diligence with Rudolph and KLA only if they sign confidentiality agreements that comply with the requirements of the merger agreement with Nanometrics so as to avoid jeopardizing the merger with Nanometrics. The August Technology board concluded that it should further examine both the Rudolph and the KLA proposals provided that each of Rudolph and KLA execute a confidentiality agreement as required by the merger agreement with Nanometrics. On April 4, 2005, August Technology and Rudolph entered into a confidentiality agreement and are currently engaged in discussions and exchanging information with respect to Rudolph s offer. August Technology remains subject to the January 21, 2005 merger agreement with Nanometrics and is conducting the discussions with Rudolph as permitted by the terms of the merger agreement. KLA and August Technology have been unable to reach agreement on the form of confidentiality agreement.

In connection with its review of the advice and analysis presented by Needham & Company, the August Technology board of directors considered the fact that a substantial portion of Needham & Company s financial advisory fee is contingent on the closing of a transaction. The board did not believe that this fact influenced Needham & Company s conclusions regarding its advice to the board, due in part to the apparent objectivity of Needham & Company s analysis using assumptions prepared by management and well-accepted methods of analysis. In addition, the board noted that Needham & Company would receive a fee in the event a transaction were completed with a party other than Nanometrics, and if the overall value of that transaction were greater, Needham & Company would receive a higher fee.

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In performing the analyses presented to August Technology s board on February 4th and February 11th, Needham & Company made numerous assumptions with respect to performance of August Technology, Rudolph and KLA as well as industry performance, general business, economic and market financial conditions and other matters, many of which are beyond the control of Needham & Company, August Technology, Rudolph and KLA. The revenue projections of August Technology and Nanometrics used by Needham & Company in its analysis were prepared by August Technology and Nanometrics, respectively, in good faith, but may not be achieved. Needham & Company relied upon the estimates of August Technology of the potential cost savings and other synergies to be derived through the application of the Nanometrics business model, including the amount and timing thereof, that may be achieved as a result of the merger proposals analyzed. Needham & Company also assumed that the research analyst projections relating to Rudolph and KLA represent reasonable estimates as to the future performance of those companies. Any projections or estimates contained in the analyses by Needham & Company are not necessarily indicative of actual values or future results, which may be significantly more or less favorable than suggested by such analyses. Additionally, the estimates of the future value of securities do not purport to be appraisals or to reflect the value at which such securities might actually be sold. Accordingly, such analyses, projections and estimates are inherently subject to substantial risks and uncertainty, including without limitation the risks set forth in the section of this joint proxy statement/prospectus entitled *Risk Factors* beginning on page 34.

On March 15, 2005, August Technology received notification of early termination of the waiting period under the HSR Act applicable to the August merger. Termination or expiration of this waiting period is a condition to the August merger.

In addition, the Department of Justice has notified August Technology that it has commenced an investigation into the competitive aspects of the offers submitted to August Technology by Rudolph and KLA. In connection with this investigation, the Department of Justice has conducted interviews with senior executives of August Technology and requested that August Technology provide documents and information regarding its products and the markets in which they compete. August Technology understands that the Department of Justice has contacted and requested information from others in connection with this investigation as well. No further information regarding the timing or scope of the investigation was made available to August Technology. August Technology and Nanometrics do not anticipate that this investigation will affect the completion of the August merger. If August Technology were to proceed with a transaction with Rudolph or KLA, it would be subject to pre-merger notification requirements under the HSR Act.

The August Technology board of directors does not currently intend to request an additional fairness opinion from Needham & Company that updates the analysis provided with its original January 20, 2005 fairness opinion as of a more current date. The August Technology board has worked closely with Needham & Company and August Technology management in connection with its consideration of the August merger and the unsolicited acquisition proposals from Rudolph and KLA as described above. In view of the analysis undertaken and the circumstances as of the date hereof, the material aspects of which are described in this joint proxy statement/prospectus, the board of August Technology does not believe an additional or updated fairness opinion would add substantive information to its analysis. New developments may cause the board to change its conclusion, however, and seek an additional or updated fairness opinion.

Joint Reasons for the August Merger

The boards of directors of Nanometrics and August Technology believe that by combining the highly complementary, non-overlapping product lines of the two companies, August Nanometrics can generate improved long-term operating and financial results and establish a stronger competitive position in the industry. By offering customers an enhanced suite of integrated metrology and defect inspection products, supported by an extensive, well-trained staff of service and applications engineers, August Nanometrics would be better able to service its customers and improve their return on investment. The August merger is expected to allow August Nanometrics to eliminate duplicative research and development efforts related to components parts and assemblies common to both metrology and defect inspection products and to redeploy these resources to other research and development

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activities. Additionally, Nanometrics and August Technology believe that the August merger will enhance the ability of August Nanometrics to compete effectively against their larger competitors, including KLA-Tencor and Rudolph Technologies. By creating efficiencies that increase technological development, Nanometrics and August Technology believe that the August merger will greatly enhance the ability of August Nanometrics to be a stronger competitor in the highly dynamic markets for metrology and inspection products.

Each of the boards of directors of Nanometrics and August Technology has identified additional potential mutual benefits of the August merger that they believe will contribute to the success of August Nanometrics. These potential benefits include principally the following:

- The combination of August Technology s defect inspection technology with Nanometrics metrology products will allow August Nanometrics to offer a more comprehensive and better integrated set of tools to its customers and enhance its ability to compete more effectively.

- August Nanometrics is expected to have greater prominence within the financial community providing increased access to capital.

- The direct sales and service presence of August Nanometrics in the important Japanese semiconductor manufacturing market may increase opportunities for product orders.

- The creation of a larger sales and service organization worldwide, the expansion of the companies dedicated sales teams and a higher profile with customers and would present greater opportunities for marketing the products of August Nanometrics.

- The combined experience, financial resources, development expertise, size and breadth of product offerings of August Nanometrics may allow it to respond more quickly and effectively to technological change, increased consolidation and industry demands.

- The creation of a combined customer service and technical support system may permit August Nanometrics to provide more effective support coverage to its customers and make it more attractive to new customers.

- The management team will combine experience in both the defect inspection and metrology markets, as well as access to other areas of the semiconductor equipment manufacturing sector.

- The combination may allow August Nanometrics to sell more products to customers in the flat-panel display and biotechnology industries.

- August Nanometrics can benefit by sharing knowledge of precision staging and standalone platform systems.

Nanometrics and August Technology have each identified additional reasons for the August merger, which are discussed in the sections of this joint proxy statement/prospectus entitled *Additional Nanometrics Reasons for the August Merger* and *Additional August Technology Reasons for the August Merger* beginning on pages 91 and 102, respectively. Each board of directors has recognized that the potential benefits of the August merger may not be realized. See the section of this joint proxy statement/prospectus entitled *Risk Factors* beginning on page 34.

Additional Nanometrics Reasons for the August Merger

In addition to the anticipated joint reasons described above under the section of this joint proxy statement/prospectus entitled *Joint Reasons for the August Merger* beginning on page 90, the Nanometrics board of directors believes that the following are additional reasons the August merger will be beneficial to Nanometrics and its shareholders:

- Given the complementary, non-overlapping nature of the product lines of Nanometrics and August Technology, the August merger will enhance Nanometrics ability to achieve greater scale and presence in the semiconductor equipment industry.

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Combining with August Technology would provide an opportunity for increased sales to and support of current Nanometrics and August Technology customers by offering a more integrated and broader product line.

The Nanometrics shareholders would have the opportunity to participate in the potential for growth of August Nanometrics after the August merger.

The Nanometrics board of directors believes there are substantial benefits to Nanometrics and the Nanometrics shareholders that can be obtained as a result of the August merger. If the August merger is completed, the Nanometrics board of directors believes that August Nanometrics will be a leader in both metrology and macro defect inspection. At a meeting held on January 20, 2005, the Nanometrics board of directors unanimously determined that the August merger and the other transactions contemplated by the merger agreement, including the issuance of shares of August Nanometrics common stock in the August merger, are advisable and in the best interests of Nanometrics and the Nanometrics shareholders. Therefore, the Nanometrics board of directors unanimously resolved to recommend that the Nanometrics shareholders approve the issuance of shares of August Nanometrics common stock in the August merger.

The Nanometrics board of directors consulted with Nanometrics senior management as well as its legal counsel, Wilson Sonsini Goodrich & Rosati, Professional Corporation, and its financial advisor, Adams Harkness, Inc., in reaching its decisions to approve the merger agreement and the transactions contemplated by the merger agreement, and unanimously recommends that Nanometrics shareholders vote to approve the issuance of shares of August Nanometrics common stock in the August merger. Particularly persuasive among the factors considered by the Nanometrics board of directors in its deliberations were the reasons for the August merger described in the section of this joint proxy statement/ prospectus entitled *Joint Reasons for the August Merger* beginning on page 90. The Nanometrics board of directors also considered each of the following factors in its deliberations:

information concerning the financial performance, financial condition, business and prospects of Nanometrics and August Technology, as well as conditions in the semiconductor equipment industry generally;

information concerning the recent and past stock price performance of Nanometrics and August Technology common stock, as well as the views of Wall Street equity analysts regarding the two companies;

the prices paid in comparable transactions involving other semiconductor manufacturing equipment companies, as well as the trading performance of the stock of comparable companies in the industry;

the stock-based merger consideration, which preserves the financial strength of the combined company for continued business investment;

the fixed exchange ratio consideration amount, which provide a level of certainty as to the aggregate number of shares of August Nanometrics common stock to be issued to August Technology shareholders and the percentage of the total shares of August Nanometrics common stock that current August Technology shareholders will own after the August merger;

the provisions that prohibit August Technology from soliciting other acquisition offers;

the conditions to completion of the August merger, in particular the likelihood of obtaining the necessary regulatory and shareholder approvals;

the provisions that require August Technology to pay Nanometrics expenses and a termination fee of $8.3 million, plus expenses, if the merger agreement is terminated for specified reasons;

an assessment of alternatives to the August merger, including development opportunities and other possible acquisition candidates, and the determination that the merger with August Technology was the best strategic fit and presented a unique opportunity to enhance and expand Nanometrics operations, product and service offerings and best positioned August Nanometrics for future growth; and

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the written opinion of Adams Harkness dated January 20, 2005, that, as of that date, and based upon and subject to the considerations described in its opinion, the full text of which is attached to this joint proxy statement/prospectus as Annex C, the exchange ratio used in the merger consideration was fair from a financial point of view to Nanometrics shareholders.

The Nanometrics board of directors also considered a variety of uncertainties and risks in its deliberations concerning the August merger. However, the Nanometrics board of directors concluded that the potential benefits of the August merger outweighed these risks, which include, without limitation:

the risk that the potential benefits sought in the August merger might not be fully realized;

the possibility that the August merger might not be completed, or that completion might be unduly delayed, for reasons beyond Nanometrics control;

the possibility that the August merger might not be completed and that, in certain circumstances, Nanometrics might be required to pay August Technology a termination fee of $8.3 million, plus expenses;

the effect of the public announcement of the August merger on Nanometrics and August Technology s respective stock prices;

the potential dilution of Nanometrics earnings per share as a result of the issuance of the shares in the August merger, and the estimated time period for the August merger to be accretive to Nanometrics earnings per share;

the risk that efforts to integrate the two companies will disrupt August Nanometrics operations;

the substantial costs to be incurred in connection with the August merger, including the costs of integrating the businesses of Nanometrics and August Technology and the transaction expenses arising from the August merger;

the risk that, despite Nanometrics efforts and the efforts of August Technology after the August merger, August Nanometrics may lose key personnel;

the risk that the restrictions on the conduct of Nanometrics business during the period between the signing of the August merger agreement and the completion of the August merger may negatively impact Nanometrics business; and

the other risks described in the section of this joint proxy statement/prospectus entitled *Risk Factors Risks Relating to the August Merger* beginning on page 34.

It was not practical to, and thus the Nanometrics board of directors did not, quantify, rank or otherwise assign relative weights to the wide variety of factors it considered in evaluating the August merger and the merger agreement, nor did the board of directors determine that any one factor was of particular importance in deciding that the merger agreement and associated transactions were in the best interests of Nanometrics and its shareholders. This discussion of information and material factors considered by the Nanometrics board of directors is intended to be a summary rather than an exhaustive list. In considering these factors, individual members of the Nanometrics board of directors may have given different weight to different factors. The board of directors conducted an overall analysis of the factors described above, and overall considered the factors to support its decision in favor of the August merger and the merger agreement. The decision of each member of the Nanometrics board of directors was based upon his or her own judgment, in light of all of the information presented, regarding the overall effect of the merger

agreement and associated transactions on the Nanometrics shareholders as compared to any potential alternative transactions or courses of action. After considering this information, the members of the Nanometrics board of directors unanimously approved the merger agreement and the transactions contemplated by the merger agreement, including the issuance of shares of August Nanometrics common stock in the August merger and recommended that the Nanometrics shareholders approve the issuance of shares of August Nanometrics common stock in the August merger.

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Recommendation of the Nanometrics Board of Directors Regarding the August Merger

After careful consideration, the Nanometrics board of directors determined that the August merger is advisable, and is fair to and in the best interests of Nanometrics and its shareholders, and unanimously approved the merger agreement and the transactions contemplated by the merger agreement.

The Nanometrics board of directors unanimously recommends that the Nanometrics shareholders vote FOR Nanometrics proposal to approve the issuance of shares of August Nanometrics common stock in the August merger.

Opinion of Nanometrics Financial Advisor Regarding the August Merger

Adams Harkness has acted as financial advisor to Nanometrics, pursuant to an engagement letter dated December 9, 2004. Nanometrics board of directors selected Adams Harkness as its financial advisor after consideration of several firms based on Adams Harkness qualifications, expertise and reputation in mergers and acquisitions as well as Adams Harkness familiarity with similarly situated technology companies. In connection with Adams Harkness engagement, Nanometrics requested that Adams Harkness deliver an opinion evaluating the fairness, from a financial point of view, to the holders of Nanometrics common stock of the exchange ratio set forth in the merger agreement.

On January 20, 2005, in connection with the evaluation of the August merger by the board of directors of Nanometrics, Adams Harkness provided an oral opinion, which opinion was subsequently confirmed by delivery of a written opinion dated January 20, 2005, that, as of the date of such opinion (subject to and based upon the various qualifications and assumptions described herein and included in materials distributed to the board of directors), the exchange ratio, which was determined through arm s length negotiations between Nanometrics and August Technology and their financial advisors, was fair, from a financial point of view, to the holders of Nanometrics common stock. The full text of the opinion, which sets forth assumptions made, matters considered and limitations on the review undertaken in connection with the opinion, is attached as Annex C to this joint proxy statement/prospectus and is incorporated herein by reference. The opinion referred to herein does not constitute a recommendation as to how any shareholder of Nanometrics should vote with respect to the August merger or the reincorporation merger at the 2005 annual meeting of shareholders of Nanometrics. The description of the opinion is qualified in its entirety by reference to the full text of the opinion. Shareholders are urged to, and should, read the opinion in its entirety.

For purposes of developing its opinion, Adams Harkness, among other things:

- reviewed certain publicly available financial statements and other business and financial information of Nanometrics and August Technology, respectively, and assumed that there had been no material change in the assets, financial condition, business or prospects of Nanometrics or August Technology, at the time of the opinion since the respective dates of the most recent financial statements made available to it;

- reviewed certain internal financial statements and other financial and operating data concerning Nanometrics and August Technology prepared by the management teams of Nanometrics and August Technology, respectively;

- considered certain financial forecasts, projections and analyses and other forward-looking financial information prepared by the management teams of Nanometrics and August Technology, respectively, and assumed that the financial results reflected in such

forecasts, projections and analyses and other forward-looking financial information would be realized in the amounts and at the times projected;

discussed the past and current operations and financial condition, and the prospects of Nanometrics and August Technology, including information relating to strategic, financial and operational benefits anticipated from the August merger or the reincorporation merger, with senior executives of

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Nanometrics and August Technology, respectively, including discussions with such senior executives concerning cost savings and other synergies that were expected to result from the August merger or the reincorporation merger as well as their assessment of the strategic rationale for, and potential benefits of, the August merger or the reincorporation merger;

reviewed certain publicly available research estimates of research analysts regarding Nanometrics and August Technology, respectively;

reviewed the reported trading prices and trading activity for Nanometrics common stock and August Technology common stock, respectively, as well as publicly-available earnings estimates for Nanometrics and August Technology, respectively;

compared the financial performance of Nanometrics and August Technology and the trading prices and trading activity of Nanometrics common stock and August Technology common stock, respectively, with those of certain other publicly-traded companies and their securities that it deemed relevant;

reviewed the financial terms, to the extent publicly available, of certain acquisition and merger of equals transactions that it deemed relevant;

reviewed and analyzed the potential pro forma financial effects of the August merger and the reincorporation merger;

reviewed and analyzed the capitalization of Nanometrics and August Technology, respectively, as well as the projected pro forma capitalization of August Nanometrics after giving effect to the August merger and the reincorporation merger;

reviewed drafts of the merger agreement and certain related documentation, dated January 20, 2005, and the financial terms and conditions set forth therein, as well as the schedules thereto, and assumed that the final forms of the merger agreement and related documentation and the schedules thereto would not vary in any regard that is material to its analysis, and that the August merger and the reincorporation merger will be consummated in accordance with the terms thereof, including that in all respects material to its analysis, the representations and warranties made by the parties thereto are accurate and complete and the parties will comply with all of their covenants set forth therein; and

made such other studies and inquiries, and reviewed such other data, and considered such other factors as Adams Harkness deemed, in its sole judgment, to be necessary, appropriate or relevant.

In connection with its review and in arriving at its opinion, Adams Harkness did not independently verify any information received from Nanometrics or August Technology or their representatives or otherwise made available to it. Adams Harkness relied on such information, and assumed that all such information was complete and accurate in all material respects. Adams Harkness also relied on the representations of the respective management teams of Nanometrics and August Technology that they were not aware of any facts that would make such information misleading. With respect to any forecasts, projections, analyses and other forward-looking financial information reviewed by Adams Harkness relating to the prospects of Nanometrics and August Technology, respectively, including information relating to the strategic, financial and operational benefits anticipated from the August merger and the reincorporation merger, Adams Harkness assumed that such forecasts, projections and analyses and other forward-looking information had been reasonably prepared or developed on bases reflecting the best currently available estimates and judgments of the management teams of Nanometrics and August Technology, respectively. Adams Harkness did not conduct, nor did it receive copies of, any independent valuation or appraisal of any of the assets of Nanometrics or August Technology. Adams Harkness was not requested to conduct and did not conduct a physical inspection of the properties or facilities of Nanometrics or August Technology. Adams Harkness assumed that any material liabilities (contingent or otherwise, known or unknown) of Nanometrics and August Technology were as set forth in the historic and projected financial statements of each company, respectively. In addition, Adams Harkness did not make an independent evaluation or appraisal of August Nanometrics after the August merger and the reincorporation merger and accordingly, it expressed no opinion as to the future prospects, plans or viability of August

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Nanometrics after the August merger and the reincorporation merger. Adams Harkness made no independent investigation of any legal matters involving Nanometrics or August Technology, and assumed the correctness of all statements with respect to legal matters made or otherwise provided to the board of directors of Nanometrics and Adams Harkness by Nanometrics counsel or by August Technology s counsel.

Adams Harkness opinion was necessarily based on financial, economic and securities market conditions prevailing as of the date thereof, and on the conditions and prospects, financial and otherwise, of Nanometrics and August Technology as known to Adams Harkness on the date thereof. Adams Harkness also took into account its assessment of general economic, market and financial conditions and its experience in similar transactions, as well as its experience in securities valuation in general. It should be understood that (i) subsequent developments may affect the conclusions expressed in Adams Harkness opinion if it were to be rendered as of a later date, and (ii) Adams Harkness disclaimed any obligation to advise any person of any change in any matter affecting its opinion that may come to its attention after the date of the opinion. Adams Harkness did not undertake to reaffirm or revise its opinion or otherwise comment upon any events occurring after the delivery thereof and does not have any obligation to update, revise or reaffirm its opinion.

Adams Harkness also assumed that, in the course of obtaining necessary regulatory and third party approvals and consents for the August merger and the reincorporation merger, no modification, delay, limitation, restriction, or conditions will be imposed that will have an adverse effect on Nanometrics, August Technology, August Nanometrics or the contemplated benefits of the August merger and the reincorporation merger, and that the August merger and the reincorporation merger will be consummated in accordance with the terms of the merger agreement without waiver, modification or amendment of any material term, condition or agreement therein.

Adams Harkness opinion did not address the relative merits of the merger agreement, the August merger and the reincorporation merger or other business strategies that might be available to Nanometrics, the decision of the board of directors of Nanometrics to proceed with the merger agreement or the August merger and the reincorporation merger, or the prices at which (i) Nanometrics common stock would trade following the announcement of the merger agreement, or (ii) August Nanometrics common stock will trade following the consummation of the August merger and the reincorporation merger.

Adams Harkness used several methodologies to assess the fairness of the exchange ratio, from a financial point of view, to the holders of Nanometrics common stock. The following is a summary of the material financial and comparative analyses undertaken by Adams Harkness in connection with providing its opinion. This summary is qualified in its entirety by reference to the full text of the opinion. In arriving at its opinion, Adams Harkness considered all of the financial and comparative analyses it performed and did not attribute any particular weight to any individual analysis it considered or reach specific conclusions with respect to any such analysis. Rather, Adams Harkness made its determination as to the fairness of the exchange ratio, from a financial point of view, to the holders of Nanometrics common stock on the basis of its experience and professional judgment after considering the collective results of all of the analyses described in the following pages.

The financial and comparative analyses summarized below include information presented in tabular format. In order to fully understand Adams Harkness financial and comparative analyses, the tables must be read together with the text of each summary. The tables alone do not constitute a complete description of the financial and comparative analyses. Considering the data in the tables below without considering the full narrative description of the analyses, including the methodologies and assumptions underlying the analyses, could create a misleading or incomplete view of Adam Harkness financial and comparative analyses.

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Trading Price Ratio Analysis

Adams Harkness performed a trading price ratio analysis in which it reviewed the ratio of the closing price of Nanometrics common stock to the closing price of August Technology common stock on January 20, 2005, the date of the delivery of its opinion, the ratio of the daily closing prices of Nanometrics common stock to the daily closing prices of August Technology common stock over the twelve month period ended January 20, 2005, the Latest Twelve Months, or LTM, and the ratio of the twenty day moving average of the daily closing prices of Nanometrics common stock to the twenty day moving average of the daily closing prices of August Technology common stock over the three month and twelve month periods ended January 20, 2005. Adams Harkness also calculated the standard deviation, or the SD, of these ratios over each time period, and compared, for each time period, the range of the mean plus and minus one standard deviation to the exchange ratio of 0.6401 set forth in the merger agreement.

Adams Harkness noted that the exchange ratio was 0.6401 and that the estimated percentage ownership of former Nanometrics shareholders in August Nanometrics based on that ratio was approximately 53.5% on a fully diluted basis.

The following table sets forth the ratio of the daily closing prices of Nanometrics common stock to the daily closing prices of August Technology common stock over latest twelve months, and the ratio of the twenty day moving average of the daily closing prices of Nanometrics common stock to the twenty day moving average of the daily closing prices of August Technology common stock over the three month and twelve month periods ended January 20, 2005.

	Trading Price Ratio*		
Closing Prices on January 20, 2005:		0.657	
	Mean-1SD	**Mean**	**Mean+1SD**
Daily Closing Price LTM:	0.662	0.867	1.072
20-Day Moving Average LTM:	0.683	0.881	1.079
20-Day Moving Average Last Three Months:	0.542	0.583	0.624

* Certain of the data appearing in this table differs from the data that originally appeared in the written materials Adams Harkness provided to the board of directors of Nanometrics at the time it delivered its fairness opinion, which had been based on erroneous trading price information obtained by Adams Harkness from a third party. Adams Harkness has determined, and has advised the board of directors of Nanometrics, that such differences would not have had any effect on its fairness opinion.

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Contribution Analysis

Adams Harkness performed a contribution analysis in which it reviewed certain historical and estimated future annual and quarterly operating and financial information for Nanometrics, August Technology and August Nanometrics provided to Adams Harkness by the management teams of Nanometrics and August Technology. The annual analysis was based on the relative contributions of each of Nanometrics and August Technology to August Nanometrics pro forma revenue, gross profit and operating income for the fiscal years ended closest to December 31, 2001, 2002, and 2003 and the LTM ended in the fiscal third quarter of 2004, as well as to August Nanometrics estimated pro forma revenue, gross profit and operating income for the fiscal years ending closest to December 31, 2004 and 2005. The quarterly analysis was based on the relative contributions of each of Nanometrics and August Technology to August Nanometrics revenue, gross profit, operating income, EBITDA, net income, net tangible assets, and shareholders equity for the period from the first quarter of 2003 through the third quarter of 2004, as well as August Nanometrics estimated revenue, gross profit, operating income (loss), EBITDA, net income (loss), net tangible assets, and shareholders equity for the period from the fourth quarter of 2004 through the fourth quarter of 2005. Adams Harkness calculated an implied exchange ratio based on the median, high and low of the relative contributions of each company for each of such metrics over each period. The following table presents the results of the analysis and the implied exchange ratios derived:

	Implied Exchange Ratio*		
	Low	**Median**	**High**
Annual Contribution (2001-2005E)			
Revenue Contribution:	0.461	0.698	0.779
Gross Profit Contribution:	0.540	0.731	0.936
Operating Income Contribution:	0.053	0.316	0.586

	Low	**Median**	**High**
Quarterly Contribution (2003-2005E)			
Revenue Contribution:	0.516	0.668	0.908
Gross Profit Contribution:	0.384	0.722	0.988
Operating Income Contribution:	0.181	0.563	1.008
EBITDA Contribution:	0.062	0.366	0.882
Net Income Contribution:	0.032	0.529	1.227
Net Tangible Assets Contribution:	0.228	0.527	0.582
Shareholders Equity Contribution:	0.211	0.501	0.562

* The figures presented in this table under the headings Operating Income Calculation, EBITDA Calculation and Net Income Calculation reflect only the relevant annual and quarterly periods in which both Nanometrics and August Technology experienced positive operating income, positive EBITDA or positive net income, respectively. During certain other annual and quarterly periods analyzed by Adams Harkness but not presented in the table, one or both of Nanometrics and August Technology experienced an operating loss, negative EBITDA or a net loss.

Adams Harkness noted that the exchange ratio was 0.6401 and that the estimated percentage ownership of former Nanometrics shareholders in August Nanometrics based on that ratio was approximately 53.5% on a fully diluted basis.

Precedent Transaction Analysis

Adams Harkness performed a precedent transaction analysis in which it assessed the relative valuations associated with selected precedent acquisitions publicly announced since January 1, 2000 it deemed relevant. Adams Harkness reviewed two sets of precedent transactions: (a) fifteen merger of equals precedent transactions (including one pending transaction), and (b) fifteen semiconductor capital equipment precedent transactions

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(including two pending transactions) it deemed comparable to the contemplated transaction between Nanometrics and August Technology.

The selected merger of equal transactions were:

Date Completed	Target Name	Acquiror Name
Pending	Nextel Communications, Inc.	Sprint Corporation
11/16/2004	Metrocall Holdings, Inc.	Arch Wireless, Inc.
08/04/2004	Sports Authority, Inc.	Gart Sports Company
07/15/2004	Cable Design Technologies Corporation	Belden Inc.
11/12/2003	Biogen, Inc.	IDEC Pharmaceuticals Corporation
08/30/2002	Conoco Inc.	Phillips Petroleum Company
06/26/2002	Visionics Corporation	Identix Incorporated
03/26/2002	Proxim Corporation	Western Multiplex Corporation
01/30/2002	Westvaco Corporation	Mead Corporation
12/14/2001	Virata Corporation	GlobeSpan, Inc.
01/12/2001	Time Warner Inc.	America Online, Inc.
07/10/2000	Arvin Industries, Inc.	Meritor Automotive, Inc.
07/05/2000	CCB Financial Corporation	National Commerce Bancorporation
05/30/2000	Varco International, Inc.	Tuboscope Inc.
05/15/2000	Mission Critical Software, Inc.	NetIQ Corporation

The selected semiconductor capital equipment transactions were:

Date Completed	Target Name	Acquiror Name
Pending	DuPont Photomasks, Inc.	Toppan Printing Co., Ltd.
3/10/2005	Genus, Inc.	Aixtron Aktiengesellschaft
12/14/2004	Metron Technology, N.V.	Applied Materials, Inc.
03/19/2003	CoorsTek, Inc.	Keystone Holdings LLC
12/09/2002	SpeedFam-IPEC, Inc.	Novellus Systems, Inc.
05/15/2002	PRI Automation, Inc.	Brooks Automation, Inc.
10/29/2001	GenRad, Inc.	Teradyne, Inc.
08/01/2001	Integrated Measurement Systems, Inc.	Credence Systems Corporation
05/21/2001	Silicon Valley Group, Inc.	ASM Lithography, Inc.
01/26/2001	Applied Science and Technology, Inc.	MKS Instruments, Inc.
01/10/2001	Gasonics International Corporation	Novellus Systems, Inc.
01/03/2001	CFM Technologies, Inc.	Mattson Technology, Inc.
11/24/2000	Cerprobe Corporation	Kulicke & Soffa Industries, Inc.
05/05/2000	CVC, Inc.	Veeco Instruments Inc.
03/29/2000	Etec Systems, Inc.	Applied Materials, Inc.

Adams Harkness analyzed the premiums paid in each precedent transaction based on the closing stock price of the target company one day, one week, and four weeks prior to announcement of the respective transactions. Based on the median premium to the target s stock price one day prior to announcement, the implied exchange ratios from the foregoing data are as follows:

	Implied Exchange Ratio		
	Low	**Median**	**High**
Merger of Equals:	0.512	0.647	1.194
Semiconductor Capital Equipment:	0.719	0.929	1.606

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Although the selected transactions were used for comparison purposes, none of these transactions is directly comparable to the August merger, and none of the companies in such transactions is directly comparable to Nanometrics or August Technology. Accordingly, an analysis of the results of such a comparison is not purely mathematical but instead involves complex considerations and judgments concerning differences in historical and projected financial and operating characteristics of the companies involved and other factors that could affect the acquisition value of such companies to which Nanometrics and August Technology are being compared.

Public Company Peer Group Analysis

Adams Harkness identified a group of publicly traded companies, referred to as the peer group companies, that it deemed comparable to Nanometrics and August Technology based on similarity of services offered, markets served and financial performance, and analyzed certain operating performance characteristics and public market valuation metrics of such peer group companies. Such information included:

- LTM revenue;
- LTM gross margin;
- LTM operating margin;
- LTM net margin;
- ratio of enterprise value to LTM revenue and to 2004 and 2005 projected revenue; and
- ratio of current price to 2004 and 2005 projected earnings per share.

Adams Harkness compared a variety of operating and valuation metrics for each of Nanometrics and August Technology to those same metrics for each of the peer group companies.

Adams Harkness identified the following group of ten publicly traded companies as the companies that it deemed comparable to Nanometrics and August Technology for purposes of this analysis:

Company	**Enterprise Value***
	(in millions)
Applied Materials, Inc.	$ 20,595
KLA-Tencor Corporation	$ 6,579
FEI Company	$ 680
Veeco Instruments, Inc.	$ 669
ICOS Vision Systems Corporation N.V.	$ 220

ADE Corporation	$	203
Rudolph Technologies, Inc.	$	194
Zygo Corporation	$	159
Therma-Wave, Inc.	$	101
Nova Measuring Instruments Ltd.	$	37

* Enterprise value is the total market value of equity plus total debt less cash and marketable securities. Data is derived from Securities and Exchange filings and share prices as of the close of trading on January 20, 2005.

Limitations of Financial and Comparative Analyses

The foregoing summaries do not purport to be a complete description of the financial and comparative analyses performed by Adams Harkness. The preparation of a fairness opinion is a complex process. Adams Harkness believes that its analyses must be considered as a whole, and that selecting portions of such analyses without considering all analyses and factors would create an incomplete view of the processes underlying its fairness opinion. Any estimates contained in Adams Harkness analyses are not necessarily indicative of actual

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values, which may be significantly greater or lower than as set forth therein. Estimates of values of companies do not purport to be appraisals or to necessarily reflect the prices at which companies may actually be sold. Such estimates are inherently subject to uncertainty. Taken together, the information and analyses employed by Adams Harkness led to Adams Harkness opinion that the exchange ratio was fair, from a financial point of view, to holders of Nanometrics common stock as of the date of its opinion.

Adams Harkness, as part of its investment banking activities, is regularly engaged in the valuation of businesses and their securities in connection with mergers and acquisitions, underwritings, distributions of listed and unlisted securities, private placements and valuations for corporate and other purposes. In the ordinary course of its business, Adams Harkness may actively trade or hold long or short positions of August Technology or Nanometrics equity securities for either its customers or its own account. Adams Harkness has not previously provided services to Nanometrics. Except with respect to Nanometrics engagement of Adams Harkness in connection with the August merger, at no point during the past two years or at any point beforehand did Adams Harkness or any of its affiliates or representatives have a material relationship with Nanometrics or receive any compensation from Nanometrics.

Pursuant to the terms of its engagement letter with Adams Harkness, dated December 9, 2004, Nanometrics has paid Adams Harkness a fee of $400,000 for delivery of Adams Harkness opinion. Furthermore, if the August merger is consummated, Nanometrics has agreed to pay Adams Harkness a fee equal to $200,000. If the August merger is not consummated and Nanometrics receives a break-up fee, Nanometrics has agreed to pay Adams Harkness a fee of $225,000. Whether or not the August merger is consummated, Nanometrics has agreed to reimburse Adams Harkness for reasonable fees and disbursements of its counsel and all reasonable travel and other out-of-pocket expenses arising in connection with the engagement; Nanometrics has also agreed to indemnify Adams Harkness to the fullest extent permitted by law against liabilities relating to or arising out of the engagement, except for liabilities found to have resulted from the willful misconduct or gross negligence of Adams Harkness.

No limitations were imposed by Nanometrics on Adams Harkness with respect to the scope of investigations made or procedures followed in rendering Adams Harkness opinion.

Interest of Nanometrics Directors and Executive Officers in the August Merger

In considering the recommendation of the Nanometrics board of directors that Nanometrics shareholders approve the issuance of shares of August Nanometrics common stock in the August merger, you should be aware that members of the Nanometrics board of directors and Nanometrics executive officers have interests in the August merger that may be different than, or in addition to, the interests of Nanometrics shareholders generally. These interests include:

- the appointment of three current directors of Nanometrics as directors of August Nanometrics upon completion of the August merger and the appointment of certain executive officers of Nanometrics as executive officers of August Nanometrics upon completion of the August merger;
- the potential receipt of severance payments by certain Nanometrics executive officers; and
- the provision of directors and officers insurance coverage to current directors and officers of Nanometrics following the August merger.

The Nanometrics board of directors was aware of these interests and considered them, among other matters, in making its recommendation that Nanometrics shareholders approve the issuance of shares of August Nanometrics common stock in the August merger.

August Nanometrics Board of Directors and Executive Officers after the August Merger

August Technology and Nanometrics have agreed that three current directors of Nanometrics, including Vincent J. Coates and John D. Heaton, shall serve as members of the board of directors of August Nanometrics

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following the completion of the August merger. Additionally, August Technology and Nanometrics have agreed to take all action necessary to ensure that certain executive officers of Nanometrics, including Vincent J. Coates and John D. Heaton, shall be appointed to serve as executive officers of August Nanometrics following the completion of the August merger. Nanometrics has not yet selected the other director who will remain on the August Nanometrics board or the other executive officers who will be appointed to serve as executive officers of August Nanometrics if the August merger is completed.

Executive Officer Severance Payments

Nanometrics has entered into agreements with certain of its executive officers which contain change of control severance provisions. Pursuant to the terms of an agreement with Vincent J. Coates, Nanometrics Chairman of the Board and Secretary, Nanometrics is obligated to continue to pay Mr. Coates his salary and benefits for five years from the date of his resignation, in the event Mr. Coates is required to resign as Chairman of the Board and Secretary under certain circumstances, including a change of control. The estimated total severance payment to which Mr. Coates would be entitled if he were required to resign as Chairman of the Board and Secretary of Nanometrics in connection with the acquisition agreement is $1,024,000.

Nanometrics has also entered into an agreement with John D. Heaton, Nanometrics President and Chief Executive Officer and a member of the board of directors, pursuant to which Nanometrics has agreed to pay Mr. Heaton his annual salary (excluding bonuses) for a period of one year from the date that he is required or requested for any reason not involving good cause, including a change of control, to involuntarily relinquish his positions with Nanometrics as President, Chief Executive Officer and director. If Mr. Heaton leaves Nanometrics voluntarily or if he is asked to leave under certain circumstances, no such severance payment is required. The estimated total severance payment to which Mr. Heaton would be entitled if he were required to resign his positions as President, Chief Executive Officer and director of Nanometrics in connection with the August merger is $341,800.

Directors and Officers Insurance

Nanometrics does not maintain directors and officers insurance for its directors and officers. Under the terms of the merger agreement, Nanometrics is obligated to purchase a policy of directors and officers liability insurance covering claims arising from facts or events that occur after the August merger.

Additional August Technology Reasons for the August Merger

In addition to the anticipated joint reasons described above under the section of this joint proxy statement/prospectus entitled *Joint Reasons for the August Merger* beginning on page 90, the August Technology board of directors believes that the following are additional reasons the August merger will be beneficial to August Technology and its shareholders:

- for August Technology s shareholders, customers and employees, the prospects of the strategic business combination of August Technology and Nanometrics are more favorable than the prospects of the companies as separate entities;

as a unified and diversified company, August Nanometrics will be able to take advantage of cross-selling opportunities among its significantly expanded customer base;

August Nanometrics will have greater technical expertise, as well as management and financial resources to devote to research and development consistent with each company s focus on building value by pursuing technological leadership through continuous innovation and product improvement and product differentiation;

by pooling the resources and skills of both August Technology and Nanometrics, August Nanometrics will be better equipped to improve its competitive position in the markets previously served by August Technology and Nanometrics, respectively;

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Nanometrics has a front-end tool automation platform with wafer processing applications that could be immediately incorporated by August Technology in its advanced macro inspection product offerings;

August Technology s DMSVision Software, which provides high performance information handling and analysis capability, has the potential to enhance Nanometrics thin film metrology products and enable August Nanometrics to gain a competitive advantage in the thin film metrology markets;

there will be cost savings by consolidating certain general and administrative functions and eliminating redundant expenses, including the expenses of maintaining two separate public companies; and

the combination of the two companies will create more growth opportunities for both companies, provide significant economies of scale and create greater resources to enable the combined company to compete more effectively with competitors having greater resources than August Technology alone.

August Technology s board of directors consulted with August Technology s senior management and its legal and financial advisors in reaching the decision to approve the August merger. Among the factors considered by August Technology s board of directors in its deliberations were the following:

the financial condition, results of operations, cash flow, business and prospects of August Technology and Nanometrics, before and after giving effect to the August merger;

the common stock of August Nanometrics will issue in the August merger in light of current financial market conditions, comparable merger transactions, comparable public inspection and metrology stock valuations, historical market prices and other information with respect to August Technology common stock and Nanometrics common stock, and the financial performance and condition, business operations and long-term prospects of each company;

the prices paid in comparable transactions involving other metrology companies, as well as the trading performance of the stock of comparable companies in the industry;

the provisions that require Nanometrics to pay August Technology a termination fee of $8.3 million, plus expenses, if the merger agreement is terminated for specified reasons;

the fairness to August Technology and its shareholders of the terms of the merger agreement and related agreements; and

the financial analysis and presentation of Needham & Company, as well as the opinion of Needham & Company delivered to the August Technology board of directors that, as of January 20, 2005 and based upon and subject to the assumptions and other matters described in the opinion, the exchange ratio pursuant to the merger agreement was fair to the holders of August Technology common stock from a financial point of view.

August Technology s board of directors also identified and considered a number of uncertainties and risks in its deliberations concerning the August merger, including the following:

the risk that the potential benefits sought in the August merger may not be fully realized, if at all;

the possibility that the August merger might not be completed and that in certain circumstances, August Technology might be required to pay Nanometrics a termination fee of $8.3 million, plus expenses;

the risk that efforts to integrate the two companies will disrupt August Nanometrics operations;

the effect of the public announcement of the August merger on Nanometrics and August Technology s stock prices;

the restrictions on the conduct of August Technology s business during the period between the signing of the merger agreement and the completion of the August merger;

the substantial charges to be incurred in connection with the August merger, including the costs of integrating the businesses of Nanometrics and August Technology and the transaction expenses arising from the August merger;

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the risk of management and employee disruption as a result of the August merger, including the risk that key personnel may choose not to remain employed with August Nanometrics; and

other applicable risks associated with the businesses of August Technology and Nanometrics described in this joint proxy statement/prospectus.

Recommendation of the August Technology Board of Directors Regarding the August Merger

After careful consideration at a meeting of the August Technology board of directors held on January 20, 2005, the August Technology board of directors determined that the August merger is advisable, and in the best interests of August Technology and its shareholders, and unanimously approved the merger agreement and the transactions contemplated by the merger agreement.

The August Technology board of directors unanimously recommends that the August Technology shareholders vote FOR August Technology s proposal to approve the merger agreement and the August merger.

Opinion of August Technology s Financial Advisor Regarding the August Merger

August Technology retained Needham & Company to act as its financial advisor in connection with the proposed August merger and to render an opinion as to the fairness, from a financial point of view, of the exchange ratio pursuant to the merger agreement to the holders of August Technology common stock. The exchange ratio was determined through arm s length negotiations between August Technology and Nanometrics and not by Needham & Company.

On January 20, 2005, Needham & Company delivered to the August Technology board of directors its written opinion that, as of that date and based upon and subject to the assumptions and other matters described in the written opinion, the exchange ratio pursuant to the merger agreement was fair to the holders of August Technology common stock from a financial point of view. **The Needham & Company opinion is addressed to the August Technology board of directors, is directed only to the financial terms of the merger agreement and does not constitute a recommendation to any August Technology shareholder as to how that shareholder should vote on, or take any other action relating to, the August merger.**

The complete text of the Needham & Company opinion, which sets forth the assumptions made, matters considered, limitations on and scope of the review undertaken by Needham & Company, is attached to this joint proxy statement/prospectus as Annex D. The summary of the Needham & Company opinion set forth in this joint proxy statement/prospectus is qualified in its entirety by reference to the Needham & Company opinion. **August Technology shareholders should read the Needham & Company opinion carefully and in its entirety for a description of the procedures followed, the factors considered, and the assumptions made by Needham & Company.**

In arriving at its opinion, Needham & Company, among other things:

reviewed a draft of the merger agreement dated January 20, 2005;

reviewed certain publicly available information concerning August Technology and Nanometrics and certain other relevant financial and operating data of August Technology and Nanometrics furnished to Needham & Company by August Technology and Nanometrics;

reviewed the historical stock prices and trading volumes of the common stock of Nanometrics and August Technology;

held discussions with members of management of Nanometrics and August Technology concerning their current and future business prospects and joint prospects for the combined companies, including the potential cost savings and other synergies that may be achieved by August Nanometrics;

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reviewed certain research analyst projections with respect to Nanometrics and held discussions with members of Nanometrics concerning those projections;

reviewed certain financial forecasts with respect to August Technology and Nanometrics prepared by the respective managements of August Technology and Nanometrics and held discussions with members of such management concerning those forecasts;

compared certain publicly available financial data of companies whose securities are traded in the public markets and that Needham & Company deemed relevant to similar data for August Technology;

reviewed the financial terms of certain other business combinations that Needham & Company deemed generally relevant; and

performed and/or considered such other studies, analyses, inquiries and investigations as Needham & Company deemed appropriate.

In connection with its review and in arriving at its opinion, Needham & Company assumed and relied on the accuracy and completeness of all of the financial and other information reviewed or discussed with it for purposes of rendering its opinion, and Needham & Company neither attempted to verify independently nor assumed responsibility for verifying any of such information. Needham & Company assumed that the financial forecasts for each company provided to Needham & Company by their respective managements and the joint prospects of the combined companies were reasonably prepared on bases reflecting the best currently available estimates and judgments of the managements of August Technology and Nanometrics, at the time of preparation, of the future operating and financial performance of August Technology and Nanometrics and August Nanometrics. Needham & Company relied upon the estimates of August Technology and Nanometrics of the potential cost savings and other synergies, including the amount and timing thereof, that may be achieved as a result of the August merger. Needham & Company also assumed, based upon discussions with management of Nanometrics, that the research analyst projections relating to Nanometrics represent reasonable estimates as to the future performance of Nanometrics. Needham & Company did not assume any responsibility for or make or obtain any independent evaluation, appraisal or physical inspection of the assets or liabilities of August Technology or Nanometrics. Needham & Company s opinion states that it was based on economic, monetary and market conditions existing as of its date. Needham & Company expressed no opinion as to what the value of Nanometrics common stock will be when issued to the shareholders of August Technology pursuant to the August merger or the prices at which August Nanometrics common stock, August Technology common stock or Nanometrics common stock will actually trade at any time. In addition, Needham & Company was not asked to consider, and the Needham & Company opinion does not address, August Technology s underlying business decision to engage in the August merger, or the relative merits of the August merger as compared to other business strategies that might be available to August Technology.

No limitations were imposed by August Technology on Needham & Company with respect to the investigations made or procedures followed by Needham & Company in rendering its opinion.

In preparing its opinion, Needham & Company performed a variety of financial and comparative analyses. The following paragraphs summarize the material financial analyses performed by Needham & Company in arriving at its opinion. Some of the summaries of the financial analyses include information presented in tabular format. The tables are not intended to stand alone, and in order to more fully understand the financial analyses used by Needham & Company, the tables must be read together with the full text of each summary.

Contribution Analysis. Needham & Company reviewed and analyzed the pro forma contribution of each of August Technology and Nanometrics to the pro forma combined third quarter 2004 balance sheet information (as of September 30, 2004 for August Technology, and as of October 2, 2004 for Nanometrics), and the pro forma combined estimated calendar 2004 and calendar 2005 combined operating results. In calculating the pro forma estimated combined operating results, Needham & Company used financial forecasts prepared by August Technology and Nanometrics management and assumed no cost savings or other synergies.

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Needham & Company reviewed, among other things, the pro forma contributions to cash and cash equivalents, working capital, total assets, shareholders equity, revenue, gross profit, earnings before interest and taxes, or EBIT, and enterprise value. This analysis indicated that August Technology and Nanometrics would have contributed the following:

	Percentage Contribution	
	August Technology	Nanometrics
Pro forma combined cash and equivalents	59.8%	40.2%
Pro forma combined working capital	50.4%	49.6%
Pro forma combined total assets	43.6%	56.4%
Pro forma combined stockholders equity	42.0%	58.0%
Pro forma combined enterprise value	42.0%	58.0%

This analysis also indicated that August Technology and Nanometrics would contribute the percentages shown in the following table of estimated calendar 2004 through estimated calendar 2005 pro forma combined revenue, gross profit and EBIT.

	Percentage Contribution	
	August Technology	Nanometrics
Revenue:		
2004 estimate	48.7%	51.3%
2005 estimate	48.6%	51.4%
Gross Profit:		
2004 estimate	49.3%	50.7%
2005 estimate	50.4%	49.6%
EBIT:		
2004 estimate	6.8%	93.2%
2005 estimate	30.0%	70.0%

The results of the contribution analysis are not necessarily indicative of the contributions that the respective businesses may have in the future.

Based on the exchange ratio, August Technology shareholders would beneficially own approximately 46.5% of the outstanding shares of common stock of August Nanometrics on a fully diluted basis calculated using the treasury share method.

Selected Company Analysis. Using publicly available information, Needham & Company compared selected historical and projected financial and market data ratios for August Technology and Nanometrics to the corresponding publicly available data and ratios of certain publicly traded companies that Needham & Company deemed relevant. These companies, referred to as the selected companies, consisted of the following:

ADE Corporation;

Applied Materials, Inc.;

FEI Company;

ICOS Vision Systems, Inc.;

KLA-Tencor Corporation;

Nova Measuring Instruments Ltd.;

Rudolph Technologies, Inc.;

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Therma-Wave, Inc.; and

Veeco Instruments Inc.

The table below sets forth information concerning the following multiples for the selected companies and for August Technology and Nanometrics:

Enterprise value as a multiple of LTM revenues;

Enterprise value as a multiple of estimated calendar 2004 revenues;

Enterprise value as a multiple of estimated calendar 2005 revenues;

Enterprise value as a multiple of LTM earnings before interest, taxes and amortization, or EBITDA;

Enterprise value as a multiple of LTM EBIT;

Price as a multiple of LTM earnings per share;

Price as a multiple of estimated calendar 2004 earnings per share; and

Price as a multiple of estimated calendar 2005 earnings per share.

Needham & Company calculated multiples for the selected companies, August Technology and Nanometrics, based on the closing stock prices of those companies on January 20, 2005, the exchange ratio of 0.6401 of a share of August Nanometrics common stock for each share of August Technology common stock and publicly available financial estimates for each of August Technology and Nanometrics.

	Selected Transactions					August
	High	Low	Mean	Median	Nanometrics	Technology
Enterprise value to LTM revenues	3.9x	1.0x	2.0x	1.9x	2.2x	1.8x
Enterprise value to estimated calendar 2004 revenues	3.5x	0.9x	1.9x	1.8x	1.9x	1.8x
Enterprise value to estimated calendar 2005 revenues	3.4x	0.9x	1.9x	1.7x	1.6x	1.5x
Enterprise value to LTM EBITDA	80.5x	5.9x	22.2x	13.7x	30.1x	29.6x
Enterprise value to LTM EBIT	33.6x	6.1x	18.1x	14.0x	71.7x	78.3x
Price to LTM earnings per share (EPS)	105.0x	10.2x	40.1x	27.0x	95.0x	60.3x
Price to estimated calendar 2004 EPS	48.7x	10.9x	29.1x	29.8x	29.1x	NM
Price to estimated calendar 2005 EPS	33.6x	10.9x	23.2x	22.7x	14.9x	50.8x

NM = Not Meaningful

No company, transaction or business used in the preceding *Selected Company Analysis*, or the following *Selected Transaction Analysis* is identical to August Technology, Nanometrics or the August merger. Accordingly, an evaluation of the results of these analyses is not entirely mathematical; rather, it involves complex considerations and judgments concerning differences in the financial and operating characteristics and other factors that could affect the acquisition, public trading or other values of the selected companies or selected transactions or the business segment, company or transaction to which they are being compared.

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Selected Transaction Analysis. Needham & Company analyzed publicly available financial information for the following selected merger and acquisition transactions, which represent transactions since January 1, 2001 involving merger of equal combinations of U.S. publicly traded companies with an equity value greater than $100 million. Shareholders of the constituent companies in these selected transactions with 50% ownership or less following the transactions owned between 43.4% and 50.0% of the combined entities resulting from the transactions.

Company A	Company B
IMCO Recycling Inc.	Commonwealth Industries, Inc.
Belden Inc.	Cable Design Technologies Corporation
IDEC Pharmaceuticals Corporation	Biogen, Inc.
Gart Sports Company	The Sports Authority, Inc.
Identix Incorporated	Visionics Corporation
Western Multiplex Corporation	Proxim Corporation
Phillips Petroleum Company	Conoco Inc.
GlobeSpan, Inc.	Virata Corporation
UNB Corp.	BancFirst Ohio Corp.
Santa Fe International Corporation	Global Marine Inc.
The Mead Corporation	Westvaco Corporation
Pride International, Inc.	Marine Drilling Companies, Inc.
AmeriSource Health Corporation	Bergen Brunswig Corporation

In examining the selected transactions, Needham & Company analyzed:

- the premium or discount of consideration offered to Company B s stock price one day prior to the announcement of the transaction;
- the premium or discount of consideration offered to Company B s stock price one week prior to the announcement of the transaction; and
- the premium or discount of consideration offered to Company B s stock price four weeks prior to the announcement of the transaction.

Needham & Company calculated premiums/discounts for August Technology based on the exchange ratio of 0.6401 of a share of August Nanometrics common stock for each share of August Technology common stock and the closing price of August Technology common stock on January 19, 2005 of $9.36 per share. The following table sets forth information concerning the stock price premiums/discounts in the selected transactions and the stock price premiums/discounts implied by the August merger.

	Selected Transactions				
	High	Low	Mean	Median	August merger
One-day stock price premium (discount)	27.3%	(9.0)%	5.3%	3.7%	(8.4)%
One-week stock price premium (discount)	16.2%	(28.1)%	0.5%	2.8%	3.3%
Four-week stock price premium (discount)	27.6%	(30.8)%	(2.4)%	(2.0)%	(18.7)%

Accretion/Dilution Analysis. Needham & Company reviewed various pro forma financial impacts of the August merger on the holders of August Technology and Nanometrics common stock based on the exchange ratio and estimated financial results of August Technology and Nanometrics for the third and fourth quarters of 2005, estimated transaction fees, and assuming cost savings and other synergies resulting from the August merger. The estimated financial results, transaction fees and cost savings and other synergies were based upon August Technology s and Nanometrics respective management estimates. Based upon these projections and assumptions, Needham & Company noted that the August merger would result in accretion to the projected earnings per share of August Nanometrics for each of the third and fourth quarters of 2005. The actual operating or financial results achieved by the combined entity may vary from projected results, and these variations may be material.

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Other Analyses. In rendering its opinion, Needham & Company considered various other analyses in addition to the material financial analyses summarized above, including a history of trading prices for August Technology and Nanometrics common stock.

The summary set forth above does not purport to be a complete description of the analyses performed by Needham & Company in connection with the rendering of its opinion. The preparation of a fairness opinion involves various determinations as to the most appropriate and relevant quantitative and qualitative methods of financial analyses and the application of those methods to the particular circumstances and, therefore, such an opinion is not readily susceptible to summary description. Accordingly, Needham & Company believes that its analyses must be considered as a whole and that selecting portions of its analyses or the factors it considered, without considering all analyses and factors, could create a misleading or incomplete view of the process underlying its opinion. In its analyses, Needham & Company made numerous assumptions with respect to industry performance, general business and economic and other matters, many of which are beyond the control of August Technology and Nanometrics. Any estimates contained in these analyses are not necessarily indicative of actual values or predictive of future results or values, which may be significantly more or less favorable. Additionally, analyses relating to the values of businesses or assets do not purport to be appraisals or necessarily reflect the prices at which businesses or assets may actually be sold. Accordingly, these analyses and estimates are inherently subject to substantial uncertainty. Needham & Company s opinion and related analyses were only one of many factors considered by August Technology s board of directors in its evaluation of the proposed August merger and should not be viewed as determinative of the views of August Technology s board of directors or management with respect to the exchange ratio or the August merger.

Under the terms of its engagement letter with Needham & Company, August Technology has paid or agreed to pay Needham & Company a nonrefundable fee of $200,000 for rendering the Needham & Company opinion and fees for financial advisory services that total $300,000, consisting of a $50,000 initial financial advisory fee and a fee of $250,000 payable upon signing of the merger agreement. If the August merger is consummated, August Technology has agreed to pay to Needham & Company an additional fee equal to 1.5% of the aggregate transaction value of the August merger, against which the $300,000 in financial advisory fees would be credited. Based on the closing price of Nanometrics common stock as of , the total fees payable to Needham & Company would be approximately $. Whether or not the August merger is consummated, August Technology has agreed to reimburse Needham & Company for its out-of-pocket expenses and to indemnify it against specified liabilities relating to or arising out of services performed by Needham & Company as financial advisor to August Technology. In the event the August merger is not consummated and an alternative business combination is consummated during the period that Needham & Company is retained as financial advisor to August Technology or within twenty-four months thereafter, August Technology has agreed to pay Needham & Company fees for financial advisory services equal to 1.5% of the aggregate transaction value of the first such alternative business combination and 1% of the aggregate transaction value of subsequent alternative business combinations, against which the initial $50,000 advisory fee, to the extent not previously credited with respect to a prior transaction, and the $250,000 fee due upon signing of a definitive agreement with respect to a transaction, would be credited. Needham & Company would also receive a fee of $200,000 for any opinion rendered with respect to any such transaction.

Needham & Company is a nationally recognized investment banking firm. As part of its investment banking services, Needham & Company is frequently engaged in the evaluation of businesses and their securities in connection with mergers and acquisitions, negotiated underwritings, secondary distributions of securities, private placements and other purposes. Needham & Company was retained by the August Technology board of directors to act as August Technology s financial advisor in connection with the August merger based on Needham & Company s experience as a financial advisor in mergers and acquisitions as well as Needham & Company s familiarity with August Technology and similarly situated technology companies. Needham & Company has in the past provided and may in the future provide investment banking and financial advisory services to August Technology and Nanometrics unrelated to the proposed August merger, for which services Needham & Company has received and expects to receive compensation. During the past two years, Needham & Company acted as lead

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managing underwriter for August Technology s September 2003 public offering of common stock. In the normal course of its business, Needham & Company may actively trade the equity securities of August Technology or Nanometrics for its own account or for the account of its customers and, therefore, may at any time hold a long or short position in these securities.

Interests of August Technology Directors and Executive Officers in the August Merger

In considering the recommendation of the August Technology board of directors that August Technology shareholders approve the merger agreement and the August merger, you should be aware that members of the August Technology board of directors and August Technology executive officers have interests in the August merger that may be different than, or in addition to, the interests of August Technology shareholders generally. These interests include:

- the appointment of three current directors of August Technology as directors of August Nanometrics upon completion of the August merger, and the appointment of certain executive officers of August Technology as executive officers of August Nanometrics upon completion of the August merger;
- the potential receipt of severance payments and the acceleration of options held by August Technology executive officers; and
- the continued indemnification of, and provision of directors and officers insurance coverage to, current directors and officers of August Technology following the August merger.

The August Technology board of directors was aware of these interests and considered them, among other matters, in making its recommendation.

August Nanometrics Board of Directors and Executive Officers after the August Merger

August Technology and Nanometrics have agreed that three current directors of August Technology, including Jeff L. O Dell, shall serve as members of the board of directors of August Nanometrics following the completion of the August merger. Additionally, August Technology and Nanometrics have agreed to take all action necessary to ensure that certain executive officers of August Technology, including Jeff L. O Dell and Stanley D. Piekos, shall be appointed to serve as executive officers of August Nanometrics following the completion of the August merger. August Technology has not yet selected two of the three directors who will join the August Nanometrics board or each of the executive officers who will be appointed to serve as executive officers of August Nanometrics if the August merger is completed.

Executive Officer Severance Payments and Stock Option Acceleration

August Technology has from time to time entered into change of control severance agreements with its executive officers. Other than as noted herein, each of the executive officers is subject to an agreement with substantially similar terms and conditions that provide each executive officer with certain severance payments if he or she is subject to an event of termination, as defined below, or terminates his or her employment for good reason, as defined below, at any time within the 18-month period following a change of control, which includes the completion of the August merger. These benefits include payment of the executive officer s base salary for varying periods as specified in the particular agreements

in an amount equal to that reflected in the chart below. In addition, for the same period, the executive officer would be entitled to receive continued group health or other group benefits as allowed under the Consolidated Omnibus Budget Reconciliation Act of 1985, or COBRA. Finally, all unexpired and non-vested stock options held by the executive officer would immediately vest. The agreements are binding on any successor to August Technology.

The following table identifies, for each August Technology executive officer, as of January 20, 2005, the estimated total severance payment to which he or she would be entitled if he or she were subject to an event of termination or were to resign for good reason at any time within the 18-month period following completion

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of the August merger, the aggregate number of shares of his or her outstanding vested and unvested August Technology stock options, the aggregate number of shares subject to his or her outstanding unvested August Technology stock options that would become fully vested and exercisable upon completion of the August merger, the weighted average exercise price of his or her collective vested and unvested August Technology stock options and the value of all options.

Name and Title	Total Severance Payment	Aggregate Shares Subject to Outstanding Options	Aggregate Shares Subject to Unvested Options to be Accelerated in the August Merger(1)	Weighted Average Exercise Price of All Options to be Accelerated in the August Merger	Value of Unvested Options to be Accelerated in the August Merger(2)	Weighted Average Exercise Price of All Options	Value of All Options(3)
Jeff L. O Dell Chief Executive Officer	$ 442,500	17,250	4,000	$ 4.70	$ 14,741	$ 7.86	$ 36,853
David Klenk President and Chief Operating Officer	$ 322,500	138,591	7,791	$ 6.74	$ 16,112	$ 7.85	$ 418,269
Stanley D. Piekos Chief Financial Officer and Secretary	$ 322,500	180,632	127,100	$ 5.83	$ 386,430	$ 7.08	$ 483,037
D. Mayson Brooks Vice President, Sales and Field Operations	$ 315,000	120,806	26,849	$ 7.55	$ 47,862	$ 9.64	$ 187,521
Cory Watkins Chief Technical Officer	$ 300,000	60,002	27,999	$ 9.09	$ 19,041	$ 10.51	$ 57,107
Scott Gabbard Vice President, Finance	$ 262,500	87,165	21,433	$ 8.57	$ 17,406	$ 9.57	$ 113,203
Jeff Nelson Vice President, Manufacturing	$ 41,250	45,000	45,000	$ 7.62	$ 34,439	$ 7.62	$ 34,439

(1) Pursuant to the terms of August Technology s 1997 Stock Incentive Plan, certain unvested options will vest at the completion of the August merger.

(2) Illustrates the economic value of all unvested options held by each executive officer assuming the acceleration of all such unvested options in the August merger and the exercise of such options, immediately upon completion of the August merger. The economic value was calculated for each executive officer by multiplying the shares subject to in-the-money options by the difference between the value of the merger consideration as of January 20, 2005 ($8.3851) and the exercise price of such unvested options.

(3) Illustrates the economic value of all options held by each executive officer assuming the acceleration of all such options in the August merger and the exercise of all options, immediately upon completion of the August merger. The economic value was calculated for each executive officer by multiplying the shares subject to options by the difference between the value of the merger consideration as of January 20, 2005 ($8.3851) and the exercise price of such in-the-money options.

As used in the employment agreements with the August Technology executive officers, the term termination means any of the following events occurring within eighteen (18) months after a change of control event: (1) the termination of the executive officer s employment by the employer for any reason, with or without cause, except for termination resulting from conduct by the executive officer constituting (a) a felony involving moral turpitude under either federal law or the laws of the state of Minnesota, or (b) the executive officer s willful failure to fulfill his or her employment duties; provided, however, that an act or the failure to act by the executive officer shall not be willful unless it is done, or omitted to

be done, in bad faith and without any reasonable belief that the executive officer s action or omission was in the best interests of the employer.

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As used in the employment agreements with the August Technology executive officers, the term good reason means (1) a material change in the executive officer s reporting responsibilities, titles or offices, or any removal of the executive officer from or any failure to re-elect the executive officer to any of such positions, which has the effect of materially diminishing the executive officer s responsibility or authority, (2) a reduction by the employer of the executive officer s base salary, (3) a requirement imposed by the employer on the executive officer that results in the executive officer being based at a location that is outside of a twenty-five (25) radius of the executive officer s prior job location, (4) without the adoption of a replacement plan, program or arrangement that provides benefits to the executive officer that are equal to or greater than those benefits that are discontinued or adversely affected, (a) the failure by the employer to continue in effect, within its maximum stated term, any pension, bonus, incentive, stock ownership, stock purchase, stock option, life insurance, health, accident, disability, or any other employee compensation or benefit plan, program or arrangement, in which the executive officer is or has been participating, or (b) the taking of any action by the employer that would adversely affect the executive officer s participation or materially reduce the executive officer s benefits under any of such plans, programs or arrangements, (5) any action by the employer that would materially adversely affect the physical conditions in or under which the executive officer performs his or her employment duties, or (6) any material breach by the employer of the employment agreement. Good reason shall be determined by the employee s good faith, but sole and absolute judgment. Good reason does not include the death of the executive officer, any other reason for the executive officer terminating the employment relationship, or any event that the executive officer has expressly consented to in writing. An event shall not constitute good reason if the executive officer fails to notify the employer within sixty (60) days of the occurrence of the event.

Indemnification; Directors and Officers Insurance

In the merger agreement, Nanometrics agreed that, for a period of six years following completion of the August merger, August Nanometrics and any of its subsidiaries would honor any indemnification agreements currently in place between August Technology and any of its directors and officers. Additionally, Nanometrics agreed that, for a period of six years following completion of the August merger, that August Nanometrics and any of its subsidiaries would cause the certificate of incorporation and bylaws (or any similar organizational documents) of August Nanometrics and its subsidiaries to contain indemnification and exculpation provisions no less favorable than the indemnification and exculpation provisions contained in the August Technology articles of incorporation and bylaws immediately prior to the August merger and, for a period of six years following the August merger, August Nanometrics, and its subsidiaries would not amend, repeal or otherwise modify such provisions of the certificate or articles of incorporation or bylaws in any manner.

In addition, for a period of six years from the completion of the August merger, August Nanometrics will cause August Technology s existing policy of directors and officers and fiduciary liability insurance to be maintained, subject to certain limitations. Alternatively, August Nanometrics is permitted to purchase a six-year tail prepaid policy on August Technology s current policy of directors and officers and fiduciary liability insurance and maintain the policy in full force and effect for a period of six years.

In addition, August Nanometrics shall, prior to or currently with the completion of the August merger, cause to be in effect a directors and officers liability insurance policy covering claims arising from facts or events that occur after the completion of the August merger with not less than $15,000,000 in available coverage.

Material United States Federal Income Tax Consequences of the August Merger

In the opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation, tax counsel to Nanometrics, and Fredrikson & Byron, P.A., tax counsel to August Technology, the following are the material United States federal income tax consequences of the August merger, assuming that it is effected as described in the merger agreement and this joint proxy statement/prospectus. This summary is based on the Internal Revenue Code of 1986, as amended, applicable United States Treasury regulations under the Internal Revenue Code, administrative rulings and judicial authority, all as of the date of this proxy statement. All of the foregoing

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authorities are subject to change, with or without retroactive effect, and any change could affect the continuing validity of this summary.

The summary assumes that August Technology shareholders hold their shares as capital assets. The summary does not address the tax consequences that may be applicable to particular August Technology shareholders in light of their individual circumstances or to August Technology shareholders who are subject to special tax rules, such as non-United States persons, dealers in securities, shareholders who acquired shares of August Technology common stock through the exercise of options or otherwise as compensation or through a qualified retirement plan, and August Technology shareholders who hold their August Technology common stock as part of a straddle, hedge, or conversion transaction. In addition, this summary does not address the tax consequences of the August merger to holders of options or warrants to acquire capital stock of August Technology or the tax consequences of transactions effectuated prior or subsequent to, or concurrently with, the August merger, whether or not any such transactions are undertaken in connection with the August merger. This summary also does not address any consequences arising under the tax laws of any state, local, or foreign jurisdiction. Accordingly, each August Technology shareholder is urged to consult its own tax advisors as to the specific tax consequences of the August merger, including the applicable federal, state, local and foreign tax consequences.

Attached as Exhibits 8.1 and 8.2 to the registration statement of which this joint proxy statement/prospectus forms a part are opinions of tax counsel to Nanometrics and August Technology, respectively, that the August merger will constitute a reorganization within the meaning of Section 368(a) of the Internal Revenue Code, In addition, completion of the August merger is conditioned upon, among other things, the receipt by Nanometrics and August Technology of legal opinions from their respective tax counsel that the August merger will constitute a reorganization within the meaning of Section 368(a) of the Internal Revenue Code (or, alternatively, if either party s tax counsel is unable to deliver an opinion, the delivery of an opinion to each of Nanometrics and August Technology by tax counsel to the other party shall satisfy this condition). Such tax opinions will be based on, among other things, representations of August Technology and Nanometrics and various assumptions as noted in the opinions. The tax opinions will not be binding on the United States Internal Revenue Service or a court, and will not preclude the United States Internal Revenue Service or a court from adopting a contrary position.

Qualification of the August merger as a reorganization within the meaning of Section 368(a) of the Internal Revenue Code will result in the following material United States federal income tax consequences:

- August Technology shareholders will not recognize gain or loss upon the conversion of their August Technology common stock solely into August Nanometrics common stock in the August merger.

- August Technology shareholders who receive cash in the August merger in lieu of a fractional share of August Nanometrics common stock will recognize gain or loss equal to the difference between the cash received and such holder s basis in such fractional share interest. Such gain or loss should be capital gain or loss to the August Technology shareholder.

- The aggregate tax basis of the August Nanometrics common stock received by a holder of August Technology common stock in the August merger (including the basis in any fractional share for which cash is received) will be the same as the shareholder s aggregate tax basis in August Technology common stock surrendered in the August merger.

- The holding period of the August Nanometrics common stock received by an August Technology shareholder in the August merger will include the holding period of the August Technology common stock held by such August Technology shareholder.

- Neither August Nanometrics nor August Technology will recognize any gain or loss as a result of the August merger.

A successful Internal Revenue Service challenge to the status of the August merger as a tax-free reorganization would result in holders of August Technology common stock being treated as if they sold such

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stock in a taxable transaction. In such event, each August Technology shareholder would recognize gain or loss with respect to the disposition of each of his or her shares of August Technology common stock equal to the difference between the August Technology shareholder s basis in each such share and the fair market value, as of the date the August merger becomes effective, of the August Nanometrics common stock received in the August merger. Such gain or loss would be treated as capital gain or capital loss for each such August Technology shareholder. August Technology shareholders aggregate basis in the August Nanometrics common stock so received would equal its fair market value, and the August Technology shareholders holding period for such August Nanometrics common stock would begin the day after the August merger. However, even in the event that the August merger is not deemed to be a reorganization for purposes of Section 368(a) of the Internal Revenue Code, neither Nanometrics nor August Technology would recognize gain or loss solely as a result of the August merger.

Certain August Technology shareholders may be subject to information reporting with respect to the cash received in lieu of a fractional share of August Nanometrics common stock. August Technology shareholders who are subject to information reporting and who do not provide appropriate information when requested may also be subject to backup withholding. Any amount withheld under such rules is not an additional tax and may be refunded or credited against such shareholder s federal income tax liability, provided that the required information is properly furnished in a timely manner to the Internal Revenue Service.

The approval (and consummation) or disapproval of the reincorporation merger will have no effect on the material United States federal income tax consequences of the August merger.

The preceding discussion is intended only as a summary of the material United States federal income tax consequences of the August merger and does not purport to be a complete analysis or discussion of all potential tax effects relevant thereto. August Technology shareholders are urged to consult their own tax advisors as to the specific tax consequences to them of the August merger, including tax return reporting requirements, the applicability and effect of federal, state, local, and other applicable tax laws and any proposed tax law changes.

Accounting Treatment of the August Merger

The August merger will be accounted for under the purchase method of accounting in accordance with Statement of Financial Accounting Standards No. 141, *Business Combinations*. Under the purchase method of accounting, the total estimated purchase price is allocated to the net tangible and identifiable intangible assets of August Technology acquired in connection with the August merger, based on their respective estimated fair values. Management has made a preliminary allocation of the estimated purchase price to the tangible and identifiable intangible assets acquired and liabilities assumed based on various preliminary estimates. Any excess of the estimated purchase price over the fair value of net assets acquired will be accounted for as goodwill.

In accordance with the Statement of Financial Accounting Standards No. 142, *Goodwill and Other Intangible Assets,* goodwill resulting from the business combination will not be amortized but instead will be tested for impairment at least annually (more frequently if certain indicators are present).

Regulatory Matters Relating to the August Merger

The August merger is subject to review by the Department of Justice and the FTC under the HSR Act, and by foreign governmental authorities under the antitrust laws of various other jurisdictions where Nanometrics and August Technology conduct business. Under the HSR Act, Nanometrics and August Technology are required to make pre-merger notification filings and must await the expiration of statutory waiting periods prior to completing the August merger. Nanometrics and August Technology have made the requisite pre-merger notification filings with the Department of Justice and the FTC and early termination of the waiting period associated with such filings has been granted by the FTC. The completion of the August merger is also

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conditioned upon the expiration or termination of all necessary antitrust waiting periods and receipt of all necessary antitrust clearances, consents and approvals. The FTC has granted early termination of the waiting period associated with such filings and Nanometrics and August Technology have obtained the governmental or regulatory approvals required to complete the August merger.

In addition, during or after the statutory waiting periods and clearance of the August merger, and even after completion of the August merger, either the Department of Justice, the FTC, or other United States or foreign governmental authorities could challenge or seek to block the August merger under the antitrust laws, as it deems necessary or desirable in the public interest. Moreover, in some jurisdictions, a competitor, customer or other third party could initiate a private action under the antitrust laws challenging or seeking to enjoin the August merger, before or after it is completed. Nanometrics and August Technology cannot be sure that a challenge to the August merger will not be made or that, if a challenge is made, Nanometrics and August Technology will prevail.

No Dissenters or Appraisal Rights in Connection with the August Merger

Under California corporation law, the shareholders of Nanometrics do not have dissenters rights in connection with the proposed transactions.

Under Minnesota corporation law, the shareholders of August Technology do not have dissenters rights in connection with the proposed transactions.

Listing of August Nanometrics Common Stock

Application will be made to have the shares of August Nanometrics common stock issued in the August merger approved for listing on the Nasdaq National Market.

Delisting and Deregistration of August Technology Common Stock

If the August merger is completed, August Technology common stock will be delisted from the Nasdaq National Market and deregistered under the Exchange Act, and August Technology will no longer file periodic reports with the Securities and Exchange Commission.

Restrictions on Sales of Certain Shares of August Nanometrics Common Stock Received in the August Merger

The shares of August Nanometrics common stock to be issued in the August merger will be registered under the Securities Act of 1933 and will be freely transferable, except for shares of August Nanometrics common stock issued to any person who is deemed to be an affiliate of August Technology prior to the August merger. Persons who may be deemed to be affiliates of August Technology prior to the August merger include individuals or entities that control, are controlled by, or are under common control of August Technology prior to the August merger, and may include officers and directors, as well as principal shareholders of August Technology prior to the August merger.

Persons who may be deemed to be affiliates of August Technology prior to the August merger may not sell any of the shares of August Nanometrics common stock received by them in the August merger except pursuant to:

an effective registration statement under the Securities Act of 1933 covering the resale of those shares;

an exemption under paragraph (d) of Rule 145 under the Securities Act of 1933; or

any other applicable exemption under the Securities Act of 1933.

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Recent Developments

On January 27, 2005, August Technology received a letter from Rudolph Technologies, Inc., or Rudolph, stating that Rudolph is prepared to enter into a merger with August Technology based on a share exchange ratio of 0.6239 of a share of Rudolph stock for each share of August Technology common stock (equivalent to $10.50 per share of August Technology common stock based on the closing price of Rudolph stock on January 27, 2005). The letter stated that each August Technology shareholder may elect to receive all cash, stock or a combination of cash and stock, subject to proration based on total cash consideration of $40 million. Pursuant to its obligations under the merger agreement with Nanometrics, August Technology delivered a copy of the letter to Nanometrics. On the same day, Rudolph issued a press release with proposed terms that were slightly different from those described in the letter received by August Technology. The press release stated that Rudolph is prepared to enter into a merger with August Technology whereby each shareholder of August Technology will receive the value of $2.16 per share in cash and 0.4955 per share in Rudolph common stock (equivalent to $10.50 per share of August Technology common stock, based on the closing price of Rudolph stock on January 27, 2005). The press release stated that each August Technology shareholder would have the option to elect to receive all cash, stock or a combination of cash and stock, subject to proration based on total cash consideration of $40 million. August Technology has indicated that is not for sale but, in accordance with the terms of the merger agreement between Nanometrics and August Technology, it would be willing to discuss a potential transaction with Rudolph if Rudolph executes a confidentiality agreement containing provisions that are no less favorable to August Technology than those contained in August Technology s confidentiality agreement with Nanometrics. On April 4, 2005, August Technology and Rudolph entered into a confidentiality agreement and are currently engaged in discussions and exchanging information with respects to Rudolph s offer. August Technology remains subject to the January 21, 2005 merger agreement with Nanometrics and is conducting the discussions with Rudolph as permitted by the terms of the merger agreement.

On February 9, 2005, August Technology received a letter from KLA-Tencor Corporation, or KLA, regarding KLA s interest in pursuing a merger with August Technology. The letter stated that KLA proposed to acquire August Technology in a transaction in which the August Technology shareholders would receive $11.50 in cash per share. KLA also stated that it would be willing to consider using stock as consideration. In a press release dated February 11, 2005, August Technology s board of directors reiterated that August Technology is not for sale. August Technology s board of directors also stated that it had no interest in considering KLA s cash offer, but that in order to fulfill its fiduciary obligations it would investigate the alternative of a transaction in which the consideration to August Technology shareholders would consist of KLA stock at an exchange ratio per share which reflects the intrinsic value of August Technology. The board of directors also stated that it believes that several issues, including antitrust concerns, would need to be considered and resolved before any transaction with KLA could be completed. With these conditions and concerns in mind, in accordance with the terms of the merger agreement between Nanometrics and August Technology, August Technology s board of directors indicated that it would be willing to discuss a potential transaction with KLA if KLA executes a confidentiality agreement containing provisions that are no less favorable to August Technology than those contained in August Technology s confidentiality agreement with Nanometrics. KLA and August Technology have been unable to reach agreement on the form of such a confidentiality agreement and have had no discussions regarding the confidentiality agreement since early March. KLA announced in a press release on April 5, 2005 that it owns approximately 4.2% of August Technology s outstanding common stock.

August Technology s board of directors determined, after consulting with August Technology s financial and legal advisors, that, despite the offers from Rudolph and KLA, continuing to pursue the August merger is in the best interests of August Technology and its shareholders because it provides the highest potential long-term value for the August Technology shareholders. For a complete discussion of the consideration the August Technology board of directors gave the Rudolph and KLA offers, we encourage you to read the section of this joint proxy statement/prospectus entitled *The August Merger Background of the August Merger* beginning on page 75.

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On March 15, 2005, August Technology received notification of early termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, applicable to the August merger. Termination or expiration of this waiting period is a condition to the August merger.

In addition, the Department of Justice has notified August Technology that it has commenced an investigation into the anti-competitive aspects of the offers submitted to August Technology by Rudolph and KLA. In connection with this investigation, the Department of Justice has conducted interviews with senior executives of August Technology and, by letter dated April 21, 2005, requested that August Technology voluntarily provide documents and information regarding its products and the markets in which it competes. August Technology is in the process of responding to this request for documents and information. August Technology understands that the Department of Justice has contacted and requested information from others in connection with this investigation as well. No further information regarding the timing or scope of the investigation was made available to August Technology. August Technology and Nanometrics do not anticipate that this investigation will affect the completion of the August merger. If August Technology were to proceed with a transaction with Rudolph or KLA, it would be subject to pre-merger notification requirements under the HSR Act.

On March 14, 2005, Nanometrics announced that it has received notice of a patent infringement lawsuit brought by Nova Measuring Instruments, Ltd. alleging infringement of United States Patent No. 6,752,689, or the 689 Patent. Nanometrics believes that its products do not infringe any valid claim of the 689 patent and that the lawsuit will not have a material impact on its business and operating results.

Legal Proceedings Regarding the August Merger

On February 4, 2005, a shareholder class action lawsuit was filed in Minnesota state court against August Technology and the August Technology board of directors. The lawsuit claims that the directors breached their fiduciary duties to August Technology s shareholders in connection with their actions in agreeing to the August merger. The plaintiff seeks various forms of injunctive relief including an order enjoining August Technology and the directors from consummating the August merger.

On February 14, 2005, a similar shareholder class action lawsuit was filed in Minnesota state court against August Technology and the August Technology board of directors. The lawsuit also claims that the directors breached their fiduciary duties to August Technology s shareholders in connection with their actions in agreeing to the August merger. The plaintiff seeks various forms of injunctive relief including an order enjoining August Technology and the directors from consummating the August merger.

James A. Bernards, Roger E. Gower, Jeff L. O Dell, Linda Hall Whitman and Michael Wright, the members of the board of directors of August Technology who have been named as individual defendants in the two purported class actions, have collectively retained separate counsel to represent them in connection with the foregoing lawsuits. August Technology and these named individuals believe they have meritorious defenses and intend to vigorously defend these lawsuits. They have moved to dismiss these lawsuits.

The two proceedings have been consolidated and are being heard as one case. On April 19, 2005, the Court issued a 30 day stay of all proceedings. On April 27, 2005, the plaintiffs scheduled a hearing on a motion to amend the complaint. The hearing was scheduled for June 9, 2005. On May 10, 2005, the court issued an order dismissing the complaint for asserting derivative claims without complying with rules governing derivative actions. Thereafter, the court removed the hearing from the calendar. Therefore, at this time, there are no legal proceedings pending.

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THE MERGER AGREEMENT

The following summary describes the material provisions of the merger agreement. The provisions of the merger agreement are complicated and not easily summarized. This summary may not contain all of the information about the merger agreement that is important to you. The merger agreement is attached to this joint proxy statement/prospectus as Annex A and is incorporated by reference into this joint proxy statement/prospectus. We encourage you to read the merger agreement carefully in its entirety for a more complete understanding of the terms and conditions of the merger agreement.

Structure of the August Merger and the Reincorporation Merger

The merger agreement provides for the reincorporation of Nanometrics into Delaware through the merger of Nanometrics with Minor League Merger Corporation, a wholly-owned subsidiary of Nanometrics. After the reincorporation merger, Minor League Merger Corporation will be renamed Nanometrics Incorporated and will survive as the parent corporation incorporated in Delaware.

Thereafter August Technology will merge with Major League Merger Corporation, a wholly-owned subsidiary of Nanometrics, with August Technology surviving the August merger as a wholly-owned subsidiary of Nanometrics. The surviving Delaware parent corporation will, effective as of the closing of the August merger, again be renamed August Nanometrics Inc. August Technology will survive as a wholly-owned subsidiary of August Nanometrics.

Closing and Effective Time of the August Merger and the Reincorporation Merger

We will complete the August merger and the reincorporation merger when all of the conditions to completion of the August merger and the reincorporation merger contained in the merger agreement, which are described in the section of this joint proxy/prospectus entitled *Conditions to Obligations to Complete the August Merger* beginning on page 128, are satisfied or waived. In the case of the reincorporation merger, such conditions include, but are not limited to, approval by the shareholders of Nanometrics of the reincorporation merger. In the case of the August merger, such conditions include, but are not limited to, approval by the Nanometrics shareholders of the issuance of shares of August Nanometrics common stock in the August merger and approval by the August Technology shareholders of the merger agreement and the August merger. The reincorporation merger is not conditioned on the August merger, nor is the August merger conditioned on the reincorporation merger.

The reincorporation merger will become effective when both the certificate of merger and the certificate of ownership relating to the reincorporation merger shall have been filed with the Secretary of State of the State of Delaware and the Secretary of the State of California, respectively. The August merger will become effective upon the filing of the articles of merger with the Secretary of State of the State of Minnesota.

We are working to complete the August merger and the reincorporation merger as quickly as possible. Because completion of the August merger and the reincorporation merger are subject to certain conditions that are beyond our control, we cannot predict the exact timing. Absent any unanticipated delay, we expect to complete the August merger and the reincorporation merger during the second quarter of 2005.

Treatment of Securities

Upon completion of the reincorporation merger, each authorized share of Nanometrics common stock, including shares reserved under Nanometrics stock option plans, shall automatically be converted into one share of common stock of the August Nanometrics. Upon completion of the August merger, each share of August Technology common stock outstanding immediately prior to the effective time of the August merger will be canceled and extinguished and automatically converted into the right to receive 0.6401 of a share of August Nanometrics common stock upon surrender of the certificate representing such August Technology share in the

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manner provided in the merger agreement. Upon completion of the August merger, August Nanometrics will also assume all outstanding options to purchase August Technology common stock. For more information relating to the treatment of options to purchase August Technology common stock, see the section of this joint proxy statement/prospectus entitled *Treatment of August Technology Stock Options and ESPP* beginning on page 119.

The exchange ratio in the August merger (*i.e.*, 0.6401 of a share of August Nanometrics common stock for each share of August Technology common stock) will be adjusted to reflect the effect of any stock split, reverse stock split, reclassification, stock dividend, reorganization, recapitalization, consolidation, exchange or other like change with respect to Nanometrics common stock or August Technology common stock occurring or having a record date after the date of the merger agreement and prior to the effective time of the August merger.

Each share of August Technology common stock held by August Technology or owned by Nanometrics or any of their direct or indirect wholly-owned subsidiaries immediately prior to the August merger will be automatically cancelled and retired and cease to exist, and none of August Technology, Nanometrics or any of their direct or indirect subsidiaries will receive any securities of August Nanometrics or other consideration in exchange for those shares.

Based on the exchange ratio and the total number of shares of August Technology common stock outstanding as of the record date, a total of approximately shares of August Nanometrics common stock will be issued in the August merger to holders of August Technology common stock. In addition, a total of approximately shares of August Nanometrics common stock will be reserved for issuance upon the exercise of options to purchase August Technology common stock assumed by August Nanometrics in the August merger.

After the August merger, the former shareholders of Nanometrics will own shares of August Nanometrics common stock. Further, Nanometrics shareholders will hold the same number of shares of August Nanometrics common stock as the number of shares of common stock of Nanometrics held by such holders immediately prior to the August merger. However, because August Nanometrics will be issuing new shares of its common stock to August Technology shareholders in the August merger, each share of Nanometrics common stock outstanding immediately prior to the August merger will represent a smaller percentage of the total number of shares of August Nanometrics common stock outstanding after the August merger.

Based on the number of shares of Nanometrics and August Technology common stock outstanding on April 2, 2005, we expect that Nanometrics shareholders before the August merger will hold approximately 53.6% of the fully-diluted shares of August Nanometrics common stock outstanding immediately after the August merger.

Fractional Shares

August Nanometrics will not issue any fractional shares of common stock in the August merger. Instead, each holder of August Technology common stock who would otherwise be entitled to receive a fraction of a share of August Nanometrics common stock (determined after taking into account all of the August Technology common stock held by each such holder and multiplying such shares by the exchange ratio) will receive cash, without interest, in an amount equal to the fraction multiplied by the last reported sales price of Nanometrics common stock at the end of regular trading hours on the closing date of the August merger, as reported on the Nasdaq National Market.

Treatment of August Technology Stock Options and ESPP

When the August merger is completed, August Nanometrics will assume all outstanding options to purchase shares of August Technology common stock and convert them into options to purchase shares of August Nanometrics common stock. August Nanometrics will convert each assumed August Technology option into an option to purchase that number

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of shares of August Nanometrics common stock equal to the number of shares of August Technology common stock subject to the August Technology option immediately prior to the August merger, multiplied by 0.6401, rounded down to the nearest whole share. The exercise price per share for each assumed August Technology option will be equal to the exercise price per share of the original August Technology option divided by 0.6401, rounded up to the nearest whole cent. Each assumed option will be subject to all other terms and conditions set forth in the applicable documents evidencing each August Technology option immediately prior to the effective time of the August merger. As of the record date for August Technology s special meeting of shareholders, options for approximately shares of August Technology common stock were outstanding in the aggregate under the August Technology stock option plan. Pursuant to the terms of August Technology s 1997 Stock Incentive Plan, approximately 400,000 options of the 1.3 million options to purchase shares of August Technology common stock assumed by August Nanometrics will vest at the effective time of the August merger.

August Nanometrics will file, within fifteen (15) business days after completion of the August merger, a registration statement on Form S-8 with the Securities and Exchange Commission covering shares of August Nanometrics common stock issuable in connection with the assumed options. As a result, all shares of August Nanometrics common stock issuable upon the exercise of assumed options will be freely transferable as long as the registration statement remains effective.

Prior to the effective time of the August merger, August Technology will terminate its employee stock purchase plan and all outstanding purchase rights will be automatically exercised unless Nanometrics instructs August Technology otherwise. At the effective time of the August merger, each share of August Technology common stock issued pursuant to the exercise of these rights will be cancelled and converted into the right to receive 0.6401 of a share of August Nanometrics common stock.

Exchange Fund; Exchange of Stock Certificates

Prior to completion of the August merger, Nanometrics will establish an exchange fund with a bank or trust company, who shall act as the exchange agent for the August merger, to hold the stock and cash to be issued to August Technology shareholders in the August merger. The exchange fund will consist of stock certificates representing shares of August Nanometrics common stock and cash, including cash to be issued in lieu of fractional shares of August Nanometrics common stock, and, dividends or other distributions, if any, on August Nanometrics common stock with a record date occurring after the completion of the August merger.

As soon as practicable following completion of the August merger, the exchange agent will mail to each record holder of August Technology common stock a letter of transmittal and instructions for surrendering the record holder s stock certificates in exchange for a certificate representing the shares of August Nanometrics common stock issuable to each such holder pursuant to the August merger. Only those holders of August Technology common stock who properly surrender their August Technology stock certificates in accordance with the exchange agent s instructions will receive (i) a certificate representing the shares of August Nanometrics common stock issuable to each such holder pursuant to the August merger, (ii) cash in lieu of any fractional share of August Nanometrics common stock issuable to any such holders, and (iii) dividends or other distributions, if any, to which they are entitled under the terms of the merger agreement. The surrendered certificates representing August Technology common stock will be cancelled. After the effective time of the August merger, each certificate representing shares of August Technology common stock that has not been surrendered will represent only the right to receive shares of August Nanometrics common stock issuable pursuant to the August merger and cash in lieu of any fractional share of August Nanometrics common stock to which the holder of any such certificate is entitled. Following the completion of the August merger, August Technology will not register any transfers of August Technology common stock on its stock transfer books.

Holders of August Technology common stock should not send in their August Technology stock certificates until they receive a letter of transmittal from the exchange agent with instructions for the surrender of August Technology stock certificates.

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Distributions with Respect to Unexchanged Shares

Holders of August Technology common stock are not entitled to receive any dividends or other distributions on August Nanometrics common stock until the August merger is completed. After the August merger is completed, holders of August Technology common stock will be entitled to dividends and other distributions declared or made after completion of the August merger with respect to the number of whole shares of August Nanometrics common stock which they are entitled to receive upon exchange of their August Technology common stock. These holders will not be entitled to receive these dividends or distributions, however, until they surrender their August Technology common stock to the exchange agent in accordance with the exchange agent instructions.

Termination of Exchange Fund; No Liability

At any time following the six-month anniversary of the completion of the August merger, August Nanometrics will be entitled to the return of all cash and shares of August Nanometrics common stock held in the exchange fund. Thereafter, August Technology shareholders may look only to August Nanometrics for any merger consideration and any cash payment relating to any dividends or distributions to which they may be entitled upon surrender of their certificates representing shares of August Technology common stock.

Neither August Nanometrics nor August Technology will be liable to any holder of August Technology common stock or August Nanometrics common stock, as the case may be, for any shares (or any related dividends or distributions) delivered to a public official under any applicable abandoned property, escheat or similar law following the passage of time specified therein.

Lost, Stolen or Destroyed Certificates

If an August Technology stock certificate is lost, stolen or destroyed, the holder of the certificate must deliver an affidavit of such fact, and may also be required to deliver an agreement of indemnity or an indemnity bond prior to receiving any merger consideration. Nanometrics will issue only (i) August Nanometrics common stock, (ii) cash in lieu of a fractional share and (iii) any dividends or distributions that may be applicable in a name other than the name in which a surrendered August Technology stock certificate is registered only if the person requesting the exchange presents to the exchange agent all documents required to show and effect the unrecorded transfer of ownership and to show that the requesting person paid any applicable stock transfer taxes.

Representations and Warranties

The merger agreement contains general representations and warranties made by each of Nanometrics and August Technology, regarding aspects of their respective businesses, financial condition and structure, as well as other facts pertinent to the August merger. These representations and warranties relate to the following subject matters with respect to each party:

- corporate organization, qualifications to do business, corporate standing and corporate power;

capitalization;

corporate authorization, including board approval, to enter into and carry out the obligations contained in the merger agreement;

enforceability of the merger agreement;

the vote of shareholders required to complete the August merger;

absence of any conflict or violation of the corporate charter and bylaws or the charter, bylaws and similar organizational documents of subsidiaries, any applicable law, or any agreements with third parties, as a result of entering into and carrying out the obligations contained in the merger agreement;

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absence of any rights of first refusal or acquisition or pre-emptive rights with respect to capital stock or other assets or properties arising or resulting from entering into and carrying out the obligations contained in the merger agreement;

governmental and regulatory approvals required in connection with the August merger;

compliance with applicable laws, and possession and compliance with all permits required for the operation of business;

Securities and Exchange Commission filings and the financial statements contained in those filings;

controls and procedures for required disclosures of financial and non-financial information to the Securities and Exchange Commission;

absence of certain changes or events since September 30, 2004;

absence of undisclosed liabilities;

absence of litigation and investigations;

material agreements and the absence of breaches of material agreements;

employee benefit plans and employment contracts;

labor matters;

real property and assets;

taxes;

environmental matters;

intellectual property;

insurance;

interested party transactions;

brokers used in connection with the transactions contemplated by the merger agreement;

opinions of financial advisors; and

applicability of Minnesota and California anti-takeover statutes to the August merger.

Conduct of Business Before Completion of the August Merger

Pursuant to the merger agreement, each of Nanometrics and August Technology has agreed that, until the earlier of the completion of the August merger or termination of the merger agreement, or unless the other party consents in writing, it will carry on its business in the ordinary course consistent with past practices and in material compliance with applicable law, and will use commercially reasonable efforts to:

preserve intact its present business organization;

keep available the services of its current officers, employees and consultants; and

preserve its relationships with customers, suppliers, distributors and others with which it has significant business relations.

Under the merger agreement, each of Nanometrics and August Technology has also agreed that, until the earlier of the completion of the August merger or termination of the merger agreement, or unless the other party consents in writing, it will not (other than Nanometrics taking any action in furtherance of or otherwise implementing the reincorporation merger):

amend or otherwise change its corporate charter and bylaws or other equivalent organizational documents;

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issue, sell, transfer, pledge, redeem, accelerate rights under, dispose of or encumber, or authorize the issuance, sale, transfer, pledge, redemption, acceleration of rights under, disposition or encumbrance of, any shares of its capital stock of any class, or any options, warrants, convertible securities or other rights of any kind to acquire any shares of its capital stock, or any other ownership interest in such party, other than grants of stock options for the purchase of up to an aggregate of 50,000 shares of such party s common stock to employees;

sell, pledge, mortgage, dispose, lease, license or encumber any of its properties or assets (whether tangible or intangible), or suffer to exist any lien thereupon other than (i) sales of assets not to exceed $100,000 in the aggregate and (ii) sales, leases or licenses of the proprietary products in the ordinary course of business consistent with past practice;

declare, set aside, make or pay any dividend or make any other distribution;

effect any stock splits, recapitalizations and similar transactions;

purchase, redeem or acquire its capital stock, other than repurchases of unvested shares held by individuals terminating employment or service with it;

acquire (by merger, consolidation or acquisition of stock or assets or otherwise) any corporation, partnership or other business organization or division thereof or any equity interest therein;

incur any indebtedness for borrowed money, issue any debt securities, guarantee any obligations, or make any loans, advances, capital contributions or investments other than in the ordinary course of business consistent with past practice;

amend any material contract or enter into a contract that would be deemed a material contract, or terminate, cancel or waive any right under any material contract, other than in the ordinary course of business;

enter into, amend or terminate any lease relating to real property;

adopt or implement any shareholder rights plan, or take any action to cause any takeover statute to apply to the merger agreement, the voting agreements or the transactions contemplated by such agreements;

make or authorize any capital expenditures or purchase of fixed assets outside the ordinary course of business;

modify or amend standard product warranty terms or any other existing warranty obligations in a materially adverse manner, other than extensions of warranties in the ordinary course of business;

increase the compensation payable or to become payable to its directors, officers or employees;

hire or promote any officer or director-level employee or appoint any director;

make any loan, advance or capital contribution (other than loans or advances of reasonable relocation expenses), or grant any severance or termination pay to any current or former officers or employees, or enter into or amend any employee benefit plan or other plan, contract, agreement or arrangement (provided that in connection with the reincorporation merger, Nanometrics may adopt employee benefit plans, including stock plans or an employee stock purchase plan);

establish, adopt, enter into or amend any collective bargaining agreement or other plan, agreement, trust, fund, policy or arrangement for the benefit of any of its current or former directors, officers or employees (except for Nanometrics adopting directors and officers liability insurance);

pay any discretionary bonuses to any of its officers;

materially change any actuarial assumption or other assumption used to calculate funding obligations with respect to any pension or retirement plan, or change the manner in which contributions to any such plan are made or the basis on which such contributions are determined, except, as may be required by applicable law or contractual commitments which were existing as of the date of the merger agreement;

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change accounting policies and procedures except as required by United States generally accepted accounting principles or other applicable law;

make any tax election inconsistent with past practice and take (or fail to take) certain other actions with regard to tax liabilities and obligations;

pay, discharge or satisfy any claims, liabilities or obligations other than payment or satisfaction in the ordinary course of business consistent with past practice of liabilities reflected in its financial statements or incurred in the ordinary course of business consistent with past practice;

fail to pay accounts payable and other obligations in the ordinary course of business;

accelerate the collection of receivables or modify their payment terms, other than in the ordinary course of business consistent with past practice;

sell, securitize or transfer any accounts receivable;

adopt a plan of complete or partial liquidation, dissolution, merger, consolidation, recapitalization or reorganization, other than as provided in the merger agreement;

implement any plant closings or layoffs, except in compliance with applicable law;

terminate or lay off employees in such numbers as would give rise to liability for severance, termination pay or other payments due upon termination of employment, reduction of hours, or temporary or permanent layoffs;

take any action that would or would reasonably be expected to prevent or materially impair it from consummating (or cause it not to consummate) the transactions described in the merger agreement;

take any action that would make any of its representations and warranties contained in the merger agreement untrue or incorrect, or prevent it from performing or causing it not to perform its covenants such that the closing conditions of the other party would not be satisfied; or

authorize, take, or agree in writing or otherwise take any actions with respect to any of the foregoing matters.

Nanometrics and August Technology Prohibited from Soliciting Other Offers

Under the merger agreement, each of Nanometrics and August Technology have agreed, and have agreed to cause their subsidiaries, affiliates, directors, officers, employees, agents and representatives (including any retained investment banker, attorney or accountant), to:

cease any discussions or negotiations with any other parties with respect to any acquisition proposal; and

not release any third party from, or waive any provisions of, any existing confidentiality or standstill agreement with respect to any acquisition proposal.

For purposes of those restrictions, an acquisition proposal is any inquiry, proposal or offer, filing of any regulatory application or disclosure of any intention relating to any of the following:

the direct or indirect acquisition of a business that constitutes a substantial portion of the net revenues, net income or assets of the party or its significant subsidiaries;

the direct or indirect acquisition of equity securities representing 10% or more of the party or any of its significant subsidiaries;

a tender offer or exchange offer that, if consummated, would result in any person owning 10% or more of the party s voting power; or

any merger, consolidation, business combination or similar transaction involving a party or any of its subsidiaries, other than transactions specifically contemplated by the merger agreement.

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Under the terms of the merger agreement, subject to certain exceptions described below, each of Nanometrics and August Technology also agreed that neither of them would directly or indirectly; nor will they authorize or permit any of their respective subsidiaries, affiliates, directors, officers, employees, agents and representatives (including any retained investment banker, attorney or accountant) to:

- solicit, initiate, facilitate, encourage, furnish information or take any other action (other than to disclose the existence of its non-solicitation obligation under the merger agreement) that constitutes, or is reasonably likely to lead to, any acquisition proposal by a third party of the type described above;
- participate in any discussions or negotiations with any third party regarding any acquisition proposal of the type described above; or
- enter into or execute any letter of intent or similar document or any contract agreement or commitment constituting or otherwise relating to any acquisition proposal of the type described above.

Each of Nanometrics and August Technology is obligated to notify the other orally and in writing within twenty-four (24) hours from its receipt of any acquisition proposal of the type described above or any request for nonpublic information from a party who has made, or indicated an intention to enter into discussions relating to, an acquisition proposal of the type described above. The notice must include the material terms and conditions of the acquisition proposal or information request, the identity of the person or group making the acquisition proposal or information request, and all related written materials provided in connection with the proposal or request. If either Nanometrics or August Technology enters into discussions or provides nonpublic information relating to an acquisition proposal, such party shall notify the other within twenty-four (24) hours from the discussion or production of information and shall keep the other party reasonably informed of the status and terms of the proposals, requests or discussions on a current basis, including by providing a copy of all related material documentation and correspondence.

Notwithstanding the prohibitions described above, if either Nanometrics or August Technology receives an unsolicited bona fide written acquisition proposal before the date of its shareholder meeting to approve the transactions contemplated by the merger agreement, under the terms of the merger agreement, the party receiving the acquisition proposal is permitted to engage in discussions and negotiations with, and provide nonpublic information to, the party making the acquisition proposal as long as:

- the receiving party has entered into a confidentiality agreement with the person making the acquisition proposal having provisions that are no less favorable to such party than those contained on the confidentiality agreement between Nanometrics and August Technology dated October 26, 2004; and
- the receiving party s board of directors reasonably determines in good faith, after consulting with outside legal counsel, that such action is necessary to comply with its fiduciary duties under applicable law.

Obligations of each of the Nanometrics and August Technology Boards of Directors with Respect to its Recommendation and Holding a Meeting of its Shareholders

Under the terms of the merger agreement, the Nanometrics and August Technology boards of directors each agreed to call, hold and convene a meeting of its shareholders promptly after the registration statement of which this joint proxy statement/prospectus forms a part is declared effective by the Securities and Exchange Commission. The Nanometrics board of directors agreed to recommend to its shareholders the approval of the issuance of shares of August Nanometrics common stock in the August merger and to use reasonable best efforts to obtain the required shareholder approval. The August Technology board of directors agreed to recommend to its shareholders the approval of the merger agreement and the August merger and to use reasonable best efforts to obtain the required shareholder approvals.

Each of the Nanometrics and August Technology boards of directors also agreed not to withdraw or modify, or publicly propose to withdraw or modify, its recommendations relating to the merger agreement and the

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transactions contemplated thereby, and not to adopt, approve or recommend to its shareholders that they accept any other acquisition proposal of the type described above or any superior proposal. For purposes of this restriction, a superior proposal is an acquisition proposal of the type described above on terms that the recipient board of directors has determined in good faith, after consulting with its independent financial advisor or another nationally recognized financial advisor and its outside counsel and after taking into account all the terms of conditions of the proposal, the financial, legal and regulatory aspects of such proposal and the party making such proposal, that the proposal is:

- more favorable to such party s shareholders than the August merger or any counterproposal made by the other party;
- capable of being consummated in a timely manner on the terms proposed; and
- fully capable of being financed by the party making the proposal or for which financing has been committed by a reputable financing source, to the extent required.

Notwithstanding the obligations described above, in response to an acquisition proposal of the type described above deemed by the Nanometrics or August Technology board of directors to be a superior proposal, the board of directors of Nanometrics or August Technology, as the case may be, may withdraw or modify, or propose publicly to withdraw or modify its approval or recommendation, relating to the merger agreement and the transactions contemplated thereby if the following conditions are met:

- a superior proposal of the type described above has been made and has not been withdrawn;
- the shareholders meeting of that party has not occurred;
- the party s board of directors has reasonably determined in good faith, after consulting with outside legal counsel, that in light of the superior proposal, such action is necessary to comply with its fiduciary duties under applicable law; and
- the party has provided the other party with five business days prior written notice of its intention to take such action, specifying in the notice the material terms and conditions of the superior proposal, as well as the identity of the third party making the proposal.

Regardless of whether either the Nanometrics or August Technology board of directors has received an acquisition proposal or a superior proposal of the type described above, or has withheld, withdrawn, amended or modified its recommendation to its shareholders relating to the merger agreement, or has approved or recommended that its shareholders accept a superior proposal of the type described above, each of Nanometrics and August Technology is obligated to call, give notice of, convene and hold a meeting of its shareholders to consider and vote upon its respective proposal relating to the merger agreement and the transactions contemplated thereby; and the fact that any of the foregoing has occurred will not give Nanometrics or August Technology a right to terminate the merger agreement or affect any other obligation of the parties under the merger agreement. Neither Nanometrics nor August Technology is permitted under the merger agreement to submit any acquisition proposal, including a superior proposal, to a vote of its respective shareholders at or prior to its shareholders meeting relating to the merger agreement and the transactions contemplated thereby.

Regulatory Matters

The August merger is subject to review by the Department of Justice and the FTC under the HSR Act, as more fully described in the section of this joint proxy statement/prospectus entitled *The August Merger Regulatory Matters Relating to the August Merger* beginning on page 114. We have made all required regulatory filings and have been notified by the FTC that early termination of the waiting period associated with these filings has been granted, and we have therefore obtained all regulatory clearances, consents and approvals required to complete the August merger.

Public Announcements

Neither Nanometrics nor August Technology will issue any press release or make any public statement with respect to the merger agreement or the transactions contemplated thereby without the prior written consent of the

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other party, which consent shall not be unreasonably withheld. However, Nanometrics and August Technology may, without the prior consent of the other, issue a press release or make a public statement relating to the merger agreement or the transactions contemplated thereby if, after consulting with outside counsel, it determines that the press release or public statement is required by applicable law or the rules and regulations of the Nasdaq National Market, and it has used all reasonable best efforts to consult with the other party regarding the timing, scope and content of any such press release or public statement. Also, each of Nanometrics and August Technology may, without the prior written consent of the other, issue a press release or make a public statement relating to a change in recommendation by the Nanometrics board of directors or the August Technology board of directors, as the case may be.

Indemnification and Insurance

Under the terms of the merger agreement, Nanometrics agreed to honor for a period of six years after completion of the August merger all obligations of August Technology contained in any indemnification agreement between August Technology or its subsidiaries, on the one hand, and any of its current or former directors or officers, on the other; provided that such agreement was in effect prior to completion of the August merger. Also, for six years following completion of the August merger, the certificate of incorporation and bylaws of August Nanometrics will contain provisions with respect to indemnification and exculpation that are at least as favorable as the indemnification and exculpation provisions contained in the articles of incorporation or bylaws or similar organizational documents of August Technology and its subsidiaries as in effect prior to completion of the August merger, and August Nanometrics and its subsidiaries will not amend, repeal or otherwise modify such provisions in any respect, except as required by law.

For six years from completion of the August merger, August Nanometrics also will maintain the existing policy of August Technology s directors and officers and fiduciary liability insurance covering claims arising from facts or events that occurred prior to the completion of the August merger, including acts or omissions occurring in connection with the merger agreement and completion of the transactions contemplated thereby to the extent such acts or omissions are covered by the existing insurance policy, and covering each director and officer of August Technology who was covered at the effective time of the August merger on terms with respect to coverage and amounts no less favorable than those in effect on the date of the signing of the merger agreement. However, August Nanometrics will not be required to expend in any one year an amount in excess of 200% of the annual premium paid by August Technology at the time the merger agreement was signed. In the event the premium exceeds 200% of the annual premium at the time the merger agreement was signed, August Nanometrics will be obligated to obtain an insurance policy with the greatest coverage available for a cost not exceeding 200% of the annual premium paid by August Technology at the time the merger agreement was signed. Alternatively, August Nanometrics may, prior to completion of the August merger, purchase a tail prepaid insurance policy for an effective term of six (6) years from the completion of the August merger, covering only those directors and officers of August Technology who were covered at the effective time of the August merger for actions and omissions that occurred prior to the completion of the August merger, and on terms, conditions and amounts no less advantageous than the existing insurance policy.

In addition, August Nanometrics shall, prior to or currently with the completion of the August merger, cause to be in effect a directors and officers liability insurance policy covering claims arising from facts or events that occur after the completion of the August merger with not less than $15 million in available coverage.

August Nanometrics Board of Directors after the August Merger

Upon completion of the August merger, the board of directors of August Nanometrics shall be fixed at seven (7) members. Three of the directors shall have served as directors of August Technology prior to the August merger; three of the directors shall have served as directors of Nanometrics prior to the reincorporation merger; and one director shall be acceptable to both Nanometrics and August Technology. The organizational documents of August Nanometrics shall provide for three classes of directors and staggered election of directors.

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Reasonable Best Efforts to Complete the August Merger

Under the terms of the merger agreement, each of Nanometrics and August Technology has agreed to cooperate fully with the other and use its reasonable best efforts to take all actions, and to do all things necessary, proper or advisable to complete the August merger in the most expeditious manner possible, including:

- obtaining any clearance, consent or approval of any governmental entity required to be obtained by Nanometrics or August Technology in connection with the August merger, and making any and all registrations and filings necessary or advisable to obtain the approval or waiver from any governmental entity, including all filings required by the HSR Act and any other applicable antitrust laws;

- obtaining all necessary consents, waivers and approvals under any of material contracts and real property leases in connection with the August merger;

- authorizing for listing on the Nasdaq National Market, upon official notice of issuance, the shares of August Nanometrics common stock to be issued in the August merger;

- reserving for issuance the shares of August Nanometrics common stock issuable upon the exercise of all August Technology assumed options;

- defending any lawsuit or proceeding seeking to challenge the merger agreement or the transactions contemplated by the merger agreement, including seeking to have lifted or rescinded any injunction or restraining order or other order adversely affecting the ability Nanometrics or August Technology to complete the transactions contemplated by the merger agreement; and

- executing any certificates, instruments or other documents necessary to complete the transactions contemplated by the merger agreement.

Each of Nanometrics and August Technology also agreed to keep the other reasonably informed of the status of their respective efforts to complete the transactions contemplated by the merger agreement, including by:

- promptly notifying the other in writing of any written communications or material oral communications from any governmental entity with respect to the transactions contemplated by the merger agreement;

- permitting the other to review and discuss in advance, and consider in good faith the views of the other in connection with proposed communications with any such governmental entity;

- not participating in any meeting with any such governmental entity unless it consults with the other in advance and to the extent permitted by such governmental entity gives the other the opportunity to attend and participate at such meeting;

- furnishing the other with copies of all correspondence, filings and communications between it and any governmental entity with respect to the transactions contemplated by the merger agreement; and

furnishing the other with such necessary information and reasonable assistance as each of them may reasonably request in connection with its preparation of necessary filings or submissions of information to any such governmental entity.

Conditions to Obligations to Complete the August Merger

The respective obligations of Nanometrics and August Technology to complete the August merger and the other transactions contemplated by the merger agreement are subject to the satisfaction of each of the following conditions:

the Securities and Exchange Commission shall have declared Nanometrics registration statement effective, no stop order suspending its effectiveness shall have been issued and no proceedings for suspension of the registration statement s effectiveness, or a similar proceeding in respect of this joint proxy statement/prospectus, shall have been initiated or threatened in writing by the Securities and Exchange Commission;

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the merger agreement and the August merger shall have been approved by the vote of holders of the requisite number of shares of August Technology common stock under applicable law, as more fully described in the section of this joint proxy statement/prospectus entitled *The August Technology Special Meeting Record Date; Outstanding Shares; Voting Rights; Quorum; Required Vote* beginning on page 71;

the issuance of shares of August Nanometrics common stock in the August merger shall have been approved by the vote of holders of the requisite number of shares of Nanometrics common stock under applicable regulations of the Nasdaq National Market, as more fully described in the section of this joint proxy statement/prospectus entitled *The Nanometrics Annual Meeting Quorum and Vote Required* beginning on page 67;

all waiting periods under the HSR Act with respect to the August merger and the other transactions contemplated by the merger agreement shall have expired or terminated early (which condition has been satisfied) and all clearances, consents, approvals, orders and authorizations necessary for the consummation of the August merger under the antitrust laws shall have been received;

no temporary restraining order, preliminary or permanent injunction or other order issued by any court of competent jurisdiction or other legal restraint or prohibition preventing the consummation of the August merger shall be in effect;

no statute, rule, regulation or order shall have been enacted, entered, enforced or deemed applicable to the August merger by a governmental entity of competent jurisdiction and has the effect of making completion of the August merger illegal;

the shares of August Nanometrics common stock to be issued in the August merger shall have been authorized for listing on the Nasdaq National Market; and

each of Nanometrics and August Technology shall have received from its respective tax counsel an opinion to the effect that the August merger will constitute a reorganization within the meaning of Section 368(a) of the Internal Revenue Code and such opinions shall not have been withdrawn, or to the extent counsel for August Technology does not issue such tax opinion, counsel to Nanometrics shall have delivered such tax opinion to August Technology and to the extent counsel for Nanometrics does not issue such tax opinion, counsel to August Technology shall have delivered such tax opinion to Nanometrics.

In addition, individually, the respective obligations of Nanometrics and Minor League Merger Corporation on the one hand, and August Technology on the other, to effect the August merger and the other transactions contemplated by the merger agreement are subject to the satisfaction or waiver of the following additional conditions:

the representations and warranties of the other party shall have been true and correct (without giving any effect to any qualification as to materiality or material adverse effect contained in any specific representation or warranty) on the date the merger agreement was signed (i.e., January 21, 2005) and as of the date the August merger is to be completed as if made at and as of that time, except:

for changes contemplated or permitted by the merger agreement,

to the extent the representations and warranties of the other party address matters only as of a particular date, they must be true and correct only as of that date, and

where any failures of such representations and warranties to be true and correct, individually or in the aggregate, do not have a material adverse effect, as defined below;

the other party shall have performed or complied in all material respects with all of its agreements and covenants required by the merger agreement to be performed or complied with by it before completion of the August merger; and

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no material adverse effect, as defined below, with respect to the other party shall have occurred since the date the merger agreement was signed (i.e., January 21, 2005).

Material Adverse Effect

Under the terms of the merger agreement, a material adverse effect on either Nanometrics or August Technology means any change, effect or circumstance that (i) is materially adverse to the business, operation, properties or condition (financial or otherwise) of Nanometrics and any of its subsidiaries or August Technology and any of its subsidiaries, taken as a whole, or (ii) materially adversely affects the completion of the transactions contemplated by the merger agreement. However, under the terms of the merger agreement, none of the following, either alone or in combination, will be deemed to constitute, nor will any of the following be taken into account in determining whether there has been or will or could be, a material adverse effect:

any changes resulting from or arising out of general market, economic or political conditions (including any changes arising out of acts of terrorism, or war, weather conditions or other force majeure events), provided that the change does not have a substantially disproportionate impact on Nanometrics and any of its subsidiaries or August Technology and any of its subsidiaries, as the case may be, taken as a whole;

any changes resulting from or arising out of general market, economic or political conditions in the industries in which Nanometrics or August Technology and conduct business (including any changes arising out of acts of terrorism, or war, weather conditions or other force majeure events), provided that the changes do not have a substantially disproportionate impact on Nanometrics and any of its subsidiaries or August Technology and any of its subsidiaries, as the case may be, taken as a whole;

any changes resulting from or arising out of actions taken pursuant to (and required by) the merger agreement or at the request of Nanometrics or August Technology, as the case may be, or the failure to take any actions due to restrictions set forth in the merger agreement;

any changes in the price or trading volume of Nanometrics or August Technology stock, in and of itself;

any failure of Nanometrics or August Technology to meet published revenue or earnings projections, in and of itself; and

any changes or effects arising out of or resulting from any legal claims or other proceedings made by any of the August Technology or Nanometrics shareholders, as the case may be, arising out of or related to the merger agreement, the August merger or any other transactions contemplated by the merger agreement.

Termination; Termination Fees and Expenses

Termination

The merger agreement may be terminated in accordance with its terms at any time prior to completion of the August merger, whether before or after the approval of the merger agreement and approval of the August merger by shareholders of August Technology or the approval of the issuance of the shares of August Nanometrics common stock in the August merger by shareholders of Nanometrics:

by mutual written consent of Nanometrics and August Technology duly authorized by their respective boards of directors;

by either Nanometrics or August Technology, if the August merger is not completed by September 30, 2005; provided, however, that neither party may terminate the merger agreement on this basis if such terminating party has breached its obligations under the merger agreement, or if such terminating party has not complied with its obligations relating to payment of fees and expenses described below;

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by either Nanometrics or August Technology, if a court of competent jurisdiction or governmental, regulatory or administrative agency or commission has issued a nonappealable final order or taken any other action having the effect of permanently prohibiting the August merger;

by either Nanometrics or August Technology, if the merger agreement and the August merger fail to receive the requisite affirmative vote for approval at the August Technology shareholders meeting, provided that August Technology may not terminate the merger agreement on this basis if August Technology has breached the provisions of the merger agreement relating to non-solicitation, board recommendations and filing this joint proxy statement/prospectus, or if August Technology has not complied with its obligations relating to payment of fees and expenses described below;

by either Nanometrics or August Technology, if the issuance of shares of August Nanometrics common stock in the August merger fails to receive the requisite affirmative vote at the Nanometrics shareholders meeting, provided that Nanometrics may not terminate the merger agreement on this basis if Nanometrics has breached the provisions of the merger agreement relating to non-solicitation, board recommendation and filing this joint proxy statement/prospectus, or if Nanometrics has not complied with its obligations relating to payment of fees and expenses described below;

by Nanometrics, upon a breach of, or failure to perform, any representation, warranty or covenant (other than covenants related to non-solicitation and board recommendation) in the merger agreement that the condition would reasonably be expected to cause to completion of the August merger regarding August Technology s representations and warranties or covenants to not be met; however, if the breach or inaccuracy is curable by August Technology, then Nanometrics may not terminate the merger agreement for twenty (20) days after delivery of written notice from Nanometrics to August Technology of the breach, and if the breach is cured during those twenty (20) days Nanometrics may not exercise this termination right;

by August Technology, upon a breach of, or failure to perform, any representation, warranty or covenant (other than covenants related to non-solicitation and board recommendation) in the merger agreement that would reasonably be expected to cause the condition to completion of the August merger regarding Nanometrics representations and warranties or covenants to not be met; however, if the breach or inaccuracy is curable by Nanometrics, then August Technology may not terminate the merger agreement for twenty (20) days after delivery of written notice from August Technology to Nanometrics of the breach, and if the breach is cured during those twenty (20) days, August Technology may not exercise this termination right; or

by either Nanometrics or August Technology if the other party has breached any of the provisions of the merger agreement relating to non-solicitation or board recommendations; the board of directors of such party shall have changed its recommendation; such party shall have accepted an acquisition proposal or another party shall have made a tender or exchange offer for such party s shares and such party shall not have made a statement reaffirming such party s recommendation within ten (10) business days.

Termination Fees and Expenses

Under the terms of the merger agreement, Nanometrics must pay a fee to August Technology of $8.3 million, plus expenses, if (i) August Technology terminates the merger agreement because Nanometrics has breached any provisions of the merger agreement related to non-solicitation or board recommendation; the Nanometrics board of directors shall have changed its recommendation; Nanometrics shall have accepted an acquisition proposal; or another party shall have made a tender or exchange offer for Nanometrics shares and Nanometrics shall not have made a statement reaffirming its recommendation within ten (10) business days; or (ii) if either party terminates the merger agreement because the August merger has not been completed by September 30, 2005, the Nanometrics shareholder approval required to complete the August merger has not been obtained (subject to the conditions described above) or Nanometrics has materially breached the merger

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agreement, and prior to such termination, an acquisition proposal with respect to Nanometrics had been publicly announced (or had otherwise become publicly known) or a person had publicly announced an intention to make an acquisition proposal with respect to Nanometrics, and such proposal or intention was not withdrawn or retracted prior to the Nanometrics shareholders meeting or such termination.

Under the terms of the merger agreement, August Technology must pay a fee to Nanometrics of $8.3 million, plus expenses, if (i) Nanometrics terminates the merger agreement because August Technology has breached any provisions of the merger agreement related to non-solicitation or board recommendation; the August Technology board of directors shall have changed its recommendation; August Technology shall have accepted an acquisition proposal; or another party shall have made a tender or exchange offer for August Technology s shares and August Technology shall not have made a statement reaffirming its recommendation with ten (10) business days; or (ii) either party shall have terminated the merger agreement because the August merger has not been completed by September 30, 2005, the August Technology shareholder approval required to complete the August merger has not been obtained (subject to the conditions described above) or August Technology has materially breached the merger agreement, and prior to such termination, an acquisition proposal with respect to August Technology had been publicly announced (or had otherwise become publicly known) or a person had publicly announced an intention to make an acquisition proposal with respect to August Technology, and such proposal or intention was not withdrawn or retracted prior to the August Technology shareholders meeting or such termination.

Expenses Generally

Except as provided above, all fees and expenses incurred in connection with the merger agreement and the transactions contemplated thereby will be paid by the party incurring the fees or expenses, whether or not the August merger is completed, other than expenses incurred in connection with filing and printing this joint proxy statement/prospectus, the registration statement, and filings by Nanometrics and August Technology under the HSR Act or any similar filing requirement of any governmental entity applicable to the August merger, which will be shared equally by Nanometrics and August Technology.

If the party entitled to payment of the termination fee has to make a claim against the other party and such claim results in a judgment against the other party, the party required to pay the termination fee will also have to pay all of the other party s costs and expenses in connection with the suit together with interest on the unpaid termination fee.

The Voting Agreements

Nanometrics Voting Agreements. Each of Vincent J. Coates, John D. Heaton, Edmond R. Ward, William G. Oldham, Stephen J Smith, J. Thomas Bentley, Roger Ingalls, Jr., Norman Coates and Paul B. Nolan has entered into a voting agreement with August Technology, agreeing to vote all of his respective shares of Nanometrics common stock, including shares of Nanometrics common stock acquired after the date of the voting agreements, as follows:

- in favor of the adoption and approval of the merger agreement, and in favor of each of the other actions contemplated by the merger agreement and any action required to further the August merger or these actions, including the reincorporation merger;

- against approval of any proposal made in opposition to, or in competition with, the completion of the August merger and the transactions contemplated under the merger agreement, including the reincorporation merger;

against any of the following actions (other than those actions that relate to the August merger, including the reincorporation merger): (i) any merger, consolidation, business combination, sale of assets, reorganization or recapitalization of Nanometrics or any of its subsidiaries, (ii) any sale, lease or transfer of any significant part of the assets of Nanometrics or any of its subsidiaries, (iii) any reorganization,

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recapitalization, dissolution, liquidation or winding up of Nanometrics or any of its subsidiaries, (iv) any change in the capitalization or the corporate structure of Nanometrics or any of its subsidiaries, or (v) any other any action that is intended, or could reasonably be expected to, impede, interfere with, delay, postpone, discourage or adversely affect the August merger or any other transactions contemplated by the merger agreement; and

in favor of waiving any notice that may have been or may be required relating to any reorganization of Nanometrics or its subsidiaries, any reclassification or recapitalization of the capital stock of Nanometrics or its subsidiaries, any sale of assets, change of control or acquisition of Nanometrics or its subsidiaries by any person, or any consolidation or merger of Nanometrics or its subsidiaries with or into any person.

Each of these shareholders has also granted to August Technology an irrevocable proxy to vote the shares of Nanometrics common stock subject to the voting agreements in accordance with its terms. The voting agreements and irrevocable proxies terminate upon the earlier of the termination of the merger agreement or the effective time of the August merger.

At the close of business on January 21, 2005, directors and executive officers of Nanometrics and their affiliates owned and were entitled to vote 3,392,274 shares of Nanometrics common stock, collectively representing approximately 26.9% of the shares of Nanometrics common stock outstanding on that date. As of the record date for the Nanometrics annual meeting, directors and executive officers of Nanometrics and their affiliates owned and were entitled to vote shares of Nanometrics common stock, collectively representing approximately of the shares of Nanometrics common stock outstanding on that date.

The voting agreements prohibit the signing shareholders from selling or disposing of any shares or options of Nanometrics common stock beneficially owned by the signing shareholders, unless the transferee agrees to be bound by the terms and conditions of the voting agreement. A form of the voting agreement is attached to this joint proxy statement/prospectus as Annex A-1.

August Technology Voting Agreements. Each of James A. Bernards, Roger E. Gower, Stanley D. Piekos, Scott A. Gabbard, Jeff L. O Dell, David A. Klenk, D. Mayson Brooks, Jeffrey T. Nelson, Cory M. Watkins, Michael W. Wright and Linda Hall Whitman has entered into a voting agreement with Nanometrics and Minor League Merger Corporation, agreeing to vote all of his or her shares of August Technology common stock, including shares of August Technology common stock acquired after the date of the voting agreements, as follows:

in favor of the adoption and approval of the merger agreement, and in favor of each of the other actions contemplated by the merger agreement and any action required to further the August merger or these actions;

against approval of any proposal opposing or competing with the August merger and the transactions contemplated under the merger agreement;

against any of the following actions (other than those actions that relate to the August merger): (i) any merger, consolidation, business combination, sale of assets, reorganization or recapitalization of August Technology or any of its subsidiaries, (ii) any sale, lease or transfer of any significant part of the assets of August Technology or any of its subsidiaries, (iii) any reorganization, recapitalization, dissolution, liquidation or winding up of August Technology or any of its subsidiaries, (iv) any change in the capitalization or the corporate structure of August Technology or any of its subsidiaries, or (v) any other any action that is intended, or could reasonably be expected to, impede, interfere with, delay, postpone, discourage or adversely affect the August merger or any other transactions contemplated by the merger agreement; and

in favor of waiving any notice that may have been or may be required relating to any reorganization of August Technology or its subsidiaries, any reclassification or recapitalization of the capital stock of

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August Technology or its subsidiaries, any sale of assets, change of control or acquisition of August Technology or its subsidiaries by any person, or any consolidation or merger of August Technology or its subsidiaries with or into any person.

Each of these shareholders has also granted to Nanometrics an irrevocable proxy to vote the shares of August Technology common stock subject to the voting agreements in accordance with its terms. The voting agreements and irrevocable proxies terminate upon the earlier of the termination of the merger agreement or the effective time of the August merger.

At the close of business on January 21, 2005, the date of the merger agreement, directors and executive officers of August Technology and their affiliates beneficially owned and were entitled to vote 1,120,911 shares of August Technology common stock, collectively representing approximately 6.3% of the shares of August Technology common stock outstanding on that date. As of the record date for the August Technology special meeting, directors and executive officers of August Technology and their affiliates beneficially owned and were entitled to vote shares of August Technology common stock, collectively representing approximately of the shares of August Technology common stock outstanding on that date.

The voting agreements prohibit the signing shareholders from selling or disposing of any shares or options of August Technology common stock beneficially owned by the signing shareholders, unless the transferee agrees to be bound by the terms and conditions of the voting agreement. A form of the voting agreement is attached to this joint proxy statement/prospectus as Annex A-2.

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UNAUDITED PRO FORMA CONDENSED COMBINED FINANCIAL INFORMATION

The following unaudited pro forma condensed combined balance sheet as of April 2, 2005 and the unaudited pro forma condensed combined statement of operations for the year ended January 1, 2005 and the three months ended April 2, 2005 are based on the historical consolidated financial statements of Nanometrics and August Technology, incorporated by reference into this joint proxy statement/prospectus, after giving effect to the August merger as a purchase of August Technology by Nanometrics using the purchase method of accounting and applying the assumptions and adjustments described in the accompanying notes to the unaudited pro forma condensed combined financial statements.

Nanometrics and August Technology have different fiscal year ends. Accordingly, the unaudited pro forma condensed combined balance sheet combines Nanometrics historical consolidated balance sheet as of April 2, 2005 with August Technology s historical consolidated balance sheet as of March 31, 2005, giving effect to the August merger as if it had occurred on April 2, 2005. The unaudited pro forma condensed combined statements of operations for the year ended January 1, 2005 and for the three months ended April 2, 2005 combine Nanometrics historical consolidated statements of operations for the periods then ended with August Technology s historical consolidated statements of operations for the year ended December 31, 2004 and for the three month period ended March 31, 2005. The unaudited pro forma condensed combined statements of operations give effect to the August merger as if it had occurred on January 4, 2004.

The August merger will be accounted for under the purchase method of accounting in accordance with Statement of Financial Accounting Standards No. 141, *Business Combinations* (SFAS 141). Under the purchase method of accounting, the total estimated purchase price, calculated as described in Note 1 to these unaudited pro forma condensed combined financial statements, is allocated to the net tangible and identifiable intangible assets of August Technology acquired in connection with the August merger, based on their respective estimated fair values. Management has made a preliminary allocation of the estimated purchase price to the tangible and identifiable intangible assets acquired and liabilities assumed based on various preliminary estimates. A final determination of these estimated fair values, which cannot be made prior to the completion of the August merger, will be based on the actual net tangible and identifiable intangible assets of August Technology that exist as of the date of completion of the August merger.

Further, the unaudited pro forma condensed combined financial statements do not include any adjustments for liabilities that may result from integration activities, as management of Nanometrics and August Technology are in the process of making these assessments, and estimates of these costs are not currently known. However, liabilities ultimately may be recorded for severance or relocation costs related to August Technology employees, costs of vacating some facilities of August Technology, or other costs associated with exiting activities of August Technology that would affect amounts in the pro forma financial statements. Any such liabilities would be recorded as an adjustment to the purchase price and an increase in goodwill. In addition, Nanometrics may incur significant restructuring charges upon completion of the August merger or in subsequent quarters for severance or relocation costs related to Nanometrics employees, costs of vacating some facilities of Nanometrics, or other costs associated with exiting activities of Nanometrics. Any such restructuring charges would be recorded as an expense in the consolidated statement of operations in the period in which they were incurred. Since the final intrinsic value associated with deferred stock-based compensation will be calculated at the completion of the August merger, the amount allocated to this item could change materially depending on the price of Nanometrics common stock or the number of August Technology unvested options outstanding as of the completion of the August merger.

These unaudited pro forma condensed combined financial statements have been prepared based on preliminary estimates of fair values. Amounts preliminarily allocated to intangible assets with definite lives may change significantly, which could result in a material change in amortization of intangible assets. Therefore, the actual amounts recorded as of the completion of the August merger may differ materially from the information presented in these unaudited pro forma condensed combined consolidated financial statements. The impact of ongoing integration activities, the timing of completion of the August merger and other changes in August Technology s net tangible and intangible assets that occur prior to completion of the August merger could cause material differences in the information presented.

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UNAUDITED PRO FORMA CONDENSED COMBINED BALANCE SHEET

AS OF APRIL 2, 2005

(in thousands)

	Historical Nanometrics	Historical August Technology (1)	Pro Forma Adjustments	Pro Forma Combined
Assets				
Current assets:				
Cash and cash equivalents	$ 12,296	$ 11,518	$	$ 23,814
Short-term marketable debt securities	18,852	25,265		44,117
Trade receivables, net	27,598	9,618		37,216
Inventories	25,422	24,739	6,872 (o)	57,033
Prepaid and other current assets	2,669	1,954	(1,721)(w)	2,902
Total current assets	86,837	73,094	5,151	165,082
Property, plant and equipment, net	48,245	5,531	(606)(p)	53,170
Long-term marketable debt securities		15,439		15,439
Intangible assets, net	848	3,355	(3,355)(b)	36,059
			35,211 (m)	
Goodwill		498	(498)(a)	29,071
			29,071 (n)	
Other assets	1,217	139		1,356
Total assets	$ 137,147	$ 98,056	$ 64,974	$ 300,177
Liabilities and Stockholders Equity				
Current liabilities:				
Accounts payable	$ 3,275	$ 5,975	$	$ 9,250
Accrued compensation	2,326	2,051		4,377
Accrued liabilities	2,564	2,222	(92)(d)	9,096
			1,170 (k)	
			3,232 (l)	
Customer deposits and deferred revenue	4,256	6,767		11,023
Income taxes payable	1,099			1,099
Current portion of long-term debt	792			792
Total current liabilities	14,312	17,015	4,310	35,637
Long-term debt, net of current portion	1,851			1,851
Deferred income tax liabilities and other	354	112	(90)(d)	2,162
			(22)(e)	
			1,808 (r)	
Total liabilities	16,517	17,127	6,006	39,650
Stockholders equity:				
Common stock	104,323	90,815	(90,815)(c)	255,182
			144,278 (h)	

			6,581 (i)	
Deferred compensation related to stock options			(13)(j)	(13)
Retained earnings (accumulated deficit)	14,636	(9,674)	9,674 (c)	3,687
			(10,949)(q)	
Accumulated other comprehensive income (loss)	1,671	(212)	212 (c)	1,671
Total stockholders equity	120,630	80,929	58,968	260,527
Total liabilities and stockholders equity	$ 137,147	$ 98,056	$ 64,974	$ 300,177

(1) Historical August Technology Balance Sheet is as of March 31, 2005

See accompanying notes to unaudited pro forma condensed combined financial statements.

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UNAUDITED PRO FORMA CONDENSED COMBINED STATEMENT OF OPERATIONS

FOR THE YEAR ENDED JANUARY 1, 2005

(in thousands, except per share amounts)

	Historical Nanometrics	Pro Forma August Technology (1)	Reclassifications	Pro Forma Adjustments	Pro Forma Combined
Net Revenues:					
Products	$ 62,911	$ 68,961	$ (5,400) (A)	$	$ 126,472
Service	7,784		5,400 (A)		13,184
Total revenues	70,695	68,961			139,656
Costs and Expenses:					
Cost of products	27,555	32,012	(1,630) (B)	1 (s)	60,819
				2,904 (t)	
				(23) (u)	
Cost of service	8,404		5,997 (B)		14,401
Research and development	12,827	14,336		2 (s)	27,205
				40 (u)	
Selling and marketing	11,442	23,434	(4,367) (B)	1 (s)	24,045
			(6,767) (C)	723 (t)	
				(60) (u)	
				(361) (f)	
General and administrative	5,137		6,767 (C)	(757) (f)	11,076
				(49) (g)	
				(22) (u)	
Total costs and expenses	65,365	69,782		2,399	137,546
Income (loss) from operations	5,330	(821)		(2,399)	2,110
Other income (expense):					
Interest income	276	826			1,102
Interest expense	(110)				(110)
Other income (expense)	(44)	73			29
Income (loss) before provision for income taxes	5,452	78		(2,339)	3,131
Provision for income taxes	426	277			703
Net income (loss)	$ 5,026	$ (199)	$	$ (2,339)	$ 2,428
Net income (loss) per share:					
Basic	$ 0.41	$ (0.01)			$ 0.10
Diluted	$ 0.38	$ (0.01)			$ 0.10

Shares used to compute net income (loss) per share:			
Basic	12,320	17,755	23,794
Diluted	13,364	17,755	25,033

(1) Pro forma August Technology Statement of Operations has been adjusted to give pro forma effect to the purchase of certain assets relating to the DMSVision software division of Inspex, Inc. as if that transaction had occurred on January 1, 2004. See accompanying Note 2 to these unaudited pro forma condensed combined financial statements.

See accompanying notes to unaudited pro forma combined financial statements.

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UNAUDITED PRO FORMA CONDENSED COMBINED STATEMENT OF OPERATIONS

FOR THE THREE MONTHS ENDED APRIL 2, 2005

(in thousands, except per share amounts)

	Historical Nanometrics	Historical August Technology	Reclassifications	Pro Forma Adjustments	Pro Forma Combined
Net Revenues:					
Products	$ 21,166	$ 18,417	$ (1,218)(A)	$	$ 38,365
Service	2,325		1,218 (A)		3,543
Total revenue	23,491	18,417			41,908
Costs and Expenses:					
Cost of products	9,750	8,359	(350)(B)	725 (t) (7)(u)	18,477
Cost of service	2,573		1,678 (B)		4,251
Research and development	3,179	3,666		1 (s) (12)(u)	6,834
Selling and marketing	3,145	6,290	(1,328)(B) (1,697)(C)	181 (t) (19)(u)	6,572
General and administrative	1,998		1,697 (C)	(348)(f) (5)(u)	3,342
Total costs and expenses	20,645	18,315		516	39,476
Income (loss) from operations	2,846	102		(516)	2,432
Other income (expense):					
Interest income	130	289			419
Interest expense	(18)				(18)
Merger expenses		(1,234)		1,234(v)	
Other expense	(270)				(270)
Income (loss) before provision for income taxes	2,688	(843)		718	2,563
Provision for income taxes	83	55			138
Net income (loss)	$ 2,605	$ (898)	$	$ 718	$ 2,425
Net income (loss) per share					
Basic	$ 0.21	$ (0.05)			$ 0.10
Diluted	$ 0.19	$ (0.05)			$ 0.10
Shares used to compute net income (loss) per share					
Basic	12,575	17,867			24,049
Diluted	13,455	17,867			25,090

See accompanying notes to unaudited pro forma combined financial statements.

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NOTES TO UNAUDITED PRO FORMA

CONDENSED COMBINED BALANCE SHEET

1. Basis of Pro Forma Presentation

On January 21, 2005, Nanometrics and August Technology entered into a definitive merger agreement (the Agreement) under which Nanometrics would merge with August Technology in a business combination to be accounted for using the purchase method. Pursuant to the terms of the Agreement, August Technology will merge with a wholly-owned subsidiary of Nanometrics and August Technology will thereby become a wholly-owned subsidiary of Nanometrics. In connection with the August merger, Nanometrics will be renamed August Nanometrics Inc. The total estimated purchase price of $153.8 million includes the exchange of Nanometrics common stock valued at $144.3 million, assumed stock options with a fair value of $6.6 million and estimated direct transaction costs of $2.9 million.

The unaudited pro forma condensed combined financial statements assume the issuance of approximately 11.5 million shares of August Nanometrics common stock, based on an exchange ratio of 0.6401 of a share of August Nanometrics common stock for each outstanding share of August Technology common stock as of April 2, 2005. The estimated purchase price also assumes an average market price per share of Nanometrics common stock of $12.57 that is based on an average of the closing market price of Nanometrics common stock for the period beginning two trading days before and ending two trading days after the August merger was announced. The actual number of shares of August Nanometrics common stock to be issued will be determined based on the actual number of shares of August Technology common stock outstanding at the completion of the August merger. However, the final purchase price will continue to reflect a price per share of $12.57.

Under the terms of the merger agreement, each outstanding option to purchase August Technology common stock will be assumed by August Nanometrics and converted into an option to purchase August Nanometrics common stock. Under the terms of the merger agreement, August Nanometrics would assume August Technology stock options to purchase 1.4 million shares of August Nanometrics common stock. The fair value of the outstanding options was determined using a Black-Scholes valuation model with the following weighted-average assumptions: volatility of 75%; risk-free interest rate of 3.7%, expected life of 2.1 years and dividend yield of zero. The actual number of stock options to be assumed will be determined based on the actual number of August Technology stock options outstanding at the completion of the August merger.

There were no significant intercompany balances and transactions between Nanometrics and August Technology as of the dates and for the periods of these pro forma condensed combined financial statements. Certain reclassification adjustments have been made to conform Nanometrics and August Technology s historical reported balances to the pro forma condensed combined financial statement basis of presentation.

The allocation of the estimated purchase price discussed below is preliminary because the August merger has not yet been completed. The actual purchase price will be based on the August Nanometrics shares issued to August Technology shareholders and the options to purchase August Technology stock assumed by August Nanometrics on the closing date of the August merger. The final allocation of the purchase price will be based on August Technology s assets and liabilities on the closing date.

The total preliminary estimated purchase price of the August merger is as follows (in thousands):

	Amount
Estimated fair value of August Nanometrics shares issued to August Technology shareholders	$ 144,278
Estimated fair value of assumed August Technology stock options	6,581
Estimated direct transaction fees and expenses	2,891
Total preliminary estimated purchase price	$ 153,750

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NOTES TO UNAUDITED PRO FORMA

CONDENSED COMBINED BALANCE SHEET (Continued)

Under the purchase method of accounting, the total preliminary estimated purchase price as shown in the table above is allocated to August Technology s tangible and intangible assets and liabilities based on their estimated fair values as of the date of completion of the August merger. The total preliminary estimated purchase price is allocated as follows (in thousands):

	Amount	First Year Charges	Estimated Useful Life
Net tangible assets	$ 80,314	$ (65)(1)	n/a
		6,872 (2)	n/a
Identifiable intangible assets:			
Purchased technology	17,709	2,214	8 years
Trade name	4,759		Indefinite
Product trade names	1,311	164	8 years
Patents	4,205	526	8 years
Customer relationships	7,227	723	10 years
Goodwill	29,071		n/a
Non-current deferred tax liability	(1,808)		n/a
In-process research and development	10,949	10,949 (2)	n/a
Deferred stock-based compensation	13	4	3.9 years(3)
Total preliminary estimated purchase price	$ 153,750	$ 21,387	

(1) Relates to the net decrease in depreciation expense resulting from the adjustment to fair value of the fixed assets.

(2) The portion of the estimated purchase price allocated to in-process research and development of $10.9 million and an increase in cost of products sold of $6.9 million related to the revaluation of certain inventory to fair value. These charges are non-recurring and as such are not reflected in the pro forma condensed combined statements of operations.

(3) Estimated weighted-average remaining vesting period.

A final determination of fair values, which cannot be made prior to the completion of the August merger, may differ materially from the preliminary estimates and will include management s final valuation of the fair values of assets acquired and liabilities assumed. This final valuation will be based on the actual net tangible assets of August Technology that exist as of the date of the completion of the August merger. The final valuation may change the allocations of purchase price, which could affect the fair value assigned to the assets and liabilities and could result in a change to the unaudited pro forma condensed combined financial statements data.

A preliminary estimate of $80.3 million has been allocated to net tangible assets acquired and $30.5 million has been allocated to amortizable intangible assets acquired. The depreciation and amortization related to the fair value adjustment to net tangible assets and the amortization related to the amortizable intangible assets are reflected as pro forma adjustments to the unaudited pro forma condensed combined statements of operations.

Identifiable intangible assets. Of the total estimated purchase price, $35.2 million has been allocated to purchased technology, trade name, product trade names, patents and customer relationships. This adjustment is preliminary and is based on Nanometrics management s estimates.

The amount ultimately allocated to identifiable intangible assets may differ materially from this preliminary allocation. A $5.0 million increase or decrease in value allocated to the amortizable intangible assets would increase or decrease annual amortization by approximately $0.6 million.

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NOTES TO UNAUDITED PRO FORMA

CONDENSED COMBINED BALANCE SHEET (Continued)

Identification and allocation of value to the identified intangible assets was based on the provisions of SFAS 141. The fair value of the identified intangible assets was estimated by performing a discounted cash flow analysis using the income approach. This method includes a forecast of direct revenues and costs associated with the respective intangible assets and charges for economic returns on tangible and intangible assets utilized in cash flow generation. Net cash flows attributable to the identified intangible assets are discounted to their present value at a rate commensurate with the perceived risk. The projected cash flow assumptions considered contractual relationships, customer attrition, eventual development of new technologies and market competition.

Amounts allocated to the identifiable intangible assets are expected to be amortized over a life of 8 to 10 years with the exception of trade name, which has indefinite life and will not be amortized. The estimates of expected useful lives are based on guidance from SFAS No. 141 and take into consideration the effects of competition, product lives and possible obsolescence. The useful lives of technology rights, patents and product trade names are based on the number of years in which net cash flows have been projected. The useful lives of customer relationships was estimated based upon August Technology s established and long-standing customer relationships with its major customers. Management considers the August trade name to be recognized throughout the worldwide community of semiconductor manufactures as a premier source of all-surface, advanced macro defect inspection, metrology and analysis solutions technology. Subsequent to the August merger, management intends to maintain and continue to market existing and new products under the August Technology trade name. As management intends to continue to use the August Technology trade name indefinitely, an indefinite life was assigned.

Assumptions used in forecasting cash flows for each of the identified intangible assets included consideration of the following:

August Technology historical operating margins;

August Technology market share and growth;

Trends in technology; and

The nature and expected timing of new product introductions by August Technology and its competitors.

Goodwill. Goodwill represents the excess of the purchase price over the fair value of the underlying net tangible and intangible assets. In accordance with SFAS No. 142, goodwill will not be amortized but instead will be tested for impairment at least annually (more frequently if certain indicators are present). In the event the management of the combined company determines that the value of goodwill has become impaired, the combined company will incur an accounting charge for the amount of impairment during the fiscal quarter in which the determination is made.

Net Deferred Tax Liability. The deferred tax liability reflects the estimated tax effect of deferred tax liabilities associated with purchase accounting that were not offset by preexisting deferred tax assets. Such deferred tax liabilities are associated with intangible assets with indefinite lives. This determination is preliminary and subject to change based upon management s final valuation of the fair values of identifiable intangible assets acquired.

In-process research and development. The preliminary estimated charge for in-process research and development of $10.9 million is based on management s estimates and will be charged to expense in the period during which the August merger is completed. The amount ultimately allocated to in-process research and development may differ from this preliminary allocation. This amount has been excluded from the unaudited pro forma condensed combined statements of operations as such charge is non-recurring.

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NOTES TO UNAUDITED PRO FORMA

CONDENSED COMBINED BALANCE SHEET (Continued)

August Technology is currently developing new products that qualify as in-process research and development. Projects that qualify as in-process research and development represent those that have not yet reached technological feasibility. Technological feasibility is defined as being equivalent to completion of a beta-phase working prototype in which there is no remaining risk relating to the development. These in-process research and development projects are focused on developing new products, integrating new technologies, improving product performance and broadening features and functionalities. There is a risk that these development efforts and enhancements will not be competitive with other products using alternative technologies that offer comparable functionality.

The fair value of these IPR&D projects was estimated by considering the importance of each project to the overall development plan, estimating costs to develop the purchased in-process research and development into commercially viable products, estimating the resulting net cash flows from the projects when completed and discounting the net cash flows to their present value using the income approach.

In addition, solely for the purposes of estimating the fair value of the IPR&D projects, the following assumptions were made:

- Revenue that is reasonably likely to result from the potential uses of identifiable intangible assets that includes the estimated number of units to be sold, estimated selling prices, estimated market penetration and estimated market share and year-over-year growth rates over the product cycles;

- Remaining developmental R&D and sustaining engineering expenses once commercialized were also estimated by management according to internal planning estimates; and

- The cost structure was assumed to be similar to that for existing products.

Net cash flows attributable to the projects were discounted to their present values at a rate commensurate with the perceived risk. The weighted average cost of capital used to discount the net cash flows to their present value was adjusted to reflect the difficulties and uncertainties in completing each project and thereby achieving technological feasibility, the percentage of completion of each project, anticipated market acceptance and penetration, market growth rates and risks related to the impact of potential changes in future target markets. Based on these factors, the weighted average discount rate for these projects was 30%.

The estimates used in valuing in-process research and development were based upon assumptions believed to be reasonable but which are inherently uncertain and unpredictable. Assumptions may be incomplete or inaccurate, and unanticipated events and circumstances may occur. In addition, some projects which are currently in process may not be in process at the completion of the August merger and new projects may be started prior to completion of the August merger which may be in process at the completion of the August merger. Accordingly, actual results may vary from the projected results.

Deferred stock-based compensation. This represents the estimated intrinsic value of the unvested August Technology stock options assumed. The estimated intrinsic value was calculated as the difference between the quoted closing market price of Nanometrics stock as of April 2, 2005, the assumed consummation date of the August merger, and the exercise price of the assumed unvested August Technology stock options. This

balance will be amortized over the remaining vesting period of the stock options.

2. August Technology Pro forma Statement of Operations

Pro forma August Technology results of operations for the year ended December 31, 2004 have been adjusted to give pro forma effect to the purchase of certain assets relating to the DMSVision software division of Inspex, Inc. as if that transaction had occurred on January 1, 2004. The total consideration paid for DMSVision, including direct acquisition costs, was approximately $2.3 million of cash. In addition, August Technology may owe additional future consideration based on new orders for DMSVision software licenses received in the twelve

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NOTES TO UNAUDITED PRO FORMA

CONDENSED COMBINED BALANCE SHEET (Continued)

months after the transaction closing date of July 27, 2004. August Technology estimates the total contingent consideration to be paid will be between $150,000 and $300,000. Based upon the total estimated contingent consideration, the payment of the contingency will result in an increase in the allocation of purchase price to purchased technology.

The purchase price has been allocated based on August Technology management s estimate of the fair values of assets acquired and liabilities assumed as follows (in thousands):

Accounts receivable	$ 122
Purchased technology	2,474
Accrued liabilities	(21)
Deferred revenues	(249)
	$ 2,326

	Historical August Technology(a)	Historical DMSVision	Pro Forma Adjustments	Pro Forma August Technology
Net revenues	$ 68,443	$ 518	$	$ 68,961
Cost of revenues	31,925	87		32,012
Gross profit	36,518	431		36,949
Selling, general and administrative expenses	22,798	275	361 (b)	23,434
Research and development expenses	13,561	775		14,336
Operating income (loss)	159	(619)	(361)	(821)
Interest income	847		(21) (c)	826
Other income	73			73
Income (loss) before provision for income taxes	1,079	(619)	(382)	78
Provision for income taxes	277			277
Net income (loss)	$ 802	$ (619)	$ (382)	$ (199)
Net income (loss) per share:				
Basic	$ 0.05			$ (0.01)
Diluted	$ 0.04			$ (0.01)
Shares used to compute net income (loss) per share:				
Basic	17,755			17,755
Diluted	18,211			17,755

(a) Historical August Technology statement of operations is for the year ended December 31, 2004.
(b) Represents the amortization of purchased technology. The useful life of the purchased technology is estimated to be four years.
(c) Represents interest income foregone on net cash used at 1.6% interest rate per annum.

3. Reclassifications

Certain reclassification adjustments have been made to conform Nanometrics and August Technology s historical reported balances to the pro forma combined condensed financial statement basis of presentation. The reclassifications are as follows:

(A) To reclassify August Technology s service revenue to a separate line.

(B) To reclassify August Technology s cost of service revenue to a separate line.

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NOTES TO UNAUDITED PRO FORMA

CONDENSED COMBINED BALANCE SHEET (Continued)

(C) To reclassify August Technology s general and administrative expense to a separate line.

4. Pro Forma Adjustments

Pro forma adjustments are necessary to reflect the estimated purchase price, to reflect amounts related to August Technology s net tangible and intangible assets at an amount equal to the preliminary estimate of their fair values, to reflect the amortization expense related to the estimated amortizable intangible assets and deferred stock-based compensation, to reflect changes in depreciation and amortization expense resulting from the estimated fair value adjustments to net tangible assets and to reflect the income tax effect related to the pro forma adjustments. The pro forma combined provision for income taxes does not necessarily reflect the amounts that would have resulted had Nanometrics and August Technology filed consolidated income tax returns during the periods presented.

There were no significant intercompany balances and transactions between Nanometrics and August Technology for the year ended January 1, 2005 and as of and for the three month period ended April 2, 2005.

The pro forma adjustments included in the unaudited pro forma condensed combined financial statements are as follows:

(a) To eliminate August Technology s historical goodwill

(b) To eliminate August Technology s historical intangible assets

(c) To eliminate August Technology s equity

(d) To eliminate August Technology s historical deferred rent

(e) To eliminate August Technology s historical deferred tax liabilities

(f) To eliminate August Technology s historical and pro forma amortization of purchased technology

(g) To eliminate August Technology s historical amortization of deferred stock-based compensation

(h) To record the fair value of Nanometrics shares exchanged in the transaction

(i) To record the fair value of August Technology stock options assumed

(j) To record deferred stock-based compensation related to unvested August Technology stock options assumed

(k) To accrue the remaining Nanometrics direct costs of the transaction

(l) To accrue the remaining August Technology direct costs of the transaction

(m) To record the fair value of August Technology s identifiable intangible assets

(n) To record goodwill

(o) To adjust August Technology s inventory to fair value. This adjustment will result in an increase in cost of products upon the sale of the related inventory. The increase in costs is non-recurring and as such, is not reflected in the pro forma condensed combined statement of operations.

(p) To adjust August Technology s property, plant and equipment to fair value

(q) To record the effect of the write-off of in-process research and development. This charge is non-recurring and as such, is not reflected in the pro forma condensed statement of operations.

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NOTES TO UNAUDITED PRO FORMA

CONDENSED COMBINED BALANCE SHEET (Continued)

(r) To record the deferred tax liability associated with the difference in basis of a certain intangible asset between book and tax

(s) To record amortization of stock-based compensation

(t) To record amortization of intangible assets

(u) To adjust depreciation expense of fixed assets as a result of the adjustment to fair value

(v) To eliminate merger expenses of August Technology. These expenses are non-recurring and as such are not reflected in the pro forma condensed combined statement of operations.

(w) To eliminate Nanometrics deferred merger expenses

5. Pro Forma Net Income Per Share

The pro forma basic net income per share is based on the number of Nanometrics shares used in computing basic net income per share plus the 11.5 million shares of August Nanometrics common stock that would be exchanged for the August Technology common stock as of April 2, 2005.

The pro forma diluted net income per share is based on the number of Nanometrics shares used in computing diluted net income per share plus the 11.5 million shares of August Nanometrics common stock assumed to be exchanged for the August Technology common stock as of April 2, 2005, and the potential dilution from assumed dilutive stock options (using the treasury stock method).

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COMPARISON OF RIGHTS OF HOLDERS AND CORPORATE GOVERNANCE MATTERS

Nanometrics is incorporated under the laws of the State of California and accordingly, the rights of the shareholders of Nanometrics are currently governed by the California General Corporation Law, Nanometrics articles of incorporation and Nanometrics bylaws. August Technology is incorporated under the State of Minnesota and accordingly, the rights of the shareholders of August Technology are currently governed by the Minnesota Business Corporations Act, August Technology s articles of incorporation and August Technology s bylaws. Upon completion of the August merger, August Technology shareholders will receive August Nanometrics common stock in exchange for their shares of August Technology common stock. If Nanometrics and August Technology complete the August merger and the reincorporation merger, August Nanometrics will be a Delaware corporation, and the rights of the stockholders of Nanometrics will be governed by the Delaware General Corporation law, August Nanometrics certificate of incorporation and August Nanometrics bylaws. If Nanometrics and August Technology complete the August merger but not the reincorporation merger, August Nanometrics will be a California corporation, and the rights of the shareholders of Nanometrics will be governed by the California General Corporation Law, and Nanometrics articles of incorporation and Nanometrics bylaws in effect immediately prior to the August merger.

The following is a summary of the material differences between the current rights of holders of Nanometrics common stock, the current rights of holders of August Technology common stock and the rights of holders of August Nanometrics common stock upon completion of the August merger and the reincorporation merger. Furthermore, Nanometrics and August Technology have filed with the Securities and Exchange Commission their respective documents referenced in this summary of rights of holders and will send copies of these documents to you, without charge, upon your request. August Nanometrics certificate of incorporation and bylaws are attached to this joint proxy statement/prospectus as Annex B and Annex B-1, respectively. See the section of the joint proxy statement/prospectus entitled *Additional Information Where You Can Find More Information* beginning on page 200.

	Nanometrics (California Corporation)	**August Technology (Minnesota Corporation)**	**August Nanometrics (Delaware Corporation)**
Authorized Capital Stock	The authorized capital stock of Nanometrics consists of 50,000,000 shares of common stock, no par value per share.	The authorized capital stock of August Technology consists of 45,000,000 shares of stock, no par value per share, 42,000,000 of which are designated common stock, and 3,000,000 of which are undesignated shares. The board of directors of August Technology is authorized to establish from the undesignated shares one or more classes or series of shares, to designate each such class or series (which may include but is not limited to designation as additional common shares), and to fix the relative rights and	The authorized capital stock of August Nanometrics consists of 47,000,000 shares of common stock, par value $0.001 per share, and 3,000,000 shares of preferred stock, par value $0.001 per share. The board of directors of August Nanometrics is authorized to issue preferred stock in series, to establish from time to time the number of shares to be included in each series, and to fix the designation, powers, preferences and relative rights of each such series and the qualifications, limitations or restrictions thereof.

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	Nanometrics	August Technology	August Nanometrics
		preferences of each such class or series.	
Number of Directors	The Nanometrics bylaws provide that the board of directors shall consist of not less than five nor more than seven members. The exact number shall be seven, however, until an amendment to the bylaws otherwise fixing the number is duly adopted by the board of directors or shareholders. The number of directors may be changed by an amendment to the articles of incorporation or by an amendment to the bylaws, duly adopted by the vote or written consent of holders of a majority of the outstanding shares entitled to vote; *provided*, *however*, that an amendment reducing the fixed number or the minimum number of directors to a number less than five cannot be adopted if the votes cast against its adoption at a meeting, or the shares not consenting in the case of an action by written consent, are equal to more than 16 2/3% of the outstanding shares entitled to vote thereon. No amendment may change the stated maximum number of authorized directors to a number greater than two times the stated minimum number of directors minus one.	The August Technology bylaws provide that the shareholders, at each annual meeting, shall determine the number of directors which shall be not less than three nor more than nine; *provided*, *however*, that between annual meetings the board of directors may increase the authorized number of directors within the limits stated above. The August Technology board of directors currently consists of five directors.	No fixed number of directors are required by either the bylaws or certificate of incorporation of August Nanometrics. Rather, the authorized number of directors is to be determined from time to time by resolution of the board of directors. The August Nanometrics board of directors currently consists of two directors. Upon completion of the August merger, the August Nanometrics board of directors will be expanded to consist of seven directors.
Cumulative Voting	The Nanometrics bylaws provide for cumulative voting for the election of directors at meetings of shareholders. Accordingly, Nanometrics shareholders have cumulative voting	The August Technology articles of incorporation and bylaws do not provide for cumulative voting. Accordingly, August Technology shareholders do not have	The August Nanometrics certificate of incorporation and bylaws, as proposed, do not provide for cumulative voting. If the Nanometrics shareholders approve Nanometrics proposal 3F, August Nanometrics

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	Nanometrics	August Technology	August Nanometrics
	rights in connection with the election of directors.	cumulative voting rights in connection with the election of directors.	stockholders will not have cumulative voting rights in connection with the election of directors. If the Nanometrics shareholders do not approve Nanometrics proposal 3F, the August Nanometrics bylaws will provide for cumulative voting.
Classification of Board of Directors	The Nanometrics articles of incorporation and bylaws do not classify the Nanometrics board of directors into separate classes with staggered terms.	The August Technology bylaws classify the August Technology board of directors into three separate classes, consisting as nearly equal in number as may be practicable of 1/3 of the total number of directors constituting the entire board of directors, with staggered three-year terms. This classification of the August Technology board of directors can make it difficult for a potential acquirer of August Technology common stock to obtain control of the August Technology board of directors.	The August Nanometrics bylaws classify the August Nanometrics board of directors into three separate classes as nearly equal in size as practicable, with staggered three-year terms. This classification of the August Nanometrics board of directors can make it difficult for a potential acquirer to obtain control of the August Nanometrics board of directors.
Removal of Directors	Under California law, the board of directors may declare vacant the office of a director who has been declared of unsound mind by an order of court or convicted of a felony. Further, any director or the entire board of directors may be removed, with or without cause, with the approval of a majority of the outstanding shares entitled to vote thereon; however, no director may be removed (unless the entire board is removed) if the number of shares voted	The August Technology articles of incorporation and bylaws provide for the removal of directors only by (i) the affirmative vote of the holders of 75% of all shares of stock of the corporation entitled to vote on all matters that may come before each meeting of shareholders; or (ii) or for cause by vote of a majority of the entire board of directors.	The August Nanometrics certificate of incorporation, as proposed, provides that directors may be removed from office by the stockholders only for cause. If the Nanometrics shareholders approve Nanometrics proposal 3E, then a majority vote of the August Nanometrics stockholders would be required to remove a director for cause.

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	Nanometrics	August Technology	August Nanometrics
	against the removal would be sufficient to elect the director under cumulative voting. Shareholders holding at least 10% of the outstanding shares in any class may sue in superior county court to remove from office any officer or director for fraud, dishonest acts or gross abuse of authority or discretion.		
Filling Vacancies on the Board of Directors	Under California law, any vacancy on the board of directors other than one created by removal of a director may be filled by the board of directors, unless otherwise provided in the articles of incorporation or bylaws. If the number of directors is less than a quorum, a vacancy may be filled by the unanimous written consent of the directors then in office, by the affirmative vote of a majority of the directors at a meeting held pursuant to notice or waivers of notice, or by a sole remaining director. A vacancy created by removal of a director can only be filled by the shareholders unless board approval is authorized by a corporation s articles of incorporation or by a bylaw approved by the corporation s shareholders. Neither the articles of incorporation nor the bylaws of Nanometrics permit the board of directors to fill a vacancy created by the removal of a director.	The August Technology bylaws state that vacancies may be filled by the affirmative vote of a majority of the remaining directors, even though less than a quorum; vacancies resulting from a newly-created directorship may be filled by the affirmative vote of a majority of the directors serving at the time of the increase. Under Minnesota law, vacancies created by the removal of a director by the shareholders may be filled by the shareholders.	Under Delaware law, unless otherwise provided in the certificate of incorporation or the bylaws, (i) vacancies on a board of directors; and (ii) newly created directorships resulting from an increase in the number of directors, may be filled by a majority of the directors then in office. In the case of the classified board of directors of August Nanometrics, directors elected to fill vacancies or newly created directorships will hold office until the next election of the class for which the directors have been chosen. The certificate of incorporation and bylaws of August Nanometrics provide that any vacancies on its board of directors may be filled by the affirmative vote of a majority of the remaining directors in office, even if less than a quorum, or by a sole remaining director.
Special Meetings of Shareholders	The Nanometrics bylaws, in accordance with California law, provide	The August Technology bylaws provide that a special meeting of	The August Nanometrics certificate of incorporation, as

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	Nanometrics	August Technology	August Nanometrics
	that a special meeting of shareholders may be convened at any time by the board of directors, or by the chairman of the board of directors, or by the president, or by one or more shareholders holding shares in the aggregate entitled to cast at least 10% of the votes at that meeting.	shareholders may be convened at any time by the chairman of the board of directors, the chief executive officer, the chief financial officer, two or more directors, or a shareholder or shareholders holding 10% or more of the voting power of all shares entitled to vote who shall demand such special meeting by giving written notice of demand to the chief executive officer or the chief financial officer specifying the purposes of the meeting.	proposed, provides that special meetings of the stockholders for any purpose or purposes may be called at any time by the chairman of the board of directors or by a majority of the authorized number of directors, but such special meetings may not be called by any other person or persons. If the Nanometrics shareholders approve Nanometrics proposal 3A and the August Technology shareholders approve August Technology proposal 2a, then the August Nanometrics stockholders will not have the ability to call special meetings.
Advance Notice Provisions for Meetings of Shareholders	The Nanometrics bylaws, in accordance with California law, provide that written notice of a special meeting of the shareholders specifying the place, date and hour of the meeting and the purpose of the meeting must be given to each shareholder not less than 10 nor more than 60 days before the date of the meeting.	The August Technology bylaws provide that written notice of a special meeting of the shareholders specifying the place, date and hour of the meeting must be given to each shareholder entitled to vote not less than 10 nor more than 60 days before the date of the meeting; *provided*, *however*, that notice of a meeting at which there is to be considered a proposal (i) to dispose of all, or substantially all, of the property and assets of the corporation; or (ii) to dissolve the corporation, shall be given to all shareholders of record, whether or not entitled to vote; and *provided further*, that notice of a meeting at which there is to be considered a proposal to adopt a plan of merger or exchange	The August Nanometrics certificate of incorporation, in accordance with Delaware law, provides that written notice of a special meeting of the stockholders specifying the place, if any, date and hour of the meeting, the means of remote communication, if any, and the purpose of the meeting must be given to each stockholder entitled to vote not less than 10 nor more than 60 days before the date of the meeting.

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	Nanometrics	August Technology	August Nanometrics
		shall be given to all shareholders of record, whether or not entitled to vote, at least 14 days prior thereto. Notice of any special meeting shall state the purpose of the proposed meeting. The business transacted at all special meetings shall be confined to the purposes stated in the notice.	
Action by Written Consent of the Shareholders	The Nanometrics bylaws provide that any action which may be taken at any annual or special meeting of shareholders may be taken without a meeting and without prior notice, if a consent in writing, setting forth the action so taken, is signed by the holders of outstanding shares having not less than the minimum number of votes that would be necessary to authorize or take that action at a meeting at which all shares entitled to vote on that action were present and voted. In the case of election of directors, such a consent shall be effective only if signed by the holders of all outstanding shares entitled to vote for the election of directors. This provision allows Nanometrics shareholders to take action without a shareholder meeting and thereby dispense with the limits on who may call, and the notice requirements of, shareholders meetings.	The August Technology bylaws allow for any action that may be taken at any annual or special meeting of shareholders to be taken without a meeting if authorized by a writing signed by all of the holders of shares who would be entitled to vote on such action.	The August Nanometrics certificate of incorporation, as proposed, does not allow action to be taken by its stockholders by written consent. If the Nanometrics shareholders approve Nanometrics proposal 3B and the August Technology shareholders approve August proposal 2b, then no action may be taken by the August Nanometrics stockholders except at an annual or special meeting of the August Nanometrics stockholders called in accordance with the August Nanometrics certificate of incorporation and bylaws.
Proxies	The Nanometrics bylaws, in accordance with California law, provide that any shareholder	The August Technology bylaws allow for every shareholder having the right to vote to be entitled	The August Nanometrics bylaws enable each stockholder entitled to vote at a meeting of

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	Nanometrics	August Technology	August Nanometrics
	entitled to vote for directors, or any other matter, shall have the right to do so by designating another person to act for such shareholder by proxy. No proxy, however, shall be voted or acted upon after 11 months from its date, unless the proxy provides for a longer period.	to vote by proxy duly appointed by an instrument in writing subscribed by such shareholder.	stockholders to authorize another person or persons to act for such stockholder by proxy authorized by an instrument in writing or by a transmission permitted by law filed in accordance with the procedure established for the meeting. No proxy, however, may be voted or acted upon after three years from its date, unless the proxy specifies a longer period.
Charter Amendment	Under California law, unless otherwise specified in the articles of incorporation, an amendment to the articles of incorporation requires the approval of the corporation s board of directors and the affirmative vote of a majority of the outstanding shares entitled to vote thereon, either before or after the board of directors approval, although certain minor amendments may be adopted by the board of directors alone, such as amendments causing stock splits (including an increase in the authorized number of shares in proportion thereto) and amendments changing names and addresses given in the articles. The Nanometrics articles of incorporation do not require a greater level of approval. Under California law, the holders of the outstanding shares of a class of stock are entitled to vote as a class if a proposed amendment to the articles of incorporation would: (i) increase or decrease the	The August Technology articles of incorporation provide that after the issuance of shares by the corporation, any provision contained in the articles may be amended, altered, changed or repealed by the affirmative vote of the holders of at least a majority of the voting power of the shares present and entitled to vote at a duly held meeting or such greater percentage as may be otherwise prescribed by the laws of the State of Minnesota. Under Minnesota law, before the shareholders may vote on an amendment to the articles of incorporation, either a resolution to amend the articles must have been approved by the affirmative vote of the majority of the directors present at the meeting where such resolution was considered or the amendment must have been proposed by shareholders holding 3% or more of the voting power of the shares	Under Delaware law, unless the certificate of incorporation requires a greater vote, an amendment to the certificate of incorporation requires (i) the approval and recommendation of the board of directors; (ii) the affirmative vote of a majority of the outstanding stock entitled to vote on the amendment; and (iii) the affirmative vote of a majority of the outstanding stock of each class entitled to vote on the amendment as a class. The certificate of incorporation of August Nanometrics, as proposed, further requires the affirmative vote of the holders of at least 66.67% of the shares of capital stock of the corporation issued and outstanding and entitled to vote to amend, repeal or adopt a provision inconsistent with provisions of the company s certificate of incorporation concerning (i) shares authorized; (ii) amendment of bylaws; (iii) authority to call special stockholder meetings; and (iv) amendment of the certificate of incorporation.

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Nanometrics	August Technology	August Nanometrics
aggregate number of authorized shares of such class; (ii) effect an exchange, reclassification or cancellation of all or part of the shares of such class, other than a stock split; (iii) effect an exchange, or create a right of exchange, of all or part of the shares of another class into the shares of such class; (iv) change the rights, preferences, privileges or restrictions of the shares of such class; (v) create a new class of shares having rights, preferences or privileges prior to the shares of such class, or increase the rights, preferences or privileges or the number of authorized shares having rights, preference or privileges prior to the shares of such class; (vi) in the case of preferred shares, divide the shares of any class into series having different rights, preferences, privileges or restrictions or authorize the board of directors to do so; or (vii) cancel or otherwise affect dividends on the shares of such class which have accrued but have not been paid.	entitled to vote. Amending the articles of incorporation requires the affirmative vote of the holders of the majority of the voting power present and entitled to vote at the meeting (and of each class, if entitled to vote as a class), unless the articles of incorporation require a larger proportion. Minnesota law provides that a proposed amendment may be voted upon by the holders of a class or series even if the articles of incorporation would deny that right, if among other things, (i) the proposed amendment would increase or decrease the aggregate number of authorized shares of the class or series; (ii) change the rights or preferences of the class or series; (iii) create a new class or series of shares having rights and preferences prior and superior to the shares of that class or series; or (iv) limit or deny any existing preemptive right of the shares of the class or series. In addition to the above, amending the articles of incorporation to opt out of the Minnesota control share acquisition statute (described below) requires the affirmative vote of the holders of a majority of the voting power of all shares entitled to vote, including all shares held by the acquiring person, and the	If the Nanometrics shareholders approve Nanometrics proposal 3C and the August Technology shareholders approve August Technology proposal 2c, then the affirmative vote of the holders of at least 66.67% of the August Nanometrics shares will be required to approve any charter amendments described above.

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	Nanometrics	August Technology	August Nanometrics
		affirmative vote of holders of a majority of the voting power of all shares entitled to vote, excluding the shares held by the acquiring person. A proposed amendment to cause the control share acquisition statute to be inapplicable, however, may be approved by a committee of the board of directors comprised solely of directors who (i) are, nor have been during the past five years, neither officers nor employees; (ii) are neither acquiring persons nor affiliates or associates of an acquiring person; (iii) were not nominated for election as directors by an acquiring person or an affiliate or associates of an acquiring person; and (iv) were directors at the time an acquiring person became an acquiring person or were nominated, elected, or recommended for election as directors by a majority of those directors.	
Amendment of Bylaws	Under California law, and according to the bylaws of Nanometrics, the bylaws of Nanometrics may be adopted, amended or repealed either by the board of directors or a majority of the outstanding shares entitled to vote.	Under Minnesota law, and according to the August Technology s bylaws, the power to adopt, amend, add to or repeal the bylaws is vested in the board of directors. Minnesota law provides that the authority in the board of directors is subject to the power of the shareholders to change or repeal such bylaws by a majority	The August Nanometrics certificate of incorporation, as proposed, authorizes the board of directors to adopt, amend or repeal the bylaws. Notwithstanding the foregoing, the holders of at least 66.67% of the shares of capital stock of August Nanometrics issued and outstanding and entitled to vote may, by affirmative vote, adopt,

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		vote of the shareholders at a meeting of the shareholders called for such purpose, and the board of directors shall not make or alter any bylaws fixing a quorum for meetings of shareholders, prescribing procedures for removing directors or filling vacancies in the board of directors, or fixing the number of directors or their classifications, qualifications or terms of office. Under Minnesota law, a shareholder or shareholders holding 3% or more of the voting power of all shares entitled to vote may propose a resolution to amend or repeal bylaws adopted, amended or repealed by the board of directors, in which event such resolutions must be brought before the shareholders for their consideration pursuant to the procedures for amending the articles of incorporation.	amend, alter or repeal the bylaws of August Nanometrics. If the Nanometrics shareholders approve Nanometrics proposal 3D and the August Technology shareholders approve August Technology proposal 2d, then it will be more difficult for August Nanometrics stockholders to amend the August Nanometrics bylaws than it is for August Technology shareholders or Nanometrics shareholders to amend their respective bylaws.
Dividends and Repurchases of Shares	Under California law, no distributions to a corporation s shareholders may be made unless: (i) the amount of the retained earnings of the corporation immediately prior to the distribution equals or exceeds the amount of the proposed distribution; (ii) immediately after the distribution, the sum of the assets of the corporation (excluding certain items) is at least equal to 1 1/4 times its liabilities; and the	Under Minnesota law, the board of directors of a corporation may, subject to any restrictions contained in its articles of incorporation, the bylaws or by agreement, declare and pay dividends upon the shares of its capital stock only if (i) the board of directors determines that the corporation will be able to pay its debts in the ordinary course of business after making the distribution and the board	Under Delaware law, the board of directors of a corporation may, subject to any restrictions contained in its certificate of incorporation, declare and pay dividends upon the shares of its capital stock either (i) out of its surplus; or (ii) if there is not surplus, out of net profits for the fiscal year in which the dividend is declared or the preceding fiscal year, provided that if the capital of the

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	current assets of the corporation is at least equal to its current liabilities, or if the average of the earnings of the corporation before taxes on income and before interest expense for the two preceding fiscal years was less than the average of the interest expense of the corporation for those fiscal years, at least equal to 1 1/4 times its current liabilities. California law generally provides that a corporation may acquire its own shares, with the payment for such shares being subject to the same restrictions as dividend payments.	of directors does not know before the distribution is made that the determination was or has become erroneous; and (ii) the payment of the dividend does not reduce the remaining net assets of the corporation below the aggregate preferential amount payable in the event of liquidation to the holders of shares having preferential rights. Minnesota law generally provides that a corporation may acquire its own shares, with the payment for such shares being subject to the same restrictions as dividend payments.	corporation is less than the aggregate amount of capital represented by the issued and outstanding stock of all classes having a preference upon the distributions of the assets of the corporation, then the board of directors may not declare and pay dividends out of net profits. Delaware law generally provides that a corporation may redeem or purchase its shares only if such redemption or repurchase would not impair the capital of the corporation.
Dissenters Rights	Under California law, if the approval of the outstanding shares of the corporation is required for a merger or reorganization, each shareholder entitled to vote on the transaction, and who did not vote in favor of the merger or reorganization, may require the corporation to purchase for cash at fair market value the shares owned by such shareholder. No appraisal rights are available for shares listed on any national securities exchange certified by the Commissioner of Corporations or listed on the Nasdaq National Market, unless there exists with respect to such shares any restriction on transfer imposed by the corporation or by any law or regulation or if	Under Minnesota law, a shareholder of a Minnesota corporation may dissent from, and obtain payment for the fair value of the shareholder s shares in the event of, certain corporate actions, including, among other things, a merger. Under Minnesota law, such dissenters rights, however, are not available to holders of shares that are listed on the New York Stock Exchange or the American Stock Exchange or quoted on the Nasdaq National Market when such shares are exchanged for shares of another corporation that are listed on the New York Stock Exchange or the American Stock Exchange or quoted on the Nasdaq National Market.	Under Delaware law, stockholders of a corporation that is a constituent corporation in a merger generally have the right to demand and receive payment of the fair value of their stock in lieu of receiving the merger consideration. However, appraisal rights are not available to holders of shares: (i) listed on a national securities exchange; (ii) designated as a national market system security on an interdealer quotation system operated by the National Association of Securities Dealers, Inc.; or (iii) held of record by more than 2,000 stockholders; unless holders of stock are required to accept in the merger anything other than any combination of: (a) shares of stock or

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	demands for payment are filed with respect to 5% or more of the outstanding shares of that class.		depositary receipts of the surviving corporation in the merger; (b) shares of stock or depositary receipts of another corporation that, at the effective date of the merger, will be either: (1) listed on a national securities exchange; (2) designated as a national market system security on an interdealer quotation system operated by the National Association of Securities Dealers, Inc.; or (3) held of record by more than 2,000 stockholders; (c) cash in lieu of fractional shares of the stock or depositary receipts received; or (d) any combination thereof. In addition, appraisal rights are not available to the holders of shares of the surviving corporation in the merger, if the merger does not require the approval of the stockholders of that corporation. Section 2115 of the California General Corporation Law may impose California law regarding appraisal rights to the exclusion of Delaware law.
Liability and Indemnity	The Nanometrics articles of incorporation eliminate the personal liability of Nanometrics directors to the fullest extent permitted by California law. The Nanometrics bylaws provide that Nanometrics	The articles of incorporation of August Technology eliminate, to the fullest extent permitted by Chapter 302A, Minnesota Statutes, the personal liability of directors to	Under Delaware law, a corporation may indemnify any director, officer, employee or agent made or threatened to be made a party to any threatened, pending or completed proceeding if

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shall indemnify its directors and officers to the fullest extent permitted by California law, and grants the power to indemnify its employees and agents. Nanometrics bylaws provide that Nanometrics shall pay any expenses incurred in defending any indemnified action, in advance of final disposition of such action or proceeding, upon receipt of an undertaking by or on behalf of the indemnified party to repay such amount if it shall ultimately be determined that the indemnified party is not entitled to indemnification.	the corporation or to its shareholders for monetary damages for breach of fiduciary duty as a director. August Technology s bylaws are silent as to indemnification of directors or others. Minnesota law, however, generally provides for mandatory indemnification by a corporation of a person who is made or threatened to be made a party to a proceeding by reason of his or her former or present official capacity with the corporation against judgments, penalties, fines, taxes assessed against the person, settlements and reasonable expenses, including attorneys fees and disbursements. Indemnification is available provided the person has not been indemnified by another organization or employee benefit plan for the same action, acted in good faith, received no improper personal benefit, acted in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation and, in the case of a criminal proceeding, had no reasonable cause to believe that the conduct was unlawful. If a person is made or threatened to be made a party to a proceeding, the person is	the person acted in good faith and in a manner such person reasonably believed to be in the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe that his or her conduct was unlawful. The August Nanometrics certificate of incorporation and bylaws contains provisions that require the company to indemnify directors, officers, employees and agents to the full extent permitted by Delaware law. The corporation would be required to indemnify a person in connection with a proceeding initiated by such person, however, only if the proceeding was authorized by the board of directors. The August Nanometrics bylaws also provide that the corporation shall advance expenses incurred by its directors or officers in defending a civil or criminal action, suit or proceeding because that person is a director or officer, and may advance the expenses incurred by any employee or agent of the corporation. Such payment, however, will be made only upon receipt of an undertaking by or on behalf of the indemnified party to repay such amount if it shall ultimately be determined that the indemnified party is not entitled to indemnification.

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		entitled, upon written request to the corporation, to payment or reimbursement by the corporation of reasonable expenses, including attorneys fees and disbursements, incurred by the person in advance of the final disposition of the proceeding.	
Indemnity Insurance	The Nanometrics bylaws authorize the purchase of indemnity insurance for the benefit of any person required or permitted to be indemnified pursuant to the company s bylaws. Nanometrics has not, however, purchased any such indemnity insurance to date.	The August Technology bylaws are silent on the purchase of indemnity insurance. Nevertheless, August Technology has purchased directors and officers insurance.	The August Nanometrics bylaws authorize the purchase of indemnity insurance for the benefit of any person required or permitted to be indemnified pursuant to the company s bylaws. August Nanometrics intends to obtain directors and officers insurance, as required under the terms of the merger agreement.
Preemptive Rights	Under California law, a shareholder is not entitled to preemptive rights to subscribe for additional issuances of stock, or any security convertible into stock, unless the rights are specifically granted in the articles of incorporation. The Nanometrics articles of incorporation do not provide for any such preemptive rights.	Under Minnesota law, all shareholders are entitled to preemptive rights unless the articles of incorporation specifically deny or limit preemptive rights. The August Technology articles of incorporation specifies that the shareholders shall have no preemptive rights to subscribe for, purchase or acquire any shares of the corporation of any class.	Under Delaware law, a stockholder is not entitled to preemptive rights to subscribe for additional issuances of stock, or any security convertible into stock, unless the rights are specifically granted in the certificate of incorporation. The August Nanometrics certificate of incorporation does not provide for any such preemptive rights.
Certain Business Combination Restrictions	Under California law, except where the fairness of the transaction has been approved by the California Commissioner of Corporations and except in a short-form merger (the merger of a parent corporation with a subsidiary in which the	August Technology is subject to the Minnesota control share acquisition statute. The control share acquisition statute establishes various disclosure and shareholder approval requirements to be met by individuals or entities	Section 203 of the Delaware General Corporation Law prohibits business combinations, including mergers, consolidations, sales and leases of assets, issuances of securities and similar transactions, by a corporation or a subsidiary

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parent owns at least 90% of the outstanding shares of each class of the subsidiary s stock), if the surviving corporation or its parent corporation owns, directly or indirectly, shares of the target corporation representing more than 50% of the voting power of the target corporation prior to the merger, the nonredeemable common stock of a target corporation may be converted only into nonredeemable common stock of the surviving corporation or its parent corporation, unless all of the shareholders of the class consent. The effect of this provision is to prohibit a cash-out merger of minority shareholders, except where the majority shareholders already own 90% or more of the voting power of the target corporation and could, therefore, effect a short-form merger to accomplish such a cash-out of minority shareholders.	attempting a takeover. The control share acquisition statute applies to an issuing public corporation. An issuing public corporation is a corporation that is incorporated under Minnesota law and that has at least 50 shareholders. August Technology is subject to this statute. The control share acquisition statute requires disinterested shareholder approval as well as shareholder approval taking into account the shares held by the acquiring person for any acquisition of shares of an issuing public corporation which results in the acquiring person owning more than 20% of the outstanding shares of such corporation.	with an interested stockholder who beneficially owns 15% or more of a corporation s voting stock, for three years after the person or entity becomes an interested stockholder, unless (i) prior to the time that the stockholder became an interested stockholder, the board of directors approved either the business combination or the transaction that resulted the stockholder becoming an interested stockholder; (ii) after completion of the transaction in which the stockholder became an interested stockholder, the interested stockholder holds at least 85% of the voting stock of the corporation not including: (a) shares held by directors who are also officers and (b) shares granted under certain employee benefit plans; or (iii) after the stockholder becomes an interested stockholder, the business combination is approved by the board of directors and the holders of at least 66 2/3% of the outstanding voting stock, excluding shares held by the interested stockholder.
California law also provides that, except in certain circumstances, when a tender offer or a proposal for reorganization or for a sale of assets is made by an interested party (generally a controlling or managing party of the target corporation), an affirmative opinion in writing as to the fairness of the consideration to be paid to the shareholders	Acquiring persons who exceed this threshold without shareholder approval lose their voting rights and are subject to redemption privileges of the corporation. In general, these shares regain their voting rights if the acquiring person discloses certain information to the corporation and voting rights are granted by the shareholders at a regular or special meeting. The control share acquisition statute applies unless the issuing public corporation opts out of the statute in its articles	A Delaware corporation may elect in its certificate of incorporation not to be governed by Section 203. The August Nanometrics certificate of incorporation, however, does not contain such an opt-out provision.

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	must be delivered to shareholders. This fairness opinion requirement does not apply to a corporation that does not have shares held of record by at least 100 persons, or to a transaction that has been qualified under California state securities laws. Furthermore, if a tender of shares or vote is sought pursuant to an interested party s proposal and a later proposal is made by another party at least 10 days prior to the date of acceptance of the interested party s proposal, the shareholders must be informed of the later offer and be afforded a reasonable opportunity to withdraw any vote, consent or proxy, or to withdraw any tendered shares.	of incorporation or bylaws. Neither the articles of incorporation nor the bylaws of August Technology contain such an opt-out provision. Furthermore, Minnesota law generally states that an issuing public corporation may not engage in business combinations with any person that acquires beneficial ownership of 10% or more of the voting stock of that corporation for a period of four years following the date that the person became a 10% shareholder unless, prior to that share acquisition date, a committee of the corporation s disinterested directors approves either the business combination or the acquisition of shares. Minnesota law permits a corporation to opt-out of this statute, too, by electing to do so in its articles of incorporation or bylaws. Neither the articles of incorporation nor the bylaws of August Technology contain this opt-out provision.	
Other Anti-Takeover Provisions	California law does not contain analogous provisions to those set forth below that are applicable under Minnesota law.	Minnesota law includes three special provisions relating to takeovers that are not contemplated by Delaware or California law. Minnesota law contains a provision prohibiting a publicly held corporation from entering into or amending agreements that increase current or future	Delaware law does not contain analogous provisions to those set forth above that are applicable under Minnesota law.

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	compensation of any officer or director during any merger or request or invitation for tenders. Minnesota law also prohibits a publicly held corporation from purchasing or agreeing to purchase any shares from a person who beneficially owns more than 5% of the voting power of the corporation at a purchase price that would exceed the market value of those shares if the shares had been beneficially owned by that person for less than two years. However, a purchase will not violate the statute if it is approved at a meeting of the shareholders by a majority of the voting power of all shares entitled to vote or if the corporation s offer is of at least equal value per share and is made to all holders of shares of the class or series and to all holders of any class or series into which the securities may be converted. Minnesota law also authorizes the board of directors, in considering the best interests of the corporation in a proposed acquisition of an interest in the corporation, among other things, to consider the interests of the corporation s employees, customers, suppliers and creditors, the economy of the state and nation, community and social considerations and the long-term as well as	

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		short-term interests of the corporation and its shareholders, including the possibility that these interests may best be served by the continued independence of the corporation.	
Vote on Extraordinary Corporate Transactions	Under California law, the principal terms of a merger or reorganization must be approved by a vote of the board of directors of each constituent corporation in a merger or sale of assets reorganization. California law also generally requires the affirmative vote of a majority of the outstanding shares of each class entitled to vote thereon (two classes of common stock differing only as to voting rights are considered to be a single class for these purposes), except that, unless required by its articles of incorporation, no authorizing shareholder vote is required of a corporation surviving a merger if the shareholders of such corporation shall own, immediately after the merger, more than 5/6 of the voting power of the surviving corporation. Regardless of the voting power exercised by the shareholders in the resulting corporation, however, California law requires the affirmative vote of a majority of the outstanding shares entitled to vote thereon if (i) the surviving corporation s articles of incorporation will be amended and	Minnesota law requires the approval of a majority of the voting power of all shares entitled to vote on a proposed plan of merger or share exchange unless any class or series of shares is entitled to vote as a class on the plan. However, the vote of the shareholders of the surviving corporation on a plan of merger is not required if: (i) the articles of incorporation of the surviving corporation will not be amended in the transaction; (ii) each holder of shares of the surviving corporation that were outstanding immediately before the effective date of the merger will hold the same number of shares with identical rights immediately after the merger; (iii) the voting power of the outstanding shares of the corporation entitled to vote immediately after the merger, plus the voting power of the shares of the corporation entitled to vote and issuable on conversion of, or on the exercise of rights to purchase, securities issued in the transaction, will not exceed by more	Under Delaware law, unless otherwise provided in the certificate of incorporation, a sale or other disposition of all or substantially all of the corporation s assets, a merger or a consolidation of the corporation with another corporation requires the affirmative vote of a majority of the board of directors (except in certain limited circumstances) and, with certain exceptions, the affirmative vote of a majority of the outstanding shares entitled to vote on the matter. The August Nanometrics certificate of incorporation does not contain voting requirements for extraordinary corporate transactions in addition to or different from the approvals mandated by law. Furthermore, under Delaware law, unless otherwise provided in the corporation s certificate of incorporation, approval of the stockholders of a surviving corporation in a merger is not required if: (i) the plan of merger does not amend in any respect the certificate of incorporation of the surviving corporation; (ii) the shares outstanding immediately before the effectiveness of the merger

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	would otherwise require shareholder approval; or (ii) shareholders of such corporation will receive shares of the surviving corporation having different rights, preferences, privileges or restrictions (shares in a foreign corporation are, by definition, considered to have different rights) than the shares surrendered. The Nanometrics articles of incorporation do not modify these statutory requirements.	than 20% the voting power of the outstanding shares of the corporation entitled to vote immediately before the transaction; and (iv) the number of participating shares of the corporation immediately after the merger, plus the number of participating shares of the corporation issuable on conversion of, or on the exercise of rights to purchase, securities issued in the transaction, will not exceed by more than 20% the number of participating shares of the surviving corporation outstanding immediately before the merger. The articles of incorporation of any corporation may supersede the majority vote requirement by specifying a greater vote requirement. The August Technology articles of incorporation do not require a greater vote.	are not changed by the merger; and (iii) either no shares of common stock of the surviving corporation and no shares, securities or obligations convertible into this stock are to be issued or delivered under the plan of merger, or the authorized unissued shares or the treasury shares of common stock of the surviving corporation to be issued or delivered under the plan of merger, plus those initially issuable upon conversion of any other shares, securities or obligations to be issued or delivered under the plan do not exceed 20% of the shares of common stock of the surviving corporation outstanding immediately prior to the merger. The August Nanometrics certificate of incorporation does not provide otherwise.
Fiduciary Duties of Directors	Under California law, the duty of loyalty requires directors to perform their duties in good faith in a manner that the director reasonably believes to be in the best interests of the corporation and its shareholders. The duty of care requires that the directors act with such care, including reasonable inquiry, as an ordinarily prudent person in a like position would use under similar circumstances.	Under Minnesota law, a director must discharge the duties of the position of director in good faith, in a manner the director reasonably believes to be in the best interests of the corporation, and with the care an ordinarily prudent person in a like position would exercise under similar circumstances.	Under Delaware law, the duty of loyalty may be summarized as the duty to act in good faith, not out of self-interest and in a manner that the director reasonably believes to be in the best interests of the corporation. The duty of care requires that the directors act in an informed and deliberative manner and to inform themselves, prior to making a business decision, of all material information reasonably available to them.

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Interested Party Transactions	Under California law, no contract or transaction that is between a corporation and one or more of its directors, or between a corporation and another firm in which one or more of the corporation s directors has a material financial interest is void or voidable solely because such director or other corporation or firm is a party or because the director is present at or participates in the meeting of the board of directors or committee that authorizes the contract or transaction, if one or more of the following is true: (i) the material facts of the transaction and the director s interest are fully disclosed to or known by the board of directors or a committee of the board of directors, and the board of directors or the committee authorizes or ratifies the transaction in good faith by a vote sufficient without counting the vote of any interested director, and such contract or transaction is just and reasonable as to the corporation at the time the board of directors approves or ratifies it; (ii) the material facts of the transaction and the director s interest are fully disclosed to or known by the uninterested shareholders entitled to vote on the matter and they specifically approve in good faith the contract or transaction; or (iii) the contract or transaction is	Generally, under Minnesota law, a contract or other transaction between a corporation and one or more of its directors, or between a corporation and an organization in or of which one or more of its directors are directors, officers, or legal representatives or have a material financial interest, is not void or voidable because the director or directors or the other organizations are parties or because the director or directors are present at the meeting of the shareholders or the board of directors or a committee at which the contract or transaction is authorized, approved, or ratified, if: (i) the contract or transaction was, and the person asserting the validity of the contract or transaction sustains the burden of establishing that the contract or transaction was, fair and reasonable as to the corporation at the time it was authorized, approved, or ratified; (ii) the material facts as to the contract or transaction and as to the director s or directors interest are fully disclosed or known to the holders of all outstanding shares, whether or not entitled to vote, and the contract or transaction is approved in good faith by (a) the holders of 2/3 of the voting power of the	Under Delaware law, no contract or transaction that is between a corporation and one or more of its directors or officers, between a corporation and another corporation in which one or more of the corporation s directors or officers are directors or officers, or between a corporation and another corporation in which one or more of the corporation s directors or officers has a financial interest is void or voidable solely because of such relationship or interest, or solely because the director or officer is present at or participates in the meeting of the board of directors or committee that authorizes the contract or transaction, or solely because the director s or officer s vote was counted for this purpose, if one or more of the following is true: (i) the material facts of the contract or transaction and the director s or officer s relationship or interest are disclosed to or known by the board of directors or a committee of the board of directors, and the board of directors or the committee in good faith authorizes the contract or transaction by an affirmative vote of the majority of the disinterested directors (even though these directors are less than a quorum); (ii) the material facts of the contract or transaction and the director s or officer s relationship or interest are

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just and reasonable to the corporation at the time it was approved or ratified.	shares entitled to vote which are owned by persons other than the interested director or directors, or (b) the unanimous affirmative vote of the holders of all outstanding shares, whether or not entitled to vote; or (iii) the material facts as to the contract or transaction and as to the director s or directors interest are fully disclosed or known to the board of directors or a committee, and the board of directors or committee authorizes, approves, or ratifies the contract or transaction in good faith by a majority of the board of directors or committee, but the interested director or directors shall not be counted in determining the presence of a quorum and shall not vote. Furthermore, (i) a resolution fixing the compensation of a director or fixing the compensation of another director as a director, officer, employee, or agent of the corporation, is not void or voidable or considered to be a contract or other transaction between a corporation and one or more of its directors even though the director receiving the compensation fixed by the resolution is present and voting at the meeting of the board of directors or a committee at which	disclosed to or known by the shareholders entitled to vote on the matter and they specifically approve in good faith the contract or transaction; or (iii) the contract or transaction is fair to the corporation as of the time it was authorized, approved or ratified.

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		the resolution is authorized, approved, or ratified or even though other directors voting upon the resolution are also receiving compensation from the corporation; and (ii) a director has a material financial interest in each organization in which the director, or the spouse, parents, children and spouses of children, brothers and sisters and spouses of brothers and sisters, and the brothers and sisters of the spouse of the director, or any combination of them have a material financial interest. A contract or other transaction between a corporation and the spouse, parents, children and spouses of children, brothers and sisters, spouses of brothers and sisters, and the brothers and sisters of the spouse of a director, or any combination of them, is considered to be a transaction between the corporation and the director.	
Shareholder Suits	Under California law, a shareholder bringing a derivative action on behalf of the corporation need not have been a shareholder at the time of the transaction in question, provided that certain tests are met concerning the fairness of allowing the action to go forward. The shareholder must make his or her demands on the board of directors before filing suit.	Under Minnesota law, a shareholder may initiate a derivative action to enforce a right of a corporation if the corporation has failed to enforce a right which may properly be asserted by it. The complaint must allege that the plaintiff was a shareholder at the time of the transaction of which the plaintiff complains or that the	Under Delaware law, a stockholder may initiate a derivative action to enforce a right of a corporation if the corporation wrongfully fails to enforce the right itself. An individual may also commence a class action suit on behalf of himself and other similarly situated stockholders to enforce an obligation owed to the stockholders

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	California law also provides that the corporation or the defendant in a derivative suit may make a motion to the court for an order requiring the plaintiff shareholder to furnish a security bond.	plaintiff s share thereafter devolved on the plaintiff by operation of law. The complaint must also allege with particularity the efforts, if any, made by the plaintiff to obtain the desired action from the board of directors of the corporation and, if necessary, from the other shareholders, and the reasons for the plaintiff s failure to obtain the action or for not making the effort. The derivative action may not be maintained if it appears that the plaintiff does not fairly and adequately represent the interest of the shareholders or members similarly situated in enforcing the right of the corporation or association. Minnesota law also provides that a shareholder may initiate a direct action against a corporation when the shareholder asserts injuries that are separate and distinct from the injuries sustained by any other shareholders.	directly where the requirements for maintaining a class action under Delaware law have been met. The complaint must: (i) state that the plaintiff was a stockholder at the time of the transaction of which the plaintiff complains or that the plaintiff s shares thereafter devolved on the plaintiff by operation of law; and (ii) with respect to a derivative action: (a) allege with particularity the efforts made by the plaintiff to obtain the action the plaintiff desires from the directors; or (b) allege with particularity that such effort would have been futile. Additionally, the plaintiff must remain a stockholder through the duration of the suit. The action will not be dismissed or compromised without the approval of the Delaware Court of Chancery.
Inspection of Books and Records	Under California law, shareholders holding an aggregate of 5% or more of the corporation s voting shares, or shareholders holding an aggregate of 1% or more of such shares who have contested the election of directors and who have filed a Schedule 14A with the Securities and Exchange Commission, an absolute right to inspect and copy	Under Minnesota law, a shareholder, beneficial owner, or a holder of voting trust certificate of a publicly held corporation has (i) the right, upon written demand identifying a proper purpose, to examine and copy the share register and other records of the corporation related to that proper purpose; and (ii) the right	Under Delaware law, any stockholder is entitled to inspect and copy books and records, including the corporation s stock ledger and a list of its stockholders, as long as the inspection is for a proper purpose and during the usual hours of business. Section 1601 of the California General

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the corporation s shareholder list. In addition, Section 1601 of the California General Corporation Law provides that any shareholder may inspect the accounting books and records and minutes of a corporation, provided that the inspection is for a purpose reasonably related to the person s interests as a shareholder.	to inspect, after written demand, certain other enumerated records of the corporation. A proper purpose is one reasonably related to the person s interest as a shareholder, beneficial owner, or holder of a voting trust certificate of the corporation.	Corporation Law applies to any corporation with its principal executive offices in the State of California, even if that corporation is incorporated in another jurisdiction. The principal executive offices of August Nanometrics will be in California even though August Nanometrics will be incorporated in Delaware. Accordingly, August Nanometrics stockholders will have the right to inspect the books and records of August Nanometrics pursuant to Section 1601 of the California General Law.

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DESCRIPTION OF NANOMETRICS CAPITAL STOCK

The following is a summary of the material terms of the capital stock of Nanometrics. Because it is only a summary, it does not contain all the information that may be important to you. Accordingly, you should read carefully the more detailed provisions of the articles of incorporation and bylaws of Nanometrics, each of which has been filed with the Securities and Exchange Commission. You should also refer to the section of this joint proxy statement/prospectus entitled *Comparison of Rights of Holders and Corporate Governance Matters* beginning on page 146.

General

As of the date of this joint proxy statement/prospectus, the authorized capital stock of Nanometrics consists of 50,000,000 shares of common stock, no par value per share. Nanometrics common stock is listed on the Nasdaq National Market under the ticker symbol NANO.

As of the record date, shares of Nanometrics common stock were issued and outstanding.

Common Stock

Holders of Nanometrics common stock are entitled to one vote for each share held of record on all matters submitted to a vote of shareholders, except that, upon giving the notice required by the bylaws of Nanometrics, shareholders may cumulate their votes for the election of directors. Holders of Nanometrics common stock do not have preemptive rights. Nanometrics common stock is neither redeemable nor convertible into other securities, and there are no sinking fund provisions. Nanometrics has never declared or paid any cash dividends on its common stock or any other securities. Nanometrics does not expect to pay cash dividends on its common stock in the foreseeable future. Nanometrics intends to retain future earnings to continue to fund the development and growth of its business as well as to repay long-term debt.

Transfer Agent

The transfer agent and registrar of the Nanometrics common stock is U.S. Stock Transfer Corp.

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ADDITIONAL NANOMETRICS PROPOSALS

The following proposals are solely for the consideration of the Nanometrics shareholders at the Nanometrics annual meeting and are not dependent upon the vote of the August Technology shareholders, as opposed to proposal 1 relating to the August merger, which requires approval of shareholders of both Nanometrics and August Technology. The following proposals may be implemented (assuming they are approved) without regard to whether the August merger is consummated.

NANOMETRICS PROPOSAL 2

REINCORPORATION OF NANOMETRICS FROM CALIFORNIA INTO DELAWARE

(THE REINCORPORATION MERGER)

General

The Nanometrics board of directors, by a unanimous vote at a special meeting of the board of directors, adopted a resolution approving a change in the state of its incorporation from California to Delaware. If approved by the requisite vote of the Nanometrics shareholders, this reincorporation shall be effected through a merger of Nanometrics with its wholly owned subsidiary, Minor League Merger Corporation, a Delaware corporation.

The completion of the reincorporation merger is not contingent upon approval of proposal 1 or any of Nanometrics other proposals. If Nanometrics shareholders do not approve proposal 1, then the reincorporation merger may still be completed, assuming approval by Nanometrics shareholders.

Proposal

Pursuant to the Agreement and Plan of Merger and Reorganization, dated as of January 21, 2005, by and among Nanometrics, Major League Merger Corporation, a Minnesota corporation and wholly owned subsidiary of Nanometrics, Minor League Merger Corporation, a Delaware corporation and wholly owned subsidiary of Nanometrics, and August Technology, Nanometrics proposes to merge with and into Minor League Merger Corporation. This merger is referred to herein as the reincorporation merger. Minor League Merger Corporation will succeed to all of the rights, properties, assets and liabilities of Nanometrics. Upon completion of the reincorporation merger, Nanometrics will cease to exist and Minor League Merger Corporation will continue to operate the business of Nanometrics under the name Nanometrics Incorporated as a Delaware corporation. For convenience, Nanometrics Incorporated, after the reincorporation merger, is sometimes referred to as the Delaware company. Pursuant to the merger agreement, each outstanding share of Nanometrics common stock, no par value per share, will be automatically converted into one share of the Delaware company, $0.001 par value per share, upon the effective date of the reincorporation merger. **It will not be necessary for shareholders of Nanometrics to exchange their existing stock certificates for stock certificates of the Delaware Company.** Upon completion of the reincorporation merger, certificates which immediately prior to the reincorporation merger represented shares of common stock of Nanometrics will be deemed for all purposes to represent the same number of shares of the Delaware company s common stock. Nevertheless, shareholders may exchange their certificates if they so choose. The common stock of Nanometrics is listed for trading on the Nasdaq National Market and, after the reincorporation merger, the Delaware company s common stock will continue to be traded on the Nasdaq National Market without interruption, under the same symbol, NANO, as the shares of Nanometrics common stock are currently traded.

The reincorporation merger has been approved by the Nanometrics board of directors, by a unanimous vote at a special meeting. If approved by the requisite vote of the shareholders of Nanometrics, it is anticipated that the reincorporation merger will become effective as soon as practicable following the annual meeting of the Nanometrics shareholders. However, pursuant to the merger agreement, the reincorporation merger may be

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abandoned or the merger agreement may be amended (except that the principal terms may not be amended without shareholder approval) either before or after Nanometrics shareholder approval has been obtained and prior to the effective date of the reincorporation merger if, in the opinion of the Nanometrics board of directors, circumstances arise which make it inadvisable to proceed under the original terms of the merger agreement. If this proposal 2 is approved by the Nanometrics shareholders, we expect to effect the reincorporation even if proposal 1 is not approved and/or the August merger is not consummated. Shareholders of Nanometrics will have no appraisal rights with respect to the reincorporation merger.

Immediately following the completion of the reincorporation merger, the composition of the board of directors of Minor League Merger Corporation will be the same as the composition of the board of directors of Nanometrics immediately prior to the reincorporation merger.

After the reincorporation merger, the rights of Nanometrics stockholders and Nanometrics corporate affairs will be governed by the Delaware General Corporation Law, and the certificate of incorporation and bylaws of the Delaware company, or the Delaware charter documents, rather than by the California General Corporation Law, and the current articles of incorporation and bylaws of Nanometrics , or the California charter documents. There are differences between the California charter documents and the Delaware charter documents that may be important to you. See the section of this joint proxy statement/prospectus entitled *Comparison of Rights of Holders and Corporate Governance Matters* beginning on page 146 above for a comparison of the material rights of equity holders and matters of corporate governance before and after the reincorporation merger.

The summary and discussion of the proposed reincorporation merger set forth in this joint proxy statement/prospectus is qualified in its entirety by reference to the California General Corporation Law, the Delaware General Corporation Law, the merger agreement, the California charter documents and the Delaware charter documents. Copies of the California charter documents and the Delaware charter documents are available for inspection at Nanometrics executive offices. Additionally Nanometrics will send such documents to you upon request. *We urge you to read each of these documents carefully for a complete understanding of your rights.*

If both proposal 1 and this proposal 2 are approved by the Nanometrics shareholders, and the merger with August Technology and Nanometrics reincorporation from a California corporation to a Delaware corporation are consummated, the board of directors of August Nanometrics will be comprised of three members of the Nanometrics board of directors, three members of the August Technology board of directors and one director selected by the aforementioned six directors as required by the merger agreement.

Principal Reasons for the Reincorporation Merger

As Nanometrics plans for the future, Nanometrics board of directors and management believe that it is essential to be able to draw upon well-established principles of corporate governance in making legal and business decisions. The prominence and predictability of Delaware corporate law provide a reliable foundation on which Nanometrics corporate governance decisions can be based, and Nanometrics believes that its shareholders will benefit from the responsiveness of Delaware corporate law to their needs and to those of the corporation they own.

Prominence, Predictability and Flexibility of Delaware Law

For many years, Delaware has followed a policy of encouraging incorporation in that state and, in furtherance of that policy, has been a leader in adopting, construing and implementing comprehensive, flexible corporate laws responsive to the legal and business needs of corporations

organized under its laws. Many corporations have chosen Delaware initially as a state of incorporation or have subsequently changed their corporate domicile to Delaware. Because of Delaware s prominence as the state of incorporation for many major corporations, both the legislature and courts in Delaware have demonstrated an ability and a willingness to act quickly and effectively to meet changing business needs. The Delaware courts have developed considerable

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expertise in dealing with corporate issues, and a substantial body of case law has developed construing Delaware law, resulting in greater predictability with respect to corporate legal affairs.

Increased Ability to Attract and Retain Qualified Directors

Both California and Delaware law permit a corporation to include a provision in its charter which reduces or limits the monetary liability of directors for breaches of fiduciary duty in certain circumstances. The increasing frequency of claims and litigation directed against directors and officers has expanded the risks facing directors and officers of corporations in exercising their respective duties. The amount of time and money required to respond to such claims and to defend such litigation can be substantial. Nanometrics desires to reduce these risks to its directors and officers and to limit situations in which monetary damages can be recovered against its directors so that it may continue to attract and retain qualified directors who otherwise might be unwilling to serve because of the risks involved. Nanometrics believes that, in general, Delaware law provides greater protection to directors than California law and that Delaware law regarding a corporation s ability to limit director liability is more developed and provides more guidance than California law.

Well Established Principles of Corporate Governance

There is substantial judicial precedent in the Delaware courts as to the legal principles applicable to measures that may be taken by a corporation and as to the conduct of the board of directors, such as the business judgment rule and other standards. This tends to assure a significant measure of certainty to legal aspects of the conduct of business and a sound basis for planning. Therefore, Nanometrics believes that its shareholders will benefit from the well-established principles of corporate governance that Delaware law affords.

No Change in Board Members, Business, Management, Employee Benefit Plans or Location of Principal Facilities of Nanometrics

The reincorporation merger will effect a change in the legal domicile of Nanometrics and certain other changes of a legal nature which are described in this joint proxy statement/prospectus. Except as contemplated in connection with the reincorporation merger, the reincorporation merger will NOT result in any change in Nanometrics business, management, assets or liabilities or the location of its principal facilities. Under United States generally accepted accounting principles, the proposed reincorporation will not result in any gain or loss to Nanometrics. The consolidated financial statements and results of operations of the Delaware company immediately following the reincorporation merger will be identical to that of Nanometrics immediately prior to the reincorporation merger. The directors of Nanometrics immediately prior to the reincorporation merger will become the directors of the Delaware company immediately following the reincorporation merger. All employee benefit, stock option and employee stock purchase plans of Nanometrics will be assumed and continued by the Delaware company, and each option or right issued pursuant to such plans will automatically be converted into an option or right to purchase the same number of shares common stock of the Delaware company, at the same price per share, upon the same terms, and subject to the same conditions. Shareholders should note that approval of this proposal 2 will also constitute approval of the assumption of these plans by the Delaware company. Other employee benefit arrangements of Nanometrics will also be continued by the Delaware company upon the terms and subject to the conditions currently in effect. As noted above, after the reincorporation merger, the shares of common stock of the Delaware company will continue to be traded, without interruption, in the same principal market (the Nasdaq National Market) and under the same symbol, NANO, as the shares of common stock of Nanometrics are currently traded. Nanometrics believes that the proposed reincorporation will not affect any of its material contracts with any third parties and that Nanometrics rights and obligations under such material contractual arrangements will continue and be assumed by Nanometrics. See the section of this joint proxy statement/prospectus entitled *Comparison of Rights of Holders and Corporate Governance Matters* beginning on page 146, for a comparison of the material rights of equity holders and matters of corporate governance before and after the reincorporation merger.

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Material United States Federal Income Tax Consequences of the Reincorporation Merger

This section of the joint proxy statement/prospectus summarizes the material United States federal income tax considerations of the reincorporation merger to Nanometrics shareholders. The summary is based on the Internal Revenue Code of 1986, as amended, applicable United States Treasury regulations under the Internal Revenue Code, administrative rulings and judicial authority, all as of the date of this joint proxy statement/prospectus. All of the foregoing authorities are subject to change, with or without retroactive effect, and any change could affect the continuing validity of this summary. A ruling from the Internal Revenue Service in connection with the reincorporation merger will not be requested, and we cannot assure you that the Internal Revenue Service will conclude that the reorganization merger qualifies as a reorganization under Section 368(a) of the Internal Revenue Code.

The summary assumes that Nanometrics shareholders hold their shares as capital assets. The summary does not address the tax consequences that may be applicable to particular Nanometrics shareholders in light of their individual circumstances or to Nanometrics shareholders who are subject to special tax rules, such as non-United States persons, dealers in securities, shareholders who acquired shares of Nanometrics common stock through the exercise of options or otherwise as compensation or through a qualified retirement plan, and Nanometrics shareholders who hold their Nanometrics common stock as part of a straddle, hedge, or conversion transaction. In addition, this summary does not address the tax consequences of the reincorporation merger to holders of options or warrants to acquire capital stock of Nanometrics or the tax consequences of transactions effectuated prior or subsequent to, or concurrently with, the reincorporation merger, whether or not any such transactions are undertaken in connection with the reincorporation merger. This summary also does not address any consequences arising under the tax laws of any state, local, or foreign jurisdiction.

Attached as Exhibit 8.3 to the registration statement of which this joint proxy statement/prospectus forms a part is an opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation, tax counsel to Nanometrics, that the reincorporation merger will constitute a reorganization within the meaning of Section 368(a) of the Internal Revenue Code.

The reincorporation merger will qualify as a reorganization within the meaning of Section 368(a) of the Internal Revenue Code, which will result in the following federal income tax consequences to Nanometrics shareholders:

- Nanometrics shareholders will not recognize any gain or loss upon the receipt of Nanometrics common stock in the reincorporation merger;
- the aggregate tax basis of the Nanometrics common stock received by Nanometrics shareholders in the reincorporation merger will be the same as the aggregate tax basis of the Nanometrics common stock surrendered in exchange therefor;
- the holding period of the Nanometrics common stock received by each Nanometrics shareholder in the reincorporation merger will include the period for which Nanometrics common stock surrendered in exchange therefor was considered to be held; and
- none of August Nanometrics, Minor League Merger Corporation or Nanometrics will recognize gain or loss solely as a result of the reincorporation merger.

NANOMETRICS SHAREHOLDERS SHOULD CONSULT THEIR OWN TAX ADVISORS WITH RESPECT TO THE SPECIFIC TAX CONSEQUENCES OF THE PROPOSED REINCORPORATION TO THEM, INCLUDING THE APPLICATION AND EFFECT OF UNITED STATES FEDERAL, STATE, LOCAL AND FOREIGN INCOME AND OTHER TAX LAWS.

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Vote Required

The affirmative vote of the holders of a majority of the outstanding shares of Nanometrics common stock entitled to vote on the record date is required to approve its reincorporation from a California corporation to a Delaware corporation. Unless otherwise instructed, the proxies will vote FOR this proposal 2.

THE NANOMETRICS BOARD OF DIRECTORS RECOMMENDS THAT THE NANOMETRICS SHAREHOLDERS VOTE FOR NANOMETRICS PROPOSAL 2.

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NANOMETRICS PROPOSALS 3A-F

GOVERNANCE PROVISIONS OF NANOMETRICS

CERTIFICATE OF INCORPORATION AND BYLAWS

If approved by the requisite vote of the Nanometrics shareholders, Nanometrics will change the state of its incorporation from California to Delaware. Upon completion of the reincorporation merger, August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed) will be governed by the Delaware General Corporation Law and the certificate of incorporation of Minor League Merger Corporation, currently a wholly-owned subsidiary of Nanometrics. The proposed certificate of incorporation that will govern August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed) following the completion of the reincorporation merger differs in some material respects from Nanometrics existing articles of incorporation. At the annual meeting, you will be asked to consider and vote on each of the governance-related provisions in the company s certificate of incorporation to be in effect after the reincorporation merger described below.

The following is a summary of selected governance-related provisions of the form of certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed) to be in effect after the reincorporation merger. While Nanometrics believes that this description covers the material governance-related provisions of the certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed) to be in effect after the reincorporation merger which differ materially from Nanometrics existing articles of incorporation it may not contain all of the information that is important to you and is qualified in its entirety by reference to the form of certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed) which are attached to this joint proxy statement/prospectus as Annex B and B-1, respectively. We urge you to read the entire form of certificate of incorporation carefully.

Proposal 3A: A proposal to approve a provision limiting the August Nanometrics (or Nanometrics, if the August merger is not completed) stockholders right to call special meetings of stockholders.

Under the current Nanometrics bylaws, a special meeting of shareholders may be called at any time by one or more shareholders holding shares in the aggregate entitled to cast at least 10% of the votes at that meeting. However, the certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed) to be in effect after the reincorporation merger provides that special meetings of stockholders may be called by the chairman of the board of directors or by a majority of the board of directors, but such special meetings may not be called by any other person or persons.

See Article VIII of the form of certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed) to be in effect after the reincorporation merger.

Proposal 3B: A proposal to approve a provision limiting the August Nanometrics (or Nanometrics, if the August merger is not completed) stockholders ability to act by written consent.

Under the current Nanometrics bylaws, any action which may be taken at any annual or special meeting of shareholders may be taken without a meeting and without prior notice, if a consent in writing, setting forth the action so taken, is signed by the holders of outstanding shares having not less than the minimum number of votes that would be necessary to authorize or take that action at a meeting at which all shares entitled to

vote on that action were present and voted. In the case of election of directors, such a consent shall be effective only if signed by the holders of all outstanding shares entitled to vote for the election of directors.

Delaware law permits stockholders to act by written consent, unless otherwise provided in the certificate of incorporation. However, the certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed) to be in effect after the reincorporation merger does not permit stockholder action by written consent and provides that no action may be taken by the

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stockholders except at an annual or special meeting of stockholders called in accordance with the certificate of incorporation and bylaws.

See Article VIII of the form of certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed) to be in effect after the reincorporation merger.

Proposal 3C: A proposal to approve a provision requiring a super-majority vote of the August Nanometrics (or Nanometrics, if the August merger is not completed) stockholders to amend certain provisions of its certificate of incorporation.

Under Nanometrics current articles of incorporation, certain amendments to the articles of incorporation requires the affirmative vote of board of directors and the holders of at least a majority of the outstanding shares entitled to vote. The certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed) to be in effect after the reincorporation merger requires the affirmative vote of the holders of at least 66.67% of the outstanding shares entitled to vote to amend, repeal or adopt a provision inconsistent with the provisions of the certificate of incorporation relating to (i) shares authorized; (ii) amendment of bylaws; (iii) authority to call special stockholder meetings; and (iv) amendment of the certificate of incorporation.

See Article X of the form of certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed) to be in effect after the reincorporation merger.

Proposal 3D: A proposal to approve a provision requiring a super-majority vote of the August Nanometrics (or Nanometrics, if the August merger is not completed) stockholders to amend certain provisions of the August Nanometrics (or Nanometrics, if the August merger is not completed) bylaws.

Under California law and Nanometrics current bylaws, the bylaws may be adopted, amended or repealed either by the board of directors or a majority of the outstanding shares entitled to vote. Under the certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed) to be in effect after the reincorporation merger, bylaws may be adopted, amended, altered or repealed by the board of directors or the affirmative vote of the holders of at least 66.67% of the shares of capital stock of the corporation issued, outstanding and entitled to vote.

See Article VI of the certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed) to be in effect after the reincorporation merger.

Proposal 3E: A proposal to approve a provision limiting the August Nanometrics (or Nanometrics, if the August merger is not completed) stockholders right to remove directors from office without cause.

Under California law, any director or the entire board of directors may be removed, with or without cause, with the approval of a majority of the outstanding shares entitled to vote. However, the amended and restated certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed) to be in effect after the reincorporation merger provides that directors may

be removed from office by the stockholders only for cause. Under Delaware law, such stockholder action must occur by a majority of outstanding stock entitled to vote.

See Article V of the form of certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed) to be in effect after the reincorporation merger.

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Proposal 3F: A proposal to approve a provision limiting cumulative voting rights in connection with the election of directors.

Nanometrics current bylaws provide for cumulative voting for the election of directors at meetings of shareholders. Every shareholder voting for the election of the Nanometrics board of directors may (i) cumulate such shareholder s votes and give one candidate a number of votes equal to the number of directors to be elected multiplied by the number of shares that such shareholders holds or (ii) distribute such shareholder s votes on the same principle among as many candidates as the shareholder may select, provided that votes cannot be cast for more than the number of candidates standing for election. However, no shareholder shall be entitled to cumulate votes for a candidate unless the candidate s name has been placed in nomination prior to the voting and the shareholder, or any other shareholder, has given notice at the meeting prior to the voting of the intention to cumulate votes.

The certificate of incorporation of August Nanometrics (if the August merger is completed) or Nanometrics (if the August merger is not completed) to be in effect after the reincorporation merger will not provide for cumulative voting in connection with the election of directors. Under Delaware law, directors are elected by the affirmative vote of a plurality of the shares present in person or by proxy at a stockholder meeting entitled to vote on the election of directors.

Purpose

In connection with the reincorporation merger, Nanometrics and August Technology have agreed on a certificate of incorporation that includes the provisions described above. These provisions, including, for example, the elimination of shareholders rights to call special meetings, may have the effect of delaying or deterring unsolicited takeover transactions. However, the boards of directors of Nanometrics and August Technology have concluded that August Nanometrics will be larger and is likely to maintain a higher profile than either Nanometrics or August Technology did as stand alone companies. For these reasons, the boards of both companies determined that it was appropriate to adopt these provisions in the combined company s charter, notwithstanding the fact that such provisions are absent from the Nanometrics charter, the August Technology charter or both, in order to enhance stockholder value by helping August Nanometrics thwart hostile or coercive overtures that are not supported by the August Nanometrics board of directors.

Vote Required

Under applicable state law, stockholder approval of the reincorporation merger is sufficient to implement the proposed governance-related provisions in the August Nanometrics certificate of incorporation. Under federal proxy rules, however, we are required to present each of the proposed governance-related provisions as a separate proposal for stockholder approval. Accordingly, we have determined that we will not implement any of the proposed governance-related provisions unless it is approved by the affirmative vote of the holders of a majority of the shares of Nanometrics common stock represented and voting on each proposed governance-related provision at the Nanometrics annual meeting.

THE NANOMETRICS BOARD OF DIRECTORS RECOMMENDS THAT THE

NANOMETRICS SHAREHOLDERS VOTE FOR NANOMETRICS PROPOSALS 3A-F.

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NANOMETRICS PROPOSAL 4

ELECTION OF NANOMETRICS DIRECTORS

Nominees

At the 2005 annual meeting of Nanometrics shareholders, unless otherwise instructed, the proxy holders will vote the proxies received by them for the seven nominees named below, each of whom is presently a director of Nanometrics. In the event that any nominee is unable or declines to serve as a director at the time of the annual meeting, the proxies will be voted for any nominee who shall be designated by the present board of directors of Nanometrics to fill the vacancy. The proxy holders intend to vote all proxies received by them in such a manner and in accordance with cumulative voting as will ensure the election of as many of the nominees listed below as possible and, in such event, the specific nominees to be voted for will be determined by the proxy holders. Nanometrics is not aware of any nominee who will be unable or will decline to serve as a director. If the August merger is not completed, the term of office of each person elected as a director will continue until the next annual meeting of Nanometrics shareholders or until such director s successor has been elected and qualified.

The names of the seven nominees and certain information about them are set forth below:

Name of Nominee	Age	Director Since
Vincent J. Coates	80	1975
John D. Heaton	45	1995
Edmond R. Ward	65	1999
William G. Oldham	66	2000
Stephen J Smith	58	2004
J. Thomas Bentley	55	2004
Norman V. Coates	55	2004

Vincent J. Coates has been Chairman of the Board since Nanometrics was founded in 1975. He has been Nanometrics Secretary since February 1989. He also served as Chief Executive Officer through April 1998 and President from Nanometrics founding through May 1996, except for the period of January 1986 through February 1987 when he served exclusively as Chief Executive Officer. Mr. Coates has also served as Chairman of the Board of Nanometrics Japan Ltd., a subsidiary of Nanometrics, since its inception in November 1984. Prior to his employment at Nanometrics, Mr. Coates co-founded Coates and Welter Instrument Corporation, a designer of electron microscopes, the assets of which were subsequently acquired by Nanometrics. Mr. Coates also spent over twenty years working in engineering, sales and international operations for the Perkin-Elmer Corporation, a manufacturer of analytical instruments. In 1995, he received an award which recognized his contribution to the industry from Semiconductor and Equipment and Materials International, an industry trade organization.

John D. Heaton has served as a director of Nanometrics since July 1995. Since April 1998, he has been Chief Executive Officer of Nanometrics. From May 1996 to April 1998, he served as Nanometrics President and Chief Operating Officer. Mr. Heaton has also served as President of Nanometrics Japan Ltd., a subsidiary of Nanometrics, since January 1998. Beginning in 1978, Mr. Heaton served in various technical positions at National Semiconductor, a semiconductor manufacturer, and prior to joining Nanometrics in 1990.

Edmond R. Ward has served as a director of Nanometrics since July 1999. Beginning in January 2002, Mr. Ward has served as Chief Technical Officer of Unity Semiconductor, a semiconductor design and manufacturing company. Since April 1999, Mr. Ward has been a General Partner

of Virtual Founders, a venture capital firm. From April 1992 to June 1997, Mr. Ward was the Vice President of Technology at Silicon Valley Group, Inc., a supplier of wafer processing equipment.

William G. Oldham has served as a director of Nanometrics since June 2000. Since 1964, Mr. Oldham has been a faculty member at the University of California, Berkeley, where he researches EUV and Maskless

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Lithography and, since 1996, has been the Director of the DARPA/SRC Research Network for Advanced Lithography. He has served as a consultant in various intellectual property matters and serves on the board of directors of Cymer, Inc., a supplier of light sources for deep ultraviolet (DUV) photolithography systems used in the manufacturing of semiconductors.

Stephen J Smith has served as a director of Nanometrics since April 2004. Dr. Smith has been a professor in the Department of Molecular and Cellular Physiology at the Stanford University School of Medicine since 1989, where he researches brain development and function with special interests in the dynamic and structural aspects of synapse and circuit formation and synaptic plasticity. Dr. Smith is the author of numerous research articles in the fields of cellular and molecular neuroscience.

J. Thomas Bentley has served as a director of Nanometrics since April 2004. Mr. Bentley is a co-founder of Alliant Partners, a leading merger and acquisition firm for emerging and mid-market technology companies. For the past 10 years, Mr. Bentley has worked with some of Alliant s largest clients on their strategic acquisitions and divestitures. His expertise is in financial, tax and accounting structuring of merger transactions. Mr. Bentley holds a Master of Science degree in Management from M.I.T. and currently serves as a senior advisor to Alliant Partners.

Mr. Norman V. Coates served as a director of Nanometrics from May 1988 through June 2001. He was re-appointed to the Nanometrics board of directors on June 30, 2004. He has operated Gem of the River Produce, a farming and produce packing operation in Orleans, California, as a sole proprietor since 1978. He has also been manager of the Boise Creek Farm operation since 1985 and a manager of Coates Vineyards since 1997.

The candidates for the Nanometrics board of directors receiving the seven highest vote totals will be elected to serve as directors of Nanometrics. The directors of Nanometrics elected at the annual meeting will serve until the earlier of the end of their term, unless they resign or are removed prior to such term, or the completion of the August merger. If the August merger is consummated, then the directors of August Nanometrics shall be as described in the merger agreement.

THE NANOMETRICS BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE SHAREHOLDERS VOTE FOR THE SEVEN NOMINEES FOR DIRECTOR SET FORTH HEREIN.

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NANOMETRICS PROPOSAL 5

RATIFICATION OF APPOINTMENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The audit committee of the board of directors of Nanometrics has appointed BDO Seidman, LLP, independent registered public accounting firm, to audit the consolidated financial statements of Nanometrics for the fiscal year ending December 31, 2005.

Deloitte & Touche LLP previously audited Nanometrics financial statements from fiscal 1991 through the fiscal year ended January 3, 2004. Deloitte & Touche LLP resigned effective as of August 23, 2004. BDO Seidman, LLP was selected by the audit committee to serve as Nanometrics independent registered public accounting firm effective as of September 3, 2004.

The reports of Deloitte & Touche LLP on the Nanometrics financial statements for the fiscal years ended December 28, 2002 and January 3, 2004 do not contain an adverse opinion or a disclaimer of opinion, and are not qualified or modified as to uncertainty, audit scope or accounting principles, except that such reports include an explanatory paragraph relating to a change in method of accounting for goodwill and other intangible assets.

During the fiscal years ended December 28, 2002 and January 3, 2004, and through August 23, 2004, there were no disagreements between Nanometrics and Deloitte & Touche LLP on any matter of accounting principles or practices, financial statements disclosure, or auditing scope or procedure which disagreements, if not resolved to the satisfaction of Deloitte & Touche LLP, would have caused Deloitte & Touche LLP to make reference thereto in the firm s reports on the Nanometrics financial statements for such periods. In addition, no reportable events, as defined in Item 304 (a)(1)(v) of Regulation S-K, occurred during Nanometrics two most recent fiscal years.

Representatives of BDO Seidman, LLP are expected to be present at Nanometrics annual meeting with the opportunity to make a statement if they desire to do so, and are also expected to be available to respond to appropriate questions.

Audit Fees

The following table summarizes the aggregate fees that Nanometrics expects to pay BDO Seidman, LLP for fiscal 2004 and fees billed to Nanometrics by Deloitte & Touche LLP for fiscal 2003 and 2002.

Type of fees	Fiscal 2004(5)	Fiscal 2003	Fiscal 2002
Audit Fees(1)	$ 221,335	$ 263,680	$ 264,239
Audit-Related Fees(2)	4,400		
Tax Fees(3)		127,690	222,255
All Other Fees(4)		7,500	
Total Fees	$ 225,735	$ 398,870	$ 486,494

(1) Fees for audit services consist of:

Audit of Nanometrics annual financial statements

Reviews of Nanometrics quarterly financial statements

Statutory and regulatory audits, consents and other services related to Securities and Exchange Commission filings

(2) Fees for audit-related services billed in fiscal 2004 consisted of consultations on SEC comment letters

(3) Fees for tax services billed in fiscal 2003 consisted of tax compliance assistance, transfer pricing documentation and assistance with tax return filings in certain foreign jurisdictions

(4) All other fees consisted of training on the requirements of Section 404 of the Sarbanes-Oxley Act of 2002

(5) In fiscal 2004, Deloitte & Touche LLP billed Nanometrics $74,036, $57,330, $13,913 and $0 for audit, audit-related, tax and all other fees, respectively.

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In considering the nature of the services provided by the independent registered public accountants, the audit committee determined that such services are compatible with the provision of independent audit services. The audit committee discussed these services with the independent registered public accountants and Nanometrics management to determine that they are permitted under the rules and regulations concerning auditors independence promulgated by the Securities and Exchange Commission to implement the Sarbanes-Oxley Act of 2002, as well as the American Institute of Certified Public Accountants.

Audit Committee Pre-Approval Policy

Pursuant to the audit committee charter, the audit committee must pre-approve all audit and non-audit services, and the related fees, provided to Nanometrics by its independent auditors, or subsequently approve non-audit services in those circumstances where a subsequent approval is necessary and permissible under the Exchange Act or the rules of the Securities and Exchange Commission. Accordingly, the audit committee pre-approved all services and fees provided by Deloitte & Touche LLP and BDO Seidman, LLP during the year ended January 1, 2005 and has concluded that the provision of these services is compatible with the accountants independence.

Matters Not Required to be Submitted to Security Holders

Nanometrics is submitting to the shareholders the proposal to approve the appointment of BDO Seidman, LLP as its independent registered public accounting firm for the fiscal year ending December 31, 2005 even though it is not strictly required to do so. Nanometrics is seeking shareholder approval as a matter of good corporate governance. If the shareholders do not vote in favor of this proposal, Nanometrics will consider the selection of other auditors.

Vote Required

As a matter of good corporate governance, Nanometrics is seeking the affirmative vote of the holders of a majority of the shares of Nanometrics common stock represented and voting at the annual meeting to approve this proposal.

THE NANOMETRICS BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT SHAREHOLDERS VOTE FOR THE RATIFICATION OF THE APPOINTMENT OF BDO SEIDMAN, LLP AS NANOMETRICS INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR NANOMETRICS FISCAL YEAR ENDING DECEMBER 31, 2005.

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ADDITIONAL AUGUST TECHNOLOGY PROPOSALS

The following proposals are solely for the consideration of the August Technology shareholders at the August Technology special meeting.

AUGUST TECHNOLOGY PROPOSALS 2a-d

THE POST-TRANSACTION CERTIFICATE OF INCORPORATION

In connection with the transactions contemplated by the merger agreement, Nanometrics agreed to a number of governance and other rights and restrictions as a result of the reincorporation merger. The proposed form of the certificate of incorporation that will govern August Nanometrics following the completion of the reincorporation merger and August merger differs in some material respects from August Technology s existing articles of incorporation and bylaws. At the special meeting you will be asked to consider and vote on each of the proposals relating to the governance and other provisions in the post-transaction certificate of incorporation described below.

The following is a summary of selected provisions of the form of the post-transaction certificate of incorporation. While August Technology believe that this description covers the material terms of the form of the post-transaction certificate of incorporation which differ materially from August Technology s existing articles of incorporation, it may not contain all of the information that is important to you and is qualified in its entirety by reference to the proposed form of the post-transaction certificate of incorporation, which is attached to this joint proxy statement/prospectus as Annex B to this document and is incorporated by reference in this document. We urge you to read the entire form of the post-transaction certificate of incorporation carefully.

Proposal 2a: A proposal to approve a provision limiting the August Nanometrics stockholders right to call special meetings of stockholders.

Under the current August Technology bylaws, special meetings of shareholders may be called at any time by a shareholder or shareholders holding 10% or more of the voting power of all shares entitled to vote by giving written notice of demand to the chief executive officer or the chief financial officer. The post-transaction certificate of incorporation provides however, that special meetings of stockholders may be called by the chairman of the board or a majority of the board, but such meetings may not be called by any other person or persons.

See generally Article VIII of the post-transaction certificate of incorporation.

Proposal 2b: A proposal to approve a provision limiting the August Nanometrics stockholders ability to act by written consent.

Under the current August Technology bylaws, an action required or permitted to be taken at a meeting of shareholders may be taken without a meeting by written action signed by all of the shareholders entitled to vote on that action. Delaware corporate law also allows stockholder action by written consent, unless otherwise provided in the certificate of incorporation. The post-transaction certificate of incorporation opts out of coverage under this provision and explicitly states that no action shall be taken by stockholders by written consent.

See generally Article VIII of the post-transaction certificate of incorporation.

Proposal 2c: A proposal to approve a provision requiring a super-majority vote of the August Nanometrics stockholders to amend certain provisions of the August Nanometrics certificate of incorporation.

Unlike August Technology s current articles of incorporation under which the affirmative vote of the holders of at least a majority of the voting power present and entitled to vote is required to amend the articles

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of incorporation the post-transaction certificate of incorporation requires the affirmative vote of at least 66.67% of the shares of issued and outstanding capital stock entitled to vote to amend, repeal, or to adopt any provision inconsistent with provisions relating to (i) shares authorized, (ii) amendment of bylaws, (iii) authority to call special meetings and no written consent, and (iv) amendment of the certification of incorporation.

See generally Article X of the post-transaction certificate of incorporation.

Proposal 2d: A proposal to approve a provision requiring a super-majority vote of the August Nanometrics stockholders to amend certain provisions of the August Nanometrics bylaws.

Under Minnesota law and according to the August Technology s bylaws, the power to adopt, amend, add to or repeal the bylaws is vested in the board of directors, subject to the power of shareholders to change or repeal such bylaws. The post-transaction certificate of incorporation authorizes the board of directors to adopt, amend or repeal the bylaws, provided that holders of at least 66.67% of the shares of issued and outstanding capital stock entitled to vote may, by affirmative vote, adopt, amend, alter or repeal the bylaws. This provision makes it more difficult for August Nanometrics to amend its bylaws than it is for August Technology shareholders to amend their bylaws.

See generally Article VI of the post-transaction certificate of incorporation.

For detailed discussion concerning the rights of August Technology shareholders and corporate governance matters, please see section of the joint proxy statement/prospectus entitled *Comparison of Rights of Holders and Corporate Governance Matters* beginning on page 146.

The affirmative vote of the holders of a majority of the shares of August Technology s common stock entitled to vote and represented, in person or by proxy, at the special meeting is required to approve the grant of discretionary authority to adjourn or postpone the special meeting to a later date, if necessary, to solicit additional proxies if there are not sufficient votes in favor of proposal 1 or proposal 2. Unless otherwise instructed, the proxies will vote FOR proposals 2 a-d.

THE AUGUST TECHNOLOGY BOARD OF DIRECTORS RECOMMENDS THAT YOU VOTE FOR AUGUST TECHNOLOGY S PROPOSALS 2a-d.

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AUGUST TECHNOLOGY PROPOSAL 3

ADJOURNMENT OF THE SPECIAL MEETING

In the event that there are not sufficient votes to constitute a quorum or approve and adopt of the merger agreement and the August merger and each of the of the proposals to approve governance provisions to be effective upon completion of the reincorporation merger, these proposals could not be approved unless the meeting was adjourned to a later date or dates in order to permit further solicitation of proxies. Under Minnesota law, written notice of an adjourned meeting need not be given to shareholders if the date, place and time of the adjourned meeting are announced at the special meeting before adjournment and the new meeting date is not more than 120 days after the original date of the special meeting.

In order to allow proxies that have been received by August Technology at the time of the special meeting to be voted for an adjournment, if necessary, August Technology has submitted the question of adjournment to its shareholders as a separate matter for their consideration.

The affirmative vote of the holders of a majority of the shares of August Technology s common stock entitled to vote and represented, in person or by proxy, at the special meeting is required to approve the grant of discretionary authority to adjourn or postpone the special meeting to a later date, if necessary, to solicit additional proxies if there are not sufficient votes in favor of proposal one or proposal two. Unless otherwise instructed, the proxies will vote FOR this proposal three.

THE AUGUST TECHNOLOGY BOARD OF DIRECTORS RECOMMENDS THAT YOU VOTE FOR AUGUST TECHNOLOGY S PROPOSAL 3.

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INFORMATION ABOUT NANOMETRICS

Executive Officers of Nanometrics

The following are the current executive officers and their ages as of May 24, 2005:

Name of Nominee	Age	Title
Vincent J. Coates	80	Chairman of the Board and Secretary
John D. Heaton	45	President, Chief Executive Officer and Director
Paul B. Nolan	50	Vice President and Chief Financial Officer
Quentin Wright	48	Chief Accounting Officer
Michael Weber	47	Vice President of Engineering
Roger Ingalls, Jr.	43	Senior Vice President of Standalone Sales

Mr. Paul B. Nolan has served as Vice President and Chief Financial Officer of Nanometrics since March 1994. Mr. Nolan joined Nanometrics as a Financial Analyst in March 1989, and served as Director of Finance from March 1993 to March 1994. Mr. Nolan served as Financial Analyst at Harris Corporation, a communications equipment company, prior to joining Nanometrics.

Mr. Quentin Wright has served as Chief Accounting Officer of Nanometrics since April, 2005. Prior to joining Nanometrics, from January, 2004 to April 2005, Mr. Wright advised a variety of companies on their public financial reporting obligations. Mr. Wright held the position of Director of Accounting for Adaptec, Inc., a manufacturer of data storage products, from 1999 to 2003. From 1998 to 1999, Mr. Wright was the Corporate Controller for Vascular Therapeutics, Inc., a biotechnology corporation.

Mr. Michael Weber has served as Vice President of Engineering of Nanometrics since April, 2005. Prior to joining Nanometrics, from 2001 to 2005, Mr. Weber was the Vice President of the Surface Metrology division of KLA-Tencor Corporation, a supplier of process control and yield management products for the semiconductor and related microelectronics industries, where he was responsible for technology and product strategy programs. From 1998 to 2001, Mr. Weber was Vice President of Engineering for Sensys Instruments, a producer of products for the semiconductor manufacturing industry. Before joining Sensys Instrument, he held several positions within KLA-Tencor Corporation, including Director of Engineering and Director of Technical Marketing.

Mr. Roger Ingalls, Jr. has served as Senior Vice President of Standalone Sales of Nanometrics since January 2002. Mr. Ingalls joined Nanometrics in March 1995, serving as Vice President and Director of Sales and Marketing from October 1997 to February 1998, and as Vice President and Director of Marketing from February 1998 to January 2002. Prior to joining Nanometrics, he served as a sales engineer for Nikon Inc., a precision optical company, from March 1993 to March 1995.

Please see Mr. Coates and Mr. Heaton s biographies under Nanometrics Proposal 3 Election of Nanometrics Directors above.

Material Proceedings

To the best of Nanometrics management s knowledge, there are no material proceedings to which any director or officer of Nanometrics is a party and (i) is adverse to Nanometrics or any of its subsidiaries or (ii) has a material interest adverse to Nanometrics or any of its subsidiaries.

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Security Ownership of Management and Certain Beneficial Owners of Nanometrics

The following table sets forth beneficial ownership of common stock of Nanometrics as of the record date, by each director or nominee, by each of the Named Officers (as defined in the section of this joint proxy statement/prospectus entitled *Compensation of Executive Officers* beginning on page 191), by all directors and Named Officers as a group, and by all persons known to Nanometrics to be the beneficial owners of more than 5% of Nanometrics common stock. Unless otherwise indicated, all persons named below can be reached at Nanometrics Incorporated, 1550 Buckeye Drive, Milpitas, California 95035.

Name of Beneficial Owner	Number of Shares of Common Stock Beneficially Owned(1)	Percent of Total
Vincent J. Coates(2)	3,376,274	%
Artemis Investment Management LLC(3)	881,800	
437 Madison Avenue		
New York, New York 10022		
August Technology Corporation(4)		
4900 W. 78th Street		
Bloomington, Minnesota 55435		
Dimensional Fund Advisors Inc.(5)	913,148	
1299 Ocean Avenue		
11th Floor		
Santa Monica, CA 90401		
John D. Heaton(6)		
Edmond R. Ward(7)		
William G. Oldham(8)		
Paul B. Nolan(9)		
Roger Ingalls, Jr. (10)		
Stephen J Smith (11)		
J. Thomas Bentley (12)		
Norman V. Coates (13)		
Quentin Wright (14)		
Michael Weber (15)		
All Named Officers and directors as a group (eleven (11) persons) (16)		%

* Represents less than 1% of outstanding shares of common stock.

(1) Beneficial ownership is determined in accordance with the rules of the Securities and Exchange Commission. The number of shares beneficially owned by a person includes shares of common stock subject to options held by that person that are currently exercisable or exercisable within 60 days of , 2005. Such shares issuable pursuant to such options are deemed outstanding for computing the percentage ownership of the person holding such options but are not deemed outstanding for the purposes of computing the percentage ownership of each other person.

(2) Includes 3,376,154 shares of common stock held of record by the Vincent J. Coates Separate Property Trust, U/D/T dated August 7, 1981, for which Mr. Coates acts as trustee.

(3)

According to a Schedule 13G filed on February 10, 2004, Artemis Investment Management LLC may be deemed to be the beneficial owner of 881,800 shares of common stock.

(4) According to a Schedule 13G filed with the SEC on January 28, 2005, August Technology Corporation may be deemed to be the beneficial owner of 3,672,301 shares of common stock, including shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of , 2005. By virtue of a voting agreement it entered into on January 21, 2005 with directors and executive officers of Nanometrics, August Technology Corporation may be deemed to be the beneficial owner of shares of common stock and shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of , 2005. The natural persons who beneficially

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own the shares attributed to August Technology Corporation are each of the individuals who were executive officers and directors of Nanometrics as of January 21, 2005: Vincent J. Coates, John D. Heaton, Edward R. Ward, William G. Oldham, Paul B. Nolan, Roger Ingalls, Jr., Stephen J Smith, J. Thomas Bentley and Norman V. Coates.

(5) According to a Schedule 13G/A filed on February 9, 2005, Dimensional Fund Advisors Inc. may be deemed to be the beneficial owner of 913,148 shares of common stock.

(6) Includes shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of , 2005.

(7) Includes shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of , 2005.

(8) Includes shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of , 2005.

(9) Includes shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of , 2005.

(10) Includes shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of , 2005.

(11) Includes shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of , 2005.

(12) Includes shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of , 2005.

(13) Includes 0 shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of , 2005.

(14) Includes shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of , 2005.

(15) Includes , shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of , 2005.

(16) Includes , shares of common stock issuable upon exercise of outstanding options exercisable within 60 days of , 2005.

Board Meetings and Committees

The Nanometrics board of directors held meetings (or acted by written consent) a total of nine (9) times during fiscal year ended January 1, 2005. During the fiscal year ended January 1, 2005, all incumbent directors attended at least 75% of meetings of the Nanometrics board of directors and meetings of committees, if any, upon which such directors served. The standing committees of the Nanometrics board of directors include an audit committee, a compensation/stock option committee and a nominating/governance committee.

The Nanometrics board of directors has determined that all of its directors meet the independence requirements of the Nasdaq National Market, with the exception of Vincent J. Coates, Norman V. Coates and John D. Heaton.

It is the policy of Nanometrics to require its directors to attend its annual meetings absent a valid reason, such as a schedule conflict. All of the Nanometrics directors who served on the board of directors for the entire fiscal year attended the 2004 annual meeting of shareholders.

Audit Committee

The audit committee of the Nanometrics board of directors reviews and monitors the corporate financial reporting as well as the internal and external audits of Nanometrics, including among other things, Nanometrics internal audit and control functions, the results and scope of the annual audit and other services provided by Nanometrics independent auditors, and Nanometrics compliance with legal matters that may have a significant impact on Nanometrics financial reports. In addition, the audit committee has the responsibility to consider and

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recommend the employment of, and to review fee arrangements with, Nanometrics independent auditors. The audit committee also monitors transactions between Nanometrics and its officers, directors and employees for any potential conflicts of interest. The audit committee met (or acted by written consent) five (5) times during the fiscal year ended January 1, 2005.

The members of the audit committee during the fiscal year ended January 1, 2005 were William Oldham, Nathaniel Brenner (through March 2004), Edmond R. Ward and J. Thomas Bentley (beginning in April 2004). Mr. Brenner, the audit committee s financial expert in the fiscal year ended January 3, 2004, resigned his position as director as well as his committee assignments effective as of March 2004. At the recommendation of the nominating/governance committee, the board of directors appointed J. Thomas Bentley to the audit committee as of May 26, 2004. Mr. Bentley was appointed by the board of directors to serve as the audit committee s financial expert and chairman.

Each member of Nanometrics audit committee is an independent director as that term is defined under the applicable Nasdaq National Market listing standards. The audit committee has adopted a written charter, which is available on Nanometrics website at www.nanometrics.com.

Compensation/Stock Option Committee

The compensation/stock option committee reviews and makes recommendations to the Nanometrics board of directors regarding Nanometrics compensation policy and all forms of compensation to be provided to certain of the executive officers of Nanometrics, including the chief executive officer.

The compensation/stock option committee is responsible for approving the grant of stock options to Nanometrics employees under Nanometrics 2000 Employee Stock Option Plan and 2002 Nonstatutory Stock Option Plan.

The members of the compensation/stock option committee serving in the fiscal year ended January 1, 2005 were Edmond Ward, J. Thomas Bentley, Stephen J Smith and Nathaniel Brenner. Mr. Ward was appointed as chairman of the compensation/stock option committee by the Nanometrics board of directors. As indicated above, Mr. Brenner resigned his position as director as well as his committee assignments effective as of March 2004. The compensation/stock option committee met (or acted by written consent) seven (7) times during fiscal 2004. The compensation/stock option committee has adopted a written charter, which is available on Nanometrics website at www.nanometrics.com.

Nominating/Corporate Governance Committee

Nanometrics maintains a standing nominating/corporate governance committee that assists the Nanometrics board of directors in identifying and qualifying candidates to join the Nanometrics board of directors and addressing governance issues. All members of the nominating committee are independent. The nominating committee utilizes a variety of methods for identifying and evaluating nominees. Its general policy is to assess the appropriate size of the board of directors and whether any vacancies are expected due to retirement or otherwise. In the event those vacancies are anticipated, or otherwise arise, the nominating committee will consider recommending various potential candidates to fill such vacancies. Candidates may come to the attention of the nominating committee through its current members, shareholders or other persons. The board of directors may consider properly submitted shareholder nominations for candidacy. Nominees may be submitted by shareholders in accordance with the shareholder communication policy described below.

The nominating/corporate governance committee has no specific, minimum qualifications for director candidates. In general, however, persons considered for board of directors positions must have demonstrated leadership capabilities, be of sound mind and high moral character, have no personal or financial interest that would conflict or appear to conflict with the interests of Nanometrics and be willing and able to commit the necessary time for board of directors and committee service.

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The nominating/corporate governance committee believes that board members should represent a balance of diverse backgrounds and skills, including marketing, finance, manufacturing, engineering, science, and international experience. The nominating/corporate governance committee consists of William Oldham and Stephen Smith. Mr. Oldham was appointed as chairman of the nominating/corporate governance committee by the Nanometrics board of directors. The nominating/corporate governance committee met once in the fiscal year ended January 1, 2005 and has adopted a written charter, which is available on Nanometrics website at www.nanometrics.com.

Shareholder Communication Policy

Nanometrics board of directors has established a formal process for shareholders to send communications to the board of directors or to individual directors. The names of all directors are available to shareholders in this joint proxy statement/prospectus. If Nanometrics receives any shareholder communication intended for the full board of directors or any individual director, Nanometrics will forward the communication to the full board of directors or the individual director, unless the communication is clearly of a marketing nature or is unduly hostile, threatening, illegal or similarly inappropriate, in which case Nanometrics has the authority to discard the communications or take appropriate legal action regarding the communication.

Compensation/Stock Option Committee Interlocks and Insider Participation

No member of the compensation/stock option committee of Nanometrics board of directors serves as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving as a member of Nanometrics board of directors or compensation/stock option committee.

Compensation of Directors

Directors who are not also employees of Nanometrics receive an annual retainer fee of $5,000, plus $1,000 for each board and committee meeting attended. Directors are also eligible to participate in Nanometrics Directors Stock Option Plan. Each audit committee member receives an additional $3,000 annual retainer and $500 for attending quarterly earnings release conference calls. Additionally, the audit committee chairman receives an incremental $2,000 retainer for serving in such capacity.

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Compensation of Executive Officers

The following table sets forth the compensation paid by Nanometrics during the past three fiscal years to (i) the chief executive officer, (ii) each of the four most highly compensated executive officers (or such lesser number of executive officers as Nanometrics may have) of Nanometrics not serving as chief executive officer and (iii) up to an additional two individuals that would have been included under item (ii) but for the fact that the individuals were not serving as executive officers as of January 1, 2005, all of whom are collectively referred to as the Named Officers. Quentin Wright and Michael Weber are not listed on the table below because they did not join Nanometrics in their capacities as executive officers until after January 1, 2005.

Summary Compensation Table

		Annual Compensation		Long Term Compensation Awards
Name	Fiscal Year	Salary	Bonus	Securities Underlying Options (#)
John D. Heaton	2004	$ 341,800	$ 79,314	100,000
	2003	342,800		572,500
President and Chief Executive Officer	2002	343,800		275,000
Vincent J. Coates	2004	$ 204,800		
	2003	204,800		
Chairman of the Board and Secretary	2002	204,800		
Roger Ingalls, Jr.	2004	$ 195,265	$ 29,658	5,000
	2003	198,965		31,500
Senior Vice President of Standalone Sales	2002	201,834		25,000
Paul B. Nolan	2004	$ 183,055	$ 29,864	
	2003	179,050		
Vice President and Chief Financial Officer	2002	162,234		50,000

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Stock Options Granted in the Fiscal Year Ended January 1, 2005

The following table sets forth information with respect to stock options granted during the fiscal year ended January 1, 2005 to each of the Named Officers. Quentin Wright and Michael Weber are not listed on the table below because they did not join Nanometrics in their capacities as executive officers until after January 1, 2005. All options were granted under Nanometrics 2000 Stock Option Plan. The potential realizable value amounts in the last two columns of the following chart represent hypothetical gains that could be achieved for the respective options if exercised at the end of the option term. The assumed 5% and 10% annual rates of stock price appreciation from the date of grant to the end of the option term are provided in accordance with rules of the Securities and Exchange Commission and do not represent Nanometrics estimate or projection of the future common stock price. Actual gains, if any, on stock option exercises are dependent on the future performance of the common stock, overall market conditions and the option holder s continued employment through the vesting period.

Option Grants in Last Fiscal Year

	Individual Grants					
					Potential Realized Value at Assumed Annual Rates of Stock Price Appreciation for Option Term	
Name	Number of Securities Underlying Options Granted (#) (1)	% of Total Options Granted to Employees in Fiscal Year (2)	Exercise Price ($/Sh)	Expiration Date	5% ($)	10% ($)
John D. Heaton	100,000	22%	$ 12.02	5/26/11	$ 332,000	$ 734,000
Vincent J. Coates	0	0				
Roger Ingalls, Jr.	5,000	1.1%	10.37	8/23/11	14,350	31,650
Paul B. Nolan	0	0				

(1) All options granted to the Named Officers in fiscal 2004 were granted at exercise prices equal to the fair market value of Nanometrics common stock on the dates of grant. Historically, options granted become exercisable at the rate of 33% on the first anniversary date of the option grant and 33% of the option shares become exercisable each full year thereafter, such that full vesting occurs three years after the date of grant. Options lapse after 7 years or 90 days after termination of employment.

(2) Based on 453,550 options granted during the fiscal year ended January 1, 2005.

Aggregated Option Exercises in Last Fiscal Year and Fiscal Year-End Option Values

The following table sets forth the number of shares covered by both exercisable and unexercisable stock options held by each of the Named Officers at January 1, 2005. Quentin Wright and Michael Weber are not listed on the table below because they did not join Nanometrics in their capacities as executive officers until after January 1, 2005. As indicated below, two (2) Named Officers, John D. Heaton and Paul B. Nolan, exercised stock options during the fiscal year ended January 1, 2005.

Name	Shares Acquired on Exercise (#)	Value Realized ($) (1)	Number of Securities Underlying Unexercised Options at Fiscal Year-End (#)	Value of Unexercised In-the-Money Options at Fiscal Year-End ($) (2)

			Number of Securities Underlying Unexercised Options at December 31, 2004		Value of Unexercised In-the-Money Options at December 31, 2004	
			Exercisable	**Unexercisable**	**Exercisable**	**Unexercisable**
John D. Heaton	100,000	$ 674,000	219,583	402,917	$ 2,243,722	$ 3,477,728
Vincent J. Coates						
Roger Ingalls, Jr.			15,750	20,750	164,115	192,865
Paul B. Nolan	26,666	213,594	16,666	16,668	9,132	135,107

(1) The value realized upon exercise is (i) the fair market value of Nanometrics common stock on the date of exercise, less the option exercise price per share, multiplied by (ii) the number of shares underlying the options exercised.

(2) The value of unexercised options is (i) the fair market value of Nanometrics common stock on December 31, 2004 ($16.12 per share), less the option exercise price of in-the-money options, multiplied by (ii) the number of shares underlying such options.

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Employment Contracts and Termination of Employment and Change-in-Control Arrangements

Pursuant to the terms of an agreement between Nanometrics and Vincent J. Coates, the Chairman of the Board of Nanometrics, dated May 1, 1985, as amended and restated in August 1996 and April 1998, Nanometrics is obligated to continue to pay Mr. Coates his salary and benefits for five years from the date of his resignation in the event Mr. Coates is required to resign as Chairman of the Board under certain circumstances, including a change of control.

In April 1998, Nanometrics entered into an agreement with John D. Heaton pursuant to which Nanometrics agreed to pay Mr. Heaton his annual salary (excluding bonuses) for a period of one year from the date that he is required or requested for any reason not involving good cause, including a change of control, to involuntarily relinquish his positions with Nanometrics as President, Chief Executive Officer and director. If Mr. Heaton leaves Nanometrics voluntarily, or if he is asked to leave under certain circumstances, no such severance payment is required.

In March 1995, Nanometrics entered into an agreement with Roger Ingalls, Jr. pursuant to which Nanometrics agreed to pay Mr. Ingalls his annual salary (excluding bonuses) for a period of one hundred twenty (120) days from the date he is terminated without cause.

Equity Compensation Plan Information

All of Nanometrics equity compensation plans except the 2002 Non Statutory Stock Option Plan were approved by Nanometrics shareholders. The following table sets forth, for all of Nanometrics existing equity compensation plans, the number of outstanding option grants and the number of shares remaining available for issuance as of the fiscal year ended January 1, 2005.

	Number of Securities to be Issued Upon Exercise of Outstanding Options	Weighted Average Exercise Price of Outstanding Options	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (1)
Equity Compensation Plans Approved by Security Holders	1,555,629	$ 11.94	483,444
Equity Compensation Plans Not Approved by Security Holders	1,076,646	$ 8.13	35,359

(1) Excludes securities to be issued upon exercise of outstanding options.

Certain Relationships

Vincent J. Coates is the father of Norman V. Coates. There are no other family relationships between any of the foregoing nominees or between any such nominees and any of the executive officers of Nanometrics.

On January 21, 2005, Nanometrics announced a definitive agreement to merge its business with that of August Technology. Upon consummation of the August merger, Nanometrics will be renamed August Nanometrics Inc. and reincorporated into Delaware. Additionally, August Technology will become a wholly owned subsidiary of August Nanometrics. Each share of August Technology common stock will be converted into the right to receive 0.6401 of a share of August Nanometrics common stock upon consummation of the August merger. The August merger is expected to close during the second quarter of 2005, and is subject to customary closing conditions, including receipt of approval from shareholders of Nanometrics and August Technology.

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Members of the board of directors and executive officers of Nanometrics may have interests in the August merger. These interests include:

- the appointment of three current directors of Nanometrics as directors of August Nanometrics, including both Mr. Heaton and Mr. Coates, upon completion of the August merger and the appointment of certain executive officers of Nanometrics, including both Mr. Heaton and Mr. Coates, as executive officers of August Nanometrics upon completion of the August merger;

- the potential receipt of severance payments by Vincent J. Coates, Chairman of the Board and Secretary of Nanometrics, John D. Heaton, President, Chief Executive Officer and a director of Nanometrics and Roger Ingalls, Jr., Senior Vice President of Standalone Sales for Nanometrics (see Employment Contracts and Termination of Employment and Change-in-Control Arrangements, above, for more information); and

- the provision of directors and officers insurance coverage to our current directors and officers following the August merger.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act requires Nanometrics executive officers and directors, and persons who own more than ten percent of a registered class of Nanometrics equity securities, to file reports of ownership and changes in ownership with the Securities and Exchange Commission and the Nasdaq National Market. Executive officers, directors and greater than ten percent shareholders are required by Securities and Exchange Commission regulations to furnish Nanometrics with copies of all Section 16(a) forms that they file. Based solely on its review of the copies of such forms received by it or written representations from certain reporting persons, Nanometrics believes that, with the exception of Roger Ingalls, Jr., during the fiscal year ended January 1, 2005, its executive officers, directors and greater than ten percent shareholders complied with all applicable filing requirements. Mr. Ingalls failed to timely report an option grant on Form 4.

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Report of the Audit Committee of the Nanometrics Board of Directors

The following is the report of the audit committee of the board of directors of Nanometrics describing its review of materials and determinations with respect to its auditors and financial statements for the fiscal year ended January 1, 2005. The information contained in this report shall not be deemed to be soliciting material or to be filed with the Securities and Exchange Commission, nor shall such information be incorporated by reference into any future filing under the Securities Act or Exchange Act, except to the extent that Nanometrics specifically incorporates it by reference into such filing.

In accordance with its written charter adopted by the board of directors, the audit committee assists the board of directors in fulfilling its responsibility for oversight of the quality and integrity of the accounting, auditing and financial reporting practices of Nanometrics. During the fiscal year ended January 1, 2005, the audit committee met (or acted by written consent) five (5) times, and the audit committee chairman, as representative of the committee, discussed the interim financial information contained in quarterly earnings announcements with the chief financial officer and independent auditors prior to public release.

The audit committee received from Nanometrics independent auditors a formal written statement, consistent with Independence Standards Board Standard No. 1, Independence Discussions with Audit Committees, which describes all relationships between the auditors and Nanometrics that, in the auditors professional opinion, might reasonably be thought to bear on the auditors independence. The audit committee discussed with the auditors these relationships and satisfied itself as to the auditors independence.

The audit committee also discussed and reviewed with the independent auditors all communications required by generally accepted auditing standards, including those described in Statement on Auditing Standards No. 61, as amended, Communication with Audit Committees and, with and without management present, discussed and reviewed the results of the independent auditors examination of Nanometrics financial statements.

Additionally, the audit committee reviewed and discussed the audited financial statements of Nanometrics as of and for the fiscal year ended January 1, 2005 with management and the independent auditors. Management has the responsibility for the preparation of Nanometrics financial statements and the independent auditors have the responsibility for the examination of those statements.

Based on the foregoing review and discussions with management and the independent auditors, the audit committee recommended to the board of directors that Nanometrics audited financial statements as of and for the year ended January 1, 2005 be included in its Annual Report on Form 10-K for the fiscal year ended January 1, 2005 for filing with the Securities and Exchange Commission. The Audit Committee also recommended the appointment, subject to shareholder approval, of the independent auditors and the board of directors concurred in such recommendation.

Members of the Audit Committee

J. Thomas Bentley, Chairman

Edmond R. Ward

William G. Oldham

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Report of the Compensation/Stock Option Committee of the Nanometrics Board of Directors

The following is the report of the compensation/stock option committee of the board of directors of Nanometrics describing compensation policies and rationales applicable to certain of its executive officers with respect to the compensation paid to such executive officers for the fiscal year ended January 1, 2005. The information contained in such report shall not be deemed to be soliciting material or to be filed with the Securities and Exchange Commission, nor shall such information be incorporated by reference into any future filing under the Securities Act or Exchange Act, except to the extent that Nanometrics specifically incorporates it by reference into such filing.

General. The compensation/stock option committee is responsible for making recommendations to the board of directors with respect to cash compensation levels for certain of Nanometrics executive officers. During fiscal year ended January 1, 2005, the compensation/stock option committee also was responsible for determining levels of equity-based compensation for Nanometrics employees.

Compensation Philosophy. The compensation/stock option committee makes recommendations as to the salaries of certain of the executive officers by considering (i) the salaries of executive officers in similar positions at comparably-sized peer companies, (ii) Nanometrics financial performance over the past year based upon revenues and operating results and (iii) the achievement of individual performance goals related to each executive officer s duties and areas of responsibility. The compensation/stock option committee makes recommendations as to the levels of cash bonuses awarded to certain of Nanometrics executive officers and views such bonuses as being an integral part of its performance based compensation program. Such bonuses are based on Nanometrics profits and are determined as a percentage of the officer s salaries.

Equity-Based Compensation. The compensation/stock option committee views stock options as an important part of its long-term, performance-based compensation program. The compensation/stock option committee grants stock options to all employees of Nanometrics under its 2000 Stock Option Plan and 2002 Nonstatutory Stock Option Plan based upon the committee s estimation of each employee s contribution to the long-term growth and profitability of Nanometrics. The 2000 Stock Option Plan is intended to provide additional incentives to the executive officers to maximize shareholder value. Options are granted under the 2000 Stock Option Plan and the 2002 Nonstatutory Stock Option Plan at the then-current market price and are generally subject to three-year vesting periods to encourage key employees to remain with Nanometrics.

Compensation of the Chief Executive Officer. The compensation/stock option committee has reviewed all components of the chief executive officer s compensation, including salary, bonus, equity, stock options, and the obligations under Nanometrics change of control severance agreement with Mr. Heaton.

Based on this review, the compensation/stock option committee found Mr. Heaton s total compensation (and, in the case of the change of control severance agreement, potential payout) in the aggregate to be reasonable and not excessive. Furthermore, although Mr. Heaton made valuable contributions to Nanometrics during fiscal year ended January 3, 2004, in light of economic conditions, the compensation/stock option committee determined that an increase to the base salary of the chief executive officer would not be appropriate. It should be noted that when the compensation/stock option committee considers any component of the chief executive officer s total compensation, the aggregate amounts and mix of all the components, including accumulated (realized and unrealized) option gains are taken into consideration in the compensation/stock option committee s decisions.

Section 162(m). Nanometrics intends that awards granted under Nanometrics 2000 Stock Option Plan and 2002 Nonstatutory Stock Option Plan be deductible by Nanometrics under Section 162(m) of the Internal Revenue Code of 1986, as amended.

Members of the Compensation/Stock Option Committee

Edmond Ward, Chairman

J. Thomas Bentley

Stephen J Smith

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Nanometrics Stock Performance Graph

The following graph compares the cumulative total return to shareholders of Nanometrics common stock from December 31, 1999 through December 31, 2004 to the cumulative total return over such period of (i) the Nasdaq Stock Market (U.S.) Index and (ii) the RDG Technology Composite Index. The results shown assume that $100 was invested on December 31, 1999 in Nanometrics common stock and in each of the other two indices with any dividends reinvested. Information about RDG Technology Composite Index may be obtained at the Research Data Group, Inc. website address www.researchdatagroup.com/ComponentsTech.htm or by calling Research Data Group at (415) 643-6000.

The information contained in the performance graph shall not be deemed to be soliciting material or to be filed with the Securities and Exchange Commission, nor shall such information be incorporated by reference into any future filing under the Securities Act or Exchange Act, except to the extent that Nanometrics specifically incorporates it by reference into such filing.

COMPARISON OF 5-YEAR CUMULATIVE TOTAL RETURN AMONG NANOMETRICS INCORPORATED, THE NASDAQ STOCK MARKET (U.S.) INDEX AND THE RDG TECHNOLOGY COMPOSITE INDEX

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Householding of Proxy Materials

The Securities and Exchange Commission has adopted rules that permit companies and intermediaries such as brokers to satisfy delivery requirements for proxy statements with respect to two or more shareholders sharing the same address by delivering a single proxy statement addressed to those shareholders. This process, which is commonly referred to as householding, potentially provides extra convenience for shareholders and cost savings for companies. Nanometrics and some brokers household proxy materials, delivering a single proxy statement to multiple shareholders sharing an address unless contrary instructions have been received from the affected shareholders. Once you have received notice from your broker or Nanometrics that the broker or Nanometrics will be householding materials to your address, householding will continue until you are notified otherwise or until you revoke your consent. Upon written or oral request to the Investor Relations department of Nanometrics, by mail at 1550 Buckeye Drive, Milpitas, California, 95035 or by telephone at (408) 435-9600, Nanometrics will promptly deliver a copy of its proxy statement to a shareholder if that shareholder shares an address with another shareholder to which a single copy of the proxy statement was delivered. A shareholder may notify Nanometrics as described above if the shareholder wishes to receive a separate copy of the proxy statement in the future or, alternatively, if the shareholder wishes to receive a single copy of the materials instead of multiple copies.

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ADDITIONAL INFORMATION

Shareholder Proposals

Nanometrics

If the August merger is not completed, Nanometrics will hold its 2006 annual meeting of shareholders. For any proposal to be considered for inclusion in the Nanometrics proxy statement and form of proxy for submission to the Nanometrics shareholders at the Nanometrics 2006 annual meeting, the proposal must comply with the requirements of Rule 14a-8 under the Exchange Act and be submitted in writing by notice delivered or mailed by first-class United States mail, postage prepaid, to Nanometrics Incorporated, 1550 Buckeye Drive, Milpitas, California 95035, Attention: Office of the Secretary, and must be received no later than 120 calendar days before the date of the proxy statement released to shareholders in connection with the Nanometrics 2005 annual meeting. The submission of a shareholder proposal does not guarantee that it will be included in the Nanometrics 2006 proxy statement. Additionally, shareholder proposals to be considered at the Nanometrics 2006 annual meeting outside the processes of Rule 14a-8 (which are not intended to be included in the proxy materials for the Nanometrics 2006 annual meeting) must be delivered to or mailed and received at the executive offices of Nanometrics at least 45 days before the date of the joint proxy statement/prospectus is released to shareholders in connection with the 2005 annual meeting.

August Technology

August Technology s bylaws limit the business that may be transacted at a special meeting of shareholders to matters relating to the purposes of the special meeting stated in the notice of the meeting. Accordingly, August Technology s shareholders may not submit other proposals for consideration at the special meeting.

Proposals of August Technology s shareholders submitted pursuant to Rule 14a-8 under the Exchange Act and intended to be presented at the 2005 annual meeting of shareholders must have been received by August Technology at its principal executive offices no later than November 22, 2004 in order to be considered for inclusion in August Technology s proxy materials for that meeting. In addition, August Technology s bylaws provide that a shareholder who desires to nominate a person for election to the board of directors at the 2005 annual meeting must have given written notice to August Technology on or before November 22, 2004. Any such nomination must have provided the information required by August Technology s bylaws and comply with any applicable laws and regulations. If a shareholder proposal intended to be presented at the 2005 annual meeting but not included in the proxy materials was or is received by August Technology after February 18, 2005, then management named in August Technology s proxy for the 2005 annual meeting will have discretionary authority to vote shares represented by such proxies on the shareholder proposal, if presented at the annual meeting.

All submissions should be made to the corporate secretary at August Technology s principal offices at 4900 West 78th Street, Bloomington, Minnesota 55435.

Legal Matters

Certain legal matters, including United States federal income tax consequences of the August merger, will be passed upon for Nanometrics by Wilson Sonsini Goodrich & Rosati, Professional Corporation and for August Technology by Fredrikson & Byron, P.A.

Experts

The financial statements and schedule of Nanometrics as of January 1, 2005 incorporated by reference herein and in the registration statement have been audited by BDO Seidman, LLP, an independent registered public accounting firm, to the extent and for the period set forth in its report and are incorporated by reference in reliance upon such report, given upon the authority of said firm as experts in auditing and accounting.

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The financial statements and the related financial statement schedule as of January 3, 2004, and for the years ended January 3, 2004 and December 28, 2002 incorporated in this joint proxy statement/prospectus by reference from Nanometrics Annual Report on Form 10-K for the fiscal year ended January 1, 2005, have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference, and have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

The consolidated financial statements and schedule of August Technology as of December 31, 2004 and 2003 and for each of the years in the three-year period ended December 31, 2004, have been incorporated by reference herein in reliance on the reports of KPMG LLP, independent registered public accounting firm, incorporated by reference herein and upon the authority of said firm as experts in accounting and auditing.

Where You Can Find More Information

Nanometrics and August Technology file annual, quarterly and current reports, proxy statements and other information with the Securities and Exchange Commission. You may read and copy these reports, statements or other information filed by either Nanometrics or August Technology at the Securities and Exchange Commission s Public Reference Room at 450 Fifth Street, N.W., Washington, D.C. 20549. Please call the Securities and Exchange Commission at 1-800-SEC-0330 for further information on the public reference rooms. The Securities and Exchange Commission filings of Nanometrics and August Technology are also available to the public from commercial document retrieval services and at the website maintained by the Securities and Exchange Commission at www.sec.gov.

Nanometrics has filed a registration statement on Form S-4 to register with the Securities and Exchange Commission the Nanometrics common stock to be issued to August Technology shareholders in the August merger. This joint proxy statement/prospectus is a part of that registration statement and constitutes a prospectus of Nanometrics, in addition to being a proxy statement of Nanometrics and August Technology for their respective meetings. The registration statement, including the attached annexes, exhibits and schedules, contains additional relevant information about Nanometrics, Nanometrics common stock and August Technology. As allowed by Securities and Exchange Commission rules, this joint proxy statement/prospectus does not contain all the information you can find in the registration statement or the exhibits to the registration statement.

The Securities and Exchange Commission allows Nanometrics and August Technology to incorporate by reference information into this joint proxy statement/prospectus. This means that Nanometrics and August Technology can disclose important information to you by referring you to another document filed separately with the Securities and Exchange Commission. The information incorporated by reference is considered to be a part of this joint proxy statement/prospectus, except for any information that is superseded by information that is included directly in this joint proxy statement/prospectus or incorporated by reference subsequent to the date of this joint proxy statement/prospectus. Neither Nanometrics nor August Technology incorporates the contents of their websites into this joint proxy statement/prospectus.

This joint proxy statement/prospectus incorporates by reference the documents listed below that Nanometrics and August Technology have previously filed with the Securities and Exchange Commission. They contain important information about Nanometrics and August Technology and their financial condition. The following documents, which were filed by Nanometrics with the Securities and Exchange Commission, are incorporated by reference into this joint proxy statement/prospectus:

- annual report of Nanometrics on Form 10-K for the fiscal year ended January 1, 2005, filed with the Securities and Exchange Commission on March 23, 2005;

quarterly report of Nanometrics for the quarter ended April 2, 2005 filed with the Securities and Exchange Commission on May 16, 2005;

current report of Nanometrics on Form 8-K dated January 21, 2005, filed with the Securities and Exchange Commission on January 21, 2005;

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current report of Nanometrics on Form 8-K dated March 1, 2005, filed with the Securities and Exchange Commission on March 7, 2005;

current report of Nanometrics on Form 8-K dated April 5, 2005, filed with the Securities and Exchange Commission on April 11, 2005; and

current report of Nanometrics on Form 8-K dated April 15, 2005, filed with the Securities and Exchange Commission on April 15, 2005.

the description of the common stock of Nanometrics contained in its registration statement, filed with the Securities and Exchange Commission on Form 8-A, on April 29, 1985.

The following documents, which were filed by August Technology with the Securities and Exchange Commission, are incorporated by reference into this joint proxy statement/prospectus:

annual report of August Technology on Form 10-K for the fiscal year ended December 31, 2004, filed with the Securities and Exchange Commission on March 16, 2005;

quarterly report of August Technology for the quarter ended March 31, 2005, filed with the Securities and Exchange Commission on May 10, 2005;

current report of August Technology on Form 8-K dated January 21, 2005, filed with the Securities and Exchange Commission on January 21, 2005 and amended on January 24, 2005;

current report of August Technology on Form 8-K dated January 31, 2005, filed with the Securities and Exchange Commission on January 31, 2005;

current report of August Technology on Form 8-K dated February 7, 2005, filed with the Securities and Exchange Commission on February 7, 2005;

current report of August Technology on Form 8-K dated February 8, 2005, filed with the Securities and Exchange Commission on February 8, 2005;

current report of August Technology on Form 8-K dated February 11, 2005, filed with the Securities and Exchange Commission on February 11, 2005;

current report of August Technology on Form 8-K dated February 16, 2005, filed with the Securities and Exchange Commission on February 16, 2005;

current report of August Technology on Form 8-K dated, February 18, 2005, filed with the Securities and Exchange Commission on February 18, 2005;

current report of August Technology on Form 8-K dated March 16, 2005, filed with the Securities and Exchange Commission on March 16, 2005;

current report of August Technology on Form 8-K dated March 30, 2005, filed with the Securities and Exchange Commission on April 1, 2005; and

current report of August Technology on Form 8-K dated April 4, 2005, filed with the Securities and Exchange Commission on April 4, 2005.

the description of the common stock of August Technology contained in its registration statement on Form 8-A filed with the Securities and Exchange Commission on May 16, 2000 and any amendment or report filed with the Securities and Exchange Commission for the purpose of updating the description.

In addition, Nanometrics and August Technology incorporate by reference additional documents that either may file with the Securities and Exchange Commission pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act between the date of this joint proxy statement/prospectus and the date of the Nanometrics and August Technology shareholders meetings, respectively. These documents include periodic reports, such as annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K, excluding any

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information furnished pursuant to Item 7.01 of any current report on Form 8-K solely for purposes of satisfying the requirements of Regulation FD or Regulation G under the Exchange Act, as well as proxy statements.

Nanometrics and August Technology also incorporate by reference the agreement and plan of merger attached to this joint proxy statement/prospectus as Annex A.

Nanometrics has supplied all information contained in or incorporated by reference into this joint proxy statement/prospectus relating to Nanometrics and August Technology has supplied all information contained in or incorporated by reference into this joint proxy statement/prospectus relating to August Technology.

You can obtain any of the documents incorporated by reference into this joint proxy statement/prospectus through Nanometrics or August Technology, as the case may be, or from the Securities and Exchange Commission through the Securities and Exchange Commission s website at www.sec.gov. Documents incorporated by reference are available from Nanometrics and August Technology without charge, excluding any exhibits to those documents, unless the exhibit is specifically incorporated by reference as an exhibit in this joint proxy statement/prospectus. Nanometrics shareholders and August Technology shareholders may request a copy of such documents by contacting the applicable department at:

Nanometrics Incorporated	August Technology Corporation
1550 Buckeye Drive	4900 West 78th Street
Milpitas, California 95035	Bloomington, Minnesota 55435
Attn: Investor Relations	Attn: Investor Relations

In addition, you may obtain copies of the information relating to Nanometrics, without charge, by sending an e-mail to investors@nanometrics.com or by calling (408) 435-9600.

You may obtain copies of the information relating to August Technology, without charge, by calling The Proxy Advisory Group of Strategic Stock Surveillance, LLC at (866) 657-8728 or (212) 850-8150.

IN ORDER FOR YOU TO RECEIVE TIMELY DELIVERY OF THE DOCUMENTS IN ADVANCE OF THE NANOMETRICS AND AUGUST TECHNOLOGY MEETINGS, NANOMETRICS OR AUGUST TECHNOLOGY, AS APPLICABLE, SHOULD RECEIVE YOUR REQUEST NO LATER THAN , 2005.

We have not authorized anyone to give any information or make any representation about the August merger, the reincorporation merger or our companies that is different from, or in addition to, that contained in this joint proxy statement/prospectus or in any of the materials that we have incorporated into this joint proxy statement/prospectus. Therefore, if anyone does give you information of this sort, you should not rely on it. If you are in a jurisdiction where offers to exchange or sell, or solicitations of offers to exchange or purchase, the securities offered by this joint proxy statement/prospectus or the solicitation of proxies is unlawful, or if you are a person to whom it is unlawful to direct these types of

activities, then the offer presented in this joint proxy statement/prospectus does not extend to you. The information contained in this joint proxy statement/prospectus is accurate only as of the date of this document unless the information specifically indicates that another date applies.

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Annex A

The merger agreement has been included to provide you with information regarding its terms. It is not intended to provide any other factual information about Nanometrics or August Technology. Such information can be found elsewhere in this joint proxy statement/prospectus and in the other public filings each of Nanometrics or August Technology makes with the Securities and Exchange Commission, which are available without charge at www.sec.gov.

The merger agreement contains representations and warranties Nanometrics and August Technology made to each other. The assertions embodied in those representations and warranties are qualified by information in confidential disclosure schedules that Nanometrics and August Technology have exchanged in connection with signing the merger agreement. The disclosure schedules do contain information that modifies, qualifies and creates exceptions to the representations and warranties set forth in the attached merger agreement. Accordingly, you should not rely on the representations and warranties as characterizations of the actual state of facts, since they are modified by the underlying disclosure schedules. These disclosure schedules contain information that has been included in Nanometrics or August Technology s prior public disclosures, as well as potential additional non-public information. Neither Nanometrics nor August Technology believe that the disclosure schedules contain information that the securities laws require either or both of them to publicly disclose. Moreover, information concerning the subject matter of the representations and warranties may have changed since the date of the agreement, which subsequent information may or may not be fully reflected in each of Nanometrics or August Technology s public disclosures.

AGREEMENT AND PLAN OF MERGER AND REORGANIZATION

by and among

NANOMETRICS INCORPORATED,

MAJOR LEAGUE MERGER CORPORATION,

MINOR LEAGUE MERGER CORPORATION

and

AUGUST TECHNOLOGY CORPORATION

Dated as of January 21, 2005

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AGREEMENT AND PLAN OF MERGER AND REORGANIZATION

THIS AGREEMENT AND PLAN OF MERGER AND REORGANIZATION is entered into as of January 21, 2005 (this *Agreement*) by and among Nanometrics Incorporated, a California corporation (*Parent*), Major League Merger Corporation, a Minnesota corporation and a wholly owned subsidiary of Parent (*Merger Sub 1*), Minor League Merger Corporation, a Delaware corporation and a wholly owned subsidiary of Parent (*Merger Sub 2*), and August Technology Corporation, a Minnesota corporation (the *Company*).

WHEREAS, the respective Boards of Directors of Parent, Merger Sub 1, Merger Sub 2 and the Company have each approved, and deemed it to be advisable and in the best interests of their respective shareholders to consummate the business combination transaction provided for in this Agreement in which (i) Parent will merge with and into Merger Sub 2 (the *Migratory Merger*) in accordance with the terms and conditions of this Agreement and the applicable provisions of the Delaware General Corporation Law (the *DGCL*) and the California Corporations Code (*CCC*) and (ii) following the Migratory Merger, Merger Sub 1 will merge with and into the Company (the *Acquisition Merger*) in accordance with the terms and conditions of this Agreement and the applicable provisions of the Minnesota Business Corporations Act (*MBCA*);

WHEREAS, concurrently with the execution of this Agreement and as an inducement to Parent to enter into this Agreement, certain shareholders of the Company are entering into voting agreements with Parent, in substantially the form attached hereto as *Exhibit A* (each, a *Company Shareholder Voting Agreement* and collectively, the *Company Shareholder Voting Agreements*), pursuant to which such shareholders have agreed, among other things, to vote their shares of Company Common Stock (as defined below) in favor of the Acquisition Merger and the other transactions contemplated by this Agreement;

WHEREAS, concurrently with the execution of this Agreement and as an inducement to the Company to enter into this Agreement, certain shareholders of Parent have agreed to enter into voting agreements with the Company, substantially in the form attached hereto as *Exhibit B* (each, a *Parent Shareholder Voting Agreement* and collectively, the *Parent Shareholder Voting Agreements*), pursuant to which such shareholders have agreed, among other things, to vote their shares of Parent Common Stock (as defined below) in favor of the Migratory Merger and the Acquisition Merger (collectively, the *Mergers*) and the other transactions contemplated by this Agreement; and

WHEREAS, for United States federal income tax purposes, it is intended that the Mergers shall each qualify as reorganizations within the meaning of Section 368(a) of the Internal Revenue Code of 1986, as amended (the *Code*), and that this Agreement shall be, and is hereby, adopted as a plan of reorganization for purposes of Section 368(a) of the Code.

NOW, THEREFORE, in consideration of the foregoing and the respective representations, warranties, covenants and agreements set forth below, the parties hereto agree as follows:

ARTICLE I

THE MIGRATORY MERGER

Section 1.1 *The Migratory Merger.* On the terms and subject to the conditions of this Agreement, in accordance with the DGCL and the CCC, at the Migratory Merger Effective Time (as defined in Section 1.3), Parent shall be merged with and into Merger Sub 2. Merger Sub 2 shall continue as the surviving corporation of the Migratory Merger and shall continue its corporate existence under the Laws of the State of Delaware. Upon consummation of the Migratory Merger, the separate corporate existence of Parent shall terminate. Merger Sub 2, in its capacity as the corporation surviving the Migratory Merger, is hereinafter sometimes referred to as *Nanometrics Delaware*. In the event that Parent and Merger Sub 2 shall not effect the Migratory Merger prior to the Closing, all references in this Agreement to Nanometrics Delaware (including, without limitation, all references to Nanometrics Delaware Closing Price and Nanometrics Delaware Common Stock) shall mean and refer to Parent (or Parent Closing Price and Parent Common Stock, as the case may be).

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Section 1.2 *Conditions to Migratory Merger.* The obligations of Parent and Merger Sub 2 to effect the Migratory Merger pursuant to this ARTICLE I shall be subject to the satisfaction of the following conditions:

(a) All requisite approvals of the shareholders of Parent to authorize and approve the Migratory Merger under applicable Law, the Articles of Incorporation of Parent and the Bylaws of Parent shall have been obtained.

(b) No temporary restraining order, preliminary or permanent injunction or other order issued by any court of competent jurisdiction or other legal restraint or prohibition preventing the consummation of the Migratory Merger shall be in effect.

(c) No statute, rule, regulation or order shall be enacted, entered, enforced or deemed applicable to the Migratory Merger by a governmental authority of competent jurisdiction that makes the consummation of the Migratory Merger illegal.

(d) The shares of Nanometrics Delaware Common Stock issuable in the Migratory Merger shall have been authorized for listing on the NASDAQ.

Section 1.3 *Effective Time of Migratory Merger.* The Migratory Merger shall become effective as set forth in the certificate of merger relating to the Migratory Merger as contemplated by the DGCL (the *Certificate of Migratory Merger*), which shall be filed with the Secretary of State of the State of Delaware, and the certificate of ownership relating to the Migratory Merger as contemplated by Section 1110 of the CCC (the *California Migratory Merger Certificate* and, together with the Certificate of Migratory Merger, the *Migratory Merger Certificates*), which shall be filed with the Secretary of State of the State of California. The *Migratory Merger Effective Time* shall mean the time at which the Migratory Merger becomes effective, as set forth in the Migratory Merger Certificates.

Section 1.4 *Effects of Migratory Merger*. At and after the Migratory Merger Effective Time, the Migratory Merger shall have the effects set forth in the DGCL and CCC (including Section 1107 of the CCC and Section 259 of the DGCL).

Section 1.5 *Certificate of Incorporation & Bylaws of Nanometrics Delaware*.

(a) At the Migratory Merger Effective Time, the certificate of incorporation of Merger Sub 2, as in effect immediately prior to the Migratory Merger Effective Time, in the form set forth in *Exhibit D* (or any other form as determined by Parent with the consent of the Company which consent shall not be unreasonably withheld, subject to Section 7.15 below), shall be the certificate of incorporation of Merger Sub 2 as the surviving corporation of the Migratory Merger until thereafter amended as provided by the DGCL and such certificate of incorporation, except that the name of Merger Sub 2 set forth thereon shall be *Nanometrics Incorporated* and if the Acquisition Merger occurs, then the name set forth thereon shall be *August Nanometrics Inc.*

(b) At the Migratory Merger Effective Time, the bylaws of Merger Sub 2, as in effect immediately prior to the Migratory Merger Effective Time, in the form set forth as *Exhibit E* (or any other form as determined by Parent with the consent of the Company which consent shall not be unreasonably withheld, subject to Section 7.15 below), shall be the bylaws of Merger Sub 2 as the surviving corporation until thereafter

amended as provided by the DGCL, its certificate of incorporation and such bylaws, except that the name of Merger Sub 2 set forth thereon shall be *Nanometrics Incorporated* and if the Acquisition Merger occurs, then the name set forth thereon shall be *August Nanometrics Inc.*

Section 1.6 *Board of Directors & Officers of Nanometrics Delaware*.

(a) Subject to the terms of Section 7.15, the directors of Parent immediately prior to the Migratory Merger Effective Time shall be the directors of Nanometrics Delaware as the surviving corporation in the Migratory Merger.

(b) The officers of Parent immediately prior to the Migratory Merger Effective Time shall be the officers of Nanometrics Delaware as the surviving corporation in the Migratory Merger.

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Section 1.7 *Effect of Migratory Merger on Capital Stock*. At the Migratory Merger Effective Time, by virtue of the Migratory Merger and without any action on the part of Parent, Merger Sub 2, or the holders of any of the following securities:

(a) Each share of common stock, no par value, of Parent (*Parent Common Stock*) either issued and outstanding or which Parent is authorized to issue, in each case, immediately prior to the Migratory Merger Effective Time, shall be converted into one fully paid and nonassessable share of common stock, $0.001 par value, of Merger Sub 2 (*Nanometrics Delaware Common Stock*).

(b) Each option to purchase Parent Common Stock which Parent has issued or is authorized to issue prior to the Migratory Merger Effective Time, shall be converted into an option to purchase Nanometrics Delaware Common Stock on the same terms and conditions as governed the original option.

(c) Each share of capital stock of Merger Sub 2 issued and outstanding immediately prior to the Migratory Merger Effective Time shall be cancelled and cease to be outstanding, without payment of any consideration therefor, and shall cease to exist.

ARTICLE II

THE ACQUISITION MERGER

Section 2.1 *The Acquisition Merger*. On the terms and subject to the conditions of this Agreement and in accordance with the MBCA, at the Acquisition Merger Effective Time (as defined in Section 2.2), Merger Sub 1 shall merge with and into the Company, the separate corporate existence of Merger Sub 1 shall cease and the Company shall continue as the surviving corporation in the Acquisition Merger as a wholly owned Subsidiary of Nanometrics Delaware. The Company, in its capacity as the corporation surviving the Acquisition Merger, is hereinafter sometimes referred to as the *Surviving Corporation*).

Section 2.2 *Effective Time of Acquisition Merger*. On the Closing Date (as defined in Section 3.1), Nanometrics Delaware and the Company shall cause the Acquisition Merger to be consummated by filing a duly executed and delivered articles of merger as required by the MBCA (the *Articles of Acquisition Merger*) with the Secretary of State of the State of Minnesota, in such form as required by, and executed in accordance with the relevant provisions of, the MBCA (the time of such filing, or such other time as Parent (or Nanometrics Delaware) and the Company shall specify in the Certificate of Merger, being the *Acquisition Merger Effective Time*).

Section 2.3 *Effects of Acquisition Merger*. At the Acquisition Merger Effective Time, the effect of the Acquisition Merger shall be as provided in this Agreement and the Articles of Acquisition Merger and as specified in the MBCA (including Section 302A.641 of the MBCA).

Section 2.4 *Articles of Incorporation & Bylaws of Surviving Corporation*.

(a) At and after the Acquisition Merger Effective Time, the articles of incorporation of Merger Sub 1 (the *Merger Sub 1 Charter*), as in effect immediately prior to the Acquisition Merger Effective Time, subject to the provisions of Section 7.10, shall be the articles of incorporation of the Surviving Corporation, until amended in accordance with the MBCA, except that the name of the Surviving Corporation shall be *August Nanometrics Inc.* (or such other name as the parties mutually agree).

(b) At and after the Acquisition Merger Effective Time, the bylaws of Merger Sub 1 (the *Merger Sub 1 Bylaws*), as in effect immediately prior to the Acquisition Merger Effective Time, subject to the provisions of Section 7.10, shall be the bylaws of the Surviving Corporation until amended in accordance with the MBCA, except that the name of the Surviving Corporation shall be *August Nanometrics Inc.*

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Section 2.5 *Board of Directors & Officers of the Surviving Corporation*.

(a) The directors of Merger Sub 1 immediately prior to the Acquisition Merger Effective Time shall be the initial directors of the Surviving Corporation and shall hold office from the Acquisition Merger Effective Time until their respective successors are duly elected or appointed and qualified in the manner provided in the articles of incorporation or bylaws of the Surviving Corporation or as otherwise provided by Law.

(b) The officers of Merger Sub 1 immediately prior to the Acquisition Merger Effective Time shall be the initial officers of the Surviving Corporation and shall hold office from the Acquisition Merger Effective Time until their respective successors are duly elected or appointed and qualified in the manner provided in the articles of incorporation or bylaws of the Surviving Corporation or as otherwise provided by Law.

Section 2.6 *Effects of Acquisition Merger on Capital Stock*. At the Acquisition Merger Effective Time, by virtue of the Acquisition Merger and without any action on the part of the Company, Nanometrics Delaware, Merger Sub 1 or any holder of any shares of common stock, no par value per share, of the Company (*Company Common Stock*) or any holder of any shares of capital stock of Merger Sub 1:

(a) *Company Common Stock*. Subject to this Section 2.6(a), each share of Company Common Stock issued and outstanding immediately prior to the Acquisition Merger Effective Time (other than shares to be cancelled in accordance with Section 2.6(b)), shall be converted into the right to receive (i) 0.6401 (the *Exchange Ratio*) shares of Nanometrics Delaware Common Stock (the *Merger Consideration*) payable upon the surrender of the Certificates (as defined in Section 3.2(b)). From and after the Acquisition Merger Effective Time, all such shares of Company Common Stock, shall no longer be outstanding and shall automatically be cancelled and retired and shall cease to exist, and each holder of a Certificate representing any such shares shall cease to have any rights with respect thereto, except the right to receive the Merger Consideration pursuant to this Section 2.6(a), any cash in lieu of fractional shares payable pursuant to Section 3.2(c) and any dividends or other distributions to which such holder is entitled to pursuant to Section 3.2(c). Notwithstanding the foregoing, the Exchange Ratio shall be appropriately adjusted to reflect fully the effect of any stock split, reverse split, reclassification, stock dividend, reorganization, recapitalization, consolidation, exchange or other like change with respect to Nanometrics Delaware Common Stock or Company Common Stock occurring (or having a record date) after the date of this Agreement and prior to the Acquisition Merger Effective Time.

(b) *Cancellation of Treasury Stock and Parent-Owned Stock*. All shares of Company Common Stock that are (i) held by the Company as treasury shares or (ii) owned by Nanometrics Delaware or any wholly owned Subsidiary (as defined below) of Nanometrics Delaware, in each case immediately prior to the Acquisition Merger Effective Time, shall be cancelled and retired and shall cease to exist, and no securities of Nanometrics Delaware or other consideration shall be delivered in exchange therefor.

(c) *Capital Stock of Merger Sub 1*. Each share of common stock, no par value per share, of Merger Sub 1 (*Merger Sub 1 Common Stock*) issued and outstanding immediately prior to the Acquisition Merger Effective Time shall be converted into and become one fully paid and nonassessable share of common stock, no par value per share, of the Surviving Corporation.

(d) *Stock Options*. Outstanding options to purchase shares of Company Common Stock shall be treated in the manner set forth in Section 7.9.

ARTICLE III

THE CLOSING

Section 3.1 *Closing*. Subject to the provisions of this Agreement, the closing of the Migratory Merger and the Acquisition Merger (the *Closing*) shall take place sequentially beginning at 10:00 a.m. Pacific Time, at the

offices of Wilson Sonsini Goodrich & Rosati, Professional Corporation (*WSGR*), 650 Page Mill Road, Palo Alto, California, on a date to be specified by Parent and the Company which shall be no later than the second (2nd) business day after satisfaction or waiver of each of the conditions set forth in ARTICLE VIII or on such other date and such other time and place as Parent and the Company shall agree. The date on which the Closing shall occur is hereinafter referred to as the *Closing Date* .

Section 3.2 *Exchange of Certificates*.

(a) *Exchange Agent*. Prior to the Closing Date, Parent shall designate a bank or trust company to act as Exchange Agent hereunder (the *Exchange Agent*). As soon as practicable after the Acquisition Merger Effective Time, Nanometrics Delaware shall deposit with or for the account of the Exchange Agent, for the benefit of the holders of Company Common Stock, stock certificates representing the shares of Nanometrics Delaware Common Stock and an amount of cash sufficient to deliver to the holders of Company Common Stock any cash in lieu of fractional shares payable pursuant to Section 3.2(c) and any dividends or other distributions to which such holders are entitled pursuant to Section 3.2(c) (such certificates for shares of Nanometrics Delaware Common Stock together with cash in lieu of fractional shares and dividends or other distributions being hereinafter referred to as the *Exchange Fund*) deliverable pursuant to Section 2.6 in exchange for outstanding shares of Company Common Stock.

(b) *Exchange Procedures*. As soon as practicable after the Acquisition Merger Effective Time, Nanometrics Delaware shall instruct the Exchange Agent to mail to each holder of record of a certificate or certificates which immediately prior to the Acquisition Merger Effective Time represented outstanding shares of Company Common Stock (the *Certificates*) that were converted pursuant to Section 2.6(a) into the right to receive the Merger Consideration (i) a letter of transmittal (which shall specify that delivery shall be effected, and risk of loss and title to the Certificates shall pass, only upon proper delivery of the Certificates to the Exchange Agent and shall be in such form and have such other provisions as Nanometrics Delaware may reasonably specify that are not inconsistent with the terms of this Agreement) and (ii) instructions for use in effecting the surrender of the Certificates in exchange for the Merger Consideration, the cash amount in lieu of any fractional shares pursuant to Section 3.2(d) and any dividends or distributions payable pursuant to Section 3.2(e). Upon surrender of a Certificate for cancellation to the Exchange Agent together with such letter of transmittal, duly executed, and such other customary documents as may be required pursuant to such instructions, the holder of such Certificate shall be entitled to receive (A) certificates evidencing the Merger Consideration which such holder has the right to receive pursuant to Section 2.6(a) in respect of the shares of Company Common Stock formerly evidenced by such Certificate, (B) cash in lieu of any fractional shares of Nanometrics Delaware Common Stock to which such holder is entitled pursuant to Section 3.2(d), and (C) any dividends or other distributions to which such holder is entitled pursuant to Section 3.2(d), after giving effect to any tax withholdings required by applicable Law, and the Certificate so surrendered shall forthwith be cancelled. In the event of a transfer of ownership of shares of Company Common Stock which is not registered in the transfer records of the Company as of the Acquisition Merger Effective Time, a certificate representing the proper number of shares of Nanometrics Delaware Common Stock may be issued to a transferee if the Certificate evidencing such Company Common Stock is presented to the Exchange Agent, accompanied by all documents required to evidence and effect such transfer pursuant to this Section 3.2(b) and by evidence that any applicable stock transfer taxes have been paid. Until so surrendered, each outstanding Certificate that, prior to the Acquisition Merger Effective Time, represented shares of Company Common Stock will be deemed, from and after the Acquisition Merger Effective Time, for all corporate purposes, to represent only the right to receive upon surrender the Merger Consideration and any cash in lieu of any fractional shares of Nanometrics Delaware Common Stock payable pursuant to Section 3.2(d), in accordance with the terms of this Agreement.

(c) *No Further Ownership Rights in Company Stock*. At the Acquisition Merger Effective Time, the stock transfer books of the Company shall be closed and thereafter there shall be no further registration of transfers on the stock transfer books of the Company or the Surviving Corporation of the shares of Company Common Stock which were outstanding immediately prior to such time. If, after such time, Certificates are presented to the Surviving Corporation for any reason, they shall be cancelled and exchanged as provided in this Section 3.2(b).

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(d) *No Fractional Shares*. No certificate or scrip representing fractional shares of Nanometrics Delaware Common Stock shall be issued upon the surrender for exchange of Certificates, and such fractional share interests shall not entitle the owner thereof to vote or to any other rights of a stockholder of Nanometrics Delaware. Notwithstanding any other provision of this Agreement, each holder of shares of Company Common Stock converted pursuant to the Acquisition Merger who would otherwise have been entitled to receive a fraction of a share of Nanometrics Delaware Common Stock (after taking into account all Certificates delivered by such holder and the aggregate number of shares of Company Common Stock represented thereby) shall receive, in lieu thereof, cash (without interest) in an amount equal to such fractional part of a share of Nanometrics Delaware Common Stock multiplied by the last reported sales price of Nanometrics Delaware Common Stock at the end of regular trading hours on the NASDAQ Nanometrics Market (the *NASDAQ*) on the Closing Date (the *Nanometrics Delaware Closing Price*).

(e) *Distributions with Respect to Unexchanged Shares*. No dividends or other distributions declared or made after the Acquisition Merger Effective Time with respect to Nanometrics Delaware Common Stock with a record date after the Acquisition Merger Effective Time shall be paid to the holder of any unsurrendered Certificate with respect to the shares of Nanometrics Delaware Common Stock represented thereby, and no cash payment in lieu of fractional shares shall be paid to any such holder pursuant to Section 3.2(d), unless and until the holder of such Certificate shall surrender such Certificate. Subject to the effect of escheat, tax or other applicable Laws, following surrender of any such Certificate, there shall be paid to the holder of the certificates representing whole shares of Nanometrics Delaware Common Stock issued in exchange therefor, in addition to the Merger Consideration deliverable therefore pursuant to Section 2.6, without interest, (A) the amount of any cash payable with respect to a fractional share of Nanometrics Delaware Common Stock to which such holder is entitled pursuant to Section 3.2(d) and (B) at the appropriate payment date, the amount of dividends or other distributions, with a record date after the Acquisition Merger Effective Time but prior to surrender and a payment date occurring after surrender, payable with respect to such whole shares of Nanometrics Delaware Common Stock.

(f) *Lost, Stolen or Destroyed Certificates*. In the event any Certificates shall have been lost, stolen or destroyed, the Exchange Agent shall issue in exchange for such lost, stolen or destroyed Certificates, upon the making of an affidavit of that fact by the holder thereof, such shares of Nanometrics Delaware Common Stock as may be required pursuant to Section 2.6(a) as well as the other Merger Consideration as provided in this Section 3.2(f) and any dividends or other distributions to which the holders thereof are entitled pursuant to Section 3.2(e); *provided*, *however*, that Nanometrics Delaware may, in its discretion and as a condition precedent to the issuance thereof, require the owner of such lost, stolen or destroyed Certificates to deliver an agreement of indemnification in form satisfactory to Nanometrics Delaware, or a bond in such sum as Nanometrics Delaware may direct as indemnity against any claim that may be made against Nanometrics Delaware or the Exchange Agent with respect to the Certificates alleged to have been lost, stolen or destroyed.

(g) *Transfers of Ownership*. If any certificate for shares of Nanometrics Delaware Common Stock is to be issued in a name other than that in which the Certificate surrendered in exchange therefor is registered, it will be a condition to the issuance thereof that the Certificate so surrendered will be properly endorsed and otherwise be in proper form for transfer and that the person requesting such exchange will have paid to Nanometrics Delaware or any agent designated by it any transfer or other taxes required by reason of the issuance of a certificate for shares of Nanometrics Delaware Common Stock in any name other than that of the registered holder of the Certificate surrendered, or will have established to the satisfaction of Nanometrics Delaware or any agent designated by it that such tax has been paid or is not payable.

(h) *Termination of Exchange Fund*. At any time following the six (6) month anniversary of the Acquisition Merger Effective Time, Nanometrics Delaware shall be entitled to require the Exchange Agent to deliver to Nanometrics Delaware any portion of the Exchange Fund not disbursed to holders of Certificates, and thereafter such holders shall be entitled to look only to Nanometrics Delaware (subject to abandoned property, escheat or other similar Law) with respect to the Merger Consideration to which such holders are entitled pursuant to Section 2.6(a), any cash in lieu of fractional shares payable to such holders

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pursuant to Section 3.2(d) and any dividends or other distributions to which such holders are entitled pursuant to Section 3.2(e), upon due surrender of their Certificates, without any interest thereon.

(i) *No Liability*. Neither Nanometrics Delaware, Parent, Merger Sub 1, nor the Company shall be liable to any holder of Company Common Stock or Parent Common Stock, as the case may be, for such shares (or dividends or distributions with respect thereto) delivered to a public official pursuant to any applicable abandoned property, escheat or other similar Law following the passage of time specified therein.

(j) *Withholding Rights*. Nanometrics Delaware, the Surviving Corporation or the Exchange Agent shall be entitled to deduct and withhold from the consideration otherwise payable pursuant to this Agreement to any person who was a holder of Parent Common Stock or Company Common Stock immediately prior to the Acquisition Merger Effective Time such amounts as Nanometrics Delaware, the Surviving Corporation or the Exchange Agent is required to deduct and withhold with respect to the making of such payment under the Code, or any provision of state, local or foreign tax Law. To the extent that amounts are so withheld by Nanometrics Delaware, the Surviving Corporation or the Exchange Agent, such withheld amounts shall be treated for all purposes of this Agreement as having been paid to the holder of the shares of Parent Common Stock or Company Common Stock in respect of which such deduction and withholding was made by Nanometrics Delaware, the Surviving Corporation or the Exchange Agent.

ARTICLE IV

REPRESENTATIONS AND WARRANTIES OF THE COMPANY

Except (i) as set forth in the written disclosure schedule prepared by the Company which is dated as of the date hereof and has been delivered by the Company to Parent in connection herewith (the *Company Disclosure Schedule*) or (ii) as otherwise disclosed in any Company SEC Report (as defined below) filed with the SEC prior to the date hereof (other than in any risk factors or forward looking statements contained therein, which shall not qualify, modify or otherwise affect the representations and warranties set forth in this Article IV), the Company represents and warrants to Parent, Merger Sub 1 and Merger Sub 2 as follows:

Section 4.1 *Organization and Qualification; Subsidiaries*. The Company and each of its Subsidiaries is an entity duly organized, validly existing and in good standing under the Laws of the jurisdiction of its organization and has the requisite corporate or other power and authority necessary to own, lease and operate the properties it purports to own, lease or operate and to carry on its business as it is now being conducted. Each of the Company and its Subsidiaries is duly qualified or licensed as a foreign corporation to do business, and is in good standing, in each jurisdiction where the character or location of the properties owned, leased or operated by it or the nature of its activities makes such qualification or licensing necessary, except for such failures to be so duly qualified or licensed and in good standing that would not reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect. A true, complete and correct list of all of the Company s Subsidiaries, together with the jurisdiction of incorporation of each Subsidiary, the authorized capitalization of each Subsidiary, and the percentage of each Subsidiary s outstanding capital stock owned by the Company or another Subsidiary or affiliate of the Company, is set forth in Section 4.1 of the Company Disclosure Schedule. The Company does not directly or indirectly own any equity or similar interest in, or any interest convertible into or exchangeable or exercisable for any equity or similar interest in, any corporation, partnership, limited liability company, joint venture or other business association or entity, excluding securities in the Company s Subsidiaries and securities in any publicly traded company held for investment by the Company and comprising less than one percent of the outstanding stock of such company.

Section 4.2 *Certificate of Incorporation and Bylaws*. The Company has heretofore made available to Parent a true, complete and correct copy of its articles of incorporation, as amended to date (the *Company Charter*), and bylaws, as amended to date (the *Company Bylaws*), and has

furnished to Parent true, complete and correct copies of the charter and bylaws (or equivalent organizational documents), each as amended to date, of each of

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its Subsidiaries (the *Subsidiary Documents*). The Company Charter, Company Bylaws and the Subsidiary Documents are in full force and effect. The Company is not in violation of any of the provisions of the Company Charter or Company Bylaws and the Company s Subsidiaries are not in violation of any of the provisions of their respective Subsidiary Documents.

Section 4.3 *Capitalization*.

(a) The authorized capital stock of the Company consists of 42,000,000 shares of Company Common Stock and 3,000,000 shares of undesignated stock. As of January 20, 2005, (i) 17,841,620 shares of Company Common Stock are issued and outstanding, (ii) 218,884 shares of Company Common Stock are reserved for issuance upon exercise of awards granted pursuant to the Company s 2000 Employee Stock Purchase Plan (the *Company ESPP*), (iii) 1,991,491 shares of Company Common Stock are reserved for issuance upon exercise of awards granted pursuant to the Company s 1997 Stock Incentive Plan (the *1997 Plan*), and (iv) no shares of undesignated stock are issued and outstanding.

(b) Section 4.3(b) of the Company Disclosure Schedule sets forth a true, complete and correct list of all persons who, as of January 20, 2005 held outstanding options to acquire shares of Company Common Stock (the *Company Stock Options* under the Company Stock Plans or under any other equity incentive plan or arrangement of the Company and its Subsidiaries, indicating, with respect to each Company Stock Option then outstanding, the tax status of such option under Section 422 of the Code, the number of shares of Company Common Stock subject to such Company Stock Option, the name of the plan under which such Company Stock Option was granted and the exercise price, date of grant, vesting schedule and expiration date thereof, including to the extent to which any vesting has occurred as of the date of this Agreement and whether (and to what extent) the vesting of such Company Stock Option will be accelerated in any way by the consummation of the transactions contemplated by this Agreement or by the termination of employment or engagement or change in position of any holder thereof following or in connection with the consummation of the Acquisition Merger. The Company has made available to Parent true, complete and correct copies of all Company Stock Plans and the 1997 Plan and the forms of all stock option agreements evidencing outstanding Company Stock Options.

(c) Except as described in Section 4.3(a), no capital stock of the Company or any of its Subsidiaries or any security convertible or exchangeable into or exercisable for such capital stock, is issued, reserved for issuance or outstanding as of the date of this Agreement. Except as described in Section 4.3(a), there are no options, preemptive rights, warrants, calls, rights, commitments, agreements, arrangements or understandings of any kind to which the Company or any of its Subsidiaries is a party, or by which the Company or any of its Subsidiaries is bound, obligating the Company or any of its Subsidiaries to issue, deliver or sell, or cause to be issued, delivered or sold, additional shares of capital stock of the Company or any of its Subsidiaries or obligating the Company or any of its Subsidiaries to grant, extend or accelerate the vesting of or enter into any such option, warrant, call, right, commitment, agreement, arrangement or understanding. There are no shareholder agreements, voting trusts, proxies or other similar agreements, arrangements or understandings to which the Company or any of its Subsidiaries is a party, or by which it or they are bound, obligating the Company or any of its Subsidiaries with respect to any shares of capital stock of the Company or any of its Subsidiaries. There are no rights or obligations, contingent or otherwise (including rights of first refusal in favor of the Company), of the Company or any of its Subsidiaries, to repurchase, redeem or otherwise acquire any shares of capital stock of the Company or any of its Subsidiaries or to provide funds to or make any investment (in the form of a loan, capital contribution or otherwise) in any such Subsidiary or any other entity. There are no registration rights or other similar agreements, arrangements or understandings to which the Company or any of its Subsidiaries is a party, or by which it or they are bound, obligating the Company or any of its Subsidiaries with respect to any shares of Company Common Stock or shares of capital stock of any such Subsidiary.

(d) All outstanding shares of the Company s capital stock are, and all shares of Company Common Stock reserved for issuance as specified above will be, upon issuance on the terms and conditions specified in the instruments pursuant to which they are issuable, duly authorized, validly issued, fully paid and

nonassessable and not subject to or issued in violation of any purchase option, call option, right of first refusal, preemptive right, subscription right or any similar right under any provision of the MBCA, the Company Charter or the Company Bylaws or any agreement to which the Company is a party or is otherwise bound. None of the outstanding shares of Company Common Stock have been issued in violation of any federal or state securities Laws. All of the outstanding shares of capital stock of each of the Company s Subsidiaries are duly authorized, validly issued, fully paid and nonassessable, and all such shares are owned by the Company or a Subsidiary of the Company free and clear of all security interests, liens, claims, pledges, agreements, limitations in voting rights, charges or other encumbrances of any nature whatsoever (collectively, *Liens*). There are no accrued and unpaid dividends with respect to any outstanding shares of capital stock of the Company or any of its Subsidiaries.

(e) The Company Common Stock constitutes the only class of securities of the Company or its Subsidiaries registered or required to be registered under the Securities Exchange Act of 1934, as amended (the *Exchange Act*).

Section 4.4 *Authority Relative to this Agreement; Shareholder Approval*.

(a) Subject only to the approval of the shareholders of the Company as described below, the Company has full corporate power and authority to execute and deliver this Agreement and to consummate the transactions contemplated hereby. The execution and delivery of this Agreement and the consummation of the transactions contemplated hereby have been duly and validly approved by the Board of Directors of the Company (the *Company Board*). The Company Board has (i) unanimously determined that this Agreement and the transactions contemplated hereby are advisable and in the best interests of the shareholders of the Company, (ii) unanimously approved this Agreement and the transactions contemplated hereby and (iii) unanimously recommended that the shareholders of the Company adopt and approve this Agreement and the Acquisition Merger (the *Company Voting Proposal*). A committee of disinterested directors of the Company Board (which are all of the non-employee directors) has unanimously approved the Acquisition Merger and the other transactions contemplated hereby by the Company Board under the provisions of 302A.673 of the MBCA such that Section 302A.673 of the MBCA does not prohibit this Agreement, the Company Shareholder Voting Agreements or the transactions contemplated hereby. This Agreement has been duly and validly executed and delivered by the Company, and (assuming due authorization, execution and delivery by Parent, Merger Sub 1 and Merger Sub 2) this Agreement constitutes a valid and binding obligation of the Company, enforceable against the Company in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium or other similar Laws now or hereafter in effect relating to creditors rights generally and by general equitable principles (regardless of whether enforceability is considered in a proceeding in equity or at Law).

(b) Except for the approval of the Company Voting Proposal by the affirmative vote of the holders of a majority of the voting power of all shares of the Company Common Stock entitled to vote at a meeting (the *Company Shareholders Meeting*) of the shareholders of the Company convened to consider and vote upon the Company Voting Proposal (the *Requisite Company Stock Approval*), no other corporate proceedings on the part of the Company are necessary to approve this Agreement and to consummate the transactions contemplated hereby.

Section 4.5 *No Conflict; Required Filings and Consents.*

(a) The execution and delivery by the Company of this Agreement do not, the execution and delivery by the Company of any instrument required hereby to be executed and delivered by the Company at the Closing will not, and the performance by the Company of its agreements and obligations under this Agreement will not, (i) conflict with or violate the Company Charter or Company Bylaws or any Subsidiary Documents, (ii) in any material respect, conflict with or violate any Law applicable to the Company or by which its properties is bound or affected, (iii) result in any breach of or constitute a default (or an event that with notice or lapse of time or both would become a default), or impair the Company s rights or alter the

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rights or obligations of any third party or the Company (including monetary rights and obligations) under, or give to any third party any rights of termination, amendment, payment, acceleration or cancellation of, or result in the creation of a Lien on any of the properties or assets (including intangible assets) of the Company pursuant to any note, bond, mortgage, indenture, contract, agreement, lease, license, permit, franchise or other instrument or obligation to which the Company is a party or by which the Company or its properties is bound or affected, or (v) other than the Company Stock Options, give rise to or result in any person having, or having the right to exercise, any pre-emptive rights, rights of first refusal, rights to acquire or similar rights with respect to any capital stock of the Company or any of its assets or properties.

(b) The execution and delivery by the Company of this Agreement do not, the execution and delivery by the Company of any instrument required hereby to be executed and delivered by the Company at the Closing will not, and the performance of its agreements and obligations under this Agreement by the Company will not, require any consent, approval, order, license, authorization, registration, declaration or permit of, or filing with or notification to, any nation or government, any state, province or other political subdivision thereof or any multinational organization or body or other entity having or exercising executive, legislative, judicial, regulatory or administrative functions of or pertaining to government (including any court, arbitrational tribunal, administrative or regulatory agency or commission or other governmental authority or instrumentality), whether domestic or foreign, (a *Governmental Entity*), except (i) as may be required by the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended (the *HSR Act*), (ii) as may be required under any foreign antitrust or competition Law, (iii) the filing of the Joint Proxy Statement/Prospectus (as defined in Section 7.4) with the U.S. Securities and Exchange Commission (the *SEC*) under the Exchange Act, (iv) such consents, approvals, orders, licenses, authorizations, registrations, declarations, permits, filings, and notifications as may be required under applicable U.S. federal and state or foreign securities Laws, (v) the filing of the Articles of Acquisition Merger, the Migratory Merger Certificates or other documents as required by the DGCL, the CCC and the MBCA and (vi) such other clearances, consents, approvals, orders, registrations, declarations, permits, filings and notifications which, if not obtained or made, would not reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect.

Section 4.6 *Compliance; Permits*.

(a) The Company is and has been in material compliance with and is not in material default or violation of (and have not received any notice of material non-compliance, default or violation with respect to) any Law applicable to the Company or by which any of its properties are bound or affected.

(b) The Company holds all permits, licenses, easements, variances, exemptions, consents, certificates, authorizations, registrations, orders and other approvals from Governmental Entities that are material to the operation of its business as currently conducted (collectively, the *Company Permits*). The Company Permits are in full force and effect, have not been violated in any material respect and, to the Company s knowledge, no suspension, revocation or cancellation thereof has been threatened, and there is no action, proceeding or investigation pending or threatened, seeking the suspension, revocation or cancellation of any Company Permits. No Company Permit shall cease to be effective as a result of the consummation of the transactions contemplated by this Agreement, other than as would not reasonably be expected to have a Company Material Adverse Effect.

Section 4.7 *SEC Filings; Financial Statements*.

(a) The Company has filed all forms, reports, schedules, statements and other documents, including any exhibits thereto, required to be filed by the Company since January 1, 2002 with the SEC (collectively, the *Company SEC Reports*). The Company SEC Reports, including all forms, reports and documents filed by the Company with the SEC after the date hereof and prior to the Acquisition Merger Effective Time, (i) were and, in the case of Company SEC Reports filed after the date hereof, will be, prepared in all material respects in accordance with the applicable requirements of the Securities Act (as defined below) and the Exchange Act, as the case may be, and the rules and regulations thereunder, and (ii) did not at the time they

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were filed (or if amended or superseded by a filing prior to the date of this Agreement, then on the date of such filing), and in the case of such forms, reports and documents filed by the Company with the SEC after the date of this Agreement, will not as of the time they are filed, contain any untrue statement of a material fact or omit to state a material fact required to be stated in such Company SEC Reports or necessary in order to make the statements in such Company SEC Reports, in light of the circumstances under which they were and will be made, not misleading. None of the Subsidiaries of the Company is required to file any forms, reports, schedules, statements or other documents with the SEC.

(b) Each of the consolidated financial statements (including, in each case, any related notes and schedules), contained in the Company SEC Reports, including any Company SEC Reports filed between the date of this Agreement and the Closing, complied or will comply, as of its respective date, in all material respects with all applicable accounting requirements and the published rules and regulations of the SEC with respect thereto, was or will be prepared in accordance with U.S. generally accepted accounting principles (*GAAP*) (except as may be indicated in the notes thereto) applied on a consistent basis throughout the periods involved and fairly presented in all material respects or will fairly present in all material respects the consolidated financial position of the Company and its consolidated Subsidiaries as of the respective dates thereof and the consolidated results of the operations and cash flows of the Company and its consolidated Subsidiaries for the periods indicated, except as otherwise explained therein and except that any unaudited interim financial statements are subject to normal and recurring year-end adjustments which have not been made and are not expected to be material in amount, individually or in the aggregate. The unaudited balance sheet and notes related thereto of the Company contained in the Company SEC Report on Form 10-Q for the quarter ended September 30, 2004 is referred to herein as the *Company Balance Sheet*).

(c) The chief executive officer and chief financial officer of the Company have made all certifications required by, and would be able to make such certifications as of the date hereof and as of the Closing Date as if required to be made as of such dates pursuant to, Sections 302 and 906 of the Sarbanes-Oxley Act of 2002 (the *Sarbanes-Oxley Act*) and any related rules and regulations promulgated by the SEC, and the statements contained in any such certifications are complete and correct, and the Company is otherwise in compliance with all applicable effective provisions of the Sarbanes-Oxley Act and the applicable listing standards and corporate governance rules of the NASDAQ.

(d) Each of the consolidated financial statements (including, in each case, any related notes and schedules) contained in the Company SEC Reports accurately reflects the revenues and costs relating to the Company Material Contracts.

Section 4.8 *Disclosure Controls and Procedures.* Since December 31, 2003, the Company and each of its Subsidiaries has had in place disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) promulgated under the Exchange Act) reasonably designed and maintained to ensure that all information (both financial and non-financial) required to be disclosed by the Company in the reports that it files or submits to the SEC under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC and that such information is accumulated and communicated to the Company s management as appropriate to allow timely decisions regarding required disclosure and to make the certifications of the chief executive officer and chief financial officer of the Company required under the Exchange Act with respect to such reports. The Company maintains internal accounting controls sufficient to provide reasonable assurances that (i) transactions are executed in accordance with management s general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles and to maintain accountability for assets, (iii) access to assets is permitted only in accordance with management s general or specific authorization, and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

Section 4.9 *Absence of Certain Changes or Events*. From the date of the Company Balance Sheet through the date hereof, the Company has conducted its business in the ordinary course of business consistent with past practice and, since such date and through the date hereof, there has not occurred: (i) any Company Material

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Adverse Effect; (ii) any amendments to or changes in the Company Charter, Company Bylaws or Subsidiary Documents; (iii) any material damage to, destruction or loss of any asset of the Company or any of its Subsidiaries (whether or not covered by insurance); (iv) any change by the Company in its accounting methods, principles or practices; (v) any revaluation by the Company of any of its assets, including writing down the value of inventory or writing off notes or accounts receivable other than in the ordinary course of business consistent with past practice; (vi) any sale of a material amount of assets (tangible or intangible) of the Company or any of its Subsidiaries; (vii) any recalls, field notifications or field corrections with respect to products manufactured by or on behalf of the Company or any of its Subsidiaries; or (viii) any other action or event that would have required the consent of Parent pursuant to Section 6.2 had such action or event occurred after the date of this Agreement.

Section 4.10 *No Undisclosed Liabilities*.

(a) Except as reflected in the Company Balance Sheet, the Company has no liabilities (absolute, accrued, contingent or otherwise) which are required by GAAP to be set forth on a consolidated balance sheet of the Company and its consolidated Subsidiaries or in the notes thereto, other than (i) any liabilities and obligations incurred since the date of the Company Balance Sheet in the ordinary course of business consistent with past practice, (ii) any liabilities or obligations incurred in connection with the transactions contemplated by this Agreement and (iii) liabilities that, individually or in the aggregate, have not had, and would not reasonably be expected to have, a Company Material Adverse Effect.

(b) The Company is not a party to, or has any commitment to become a party to, any joint venture, partnership agreement or any similar contract (including any contract relating to any transaction, arrangement or relationship between or among the Company or any of its Subsidiaries, on the one hand, and any unconsolidated affiliate, including any structured finance, special purpose or limited purpose entity or person, on the other hand) where the purpose or intended effect of such arrangement is to avoid disclosure of any material transaction involving the Company in the Company s consolidated financial statements.

Section 4.11 *Absence of Litigation; Investigations*. Prior to the date of this Agreement, there were no material claims, actions, suits, proceedings, governmental investigations, inquiries or subpoenas (other than challenging or arising from or relating to the Acquisition Merger or any of the other transactions contemplated by this Agreement), (a) pending against the Company or any of its properties or assets, (b) to the Company s knowledge, threatened against the Company or any of its properties or assets or (c) whether filed or threatened, that have been settled or compromised by the Company within the three years prior to the date of this Agreement and at the time of such settlement or compromise were material, which claims, actions, suits, proceedings investigations, inquiries or subpoenas referred to in clause (a) and (b) above would reasonably be expected to have a Company Material Adverse Effect. The Company is not subject to any outstanding order, writ, injunction or decree that would reasonably be expected to be material or would reasonably be expected to prevent or delay the consummation of the transactions contemplated by this Agreement. There has not been nor are there currently any internal investigations or inquiries being conducted by the Company, the Company Board (or any committee thereof) or any third party at the request of any of the foregoing concerning any financial, accounting, tax, conflict of interest, self-dealing, fraudulent or deceptive conduct or other misfeasance or malfeasance issues.

Section 4.12 *Agreements, Contracts and Commitments*.

(a) For purposes of this Agreement, the term *Company Material Contracts* shall mean any note, bond, mortgage, indenture, guarantee, other evidence of indebtedness, lease, license, contract, agreement or other instrument or obligation to which the Company or any of its Subsidiaries is a party or by which any of them or any of their assets are bound, and which:

(i) has a remaining term of more than one year from the date hereof and (A) cannot be unilaterally terminated by the Company at any time, without material penalty, within thirty (30) days of providing notice of termination, and (B) involves the payment or receipt of money in excess

of $100,000 per year;

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(ii) involves the payment or receipt of money in excess of $250,000 in any year;

(iii) contains covenants limiting the freedom of the Company or any of its Subsidiaries to sell any products or services of or to any other person, engage in any line of business or compete with any person or operate at any location;

(iv) was made with any officer, director, Company employee or member of the Company Board, or any service, operating or management agreement or arrangement with respect to any of the Company s assets or properties (whether leased or owned), other than those that are terminable by the Company on no more than thirty (30) days notice without liability or financial obligation to the Company;

(v) is a dealer, distributor, joint marketing or development contract under which the Company has continuing material obligations to jointly market any product, technology or service and which may not be canceled without penalty upon notice of ninety (90) days or less, or any contract pursuant to which the Company has continuing material obligations to jointly develop any Intellectual Property that will not be owned, in whole or in part, by the Company;

(vi) includes indemnification, guaranty or warranty other than any those contracts entered into in the Ordinary Course of the Company s business;

(vii) mortgages, indentures, guarantees, loans or credit agreements, security agreements or other agreements or instruments relating to the borrowing of money or extension of credit;

(viii) settlement agreements under which the Company has ongoing obligations; or

(ix) Company Real Property Leases.

(b) All of the Company Material Contracts that are required to be described in the Company SEC Reports (or to be filed as exhibits thereto) are so described or filed and are enforceable and in full force and effect (except as such enforceability may be subject to Laws of general application relating to bankruptcy, insolvency and the relief of debtors and rules of Law governing specific performance, injunctive relief or other equitable remedies).

(c) Section 4.12(a) of the Company Disclosure Schedule contains a complete and accurate list of, and true and complete copies have been delivered or made available to Parent with respect to, all Company Material Contracts in effect as of the date hereof other than the Company Material Contracts which are listed as an exhibit to the Company s most recent annual report on Form 10-K or a subsequent quarterly report on Form 10-Q or as otherwise set forth on Section 4.12(a) of the Company Disclosure Schedule.

(d) As of the date of this Agreement, (i) there is no breach or violation of or default by the Company or any of its Subsidiaries under any of the Company Material Contracts, except such breaches, violations and defaults as have been waived in writing, and (ii) no event has occurred with respect to the Company or any of its Subsidiaries which, with notice or lapse of time or both, would constitute a breach, violation or default, or give rise to a right of termination, modification, cancellation, foreclosure, imposition of a Lien, prepayment or acceleration under any of the Company Material Contracts, which breach, violation or default referred to in clauses (i) or (ii) would reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect.

Section 4.13 *Employee Benefit Plans, Options and Employment Agreements*.

(a) Section 4.13(a) of the Company Disclosure Schedule sets forth a complete and accurate list of all Employee Benefit Plans maintained, or contributed to by the Company or any of its ERISA Affiliates or to which the Company or any of its ERISA Affiliates is obligated to contribute, or under which any of them has or may have any liability for premiums or benefits (collectively, the *Company Employee Plans*).

(b) With respect to each Company Employee Plan, the Company has made available to Parent complete and accurate copies of (i) such Company Employee Plan (or a written summary of any unwritten

plan) together with all amendments, (ii) in the case of any plan for which Forms 5500 are required to be filed, the most recent annual report (Form 5500) with schedules attached, (iii) in the case of any plan that is intended to be qualified under Section 401(a) of the Code, the most recent determination letter from the Internal Revenue Service, (iv) each trust agreement, group annuity contract, administration and similar material agreements, investment management or investment advisory agreements, (v) the most recent summary plan descriptions and employee handbook, or other similar material employee communications relating to employee benefits matters, (vi) all personnel, payroll and employment manuals and policies, and (vii) the most recent financial statements for each Company Employee Plan that is funded.

(c) Each Company Employee Plan has been administered in all material respects in accordance with ERISA, the Code and all other applicable Laws and the regulations thereunder and materially in accordance with its terms and each of the Company and its ERISA Affiliates have in all material respects met their obligations with respect to each Company Employee Plan and have timely made (or timely will make) all required contributions thereto. All filings and reports as to each Company Employee Plan required to have been submitted to the Internal Revenue Service or to the United States Department of Labor have been timely submitted. With respect to the Company Employee Plans, no event has occurred, and, to the Company s knowledge, there exists no condition or set of circumstances in connection with which the Company, Parent or any of their respective Subsidiaries or any plan participant could be subject to any material liability (including penalties or taxes) under ERISA, the Code or any other applicable Law, nor will the negotiation or consummation of the transactions contemplated by this Agreement give rise to any such material liability.

(d) With respect to the Company Employee Plans, there are no material benefit obligations for which contributions have not been made or properly accrued and there are no benefit obligations which have not been accounted for by reserves, or otherwise properly footnoted in accordance with the requirements of GAAP, on the financial statements of the Company. The assets of each Company Employee Plan which is funded are reported at their fair market value on the books and records of such Employee Benefit Plan.

(e) No Company Employee Plan (other than the Company Stock Plans) has assets that include securities issued by the Company or any its ERISA Affiliates.

(f) All the Company Employee Plans that are intended to be qualified under Section 401(a) of the Code (each, a *Qualified Plan*) have received determination, opinion or advisory letters from the Internal Revenue Service to the effect that such Company Employee Plans are qualified and the plans and trusts related thereto are exempt from federal income taxes under Sections 401(a) and 501(a), respectively, of the Code, or the Company has remaining a period of time under applicable U.S. Department of the Treasury regulations or Internal Revenue Service pronouncements in which to apply for such a letter and to make any amendments necessary to obtain a favorable determination as to the qualified status of each such Qualified Plan. To the Company s knowledge, no such determination, opinion or advisory letter has been revoked and revocation has not been threatened, and no such Employee Benefit Plan has been amended or operated since the date of its most recent determination letter or application therefor in any respect, and no act or omission has occurred, that would reasonably be expected to adversely affect its qualification or materially increase its cost. There has been no termination, partial termination or discontinuance of contributions to any Qualified Plan that will result in material liability to the Company. Each Company Employee Plan which is required to satisfy Section 401(k)(3) or Section 401(m)(2) of the Code has been tested for compliance with, and satisfies in all material respects the requirements of Section 401(k)(3) and Section 401(m)(2) of the Code, as the case may be, for each plan year ending prior to the Closing Date for which testing is required to be completed.

(g) Neither the Company nor any of its ERISA Affiliates has (i) ever maintained a Company Employee Plan which was ever subject to Section 412 of the Code or Title IV of ERISA or (ii) ever been obligated to contribute to a multiemployer plan (as defined in Section 4001(a)(3) of ERISA). No Company Employee Plan is funded by, associated with or related to a voluntary employees beneficiary association within the meaning of Section 501(c)(9) of the Code.

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(h) To the extent permitted by applicable Law, each Company Employee Plan (other than the Company Stock Plans or an employment, severance, change in control or similar agreement with an individual) is amendable and terminable unilaterally by the Company or covered thereby at any time without material liability to the Company as a result thereof, other than for benefits accrued as of the date of such amendment or termination and routine administrative costs.

(i) Other than as required under Section 601 et seq. of ERISA, none of the Company Employee Plans promises or provides health or other welfare benefits (excluding normal claims for benefits under the Company s group life insurance, accidental death and dismemberment insurance and disability plans and policies) or coverage to any person following retirement or other termination of employment. Section 4.13(i) of the Company Disclosure Schedule lists each Company Employee Plan which provides benefits after termination of employment (other than medical benefits required to be continued under Section 4980B of the Code and part 6 of Subtitle B of Title I of ERISA) and normal claims for benefits under the Company s group life insurance, accidental death and dismemberment insurance and disability plans and policies) and the present value of benefits accrued under each such Company Employee Plan are fully funded, fully covered by insurance or reflected on the Company Balance Sheet in accordance with GAAP.

(j) There is no action, suit, proceeding, claim, arbitration, audit or investigation pending or, to the Company s knowledge, threatened, with respect to any Company Employee Plan, other than claims for benefits in the ordinary course. No Company Employee Plan is or within the last three calendar years has been the subject of, or has received notice that it is the subject of, examination by a government agency or a participant in a government sponsored amnesty, voluntary compliance or similar program.

(k) To the Company s knowledge, each individual who has received compensation for the performance of services on behalf of the Company, any of the Company s Subsidiaries or any of their respective ERISA Affiliates has been properly classified as an employee or independent contractor in accordance with applicable Law.

(l) Except as would not reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect, with respect to each Company Employee Plan maintained or covering employees outside the United States, and the books and records thereof: (i) such plan is in material compliance with all applicable Laws of each applicable jurisdiction and; (ii) there is no action, suit, proceeding, claim, arbitration, audit or investigation pending or, to the Company s knowledge, threatened, with respect to such plan, other than claims for benefits in the ordinary course; (iii) all liabilities with respect to such plan are set forth on a consolidated balance sheet of Company or in the notes thereto in accordance with GAAP; and (iv) no such plan is or within the last two calendar years has been the subject of, or has received notice that it is the subject of, an examination by a government agency or a participant in a government sponsored amnesty, voluntary compliance or similar program that has given rise to or is reasonably expected to give rise to any liability. Section 4.13(l) of the Company Disclosure Schedule lists each country in which the Company or any of its Subsidiaries or affiliates has operations and the number of employees in each such country.

(m) Section 4.13(m) of the Company Disclosure Schedule sets forth a true, complete and correct list of: (i) all employment agreements with employees of the Company or any of its Subsidiaries (other than at-will offer letters that are consistent with the Company s general form and do not provide for severance payments or benefits, notice periods for termination or change of control benefits); (ii) all employees or former employees of the Company who have executed a non competition agreement with the Company; (iii) all severance agreements, programs and policies of the Company with or relating to its employees, excluding programs and policies required to be maintained by Law; and (iv) all plans, programs, agreements and other arrangements of the Company pursuant to which payments (or acceleration of benefits or vesting of options or lapse of repurchase rights) may be required, or may become payable directly or indirectly as a result of or in connection with, the negotiation or consummation of the transactions contemplated by, or the execution of, this Agreement. True, complete and correct copies of each of the foregoing agreements to which any employee of the Company is a party have been made available to Parent.

(n) All contributions required to be made with respect to any Company Employee Plan on or prior to the Acquisition Merger Effective Time have been or will be timely made or are reflected on the Company

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Balance Sheet. There are no pending, threatened or reasonably anticipated claims by or on behalf of any Plan, by any employee or beneficiary covered under any such Company Employee Plan, or otherwise involving any such Plan (other than routine claims for benefits).

(o) The negotiation or consummation of the transactions contemplated by this Agreement will not, either alone or in combination with another event, (i) entitle any current or former employee or officer of the Company to severance pay, or any other payment from the Company or (ii) accelerate the time of payment or vesting, cause a lapse of repurchase rights or increase the amount of compensation due any such employee or officer. There is no Company Employee Plan or other contract, agreement, plan or arrangement that, individually or collectively, could give rise to the payment of any amount that would not be deductible pursuant to Sections 280G (determined without regard to Section 280G(b)(4) of the Code) as a result of the Mergers or 162(m) of the Code.

Section 4.14 *Labor Matters*.

(a) The Company is in compliance in all material respects with all applicable Laws respecting employment and employment practices, including, without limitation, all Laws respecting terms and conditions of employment, health and safety, wages and hours, child labor, immigration, employment discrimination, disability rights or benefits, equal opportunity, plant closures and layoffs, affirmative action, workers compensation, labor relations, employee leave issues and unemployment insurance.

(b) There are no personnel manuals or handbooks applicable to employees of the Company, other than those set forth in Section 4.14(b) of the Company Disclosure Schedule, true and complete copies or written summaries of which have heretofore been provided to Parent.

(c) There are no actions, suits, claims, grievances, investigations, or other proceedings pending or, to the Company s knowledge, threatened, between (i) the Company (and/or any of their current or former officers, directors, employees, or representatives, in their capacities as such) and (ii) any of their respective current or former employees, consultants or independent contractors, or any applicant for employment or classes of the foregoing, or any Governmental Entity, which actions, suits, claims, grievances, investigations, or other proceedings have or would reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect.

(d) The Company has good labor relations, and the Company and its employees, agents or representatives have not committed any unfair labor practice as defined in the National Labor Relations Act. The Company is not a party to, bound by or subject to (and none of the Company s properties or assets is bound by or subject to) any labor agreement, collective bargaining agreement, work rules or practices, or any other labor-related agreements or arrangements with any labor union, labor organization, trade union or works council. There are no labor agreements, collective bargaining agreements, work rules or practices, or any other labor-related agreements or arrangements that pertain to any of the employees of the Company, and no employees of the Company are represented by any labor union, labor organization, trade union or works council with respect to their employment with the Company.

(e) To the Company s knowledge, there are no current labor union organizing activities with respect to any employees of the Company, and no labor union, labor organization, trade union, works council, or group of employees of the Company has made a pending demand for recognition or certification, and there are no representation or certification proceedings or petitions seeking a representation proceeding presently pending or threatened in writing to be brought or filed with the National Labor Relations Board or any other labor relations tribunal or authority. To the Company s knowledge, there are no labor disputes, strikes, slowdowns, work stoppages, lockouts, or threats thereof, against or affecting the Company.

(f) No employee of the Company (i) to the Company s knowledge, is in violation of any term of any patent disclosure agreement, non-competition agreement, or any restrictive covenant to a former employer relating to the right of any such employee to be employed by the Company because of the nature of the business conducted or presently proposed to be conducted by the Company or relating to the use of trade

secrets or proprietary information of others, or (ii) in the case of any key employee or group of key employees, has given notice as of the date of this Agreement to the Company that such employee or any employee in a group of key employees intends to terminate his or her employment with the Company.

(g) The Company is and has been in compliance with all notice and other requirements under the Worker Adjustment and Retraining Notification Act of 1988, as amended (the *WARN Act*), and any similar foreign, state or local Law relating to plant closings and layoffs. The Company is not currently engaged in any layoffs or employment terminations sufficient in number to trigger application of the WARN Act or any similar state, local or foreign Law. Section 4.14(g) of the Company Disclosure Schedule contains a true and complete list of the names and the sites of employment or facilities of those individuals who suffered an employment loss (as defined in the WARN Act) at any site of employment or facility of the Company during the 90-day period prior to the date of this Agreement. Section 4.14(g) of the Company Disclosure Schedule shall be updated immediately prior to the Closing with respect to the 90-day period prior to the Closing.

(h) The execution of this Agreement and the consummation of the transactions contemplated by this Agreement will not result in any breach or other violation of any collective bargaining agreement, employment agreement, consulting agreement or any other labor-related agreement to which the Company is a party.

Section 4.15 *Properties and Assets*.

(a) The Company has good and valid title to, or a valid leasehold interest in, all the properties and assets which it purports to own or lease (real, tangible, personal and mixed), including all the properties and assets reflected in the Company Balance Sheet (except for personal property sold since the date of the Company Balance Sheet in the ordinary course of business consistent with past practice). All properties and assets reflected in the Company Balance Sheet are free and clear of all Liens, except for Liens reflected on the Company Balance Sheet and Liens for current taxes not yet due and other Liens that do not materially impair the use or operation of the property or assets subject thereto.

(b) Section 4.15 of the Company Disclosure Schedule sets forth a true, complete and correct list of all real property owned, leased, subleased or licensed by the Company and the location of such premises. All material real property leases, licenses or other occupancy agreements to which the Company is a party (collectively, the *Company Real Property Leases*) are either filed as exhibits to the Company SEC Reports or complete copies thereof have been delivered to or made available to Parent. Section 4.15 of the Company Disclosure Schedule lists all Company Real Property Leases other than the Company Real Property Leases which are listed as an exhibit to the Company s most recent annual report on Form 10-K or a subsequent quarterly report on Form 10-Q.

(c) As of the date of this Agreement, (i) all Company Real Property Leases are in full force and effect (except as such enforceability may be subject to Laws of general application relating to bankruptcy, insolvency and the relief of debtors and rules of Law governing specific performance, injunctive relief or other equitable remedies), (ii) there is no existing material default by the Company under any of the Company Real Property Leases, except such defaults as have been waived in writing, (iii) no event has occurred with respect to the Company which, with notice or lapse of time or both, would constitute a default of any of the Company Real Property Leases, and (iv) to the Company s knowledge, there are no defaults of any material obligations of any party other than the Company under any Company Real Property Lease.

Section 4.16 *Taxes*.

(a) The Company has filed with the appropriate taxing authorities all material Tax Returns required to be filed by them, and all such Tax Returns are true, complete and correct in all material respects. All Taxes required to be paid by the Company have been timely paid. There are no Liens relating or attributable or Taxes on any assets of the Company, other than liens relating to Taxes not yet due and payable. The Company has not granted any outstanding waiver of any statute of limitations with respect to, or any

outstanding extension of a period for the assessment of, any Tax. The accruals and reserves for Taxes (exclusive of any accruals for deferred taxes or similar items that reflect timing differences between tax and financial accounting principles) reflected in the Company Balance Sheet are adequate to cover all Taxes accruable through the date thereof (including Taxes being contested) in accordance with GAAP. All liabilities for Taxes attributable to the period commencing on the date following the date of the Company Balance Sheet were incurred in the ordinary course of business and are consistent in type and amount with Taxes attributable to similar prior periods.

(b) The Company has timely paid or withheld with respect to its employees all federal and state Taxes required to be paid or withheld (and have timely paid over any withheld amounts to the appropriate Taxing authority). The Company has not received any notice of any Tax deficiency outstanding, proposed or assessed against the Company. No audit or other examination of any Tax Return of the Company is presently in progress, and the Company has not received any written notice of any audit examination, deficiency, refund litigation, proposed adjustment or matter in controversy with respect to any Tax Return of the Company.

(c) The Company is not a party to or bound by any Tax indemnity, Tax sharing or Tax allocation agreements with any entity other than the Company or any Company Subsidiary. Except for the group of which the Company and its Subsidiaries are now currently members, the Company has never been a member of an affiliated group of corporations within the meaning of Section 1504 of the Code. Except with respect to the group referred to in the preceding sentence, the Company is not liable for the Taxes of any person under Treasury Regulation 1.1502-6 (or any similar provision of state, local or foreign Law) as a transferee or successor, by contract or otherwise. The Company has never been a party to any joint venture, partnership or other agreement that could be treated as a partnership for Tax purposes.

(d) To the extent requested by Parent, the Company has made available to Parent complete and correct copies of all Tax Returns, examination reports and statements of deficiencies assessed against or agreed to by the Company with respect to all taxable years for which the statutes of limitation have not expired.

(e) The Company has not agreed nor is it required to make any material adjustment under Section 481 of the Code by reason of a change in accounting method or otherwise prior to the Acquisition Merger Effective Time.

(f) The Company is not, or ever been, a United States real property holding corporation (as defined in Section 897(c)(2) of the Code) during the applicable period specified in Section 897(c)(1)(A)(ii) of the Code.

(g) The Company has not constituted either a distributing corporation or a controlled corporation (within the meaning of Section 355(a)(1)(A) of the Code) in a distribution of stock intended to qualify for tax-free treatment under Section 355 of the Code (i) in the two years prior to the date of this Agreement or (ii) in a distribution which could otherwise constitute part of a plan or series of related transactions (within the meaning of Section 355(e) of the Code) in connection with the Acquisition Merger.

(h) The Company has not engaged in, or has any commitment to engage in, any a transaction that is the same as or substantially similar to one of the types of transactions that the Internal Revenue Service has determined to be a tax avoidance transaction and identified by notice, regulation, or other form of published guidance as a reportable transaction, as set forth in Treas. Reg. § 1.6011-4(b).

Section 4.17 *Environmental Matters*.

(a) The Company is in compliance in all material respects with federal, state, local and foreign Laws and regulations relating to pollution, protection or preservation of human health or the environment, including, without limitation, Laws and regulations relating to emissions, discharges, releases or threatened releases of toxic or hazardous substances, materials or wastes, petroleum and petroleum products, asbestos or asbestos-containing materials, polychlorinated biphenyls, radon, or lead or lead-based paints or materials (*Materials of Environmental Concern*), or otherwise relating to the generation, storage, containment

(whether above ground or underground), disposal, recycling, transport, management or handling of Materials of Environmental Concern or any product containing Materials of Environmental Concern, or the preservation of the environment, the mitigation of adverse effects thereon or exposure of any person to Materials of Environmental Concern (collectively, *Environmental Laws*), and including, but not limited to, compliance with any Company Permits or other governmental authorizations or the terms and conditions thereof and compliance with any Laws respecting the sale, distribution or labeling of products pursuant to Environmental Laws.

(b) The Company has not received any written notice, whether from a governmental authority or otherwise, alleging any violation of or noncompliance with any Environmental Laws by Company for which it is responsible.

(c) There is no pending or threatened claim, action, investigation, or notice by any person or entity alleging potential liability on the part of the Company for investigatory, cleanup or governmental response costs, or natural resources or property damages, or personal injuries, attorney s fees or penalties relating to (i) the presence, or release into the environment, of any Materials of Environmental Concern at any location owned or operated by Company, now or in the past, or otherwise caused by the Company or by the actions of any other party for which the Company would be liable by contract or pursuant to Environmental Laws, or (ii) any violation, or alleged violation, of any Environmental Law (collectively, *Company Environmental Claims*), except where such Company Environmental Claims would not have a Company Material Adverse Effect or otherwise require disclosure in the Company SEC Reports.

(d) There are no past or present facts or circumstances that could reasonably be expected to form the basis of any Company Environmental Claim against the Company or against any person or entity whose liability for any Company Environmental Claim the Company has retained or assumed either contractually or by operation of Law, except where such Company Environmental Claim, if made, would not have a Company Material Adverse Effect or otherwise require disclosure in the Company SEC Reports.

(e) The Company has made available to Parent all material assessments, reports, data, results of investigations or audits, that is in the possession of Company regarding environmental matters pertaining to the environmental condition of the business of the Company, or the compliance (or noncompliance) by the Company with any Environmental Laws.

Section 4.18 *Intellectual Property*.

(a) For purposes of this Agreement, the term *Company Registered Intellectual Property* means all Registered Intellectual Property owned by the Company or any of its Subsidiaries.

(b) Section 4.18(a) of the Company Disclosure Schedule sets forth as of the date hereof a true, complete and correct list of all Company Registered Intellectual Property. All of the Company Registered Intellectual Property is owned solely by the Company and no Registered Intellectual Property that ever was Company Registered Intellectual Property has been disposed of by the Company in the two years preceding the date hereof.

(c) The Company Registered Intellectual Property, is subsisting, and has not expired or been cancelled, or abandoned.

(d) There is no pending or, to the Company s knowledge, threatened, and at no time within the three years prior to the date of this Agreement has there been pending any, material suit, arbitration or other adversarial proceeding before any court, government agency or arbitral tribunal or in any jurisdiction alleging that any activities or conduct of the Company s business infringes or will infringe upon, violate or constitute the unauthorized use of the Intellectual Property of any third party or challenging the ownership, validity, enforceability or registrability of any Intellectual Property owned by the Company.

(e) The Company is not a party to any settlements, covenants not to sue, consents, decrees, stipulations, judgments, or orders resulting from suits, actions or similar legal proceedings which (i) restrict the Company s rights to use any Intellectual Property owned by and material to the business of the Company as

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currently conducted, (ii) restrict the conduct of the business of the Company as currently conducted in order to accommodate any third party s Intellectual Property rights, or (iii) permit third parties to use any Intellectual Property owned by and used in the business of the Company as currently conducted.

(f) The conduct of the business of the Company as currently conducted does not infringe upon, violate or constitute the unauthorized use of any Intellectual Property rights owned by any third party.

(g) The Company has taken reasonable measures to protect the proprietary nature of the Intellectual Property owned by the Company that is material to the business of the Company as currently conducted.

(h) To the Company s knowledge, no third party is misappropriating, infringing, diluting or violating any Intellectual Property owned by the Company that is material to the business of the Company as currently conducted, and no Intellectual Property misappropriation, infringement dilution or violation suits, arbitrations or other adversarial proceedings have been brought before any court, government agency or arbitral tribunal against any third party by the Company which remain unresolved.

(i) The Company has not (i) disclosed to any third person any material confidential source code for any product currently being marketed, sold, licensed or developed by the Company (each such product, a *Company Proprietary Product*), or (ii) made any such source code subject to any open source license, nor is the Company obligated to make the source code for such Company Proprietary Product generally available.

(j) The Company does not have any obligation to pay any third party any royalties or other fees in excess of $100,000 in the aggregate in calendar year 2004 or any annual period thereafter for the use of Intellectual Property and no obligation to pay such royalties or other fees in excess of $250,000 in the aggregate will result from the execution and delivery by the Company of this Agreement and the consummation of the transactions contemplated by this Agreement.

(k) The Company is not in violation of any material license, sublicense, agreement or instrument to which the Company is party or otherwise bound under which the Company derives rights to Intellectual Property that is material to the Company s business as currently conducted, nor will the consummation by the Company of the transactions contemplated hereby result in any loss or impairment of ownership by the Company of, or the right of any of them to use, any Intellectual Property that is material to the business of the Company as currently conducted, nor, to the Company s knowledge, require the consent of any Governmental Entity or third party with respect to any such Intellectual Property.

(l) The Company is not a party to any agreement under which a third party would be entitled to receive or expand a license or any other right to any material Intellectual Property of Parent or any of Parent s affiliates as a result of the consummation of the transactions contemplated by this Agreement.

Section 4.19 *Insurance*. All fire and casualty, general liability, business interruption, product liability, sprinkler and water damage insurance policies and other forms of insurance maintained by the Company has been made available to Parent. Each such policy is in full force and effect and all premiums due thereon have been paid in full. None of such policies shall terminate or lapse (or be otherwise adversely affect) by reason of the execution and delivery of this Agreement or the consummation of the transactions contemplated by this Agreement.

Section 4.20 *Interested Party Transactions*. Since December 31, 2003, no event has occurred that would be required to be reported as a Certain Relationship or Related Transaction pursuant to Statement of Financial Accounting Standards No. 57.

Section 4.21 *Brokers*. No broker, finder or investment banker (other than Needham & Company, Inc., whose brokerage, finder s or other fees will be paid by the Company) is entitled to any brokerage, finder s or other fee or commission in connection with the transactions contemplated by this Agreement based upon arrangements made by or on behalf of the Company. The Company has furnished to Parent a complete and correct copy of all agreements between the Company and Needham & Company, Inc. pursuant to which Needham & Company, Inc. would be entitled to any such payment.

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Section 4.22 *Opinion of Financial Advisor of the Company*. The financial advisor of the Company, Needham & Company, Inc., has delivered to the Company its opinion, dated the date of this Agreement, that as of such date, the Merger Consideration is fair, from a financial point of view, to the shareholders of the Company. The Company has provided a true, complete and correct copy of such opinion to Parent. As of the date hereof, such opinion has not been withdrawn, revoked or modified.

Section 4.23 *Anti-Takeover Statute Not Applicable*. Except for Section 302A.673 of the MBCA (which shall not prohibit the transactions contemplated by the Agreement), no business combination, fair price, moratorium, control share acquisition or other similar anti-takeover statu or regulation under the Laws of the State of Minnesota or other applicable Law (each, a *Takeover Statute*) is applicable to the Acquisition Merger or any of the other transactions contemplated by this Agreement or the Company Shareholder Voting Agreement.

ARTICLE V

REPRESENTATIONS AND WARRANTIES OF PARENT

Except (i) as set forth in the written disclosure schedule prepared by Parent which is dated as of the date hereof and has been delivered by Parent to the Company in connection herewith (the *Parent Disclosure Schedule*) or (ii) as otherwise disclosed in any Parent SEC Report (as defined below) filed with the SEC prior to the date hereof (other than in any risk factors or forward looking statements contained therein, which shall not qualify, modify or otherwise affect the representations and warranties set forth in this Article V, Parent represents and warrants to the Company as follows:

Section 5.1 *Organization and Qualification; Merger Sub 1, Merger Sub 2*. Parent and each of its Subsidiaries (including Merger Sub 1 and Merger Sub 2) is an entity duly organized, validly existing and in good standing under the Laws of the jurisdiction of its organization and has the requisite corporate or other power and authority necessary to own, lease and operate the properties it purports to own, lease or operate and to carry on its business as it is now being conducted. Parent and each of its Subsidiaries (including Merger Sub 1 and Merger Sub 2) is duly qualified or licensed as a foreign corporation to do business, and is in good standing, in each jurisdiction where the character or location of the properties owned, leased or operated by it or the nature of its activities makes such qualification or licensing necessary, except for such failures to be so duly qualified or licensed and in good standing that would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect. A true, complete and correct list of all of Parent s Subsidiaries, together with the jurisdiction of incorporation of each Subsidiary, the authorized capitalization of each Subsidiary, and the percentage of each Subsidiary s outstanding capital stock owned by Parent or another Subsidiary or affiliate of Parent, is set forth in Section 5.1 of the Parent Disclosure Schedule. Parent owns all of the outstanding shares of capital stock of each of its Subsidiaries. Except for obligations or liabilities incurred in connection with their incorporation and the transactions contemplated by this Agreement and except for this Agreement and any other agreements or arrangements contemplated by this Agreement, neither Merger Sub 1 nor Merger Sub 2 have incurred, directly or indirectly, any obligations or liabilities or engaged in any business activities of any type or kind whatsoever or entered into any agreements or arrangements with any person. Neither Merger Sub 1 nor Merger Sub 2 directly or indirectly owns any equity or similar interest in, or any interest convertible into or exchangeable or exercisable for any equity or similar interest in, any corporation, partnership, limited liability company, joint venture or other business association or entity, excluding securities in any publicly traded company held for investment by Parent and comprising less than one percent of the outstanding stock of such company.

Section 5.2 *Certificate of Incorporation and Bylaws*. Parent has heretofore made available to the Company a true, complete and correct copy of its articles of incorporation, as amended to date (the *Parent Charter*), and bylaws, as amended to date (the *Parent Bylaws*), and has furnished to the Company true, complete and correct copies of the certificate of incorporation of Merger Sub 1, as amended to date (the *Merger Sub 1 Charter*

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Documents), and the articles of incorporation of Merger Sub 2, as amended to date (the *Merger Sub 2 Charter Documents*). The Parent Charter, Merger Sub 1 Charter Documents, Merger Sub 2 Charter Documents and the charter and bylaws (or equivalent organizational documents) each as amended to date, of each of Parent s Subsidiaries (the *Parent Sub Documents*) are in full force and effect. Parent is not in violation of any of the provisions of the Parent Charter or Parent Bylaws, and none of Parent s Subsidiaries is in violation of its respective Parent Sub Documents.

Section 5.3 *Capitalization*.

(a) The authorized capital stock of Parent consists of 50,000,000 shares of Parent Common Stock. As of January 1, 2005, (i) 12,556,636 shares of Parent Common Stock are issued and outstanding; (ii) 1,076,646 shares of Parent Common Stock are reserved for issuance pursuant to Parent s 2002 Nonstatutory Stock Option Plan (the *2002 Parent NSO Plan*); (iii) 90,000 shares of Parent Common Stock are reserved for issuance upon exercise of awards granted pursuant to Parent s 2000 Director Stock Option Plan (the *2000 Director Plan*); (iv) 1,324,129 shares of Parent Common Stock are reserved for issuance upon exercise of awards granted pursuant to Parent s 2000 Employee Stock Option Plan (the *2000 Employee Plan*); (v) 111,500 shares of Parent Common Stock are reserved for issuance upon exercise of awards granted pursuant to Parent s 1991 Stock Option Plan (the *1991 Plan*); (vi) 30,000 shares of Parent Common Stock are reserved for issuance upon exercise of awards granted pursuant to Parent s 1991 Director Option Plan (the *1991 Director Plan*), and (vii) 750,000 shares of Parent Common Stock are reserved for issuance pursuant to Parent s Employee Stock Purchase Plan (*Parent ESPP*). The 2002 Parent NSO Plan, the 2000 Employee Plan, the 2000 Director Plan, the 1991 Plan, and the 1991 Director Plan are collectively referred to herein as the *Parent Stock Plans* . Between January 1, 2005 and the date of this Agreement, Parent has not issued any securities (including derivative securities) except for shares of Parent Common Stock issued upon exercise of stock options outstanding.

(b) Section 5.3(b) of the Parent Disclosure Schedule sets forth a true, complete and correct list of all persons who, as of January 20, 2005 held outstanding awards to acquire shares of Parent Common Stock (the *Parent Stock Options*) under the Parent Stock Plans or under any other equity incentive plan or arrangement of Parent, indicating, with respect to each Parent Stock Option then outstanding, the tax status of such option under Section 422 of the Code, the number of shares of Parent Common Stock subject to such Parent Stock Option, the name of the plan under which such Parent Stock Option was granted and the exercise price, date of grant, vesting schedule and expiration date thereof, including to the extent to which any vesting has occurred as of the date of this Agreement and whether (and to what extent) the vesting of such Parent Stock Option will be accelerated in any way by the consummation of the transactions contemplated by this Agreement or by the termination of employment or engagement or change in position of any holder thereof following or in connection with the consummation of the Acquisition Merger. Parent has made available to the Company true, complete and correct copies of all Parent Stock Plans and the forms of all stock option agreements evidencing outstanding Parent Stock Options.

(c) Except as described in Section 5.3(a) no capital stock of the Parent or any of its Subsidiaries or any security convertible or exchangeable into or exercisable for such capital stock is issued, reserved for issuance or outstanding as of the date of this Agreement. Except as described in Section 5.3(a), there are no options, preemptive rights, warrants, calls, rights, commitments, agreements, arrangements or understandings of any kind to which Parent or any of its Subsidiaries is a party, or by which Parent or any of its Subsidiaries is bound, obligating Parent or any of its Subsidiaries to issue, deliver or sell, or cause to be issued, delivered or sold, additional shares of capital stock of Parent or any of its Subsidiaries or obligating Parent or any of its Subsidiaries to grant, extend or accelerate the vesting of or enter into any such option, warrant, call, right, commitment, agreement, arrangement or understanding. There are no shareholder agreements, voting trusts, proxies or other similar agreements, arrangements or understandings to which Parent or any of its Subsidiaries is a party, or by which it or they are bound, obligating Parent or any of its Subsidiaries with respect to any shares of capital stock of Parent or any of its Subsidiaries. There are no rights or obligations, contingent or otherwise (including rights of first refusal in favor of Parent), of Parent or any of its Subsidiaries, to repurchase, redeem or otherwise acquire any shares of capital stock of Parent or

any of its Subsidiaries or to provide funds to or make any investment (in the form of a loan, capital contribution or otherwise) in any such Subsidiary or any other entity. There are no registration rights or other similar agreements, arrangements or understandings to which Parent or any of its Subsidiaries is a party, or by which it or they are bound, obligating Parent or any of its Subsidiaries with respect to any shares of Parent Common Stock or shares of capital stock of any such Subsidiary.

(d) All outstanding shares of Parent s capital stock are, all shares of Parent Common Stock reserved for issuance as specified above will be (upon issuance on the terms and conditions specified in the instrument pursuant to which they are issuable), and all shares of Nanometrics Delaware Common Stock to be issued in the Acquisition Merger have been or will be (when issued in accordance with this Agreement), duly authorized, validly issued, fully paid and nonassessable and not subject to, or issued in violation of, any purchase option, call option, right of first refusal, preemptive right, subscription right or any similar right under any provision of the CCC, the DCGL, the Parent Charter, the Parent Bylaws or any agreement, arrangement or understanding to which Parent is a party or is otherwise bound. None of the outstanding shares of the Parent Common Stock have been issued in violation of any federal or state securities Laws. All of the outstanding shares of capital stock of each of Parent s Subsidiaries are duly authorized, validly issued, fully paid and nonassessable, and all such shares are owned by Parent or a Subsidiary of Parent free and clear of all Liens. The Nanometrics Delaware Common Stock to be issued in the Acquisition Merger, when issued in accordance with this Agreement, will be registered under the Securities Act of 1933, as amended (the *Securities Act*) and the Exchange Act and registered or exempt from registration under any applicable state securities or *Blue Sky* Laws.

(e) The Parent Common Stock constitutes the only class of securities of Parent or its Subsidiaries registered or required to be registered under the Exchange Act.

(f) There are no accrued and unpaid dividends with respect to any outstanding shares of capital stock of Parent.

(g) The authorized capital stock of Merger Sub 1 consists of 100 shares of Merger Sub 1 Common Stock, all of which are issued and outstanding and fully paid and nonassessable. All of the issued and outstanding capital stock of Merger Sub 1 is, and immediately preceding the Acquisition Merger Effective Time will be, owned by Parent, and there are (i) no other shares of capital stock or voting securities of Merger Sub 1, (ii) no securities of Merger Sub 1 convertible into or exchangeable for shares of capital stock or voting securities of Merger Sub 1 and (iii) no options or other rights to acquire from Merger Sub 1, and no obligations of Merger Sub 1 to issue, any capital stock, voting securities or securities convertible into or exchangeable for capital stock or voting securities of Merger Sub 1.

(h) The authorized capital stock of Merger Sub 2 consists of 1,000 shares of Merger Sub 2 Common Stock, all of which are issued and outstanding and fully paid and nonassessable. All of the issued and outstanding capital stock of Merger Sub 2 is, and immediately preceding the Migratory Merger Effective Time will be, owned by Parent, and there are (i) no other shares of capital stock or voting securities of Merger Sub 2, (ii) no securities of Merger Sub 2 convertible into or exchangeable for shares of capital stock or voting securities of Merger Sub 2 and (iii) no options or other rights to acquire from Merger Sub 2, and no obligations of Merger Sub 2 to issue, any capital stock, voting securities or securities convertible into or exchangeable for capital stock or voting securities of Merger Sub 2.

Section 5.4 *Authority Relative to this Agreement; Shareholder Approval.*

(a) Subject only to the approval of the shareholders of Parent as described below, Parent has full corporate power and authority to execute and deliver this Agreement and to consummate the transactions contemplated hereby. The execution and delivery of this Agreement and the consummation of the transactions contemplated hereby have been duly and validly approved by the Board of Directors of Parent (the *Parent Board*), the Board of Directors of Merger Sub 1 and the Board of Directors of Merger Sub 2. The Parent Board has (i) unanimously determined

that this Agreement and the transactions contemplated hereby are advisable and in the best interests of the shareholders of Parent, (ii) approved this Agreement and

the Mergers and (iii) has unanimously recommended that the shareholders of Parent approve the Migratory Merger, the Acquisition Merger and the issuance of shares of Parent Common Stock in the Migratory Merger and the Acquisition Merger (the *Parent Voting Proposal*). This Agreement has been duly and validly executed and delivered by Parent, Merger Sub 1 and Merger Sub 2, and (assuming due authorization, execution and delivery by the Company) this Agreement constitutes a valid and binding obligation of Parent, Merger Sub 1 and Merger Sub 2, enforceable against Parent and Merger Sub 1 and Merger Sub 2 in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium or other similar Laws now or hereafter in effect relating to creditors rights generally and by general equitable principles (regardless of whether enforceability is considered in a proceeding in equity or at Law).

(b) Except for the approval of Parent Voting Proposal by the affirmative vote of the holders of a majority of the outstanding shares of Parent Common Stock (the *Parent Shareholders Meeting* and together with the Company Shareholder Meeting, the *Merger Shareholders Meetings*), of the shareholders of Parent to consider Parent Voting Proposal (the *Requisite Parent Shareholder Approval*) and the approval of the Acquisition Merger and the Migratory Merger by Parent, in its capacity as sole shareholder of Merger Sub 1 and the sole stockholder of Merger Sub 2, no other corporate proceedings on the part of Parent, Merger Sub 1 or Merger Sub 2 are necessary to approve this Agreement and to consummate the transactions contemplated hereby.

Section 5.5 *No Conflict, Required Filings and Consents*.

(a) The execution and delivery by Parent, Merger Sub 1 and Merger Sub 2 of this Agreement do not, the execution and delivery by Parent, Merger Sub 1 and Merger Sub 2 of any instrument required hereby to be executed and delivered at the Closing will not, and the performance by Parent, Merger Sub 1 and Merger Sub 2 of their respective agreements and obligations under this Agreement by Parent, Merger Sub 1 and Merger Sub 2 will not, (i) conflict with or violate the Parent Charter, the Parent Bylaws, the Merger Sub 1 Charter Documents, the Merger Sub 2 Charter Documents or any Parent Sub Documents, (ii) in any material respect, conflict with or violate any Law applicable to Parent, Merger Sub 1 or Merger Sub 2 or any Law by which Parent s properties are bound or affected, (iii) except as would not reasonably be expected to have a Parent Material Adverse Effect, result in any breach of or constitute a default (or an event that with notice or lapse of time or both would become a default) or impair Parent s rights or alter the rights or obligations of any third party including monetary obligations under, or give to any third party any rights of termination, amendment, payment, acceleration or cancellation of, or result in the creation of a Lien on any of the properties or assets (including intangible assets) of Parent pursuant to any note, bond, mortgage, indenture, contract, agreement, lease, license, permit, franchise or other instrument or obligation to which Parent is a party or by which Parent or its properties is bound or affected, or (iv) other than options under the Parent Stock Plans, give rise to or result in any person having, or having the right to exercise, any pre-emptive rights, rights of first refusal, rights to acquire or similar rights with respect to any capital stock of Parent or any of its assets or properties.

(b) The execution and delivery by Parent, Merger Sub 1 and Merger Sub 2 of this Agreement do not, the execution and delivery by Parent, Merger Sub 1 and Merger Sub 2 of any instrument required hereby to be executed and delivered at the Closing will not, and the performance of the respective agreements of, and obligations under, this Agreement by Parent, Merger Sub 1 and Merger Sub 2 will not, require any consent, approval, order, license, authorization, registration, declaration or permit of, or filing with or notification to, any Governmental Entity, except (i) as may be required by the HSR Act, (ii) as may be required under any foreign antitrust or competition Law or regulation, (iii) the filing of the Registration Statement on Form S-4 (the *Registration Statement*) with the SEC in accordance with the Securities Act, and the filing of the Joint Proxy Statement/Prospectus (as defined in Section 7.4) with the SEC under the Exchange Act, (iv) such clearances, consents, approvals, orders, licenses, authorizations, registrations, declarations, permits, filings and notifications as may be required under applicable U.S. federal and state or foreign securities Laws, (v) the filing of the Articles of Acquisition Merger, the Migratory Merger Certificates or other documents as

required by the CCC, the DGCL and the MBCA and (vi) such other consents, approvals, orders, registrations, declarations, permits, filings or notifications which, if not obtained or made, would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect.

Section 5.6 *Compliance; Permits*.

(a) Parent is and has been in material compliance with and is not in material default or violation of (and has not received any notice of material non-compliance, default or violation with respect to) any Law applicable to it or by which any of its respective properties are bound or affected.

(b) Parent holds all permits, licenses, easements, variances, exemptions, consents, certificates, authorizations, registrations, orders and other approvals from Governmental Entities that are material to the operation of its business as currently conducted (collectively, the *Parent Permits*). The Parent Permits are in full force and effect, have not been violated in any material respect and no suspension, revocation or cancellation thereof has been threatened, and to Parent s knowledge there is no action, proceeding or investigation pending or threatened, seeking the suspension, revocation or cancellation of any Parent Permits. No Parent Permit shall cease to be effective as a result of the consummation of the transactions contemplated by this Agreement, other than as would not reasonably be expected to have a Parent Material Adverse Effect.

Section 5.7 *SEC Filings; Financial Statements*.

(a) Parent has filed all forms, reports, schedules, statements and other documents, including any exhibits thereto, required to be filed by Parent since January 1, 2002 with the SEC (collectively, the *Parent SEC Reports*). The Parent SEC Reports, including all forms, reports and documents filed by Parent with the SEC after the date hereof and prior to the Acquisition Merger Effective Time, (i) were and, in the case of Parent SEC Reports filed after the date hereof, will be, prepared in all material respects in accordance with the applicable requirements of the Securities Act and the Exchange Act, as the case may be, and the rules and regulations thereunder and (ii) did not at the time they were filed (or if amended or superseded by a filing prior to the date of this Agreement, then on the date of such filing) and, in the case of such forms, reports and documents filed by Parent with the SEC after the date of this Agreement, will not as of the time they are filed, contain any untrue statement of a material fact or omit to state a material fact required to be stated in such Parent SEC Reports or necessary in order to make the statements in such Parent SEC Reports, in light of the circumstances under which they were made, not misleading. None of the Subsidiaries of Parent is required to file any forms, report, schedules or other documents with the SEC.

(b) Each of the consolidated financial statements (including, in each case, any related notes and schedules) contained in the Parent SEC Reports, including any Parent SEC Reports filed between the date of this Agreement and the Closing, complied or will comply, as of its respective date, in all material respects with all applicable accounting requirements and the published rules and regulations of the SEC with respect thereto, was or will be prepared in accordance with GAAP (except as may be indicated in the notes thereto) applied on a consistent basis throughout the periods involved and fairly presented in all material respects or will fairly present in all material respects the consolidated financial position of Parent and its consolidated Subsidiaries as of the respective dates thereof and the consolidated results of the operations and cash flows of Parent and its consolidated Subsidiaries for the periods indicated, except as otherwise explained therein and except that any unaudited interim financial statements are subject to normal and recurring year-end adjustments which have not been made and are not expected to be material in amount, individually or in the aggregate. The unaudited balance sheet and notes related thereto of Parent contained in the Parent SEC Report on Form 10-Q for the fiscal Quarter ended September 30, 2004 is referred to herein as the *Parent Balance Sheet*.

(c) The chief executive officer and chief financial officer of Parent have made all certifications required by, and would be able to make such certifications as of the date hereof and as of the Closing Date as if required to be made as of such dates pursuant to, Sections 302 and 906 of the

Sarbanes-Oxley Act and

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any related rules and regulations promulgated by the SEC and the statements contained in any such certifications are complete and correct, and Parent is otherwise in compliance with all applicable effective provisions of the Sarbanes-Oxley Act and the applicable listing standards and corporate governance rules of the NASDAQ.

(d) Each of the consolidated financial statements (including, in each case, any related notes and schedules) contained in the Parent SEC Reports, accurately reflects the revenues and costs relating to the Parent Material Contracts (as defined below).

Section 5.8 *Disclosure Controls and Procedures*. Since December 31, 2003, Parent and each of its Subsidiaries has had in place disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) promulgated under the Exchange Act) reasonably designed and maintained to ensure that all information (both financial and non-financial) required to be disclosed by Parent in the reports that it files or submits to the SEC under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC and that such information is accumulated and communicated to Parent s management as appropriate to allow timely decisions regarding required disclosure and to make the certifications of the chief executive officer and chief financial officer of Parent required under the Exchange Act with respect to such reports. Parent maintains internal accounting controls sufficient to provide reasonable assurances that (i) transactions are executed in accordance with management s general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles and to maintain accountability for assets, (iii) access to assets is permitted only in accordance with management s general or specific authorization, and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

Section 5.9 *Absence of Certain Changes or Events*. From the date of the Parent Balance Sheet, Parent has conducted its business in the ordinary course of business consistent with past practice and, since such date and through the date hereof, there has not occurred: (i) any Parent Material Adverse Effect; (ii) any amendments to or changes in the Parent Charter or Parent Bylaws; (iii) any material damage to, destruction or loss of any asset of Parent (whether or not covered by insurance); (iv) any change by Parent in its accounting methods, principles or practices; (v) any revaluation by Parent of any of its assets, including writing down the value of inventory or writing off notes or accounts receivable other than in the ordinary course of business consistent with past practice; (vi) any sale of a material amount of assets (tangible or intangible) of Parent; (vii) any recalls, field notifications or field corrections with respect to products manufactured by or on behalf of Parent, or (viii) any other action or event that would have required the consent of the Company pursuant to Section 6.2 had such action or event occurred after the date of this Agreement.

Section 5.10 *No Undisclosed Liabilities*.

(a) Except as reflected in the Parent Balance Sheet, Parent has no liabilities (absolute, accrued, contingent or otherwise) which are required by GAAP to be set forth on a consolidated balance sheet of Parent and its consolidated Subsidiaries or in the notes thereto, other than (i) any liabilities and obligations incurred since the date of the Parent Balance Sheet in the ordinary course of business consistent with past practice, (ii) any liabilities or obligations incurred in connection with the transactions contemplated by this Agreement and (iii) liabilities that, individually or in the aggregate, have not had, and would not reasonably be expected to have, a Parent Material Adverse Effect.

(b) Parent is not a party to, nor has any commitment to become a party to, any joint venture, partnership agreement or any similar contract (including any contract relating to any transaction, arrangement or relationship between or among Parent or any of its Subsidiaries, on the one hand, and any unconsolidated affiliate, including any structured finance, special purpose or limited purpose entity or person, on the other hand) where the purpose or intended effect of such arrangement is to avoid disclosure of any material transaction involving Parent in the Parent s consolidated financial statements.

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Section 5.11 *Absence of Litigation; Investigations*. Prior to the date of this Agreement, there were no material claims, actions, suits, proceedings, governmental investigations, inquiries or subpoenas (other than challenging or otherwise arising from or relating to the Acquisition Merger or any of the other transactions contemplated by this Agreement), (a) pending against Parent or any of its properties or assets, (b) to Parent s knowledge, threatened against Parent, or any of its properties or assets or (c) whether filed or threatened, that have been settled or compromised by Parent within three years prior to the date of this Agreement and at the time of such settlement or compromise were material, which claims, actions, suits, proceedings investigations, inquiries or subpoenas referred to in clause (a) and (b) above would reasonably be expected to have a Parent Material Adverse Effect. Parent is not subject to any outstanding order, writ, injunction or decree that would reasonably be expected to be material or would reasonably be expected to prevent or delay the consummation of the transactions contemplated by this Agreement. There has not been nor are there currently any internal investigations or inquiries being conducted by Parent, the Parent Board (or any committee thereof) or any third party at the request of any of the foregoing concerning any financial, accounting, tax, conflict of interest, self-dealing, fraudulent or deceptive conduct or other misfeasance or malfeasance issues.

Section 5.12 *Agreements, Contracts and Commitments*.

(a) For purposes of this Agreement, the term Parent Material Contracts shall mean any note, bond, mortgage, indenture, guarantee, other evidence of indebtedness, lease, license, contract, agreement or other instrument or obligation to which Parent is a party or by which it or any of its assets is bound, and which:

(i) has a remaining term of more than one year from the date hereof and (A) cannot be unilaterally terminated by Parent at any time, without material penalty, within thirty (30) days of providing notice of termination, and (B) involves the payment or receipt of money in excess of $100,000 per year;

(ii) involves the payment or receipt of money in excess of $250,000 in any year;

(iii) contains covenants limiting the freedom of Parent to sell any products or services of or to any other person, engage in any line of business or compete with any person or operate at any location;

(iv) was made with any officer, director, Parent employee or member of the Parent Board, or any service, operating or management agreement or arrangement with respect to any of Parent s assets or properties (whether leased or owned), other than those that are terminable by Parent on no more than thirty (30) days notice without liability or financial obligation to Parent;

(v) is a dealer, distributor, joint marketing or development contract under which Parent has continuing material obligations to jointly market any product, technology or service and which may not be canceled without penalty upon notice of ninety (90) days or less, or any contract pursuant to which Parent has continuing material obligations to jointly develop any Intellectual Property that will not be owned, in whole or in part, by Parent;

(vi) includes indemnification, guaranty or warranty other than any those contracts entered into in the ordinary course of Parent s business;

(vii) mortgages, indentures, guarantees, loans or credit agreements, security agreements or other agreements or instruments relating to the borrowing of money or extension of credit;

(viii) settlement agreements under which Parent has ongoing obligations; or

(ix) Parent Real Property Leases.

(b) All of the Parent Material Contracts that are required to be described in the Parent SEC Reports (or to be filed as exhibits thereto) are so described or filed and are enforceable and in full force and effect (except as such enforceability may be subject to Laws of general application relating to bankruptcy, insolvency, and the relief of debtors and rules of Law governing specific performance, injunctive relief or other equitable remedies).

(c) As of the date of this Agreement, (i) there is no breach or violation of or default by Parent or any of its Subsidiaries under any of the Parent Material Contracts, except such breaches, violations and defaults as

have been waived, and (ii) no event has occurred with respect to Parent or any of its Subsidiaries which, with notice or lapse of time or both, would constitute a breach, violation or default, or give rise to a right of termination, modification, cancellation, foreclosure, imposition of a Lien, prepayment or acceleration under any of the Parent Material Contracts, which breach, violation or default referred to in clauses (i) or (ii), would reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect.

(d) Section 5.12 of the Parent Disclosure Schedule contains a complete and accurate list of, and true and complete copies have been delivered or made available to the Company with respect to, all Parent Material Contracts in effect as of the date hereof other than the Parent Material Contracts which are listed as an exhibit to Parent s most recent annual report on Form 10-K or a subsequent quarterly report on Form 10-Q or as otherwise set forth on Section 5.12(a) of the Parent Disclosure Schedule.

Section 5.13 *Employee Benefit Plans, Options and Employment Agreements*.

(a) Section 5.13(a) of the Parent Disclosure Schedule sets forth a complete and accurate list of all Employee Benefit Plans maintained, or contributed to by Parent, any of its Subsidiaries or any of their respective ERISA Affiliates or to which Parent, any of its Subsidiaries or any of their respective ERISA Affiliates is obligated to contribute, or under which any of them has or may have any liability for premiums or benefits for the benefit of employees located in the United States (collectively, the *Parent Employee Plans*).

(b) With respect to each Parent Employee Plan, Parent has made available to the Company complete and accurate copies of (i) such Parent Employee Plan (or a written summary of any unwritten plan) together with all amendments, (ii) in the case of any plan for which Forms 5500 are required to be filed, the most recent annual report (Form 5500) with schedules attached, (iii) in the case of any plan that is intended to be qualified under Section 401(a) of the Code, the most recent determination letter from the Internal Revenue Service, (iv) each trust agreement, group annuity contract, administration and similar material agreements, investment management or investment advisory agreements, (v) the most recent summary plan descriptions and employee handbook, or other similar material employee communications relating to employee benefits matters, (vi) all personnel, payroll and employment manuals and policies, and (vii) the most recent financial statements for each Parent Employee Plan that is funded.

(c) Each Parent Employee Plan has been administered in all material respects in accordance with ERISA, the Code and all other applicable Laws and the regulations thereunder and materially in accordance with its terms and each of Parent, its Subsidiaries and their respective ERISA Affiliates have in all material respects met their obligations with respect to each Parent Employee Plan and have timely made (or timely will make) all required contributions thereto. All filings and reports as to each Parent Employee Plan required to have been submitted to the Internal Revenue Service or to the United States Department of Labor have been timely submitted. With respect to the Parent Employee Plans, no event has occurred, and, to Parent s knowledge, there exists no condition or set of circumstances in connection with which Parent, its Subsidiaries or any plan participant could be subject to any material liability (including penalties or taxes) under ERISA, the Code or any other applicable Law, nor will the negotiation or consummation of the transactions contemplated by this Agreement give rise to any such material liability.

(d) With respect to the Parent Employee Plans, there are no material benefit obligations for which contributions have not been made or properly accrued and there are no benefit obligations which have not been accounted for by reserves, or otherwise properly footnoted in accordance with the requirements of GAAP, on the financial statements of Parent. The assets of each Parent Employee Plan which is funded are reported at their fair market value on the books and records of such Parent Employee Plan.

(e) No Parent Employee Plan has assets that include securities issued by Parent, any of its Subsidiaries or any of their respective ERISA Affiliates.

(f) All the Parent Employee Plans that are Qualified Plans have received determination, opinion or advisory letters from the Internal Revenue Service to the effect that such Parent Employee Plans are

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qualified and the plans and trusts related thereto are exempt from federal income taxes under Sections 401(a) and 501(a), respectively, of the Code, or Parent has remaining a period of time under applicable U.S. Department of the Treasury regulations or Internal Revenue Service pronouncements in which to apply for such a letter and to make any amendments necessary to obtain a favorable determination as to the qualified status of each such Qualified Plan. To Parent s knowledge, no such determination, opinion or advisory letter has been revoked and revocation has not been threatened, and no such Parent Employee Plan has been amended or operated since the date of its most recent determination letter or application therefor in any respect, and no act or omission has occurred, that would reasonably be expected to adversely affect its qualification or materially increase its cost. There has been no termination, partial termination or discontinuance of contributions to any Qualified Plan that will result in material liability to Parent. Each Parent Employee Plan which is required to satisfy Section 401(k)(3) or Section 401(m)(2) of the Code has been tested for compliance with, and satisfies in all material respects the requirements of Section 401(k)(3) and Section 401(m)(2) of the Code, as the case may be, for each plan year ending prior to the Closing Date for which testing is required to be completed.

(g) Neither Parent, any of its Subsidiaries nor any of their respective ERISA Affiliates has (i) ever maintained a Parent Employee Plan which was ever subject to Section 412 of the Code or Title IV of ERISA or (ii) ever been obligated to contribute to a multiemployer plan (as defined in Section 4001(a)(3) of ERISA) that is subject to ERISA. No Parent Employee Plan is funded by, associated with or related to a voluntary employees beneficiary association within the meaning of Section 501(c)(9) of the Code.

(h) To the extent permitted by applicable Law, each Parent Employee Plan (other than the Parent Stock Plans or an employment, severance, change in control or similar agreement with an individual) is amendable and terminable unilaterally by Parent or one or more of its Subsidiaries party thereto or covered thereby at any time without material liability to Parent or any of its Subsidiaries as a result thereof, other than for benefits accrued as of the date of such amendment or termination and routine administrative costs.

(i) Other than as required under Section 601 et seq. of ERISA, none of the Parent Employee Plans promises or provides health or other welfare benefits (excluding normal claims for benefits under the Parent s group life insurance, accidental death and dismemberment insurance and disability plans and policies) or coverage to any person following retirement or other termination of employment. Section 5.13(i) of the Parent Disclosure Schedule lists each Parent Employee Plan which provides benefits after termination of employment (other than medical benefits required to be continued under Section 4980B of the Code and part 6 of Subtitle B of Title I of ERISA) and normal claims for benefits under the Parent s group life insurance, accidental death and dismemberment insurance and disability plans and policies) and the present value of benefits accrued under each such Parent Employee Plan are fully funded, fully covered by insurance or reflected on the Parent Balance Sheet in accordance with GAAP.

(j) There is no action, suit, proceeding, claim, arbitration, audit or investigation pending or, to Parent s knowledge, threatened, with respect to any Parent Employee Plan, other than claims for benefits in the ordinary course. No Parent Employee Plan is or within the last two calendar years has been the subject of, or has received notice that it is the subject of, examination by a government agency or a participant in a government sponsored amnesty, voluntary compliance or similar program.

(k) To Parent s knowledge, each individual who has received compensation for the performance of services on behalf of Parent, any of its Subsidiaries or their respective ERISA Affiliates has been properly classified as an employee or independent contractor in accordance with applicable Law.

(l) Except as would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, with respect to each Employee Benefit Plan maintained by Parent, any of its Subsidiaries or any of their ERISA Affiliates that covers employees outside the United States, and the books and records thereof, (i) such plan is in compliance with all applicable Laws of each applicable jurisdiction; (ii) there is no action, suit, proceeding, claim, arbitration, audit or investigation pending or, to Parent s knowledge, threatened, with respect to such plan, other

than claims for benefits in the ordinary course; (iii) all liabilities with respect to such plan are set forth on a consolidated balance sheet of Parent and its

Subsidiaries or in the notes thereto in accordance with GAAP; and (iv) no such plan is or within the last two calendar years has been the subject of, or has received notice that it is the subject of, an examination by a government agency or a participant in a government sponsored amnesty, voluntary compliance or similar program that has given rise to or is reasonably expected to give rise to any liability. Section 5.13(l) of the Parent Disclosure Schedule lists each country in which Parent or any of its Subsidiaries or affiliates has operations and the number of employees in each such country.

(m) Section 5.13(m) of the Parent Disclosure Schedule sets forth a true, complete and correct list of: (i) all employment agreements with employees of Parent or any of its Subsidiaries (other than at-will offer letters that are consistent with Parent s general form and do not provide for severance payments or benefits, notice periods for termination or change of control benefits); (ii) all employees or former employees of Parent who have executed a non competition agreement with Parent; (iii) all severance agreements, programs and policies of Parent or any of its Subsidiaries with or relating to its employees, excluding programs and policies required to be maintained by Law; and (iv) all plans, programs, agreements and other arrangements of Parent or any of its Subsidiaries pursuant to which payments (or acceleration of benefits or vesting of options or lapse of repurchase rights) may be required upon, or may become payable directly or indirectly as a result of or in connection with, the negotiation or consummation of the transactions contemplated by, or the execution of, this Agreement. True, complete and correct copies of each of the foregoing agreements to which any employee of Parent is a party have been made available to Company.

(n) All contributions required to be made with respect to any Parent Employee Plan on or prior to the Acquisition Merger Effective Time have been or will be timely made or are reflected on the Parent Balance Sheet. There are no pending, threatened or reasonably anticipated claims by or on behalf of any Plan, by any employee or beneficiary covered under any such Parent Employee Plan, or otherwise involving any such Plan (other than routine claims for benefits).

(o) The negotiation or consummation of the transactions contemplated by this Agreement will not, either alone or in combination with another event, (i) entitle any current or former employee or officer of Parent or any of its Subsidiaries to severance pay, or any other payment from Parent or any of its Subsidiaries or (ii) accelerate the time of payment or vesting, cause a lapse of repurchase rights or increase the amount of compensation due any such employee or officer. There is no Parent Employee Plan or other contract, agreement, plan or arrangement that, individually or collectively, could give rise to the payment of any amount that would not be deductible pursuant to Sections 280G (determined without regard to Section 280G(b)(4) of the Code) as a result of the Mergers or 162(m) of the Code.

Section 5.14 *Labor Matters*.

(a) Parent is in compliance in all material respects with all applicable Laws respecting employment and employment practices, including, without limitation, all Laws respecting terms and conditions of employment, health and safety, wages and hours, child labor, immigration, employment discrimination, disability rights or benefits, equal opportunity, plant closures and layoffs, affirmative action, workers compensation, labor relations, employee leave issues and unemployment insurance.

(b) There are no personnel manuals or handbooks applicable to employees of Parent, other than those set forth in Section 5.14(b) of the Parent Disclosure Schedule, true and complete copies or written summaries of which have heretofore been provided to the Company.

(c) There are no actions, suits, claims, grievances, investigations, or other proceedings pending or, to Parent s knowledge, threatened, between (i) Parent (and/or any of their current or former officers, directors, employees, or representatives, in their capacities as such) and (ii) any of their respective current or former employees, consultants or independent contractors, or any applicant for employment or classes of the foregoing, or any Governmental Entity, which actions, suits, claims, grievances, investigations, or other proceedings have or would reasonably be expected to

have, individually or in the aggregate, a Parent Material Adverse Effect.

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(d) Parent has good labor relations, and Parent and its employees, agents or representatives have not committed any unfair labor practice as defined in the National Labor Relations Act. Parent is not a party to, bound by or subject to (and none of Parent s properties or assets is bound by or subject to) any labor agreement, collective bargaining agreement, work rules or practices, or any other labor-related agreements or arrangements with any labor union, labor organization, trade union or works council. There are no labor agreements, collective bargaining agreements, work rules or practices, or any other labor-related agreements or arrangements that pertain to any of the employees of Parent, and no employees of Parent are represented by any labor union, labor organization, trade union or works council with respect to their employment with Parent.

(e) To Parent s knowledge, there are no current labor union organizing activities with respect to any employees of Parent, and no labor union, labor organization, trade union, works council, or group of employees of Parent has made a pending demand for recognition or certification, and there are no representation or certification proceedings or petitions seeking a representation proceeding presently pending or threatened in writing to be brought or filed with the National Labor Relations Board or any other labor relations tribunal or authority. To the Parent s knowledge, there are no labor disputes, strikes, slowdowns, work stoppages, lockouts, or threats thereof, against or affecting Parent.

(f) No employee of Parent (i) to Parent s knowledge, is in violation of any term of any patent disclosure agreement, non-competition agreement, or any restrictive covenant to a former employer relating to the right of any such employee to be employed by Parent because of the nature of the business conducted or presently proposed to be conducted by Parent or relating to the use of trade secrets or proprietary information of others, or (ii) in the case of any key employee or group of key employees, has given notice as of the date of this Agreement to Parent that such employee or any employee in a group of key employees intends to terminate his or her employment with Parent.

(g) Parent is and has been in compliance with all notice and other requirements under the Worker Adjustment and Retraining Notification Act of 1988, as amended (the *WARN Act*), and any similar foreign, state or local Law relating to plant closings and layoffs. Parent is not currently engaged in any layoffs or employment terminations sufficient in number to trigger application of the WARN Act or any similar state, local or foreign Law. Section 5.14(g) of the Parent Disclosure Schedule contains a true and complete list of the names and the sites of employment or facilities of those individuals who suffered an employment loss (as defined in the WARN Act) at any site of employment or facility of Parent during the 90-day period prior to the date of this Agreement. Section 5.14(g) of the Parent Disclosure Schedule shall be updated immediately prior to the Closing with respect to the 90-day period prior to the Closing.

(h) The execution of this Agreement and the consummation of the transactions contemplated by this Agreement will not result in any breach or other violation of any collective bargaining agreement, employment agreement, consulting agreement or any other labor-related agreement to which Parent is a party.

Section 5.15 *Properties; Encumbrances.*

(a) Parent has good and valid title to, or a valid leasehold interest in, all the properties and assets which it purports to own or lease (real, tangible, personal and mixed), including all the properties and assets reflected in the Parent Balance Sheet (except for personal property sold since the date of the Parent Balance Sheet in the ordinary course of business consistent with past practice). All properties and assets reflected in the Parent Balance Sheet are free and clear of all Liens, except for Liens reflected on the Parent Balance Sheet and Liens for current taxes not yet due and other Liens that do not materially impair the use or operation of the property or assets subject thereto.

(b) Section 5.15 of the Parent Disclosure Schedule sets forth a true, complete and correct list of all real property owned, leased, subleased or licensed by Parent and the location of such premises. All material real property leases, licenses or other occupancy agreements to which Parent is

a party (collectively, the *Parent Real Property Leases*) are either filed as exhibits to the Parent SEC Reports or complete copies thereof

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have been delivered to or made available to the Company. Section 5.15 of the Parent Disclosure Schedule lists all Parent Real Property Leases other than the Parent Real Property Leases which are listed as an exhibit to Parent s most recent annual report on Form 10-K or a subsequent quarterly report on Form 10-Q.

(c) As of the date of this Agreement, (i) all Parent Real Property Leases are in full force and effect (except as such enforceability may be subject to Laws of general application relating to bankruptcy, insolvency and the relief of debtors and rules of Law governing specific performance, injunctive relief or other equitable remedies), (ii) there is no existing material default by Parent under any of the Parent Real Property Leases, except such defaults as have been waived in writing, (iii) no event has occurred with respect to Parent which, with notice or lapse of time or both, would constitute a default of any of the Parent Real Property Leases, and (iv) to the Parent s knowledge, there are no defaults of any material obligations of any party other than Parent under any Parent Real Property Lease.

Section 5.16 *Taxes*.

(a) Parent has filed with the appropriate taxing authorities all material Tax Returns required to be filed by them and all such Tax Returns are true, complete and correct in all material respects. All Taxes required to be paid by Parent have been timely paid. There are no Liens relating to or attributable to Taxes on any assets of Parent other than Liens relating to Taxes not yet due and payable. Parent has not granted any outstanding waiver of any statute of limitations with respect to, or any outstanding extension of a period for the assessment of, any Tax. The accruals and reserves for Taxes (exclusive of any accruals for deferred taxes or similar items that reflect timing differences between tax and financial accounting principles) reflected in the Parent Balance Sheet are adequate to cover all Taxes accruable through the date thereof (including Taxes being contested) in accordance with GAAP. All liabilities for Taxes attributable to the period commencing on the date following the date of the Parent Balance Sheet were incurred in the ordinary course of business and are consistent in type and amount with Taxes attributable to similar prior periods.

(b) Parent has timely paid or withheld with respect to its employees all federal and state Taxes required to be paid or withheld (and have timely paid over any withheld amounts to the appropriate Taxing authority). Parent has not received any notice of any Tax deficiency outstanding, proposed or assessed against Parent. No audit or other examination of any Tax Return of Parent is presently in progress, and Parent has not received any written notice of any audit examination, deficiency, refund litigation, proposed adjustment or matter in controversy with respect to any Tax Return of Parent.

(c) Parent is not a party to or bound by any Tax indemnity, Tax sharing or Tax allocation agreements with any entity other than Parent or any Parent Subsidiary. Except for the group of which Parent and its Subsidiaries are now currently members, Parent has never been a member of an affiliated group of corporations within the meaning of Section 1504 of the Code. Except with respect to the group referred to in the preceding sentence, Parent is not liable for the Taxes of any person under Treasury Regulation 1.1502-6 (or any similar provision of state, local or foreign Law) as a transferee or successor, by contract or otherwise. Parent has never been a party to any joint venture, partnership or other agreement that could be treated as a partnership for Tax purposes.

(d) To the extent requested by the Company, Parent has made available to the Company complete and correct copies of all Tax Returns, examination reports and statements of deficiencies assessed against or agreed to by Parent with respect to all taxable years for which the statutes of limitation have not expired.

(e) Parent has not agreed nor is it required to make any material adjustment under Section 481 of the Code by reason of a change in accounting method or otherwise prior to the Acquisition Merger Effective Time.

(f) Parent is not, and has never been, a United States real property holding corporation (as defined in Section 897(c)(2) of the Code) during the applicable period specified in Section 897(c)(1)(A)(ii) of the Code.

(g) Parent has not constituted either a distributing corporation or a controlled corporation (within the meaning of Section 355(a)(1)(A) of the Code) in a distribution of stock intended to qualify for tax-free

treatment under Section 355 of the Code (A) in the two years prior to the date of this Agreement or (B) in a distribution which could otherwise constitute part of a plan or series of related transactions (within the meaning of Section 355(e) of the Code) in connection with the Acquisition Merger.

(h) Parent has not engaged in, or has any commitment to engage in, any transaction that is the same as or substantially similar to one of the types of transactions that the Internal Revenue Service has determined to be a tax avoidance transaction and identified by notice, regulation, or other form of published guidance as a reportable transaction, as set forth in Treas. Reg. § 1.6011-4(b).

Section 5.17 *Environmental Matters*.

(a) Parent is in compliance in all material respects with federal, state, local and foreign Laws and regulations relating to Materials of Environmental Concern, or otherwise relating to Environmental Laws, and including, but not limited to, compliance with any Parent Permits or other governmental authorizations or the terms and conditions thereof and compliance with any Laws respecting the sale, distribution or labeling of products pursuant to Environmental Laws.

(b) Parent has not received any written notice, whether from a governmental authority or otherwise, alleging any violation of or noncompliance with any Environmental Laws by Parent for which it is responsible.

(c) There is no pending or threatened claim, action, investigation or notice by any person or entity alleging potential liability on the part of Parent or any of its Subsidiaries for investigatory, cleanup or governmental response costs, or natural resources or property damages, or personal injuries, attorney s fees or penalties relating to (i) the presence, or release into the environment, of any Materials of Environmental Concern at any location owned or operated by Parent, now or in the past, or otherwise caused by Parent or by the actions of any other party for which Parent would be liable by contract or pursuant to Environmental Laws, or (ii) any violation, or alleged violation, of any Environmental Law (collectively, *Parent Environmental Claims*), except where such Parent Environmental Claims would not have a Parent Material Adverse Effect or otherwise require disclosure in the Parent SEC Reports.

(d) There are no past or present facts or circumstances that could reasonably be expected to form the basis of any Parent Environmental Claim against Parent or against any person or entity whose liability for any Parent Environmental Claim Parent has retained or assumed either contractually or by operation of Law, except where such Parent Environmental Claim, if made, would not have a Parent Material Adverse Effect or otherwise require disclosure in the Parent SEC Reports. Parent has made available to the Company all material third party, non privileged assessments, reports, data, results of investigations or audits that is in the possession of Parent regarding environmental matters pertaining to the environmental condition of the business of Parent, or the compliance (or noncompliance) by Parent with any Environmental Laws.

Section 5.18 *Intellectual Property*.

(a) For purposes of this Agreement, the term *Parent Registered Intellectual Property* means all Registered Intellectual Property owned by Parent or any of its Subsidiaries.

(b) Section 5.18(b) of the Parent Disclosure Schedule sets forth as of the date hereof a true, complete and correct list of all Parent Registered Intellectual Property. All of the Parent Registered Intellectual Property is owned solely by Parent and no Registered Intellectual Property that ever was Parent Registered Intellectual Property has been disposed of by Parent in the two years preceding the date hereof.

(c) The Parent Registered Intellectual Property, is subsisting, and has not expired or been cancelled, or abandoned.

(d) There is no pending or, to Parent s knowledge, threatened, and at no time within the three years prior to the date of this Agreement has there been pending any, material suit, arbitration or other adversarial proceeding before any court, government agency or arbitral tribunal or in any jurisdiction alleging that any

activities or conduct of Parent s business infringes or will infringe upon, violate or constitute the unauthorized use of the Intellectual Property of any third party or challenging the ownership, validity, enforceability or registrability of any Intellectual Property owned by Parent.

(e) Parent is not a party to any settlements, covenants not to sue, consents, decrees, stipulations, judgments, or orders resulting from suits, actions or similar legal proceedings which (i) restrict Parent s rights to use any Intellectual Property owned by and material to the business of the Parent as currently conducted, (ii) restrict the conduct of the business of Parent as currently conducted in order to accommodate any third party s Intellectual Property rights, or (iii) permit third parties to use any Intellectual Property owned by and used in the business of Parent as currently conducted.

(f) The conduct of the business of Parent as currently conducted does not infringe upon, violate or constitute the unauthorized use of any Intellectual Property rights owned by any third party.

(g) Parent has taken reasonable measures to protect the proprietary nature of the Intellectual Property owned by Parent that is material to the business of Parent as currently conducted.

(h) To Parent s knowledge, no third party is misappropriating, infringing, diluting or violating any Intellectual Property owned by Parent that is material to the business of Parent as currently conducted, and no Intellectual Property misappropriation, infringement dilution or violation suits, arbitrations or other adversarial proceedings have been brought before any court, government agency or arbitral tribunal against any third party by Parent which remain unresolved.

(i) Parent has not (i) disclosed to any third person any material confidential source code for any product currently being marketed, sold, licensed or developed by Parent (each such product, a *Parent Proprietary Product*), or (ii) made any such source code subject to any open source license, nor is Parent obligated to make the source code for such Parent Proprietary Product generally available.

(j) Parent does not have any obligation to pay any third party any royalties or other fees in excess of $100,000 in the aggregate in calendar year 2004 or any annual period thereafter for the use of Intellectual Property and no obligation to pay such royalties or other fees in excess of $250,000 in the aggregate will result from the execution and delivery by Parent of this Agreement and the consummation of the transactions contemplated by this Agreement.

(k) Parent is not in violation of any material license, sublicense, agreement or instrument to which Parent is party or otherwise bound under which Parent derives rights to Intellectual Property that is material to Parent s business as currently conducted, nor will the consummation by Parent of the transactions contemplated hereby result in any loss or impairment of ownership by Parent of, or the right of any of them to use, any Intellectual Property that is material to the business of Parent as currently conducted, nor, to Parent s knowledge, require the consent of any Governmental Entity or third party with respect to any such Intellectual Property.

(l) Parent is not a party to any agreement under which a third party would be entitled to receive or expand a license or any other right to any material Intellectual Property of the Company as a result of the consummation of the transactions contemplated by this Agreement.

Section 5.19 *Insurance*. All fire and casualty, general liability, business interruption, product liability, sprinkler and water damage insurance policies and other forms of insurance maintained by Parent have been made available to the Company. Each such policy is in full force and effect and all premiums due thereon have been paid in full. None of such policies shall terminate or lapse (or be otherwise adversely affect) by reason of the execution and delivery of this Agreement or the consummation of the transactions contemplated by this Agreement.

Section 5.20 *Interested Party Transactions*. Since December 31, 2003, no event has occurred that would be required to be reported as a Certain Relationship or Related Transaction pursuant to Statement of Financial Accounting Standards No. 57.

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Section 5.21 *Brokers*. No broker, finder or investment banker (other than Adams Harkness, Inc. whose brokerage, finder s or other fee will be paid by Parent) is entitled to any brokerage, finder s or other fee or commission in connection with the transactions contemplated by this Agreement based upon arrangements made by or on behalf of Parent or any of its Subsidiaries. Parent has furnished to the Company a complete and correct copy of all agreements between Parent and Adams Harkness, Inc. pursuant to which Adams Harkness, Inc. would be entitled to any such payment.

Section 5.22 *Opinion of Financial Advisor of Parent*. The financial advisor of Parent, Adams Harkness, Inc., has delivered to Parent an opinion dated on the date of this Agreement to the effect that as of such date, the Merger Consideration is fair, from a financial point of view, to Parent. Parent has provided a true, complete and correct copy of such opinion to the Company. As of the date hereof, such opinion has not been withdrawn, revoked or modified.

Section 5.23 *Anti-Takeover Statute Not Applicable*. No Takeover Statute is applicable to the Acquisition Merger or any of the other transactions contemplated by this Agreement.

ARTICLE VI

INTERIM CONDUCT OF BUSINESS

Section 6.1 *Affirmative Covenants*. Except as described in Section 6.1 of the Company Disclosure Schedule in the case of the Company, or Section 6.1 of the Parent Disclosure Schedule in the case of Parent, or to the extent the other party hereto shall otherwise consent in writing (which consent shall not be unreasonably withheld, delayed or conditioned), during the period from the date of this Agreement and continuing until the earlier of the termination of this Agreement or the Acquisition Merger Effective Time, each party hereto shall (i) conduct its business only in, and shall not take any action except in, the ordinary course and in a manner that is consistent with past practices and in compliance in all material respects with all applicable Laws, and (ii) use commercially reasonable efforts to preserve intact its business organization, keep available the services of its current officers, employees and consultants, and preserve the its present relationships with customers, suppliers, distributors and other persons with which it has significant business relations.

Section 6.2 *Restrictive Covenants*. Except as described in Section 6.2 of the Company Disclosure Schedule in the case of the Company, or Section 6.2 of the Parent Disclosure Schedule in the case of Parent, or to the extent the other party hereto shall otherwise consent in writing (which consent shall not be unreasonably withheld, delayed or conditioned), during the period from the date of this Agreement and continuing until the earlier of the termination of this Agreement or the Acquisition Merger Effective Time, neither party hereto (other than Parent taking any action in furtherance of or otherwise implementing the Migratory Merger) shall:

(i) amend or otherwise change its articles or certificate of incorporation, bylaws or other equivalent organizational documents;

(ii) issue, sell, transfer, pledge, redeem, accelerate rights under, dispose of or encumber, or authorize the issuance, sale, transfer, pledge, redemption, acceleration of rights under, disposition or encumbrance of, any shares of its capital stock of any class, or any options, warrants, convertible securities or other rights of any kind to acquire any shares of its capital stock, or any other ownership interest in such party, other than grants of stock options for the purchase of up to an aggregate of 50,000 shares of such party s Common Stock to employees;

(iii) sell, pledge, mortgage, dispose, lease, license or encumber any of its properties or assets (whether tangible or intangible), or suffer to exist any Lien thereupon other than (A) sales of assets not to exceed $100,000 in the aggregate and (B) sales, leases or licenses of the Parent Proprietary Products or Company Proprietary Products, as the case may be, in the ordinary course of business consistent with past practice;

(iv) (A) declare, set aside, make or pay any dividend or other distribution (whether in cash, stock or property or any combination thereof) in respect of any of its capital stock, except that a direct or indirect

wholly owned Subsidiary of a party (or a Subsidiary of a party) may declare and pay a dividend to its parent, (B) split, combine or reclassify any of its capital stock or issue or authorize or propose the issuance of any other securities in respect of, in lieu of or in substitution for shares of its capital stock, or (C) purchase, repurchase, redeem or otherwise acquire, directly or indirectly, any of its securities, or any option, warrant or right to acquire any such securities, or propose to do any of the foregoing, other than pursuant to the exercise of repurchase rights with respect to unvested shares held by individuals terminating employment or service;

(v) acquire (by merger, consolidation or acquisition of stock or assets or otherwise) any corporation, partnership or other business organization or division thereof or any equity interest therein;

(vi) incur any indebtedness for borrowed money or issue any debt securities or assume, guarantee or endorse or otherwise as an accommodation become responsible for (whether directly, contingently or otherwise), the obligations of any person for borrowed money, or make any loans or advances or capital contributions to or investments in any other person, except in the ordinary course of business and consistent with past practice;

(vii) (A) amend any Company Material Contract or Parent Material Contract, as the case may be, in any material respect or enter into any agreement that would be deemed to be a Company Material Contract or Parent Material Contract, as the case may be; (B) terminate, cancel or waive any right under any Company Material Contract or Parent Material Contract, as the case may be, other than in the ordinary course of business consistent with past practices, or (C) or enter into, amend or terminate any lease relating to real property;

(viii) (A) adopt or implement any shareholder rights plan or similar arrangement, or (B) take any action to cause any Takeover Statute to apply (or fail to take any action to prevent any Takeover Statute from applying) to this Agreement, the Company Shareholder Voting Agreements, the Parent Shareholder Voting Agreements or the transactions contemplated hereby;

(ix) make or authorize any capital expenditures or purchase of fixed assets, other than in the ordinary course of business;

(x) modify its standard warranty terms for its products or amend or modify any product warranties in effect as of the date of this Agreement in any manner that is materially adverse to it, other than extensions of warranties in the ordinary course of business;

(xi) (A) increase the compensation payable or to become payable to its directors, officers or employees, (B) hire or promote any officer or director-level employee or appoint any director, (C) make any loan, advance or capital contribution (other than loans or advances of reasonable relocation expenses), or grant any severance or termination pay to any current or former officers or employees, or enter into or amend any Company Employee Plan or other plan, contract, agreement or arrangement that would be a Company Employee Plan in the case of the Company, or any Parent Employee Plan or other plan, contract, agreement or arrangement that would be a Parent Employee Plan in the case of Parent (provided that in connection with the Migratory Merger, Parent may adopt Employee Benefit Plans, including Stock Plans or an ESPP) (D) establish, adopt, enter into or amend any collective bargaining agreement or other plan, agreement, trust, fund, policy or arrangement for the benefit of any of its current or former directors, officers or employees (except for Parent adopting directors and officers liability insurance), (E) pay any discretionary bonuses to any of its officers, or (F) materially change any actuarial assumption or other assumption used to calculate funding obligations with respect to any pension or retirement plan, or change the manner in which contributions to any such plan are made or the basis on which such contributions are determined, except, in each case, as may be required by applicable Law or contractual commitments which are existing as of the date of this Agreement and listed in Section 4.13 of the Company Disclosure Schedule in the case of the Company or Section 5.13 of the Parent Disclosure Schedule in the case of Parent;

(xii) take any action to change accounting policies or procedures (including procedures with respect to revenue recognition, payments of accounts payable and collection of accounts receivable), change any

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assumption underlying, or method of calculating, any bad debt contingency or other reserve, except in each case as required under GAAP or applicable Law;

(xiii) make any Tax election inconsistent with past practice, change any Tax election already made, settle or compromise any federal, state, local or foreign Tax liability or agree to an extension of a statute of limitations, fail to file any Tax Return when due (or, alternatively, fail to file for available extensions) or fail to cause such Tax Returns when filed to be complete and accurate; or fail to pay any Taxes when due;

(xiv) pay, discharge or satisfy any claims, liabilities or obligations (absolute, accrued, asserted or unasserted, contingent or otherwise), other than the payment, discharge or satisfaction in the ordinary course of business and consistent with past practices of liabilities reflected or reserved against in the financial statements contained in the Company SEC Reports or the Parent SEC reports, as the case may be, or incurred in the ordinary course of business and consistent with past practice;

(xv) fail to pay accounts payable and other obligations in the ordinary course of business;

(xvi) accelerate the collection of receivables or modify the payment terms of any receivables other than in the ordinary course of business consistent with past practices;

(xvii) sell, securitize, factor or otherwise transfer any accounts receivable;

(xviii) adopt a plan of complete or partial liquidation, dissolution, merger, consolidation, restructuring, recapitalization or other reorganization (other than as expressly provided in this Agreement);

(xix) (A) at any time within the 90-day period before the Acquisition Merger Effective Time, without complying fully with the notice and other requirements of the WARN Act, effectuate (1) a plant closing (as defined in the WARN Act) affecting any single site of employment or one or more facilities or operating units within any single site of employment of the Company or any of its Subsidiaries, or (2) a mass layoff (as defined in the WARN Act) at any single site of employment or one or more facilities or operating units within any single site of employment of the Company or any of its Subsidiaries; or (B) terminate or lay off employees in such numbers as to give rise to liability under any applicable Laws respecting the payment of severance pay, separation pay, termination pay, pay in lieu of notice of termination, redundancy pay, or the payment of any other compensation, premium or penalty upon termination of employment, reduction of hours, or temporary or permanent layoffs (it being understood and hereby agreed that for purposes of the WARN Act and this Agreement, the Acquisition Merger Effective Time is and shall be the same as the effective date within the meaning of the WARN Act);

(xx) take any action that would, or would reasonably be expected to, prevent or materially impair or delay its ability to consummate the transaction contemplated by the Agreement;

(xxi) take any action which would make any of its representations or warranties contained in this Agreement untrue or incorrect, or prevent it from performing or cause it not to perform its covenants hereunder, in each case, such that the conditions set forth in Section 8.2 would not be

satisfied;

(xxii) authorize, take, or agree in writing or otherwise to take, any of the actions described in Section 6.2(i) through (xxi) above, inclusive.

ARTICLE VII

ADDITIONAL AGREEMENTS

Section 7.1 *Access to Information; Notice of Certain Matters*.

(a) Subject to the terms of this Section 7.1, each of Parent and the Company shall (and shall cause its Subsidiaries and its and their respective directors, officers, employees, auditors, agents and other representatives to) afford to the other party, and its officers, employees, financial advisors, legal counsel, accountants, consultants and other representatives reasonable access during normal business hours to all of

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its books and records, properties, plants and personnel; *provided*, *however*, that any such access shall be conducted under the supervision of personnel of the party providing such access and in a manner that does not interfere with the normal operations of the party providing such access.

(b) The Company shall give prompt notice to Parent, and Parent shall give prompt notice to the Company, upon any director or officer of the Company or Parent (as applicable) becoming aware of (i) any governmental complaints, investigations or hearings (or communications indicating that the same may be contemplated), or the institution or the threat of significant litigation involving such party or any of its Subsidiaries, and will keep the other party fully informed of such events and (ii) the occurrence, or failure to occur, of any event, that would be reasonably likely to cause any of the conditions set forth in ARTICLE VIII not to be satisfied.

(c) Notwithstanding anything to the contrary set forth herein, nothing in this Section 7.1 shall require the Company or Parent to disclose any information that, in its sole and absolute discretion, (i) it is not legally permitted to disclose or the disclosure of which would contravene any applicable Law or binding order (including any Antitrust Law), (ii) the disclosure of which would jeopardize any attorney-client or other legal privilege, or (iii) the disclosure of which would conflict with, violate or cause a default under any existing agreement to which it is a party.

(d) No information received pursuant to an investigation made under this Section 7.1 shall be deemed to (i) qualify, modify, amend or otherwise affect any representations, warranties, covenants or other agreements of the parties set forth in this Agreement or any certificate or other instrument delivered to other party in connection with the transactions contemplated hereby, (ii) amend or otherwise supplement the information set forth in the Company Disclosure Schedule or the Parent Disclosure Schedule, as applicable, (iii) limit or restrict the remedies available to the parties under applicable Law arising out of a breach of this Agreement, or (iv) limit or restrict the ability of either party to invoke or rely on the conditions to the obligations of the parties to consummate the transactions contemplated hereby set forth in ARTICLE VIII hereof.

(e) Each of Parent and the Company shall (and shall cause its directors, officers, employees, auditors, agents and other representatives to) hold in confidence all non-public information acquired from the other party or the other party s representatives as a result of any investigation made under this Section 7.1 in accordance with the terms of the letter agreement, dated as of October 26, 2004, between Parent and the Company (the *Confidentiality Agreement*).

Section 7.2 *No Solicitation*.

(a) Each of the Company and Parent shall and shall cause each of their respective Subsidiaries, affiliates, directors, officers, employees, agents and representatives (including any investment banker, financial advisor, attorney, accountant or other representative retained by them) to (i) immediately cease any discussions or negotiations with any other parties that may be ongoing with respect to the possibility or consideration of any Acquisition Proposal (as defined below) and (ii) not release any third party from, or waive any provisions of, any confidentiality or standstill agreement to which it or any of its Subsidiaries is a party with respect to any Acquisition Proposal. Subject to the terms of this Section 7.2, neither the Company nor Parent shall, nor shall either of them authorize or permit any of their respective Subsidiaries, directors, officers, employees, agents or representatives (including any investment banker, financial advisor, attorney, accountant or other representative retained by it) to, directly or indirectly through another person, (i) solicit, initiate, facilitate or encourage (including by way of furnishing information or assistance), or take any other action designed to solicit, initiate, facilitate or encourage any inquiries with respect to or the making of any proposal that constitutes, or is reasonably likely to lead to, an Acquisition Proposal (except to disclose the existence of this provision), (ii) participate in any discussions or negotiations regarding an Acquisition Proposal (except to disclose the existence of this provision), or (iii) enter into or execute any letter of intent, memorandum of understanding, agreement in principle, merger agreement or similar agreement constituting or relating to an Acquisition Proposal (other than a confidentiality agreement entered into in the circumstances referred to and consistent with the provisions of Section 7.2(c)). Any violation of the

foregoing restrictions by any representative of a party, whether or not such representative is so authorized and whether or not such representative is purporting to act on behalf of such party or otherwise, shall be deemed to be a breach of this Agreement by such party.

(b) Notwithstanding anything to the contrary set forth herein, in the event that the Company or Parent shall receive an unsolicited *bona fide* written Acquisition Proposal after the date of this Agreement and prior to its respective Merger Stockholders Meeting, the party receiving such Acquisition Proposal shall be permitted to engage in discussions and negotiations with, and provide nonpublic information or data to, the person making such Acquisition Proposal, *provided* that (i) the party receiving such Acquisition Proposal has entered into a confidentiality agreement with the person making such Acquisition Proposal having provisions that are no less favorable to such party than those contained in the Confidentiality Agreement, and (ii) the Board of Directors of the party receiving such Acquisition Proposal has reasonably determined in good faith (based on the advice of its outside legal counsel) that it is necessary to take such action in order to comply with its fiduciary duties under applicable Law.

(c) Each party hereto shall notify the other parties hereto promptly (and in any event within 24 hours) after receipt of any Acquisition Proposal, or any request for nonpublic information relating to such party by any person that informs such party that it is considering making, or has made, an Acquisition Proposal, or any inquiry from any person seeking to have discussions or negotiations with such party relating to a possible Acquisition Proposal. Such notice shall be made orally and confirmed in writing, and shall indicate the identity of the person making the Acquisition Proposal, inquiry or request and the material terms and conditions of any inquiries, proposals or offers (including a copy thereof if in writing and any related documentation or correspondence). Each party hereto shall also promptly (and in any event within 24 hours) notify the other parties hereto, orally and in writing, if it enters into discussions or negotiations concerning any Acquisition Proposal or provides nonpublic information or data to any person in accordance with this Section 7.2 and shall keep the other party hereto reasonably informed of the status and terms of any such proposals, offers, discussions or negotiations on a current basis, including by providing a copy of all material documentation or correspondence relating thereto that is exchanged between such party and the person making such Acquisition Proposal.

(d) Nothing set forth in this Section 7.2 shall prohibit any party hereto from taking and disclosing to its shareholders a position contemplated by Rule 14e-2(a) or Rule 14d-9 promulgated under the Exchange Act; *provided*, *however*, that any action taken or disclosure made pursuant to such rules shall not in any way limit or modify the effect that any action taken or disclosure made pursuant to such rules has under any other provision of this Agreement.

(e) Nothing set forth in this Section 7.2 shall (i) permit any party hereto to terminate this Agreement (ii) affect any other obligation of the parties under this Agreement, (iii) limit either Parent s or the Company s obligation to duly call, give notice of, convene and hold its respective Merger Shareholders Meeting, (iv) relieve either Parent or the Company of its obligation to submit to a vote of its shareholders either the Company Shareholder Proposal or the Parent Shareholder Proposal, as appropriate, at its respective Merger Shareholders Meeting, or (v) permit either party hereto to submit for a vote of its respective shareholders at or prior to its respective Merger Shareholders Meeting any Acquisition Proposal other than the Parent Voting Proposal and the Company Voting Proposal, as applicable.

Section 7.3 *Board Recommendations*.

(a) Subject to the terms of this Section 7.3, neither the Company Board (or any committee thereof) nor the Parent Board (nor any committee thereof) shall:

(i) withdraw or modify, or propose publicly to withdraw or modify, in a manner adverse to the other party, the approval or recommendation by such Board of Directors or any such committee of this Agreement or the transactions contemplated hereby (any such withdrawal, amendment,

modification or proposal, a *Change of Recommendation*); or

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(ii) adopt, approve or recommend to its shareholders that they accept, or propose publicly to adopt, approve or recommend, any Acquisition Proposal or Superior Proposal (as defined below).

(b) Notwithstanding anything to the contrary set forth herein, each of the Company Board and the Parent Board may effect a Change of Recommendation, *provided* that (i) the Company or Parent, respectively, has received a Superior Proposal and such Superior Proposal has not been withdrawn at the time such action is taken, (ii) the Company Shareholders Meeting or the Parent Shareholders Meeting, respectively, has not occurred, and (iii) the Board of Directors of the party receiving such Superior Proposal reasonably determines in good faith (based on the advice of its outside legal counsel) that it is necessary to take such action in order to comply with its fiduciary duties under applicable Law, and (iv) the party hereto receiving such Superior Proposal has provided the other party hereto five (5) business days prior written notice that its Board of Directors intends to take such action, specifying the material terms and conditions of such Superior Proposal (and providing a written copy thereof) and identifying the person or persons making such Superior Proposal.

(c) In the event that, during the foregoing five-day period, the party hereto that has received the foregoing notice shall make a counterproposal to the party hereto that is proposing to effect a Change of Recommendation, the party that is proposing to take such action shall consider and cause its financial and legal advisors to negotiate on its behalf in good faith with respect to the terms of such counterproposal.

(d) Nothing set forth in this Section 7.3 shall prohibit either party hereto from taking and disclosing to its shareholders a position contemplated by Rule 14e-2(a) or Rule 14d-9 promulgated under the Exchange Act; *provided*, *however*, that any action taken or disclosure made pursuant to such rules shall not in any way limit or modify the effect that any action taken or disclosure made pursuant to such rules has under any other provision of this Agreement.

(e) Nothing set forth in this Section 7.3 shall (i) permit either party hereto to terminate this Agreement (ii) affect any other obligation of the parties under this Agreement, (iii) limit either party s obligation to duly call, give notice of, convene and hold its respective Merger Shareholders Meeting, (iv) relieve either party hereto of its obligation to submit to a vote of its shareholders the Company Shareholder Proposal or the Parent Shareholder Proposal, as appropriate, at its respective Merger Shareholders Meeting, or (v) permit either party hereto to submit for a vote of its respective shareholders at or prior to its respective Merger Shareholders Meeting any Acquisition Proposal other than the Parent Voting Proposal and the Company Voting Proposal, as applicable.

Section 7.4 *Joint Proxy Statement/Prospectus; Registration Statement*.

(a) As promptly as practicable after execution of this Agreement, Parent and the Company shall cooperate with each other regarding, and shall prepare and file with the SEC, the Joint Proxy Statement/Prospectus (as amended or supplemented, the *Joint Proxy Statement/Prospectus*) to be sent to the shareholders of the Company in connection with the Company Shareholders Meeting and to the shareholders of Parent in connection with the Parent Shareholders Meeting, and Parent shall prepare and file with the SEC the Registration Statement (in which the Joint Proxy Statement/Prospectus will be included). The Company and Parent shall use reasonable best efforts to cause the Registration Statement to become effective as soon as practicable thereafter.

(b) Without limiting the generality of the foregoing, each of the Company and Parent shall cause its respective representatives to fully cooperate with the other parties and its respective representatives in the preparation of the Joint Proxy Statement/Prospectus and the Registration Statement, and shall, upon request, furnish the other parties with all information concerning it and its Affiliates as the other may deem reasonably necessary or advisable in connection with the preparation of the Joint Proxy Statement/Prospectus and the Registration Statement. Parent or Nanometrics Delaware, as appropriate, shall use reasonable efforts to take all actions required under any applicable federal or state

securities or Blue Sky Laws in connection with the issuance of shares of Nanometrics Delaware Parent Common Stock pursuant to the Acquisition Merger. As promptly as practicable after the Registration Statement becomes effective, Parent and the Company shall cause the Joint Proxy Statement/Prospectus to be mailed to their respective shareholders.

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(c) The information supplied or to be supplied by either Parent or the Company for inclusion in the Registration Statement shall not at the time the Registration Statement is filed with the SEC or declared effective by the SEC contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The information supplied or to be supplied by either party for inclusion or incorporation by reference in the Joint Proxy Statement/Prospectus to be sent to the shareholders of such party in connection with the respective Merger Shareholders Meeting, or to be included or supplied by or on behalf of either Parent or the Company for inclusion in any filing pursuant to Rule 165 and Rule 425 under the Securities Act or Rule 14a-12 under the Exchange Act (each, a *Regulation M-A Filing*) shall not, on the date the Joint Proxy Statement/Prospectus (or any amendment thereof or supplement thereto) is first mailed to shareholders or at the time of the Company Shareholders Meeting or at the time any Regulation M-A Filing is filed with the SEC or as of the Acquisition Merger Effective Time, contain any statement which, at such time and in light of the circumstances under which it shall be made, is false or misleading with respect to any material fact, or omit to state any material fact necessary in order to make the statements made therein not false or misleading; or omit to state any material fact necessary to correct any statement in any earlier communication with respect to the solicitation of proxies for the Merger Shareholders Meeting which has become false or misleading. The Proxy Statement/Prospectus shall comply in all material respects as to form and substance with the requirements of the Securities Act, the Exchange Act and the rules and regulations thereunder.

(d) Without limiting the generality of the foregoing, prior to the Acquisition Merger Effective Time (i) the Company and Parent shall notify each other as promptly as practicable upon becoming aware of any event or circumstance which should be described in an amendment of, or supplement to, the Joint Proxy Statement/Prospectus or the Registration Statement, and (ii) the Company and Parent (or Nanometrics Delaware as the case may be) shall each notify the other as promptly as practicable after the receipt by it of any written or oral comments of the SEC on, or of any written or oral request by the SEC for amendments or supplements to, the Joint Proxy Statement/Prospectus or the Registration Statement, and shall promptly supply the other with copies of all correspondence between it or any of its Representatives and the SEC with respect to any of the foregoing filings.

(e) The Company and Parent shall make any necessary filing with respect to the Acquisition Merger under the Securities Act and the Exchange Act and the rules and regulations thereunder.

Section 7.5 *Merger Shareholders Meetings*.

(a) Each party acting through its respective Board of Directors, shall take all actions in accordance with applicable Law, the rules of NASDAQ, in the case of the Company, the Company Charter and the Company Bylaws and, in the case of Parent, the Parent Charter and the Parent Bylaws, to promptly and duly call, give notice of, convene and hold as promptly as practicable, and in any event within forty-five (45) days after the declaration of effectiveness of the Registration Statement, its respective Merger Shareholders Meeting for the purpose of considering and voting upon, in the case of the Company, the approval of the Company Voting Proposal and, in the case of Parent, the approval of the Parent Voting Proposal. Each of the Company and Parent shall use their respective reasonable best efforts to hold the Company Shareholders Meeting and the Parent Shareholders Meeting on the same day and at the same time as the other Merger Shareholders Meeting.

(b) Subject to Section 7.3, to the fullest extent permitted by applicable Law, (i) in the case of the Company, the Company Board shall recommend approval of the Company Voting Proposal by the shareholders of the Company at the Company Shareholders Meeting and include such recommendation in the Joint Proxy Statement/Prospectus, and (ii) in the case of Parent, the Parent Board shall recommend approval of the Parent Voting Proposal by the shareholders of Parent at the Parent Shareholders Meeting and include such recommendation in the Joint Proxy Statement/Prospectus. Unless the Board of Directors of either party, or any committee thereof, shall effect a Change of Recommendation in accordance with Section 7.3, each of the Company and Parent shall use its reasonable best efforts to solicit from its shareholders

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proxies in favor of the Company Voting Proposal or the Parent Voting Proposal, respectively, and to secure the Requisite Company Shareholder Approval and the Requisite Parent Shareholder Approval, respectively.

(c) The Company shall submit the Company Voting Proposal to its shareholders at the Company Shareholders Meeting for the purpose of acting upon such proposal whether or not (i) the Company Board at any time subsequent to the date of this Agreement effects a Change of Recommendation or (ii) any actual, potential or purported Acquisition Proposal or Superior Proposal has been commenced, disclosed, announced or submitted to the Company. Parent shall submit the Parent Voting Proposal to its shareholders at the Parent Shareholders Meeting for the purpose of acting upon such proposal whether or not (A) the Parent Board at any time subsequent to the date of this Agreement effects a Change of Recommendation, or (B) any actual, potential or purported Acquisition Proposal or Superior Proposal has been commenced, disclosed, announced or submitted to Parent. Each of the Company and Parent shall use reasonable best efforts to ensure that all proxies solicited in connection with its Merger Shareholders Meetings are solicited, in compliance with the NASDAQ, in the case of the Company, the MBCA, the Company Charter and the Company Bylaws and, in the case of Parent, the CCC, the Parent Charter and the Parent Bylaws, and all other applicable legal requirements. Notwithstanding anything to the contrary contained in this Agreement, each of the Company or Parent, after consultation with the other, may adjourn or postpone its respective Merger Shareholders Meeting to the extent necessary to ensure that any required supplement or amendment to the Joint Proxy Statement/Prospectus is provided to its respective shareholders or, if as of the time for which the applicable Merger Shareholders Meeting is originally scheduled (as set forth in the Joint Proxy Statement/Prospectus), there are insufficient shares of, in the case of the Company, Company Common Stock and, in the case of Parent, Parent Common Stock, represented (either in person or by proxy) to constitute a quorum necessary to conduct the business of the respective Merger Shareholders Meeting.

(d) Following the Merger Shareholders Meetings and at or prior to the Closing, each of the Company and Parent shall deliver to the Corporate Secretary of the other party a certificate setting forth the voting results from the respective Merger Shareholders Meeting.

Section 7.6 *Reasonable Best Efforts to Complete*.

(a) Subject to the terms and conditions of this Agreement, each of Parent and the Company shall cooperate fully with the other and use its reasonable best efforts to take, or cause to be taken, all actions, and to do, or cause to be done, all things necessary, proper or advisable to consummate and make effective, in the most expeditious manner possible, the Acquisition Merger and the other transactions contemplated hereby, including by (i) obtaining (and cooperating with the other in obtaining) any clearance, consent, authorization, order or approval of, or any exemption by, any Governmental Entity required to be obtained or made by Parent or the Company in connection with the Acquisition Merger, and making any and all registrations and filings that may be necessary or advisable to obtain the approval or waiver from, or to avoid an action or proceeding by, any Governmental Entity, including all filings required by the HSR Act and any other applicable Antitrust Laws, (ii) obtaining all necessary consents, waivers and approvals under any of the Parent Material Contracts, Company Material Contracts and Company Real Property Leases in connection with the Acquisition Merger, (iii) authorizing for listing on the NASDAQ, upon official notice of issuance, the shares of Nanometrics Delaware Common Stock to be issued in the Acquisition Merger, (iv) reserving for issuance the shares of Parent Common Stock issuable upon the exercise of all Assumed Options, (v) defending any Lawsuit or other proceeding, whether brought by a Governmental Entity or other third party, seeking to challenge this Agreement or the transactions contemplated hereby, including by seeking to have lifted or rescinded any injunction or restraining order or other order adversely affecting the ability of the parties to consummate the transactions contemplated hereby, and (vi) executing any certificates, instruments or other documents that are necessary to consummate and make effective the transactions contemplated hereby and to fully carry out the purposes and intent of this Agreement.

(b) Each of the Company and Parent shall keep the other reasonably informed of the status of their respective efforts to consummate the transactions contemplated hereby, including by (i) promptly notifying the other of, and if in writing, furnishing the other with copies of (or, in the case of material oral

communications, advising the other orally of) any communications from or with any Governmental Entity (whether domestic, foreign or supranational) with respect to the transactions contemplated hereby, (ii) permitting the other to review and discuss in advance, and consider in good faith the views of the other in connection with, any proposed written (or any material proposed oral) communication with any such Governmental Entity, (iii) not participating in any meeting with any such Governmental Entity unless it consults with the other in advance and to the extent permitted by such Governmental Entity gives the other the opportunity to attend and participate thereat, (iv) furnishing the other with copies of all correspondence, filings and communications between it and any such Governmental Entity with respect to this Agreement and the transactions contemplated hereby, and (v) furnishing the other with such necessary information and reasonable assistance as each of them may reasonably request in connection with its preparation of necessary filings or submissions of information to any such Governmental Entity. Each of the Company and Parent may, as each deems advisable and necessary, reasonably designate any competitively sensitive material provided to the other under this Section 7.6 as outside counsel only and, in such event, such material and the information contained therein shall be given only to the outside legal counsel of the recipient and shall not be disclosed by such counsel to non-legal directors, officers, employees or other advisors or representatives of the recipient unless express permission is obtained in advance from the source of the materials or its legal counsel.

(c) Notwithstanding anything to the contrary set forth in this Section 7.6 or elsewhere in this Agreement, neither Parent nor any of its affiliates shall be required to (i) sell or dispose of or hold separately (through a trust or otherwise) any assets or businesses or interests in any assets or businesses of Parent, the Company or their respective affiliates or make any other change in any portion of the businesses of the Company or Parent or incur any other limitation on the conduct of the businesses of the Company or Parent to obtain such clearances, consents, authorizations, orders, approvals and exemptions or agree to do, or submit to orders providing for, any of the foregoing, in each case whether before or after the Acquisition Merger Effective Time, or (ii) if any governmental body that has the authority to enforce any Antitrust Law seeks, or authorizes its staff to seek, a preliminary injunction or restraining order to enjoin consummation of the Acquisition Merger, take or agree to take any action which Parent reasonably believes would be prohibited or restricted under such preliminary injunction or restraining order.

(d) In case at any time after the Acquisition Merger Effective Time any further action is necessary to carry out the purposes of this Agreement or to vest the Surviving Corporation with full title to all properties, assets, rights, approvals, immunities and franchises of any of the parties to the Acquisition Merger, the proper officers and directors of each party hereto shall take all such necessary action as may be reasonably requested by Nanometrics Delaware to achieve such intent.

Section 7.7 *Public Announcements*. Parent and the Company shall consult with each other before issuing any press release or making any public statement with respect to this Agreement and the transactions contemplated hereby and shall not issue any such press release or make any such public statement without the prior written consent of the other party, which shall not be unreasonably withheld, delayed or conditioned; *provided*, *however*, that a party may, without the prior consent of the other party, issue such press release or make such public statement as may upon consultation with outside counsel be required by applicable Law or the rules and regulations of the NASDAQ if it has used all reasonable best efforts to consult with the other party prior thereto regarding the timing, scope and content of any such press release or public statement, and *provided*, *further*, no such consultation shall be required to make any disclosure or otherwise take any action expressly permitted by Section 7.3.

Section 7.8 *Company Employee Benefits; Company 401(k) Plan*.

(a) From and after the Acquisition Merger Effective Time, Parent will, or will cause the Surviving Corporation to, recognize the prior service with the Company or its Subsidiaries of each employee of the Company or its Subsidiaries as of the Acquisition Merger Effective Time (the *Company Employees*) in connection with all employee benefit plans, programs or policies (including vacation) of Parent or its affiliates in which Company Employees are eligible to participate following the Acquisition Merger

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Effective Time, for purposes of eligibility, vesting and levels of vacation and severance benefits (but not for purposes of benefit accruals or benefit amounts under any defined benefit pension plan or to the extent that such recognition would result in duplication of benefits).

(b) Prior to the Acquisition Merger Effective Time, the Company shall take such actions as Parent may reasonably request so as to enable the Surviving Corporation to effect such actions relating to the Company 401(k) Plan (the *401(k) Plan*) as Parent may deem necessary or appropriate (after reasonable consultation with the Company), including terminating the 401(k) Plan prior to the Acquisition Merger Effective Time.

Section 7.9 *Company Stock Plans*.

(a) At the Acquisition Merger Effective Time, Nanometrics Delaware shall assume the rights and obligations of the Company with respect to the Company Stock Plans as well as the duties of the Company with respect to the administration of such plans such that Nanometrics Delaware may operate the Company Stock Plans.

(b) At the Acquisition Merger Effective Time, each Company Stock Option that is outstanding immediately prior to the Acquisition Merger Effective Time, whether or not then vested or exercisable (each, an *Assumed Option*), shall be assumed by Nanometrics Delaware. Each such Assumed Option shall continue to have, and be subject to, the same terms and conditions as are in effect immediately prior to the Acquisition Merger Effective Time, except that (i) such Assumed Option shall be exercisable for that number of whole shares of Nanometrics Delaware Common Stock equal to the product (rounded down to the next whole number of shares of Nanometrics Delaware Common Stock) of the number of shares of Company Common Stock that were issuable upon exercise of such Assumed Option immediately prior to the Acquisition Merger Effective Time and the Exchange Ratio, and (ii) the per share exercise price for the shares of Nanometrics Delaware Common Stock issuable upon exercise of such Assumed Option shall be equal to the quotient (rounded up to the next whole cent) obtained by dividing the exercise price per share of Company Common Stock at which such Assumed Option was exercisable immediately prior to the Acquisition Merger Effective Time by the Exchange Ratio. It is the intention of the parties that each Assumed Option that qualified as an incentive stock option (as defined in Section 422 of the Code) shall continue to so qualify, to the maximum extent permissible, following the Acquisition Merger Effective Time.

(c) If and to the extent necessary or required by the terms of any of the Company Stock Plans or any Company Stock Option, the Company shall, prior to the Acquisition Merger Effective Time, (i) obtain any consents from holders of Company Stock Options and (ii) amend the terms of its equity incentive plans or arrangements, to give effect to the provisions of Section 7.9(b). The Company shall take no action, other than those actions contemplated by this Agreement, that will cause or result in the accelerated vesting of the Assumed Options.

(d) Except as otherwise requested by Parent subject to the last sentence of this Section (d), prior to the Acquisition Merger Effective Time, the Company shall take all necessary and appropriate actions requested by Parent so that all outstanding purchase rights under the Company ESPP shall automatically be exercised, in accordance with the terms of the Company ESPP, prior to the Acquisition Merger Effective Time, and the shares of Company Common Stock purchased under those exercised rights shall at the Acquisition Merger Effective Time be cancelled and converted into the right to receive shares of Nanometrics Delaware Common Stock pursuant to Section 2.6(a) of this Agreement. Except as otherwise requested by Parent subject to the last sentence of this Section (d), prior to the Acquisition Merger Effective Time, the Company shall take all necessary and appropriate actions so that the Company ESPP shall terminate immediately prior to the Acquisition Merger Effective Time, and no further purchase rights shall be granted under the Company ESPP. Prior to the Acquisition Merger Effective Time, the Company shall take all necessary and appropriate actions requested by Parent so that all outstanding purchase rights under the Company ESPP and the Company ESPP itself shall be treated in the manner requested by Parent as long as such actions may be taken pursuant to the Company ESPP.

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(e) As soon as practicable following the Acquisition Merger Effective Time, but in any event within fifteen (15) business days thereafter (to the extent Parent or Nanometrics Delaware, as appropriate, have received the most recent copies of the relevant Company Stock Plans), Nanometrics Delaware shall prepare and file with the SEC a registration statement on Form S-8 covering the shares of Nanometrics Delaware Common Stock issuable pursuant to the outstanding Assumed Options, Nanometrics Delaware shall cause the same to become effective, and Parent shall take such further actions as may be reasonably necessary to cover under such registration statement shares of Parent Common Stock held by those persons eligible immediately prior to the Closing Date pursuant to the 1995 Director Plan.

Section 7.10 *Indemnification and Insurance*.

(a) For six (6) years after the Acquisition Merger Effective Time, Nanometrics Delaware shall, and shall cause the Surviving Corporation and its Subsidiaries to, honor and fulfill in all respects the obligations of the Company and its Subsidiaries under any and all indemnification agreements in effect immediately prior to the Acquisition Merger Effective Time between the Company or any of its Subsidiaries and any of its current or former directors and officers and any person who becomes a director or officer of the Company or any of its Subsidiaries prior to the Acquisition Merger Effective Time (the *Indemnified Parties*). In addition, for a period of six (6) years following the Acquisition Merger Effective Time, Parent shall (and shall cause the Surviving Corporation and its Subsidiaries to) cause the certificate or articles of incorporation and bylaws (and other similar organizational documents) of the Surviving Corporation and its Subsidiaries to contain provisions with respect to indemnification and exculpation that are at least as favorable as the indemnification and exculpation provisions contained in the certificate or articles of incorporation and bylaws (or other similar organizational documents) of the Company and its Subsidiaries immediately prior to the Acquisition Merger Effective Time, and during such six-year period, such provisions shall not be amended, repealed or otherwise modified in any respect, except as required by Law.

(b) For a period of six (6) years after the Acquisition Merger Effective Time, Nanometrics Delaware and the Surviving Corporation shall cause to be maintained in effect the existing policy of the Company s directors and officers and fiduciary liability insurance (the *D&O Policy*) covering claims arising from facts or events that occurred at or prior to the Acquisition Merger Effective Time (including for acts or omissions occurring in connection with this Agreement and the consummation of the transactions contemplated hereby, to the extent that such acts or omissions are covered by the D&O Policy) and covering each Indemnified Party who is covered as of the Acquisition Merger Effective Time by the D&O Policy on terms with respect to coverage and amounts that are no less favorable than those terms in effect on the date hereof; *provided*, *however*, that in no event shall Nanometrics Delaware or the Surviving Corporation be required to expend in any one year an amount in excess of 200% of the current annual premium paid by the Company (which annual premium is set forth on Schedule 6.11(b) of the Company Disclosure Schedule) for such insurance (such 200% amount, the *Maximum Annual Premium*); and *provided*, *further*, that if the annual premiums of such insurance coverage exceed such amount, Nanometrics Delaware and the Surviving Corporation shall be obligated to obtain a policy with the greatest coverage available for a cost not exceeding the Maximum Annual Premium. Notwithstanding anything in this Section 7.10 to the contrary, Parent may fulfill its (and Surviving Corporation s) obligations under this Section 7.10(b) by purchasing a D&O Policy or a tail policy under the Company s existing D&O Policy, in either case which (i) has an effective term of six (6) years from the Acquisition Merger Effective Time, (ii) covers only those persons who are currently covered by the Company s directors and officers insurance policy in effect as of the date hereof and only for actions and omissions occurring on or prior to the Acquisition Merger Effective Time, (iii) contains terms with respect to coverage and amounts that are no less favorable than those terms in the Company s D&O Policy on the date hereof.

(c) The obligations under this Section 7.10 shall not be terminated, amended or otherwise modified in such a manner as to adversely affect any Indemnified Party (or any other person who is a beneficiary under the D&O Policy or the tail policy referred to in paragraph (b) above (and their heirs and representatives)) without the prior written consent of such affected Indemnified Party or other person who is a beneficiary under the D&O Policy or the tail policy referred to in paragraph (b) above (and their heirs and

representatives). Each of the Indemnified Parties or other persons who are beneficiaries under the D&O Policy or the tail policy referred to in paragraph (b) above (and their heirs and representatives) are intended to be third party beneficiaries of this Section 7.10, with full rights of enforcement as if a party thereto. The rights of the Indemnified Parties (and other persons who are beneficiaries under the D&O Policy or the tail policy referred to in paragraph (b) above (and their heirs and representatives)) under this Section 7.10 shall be in addition to, and not in substitution for, any other rights that such persons may have under the certificate or articles of incorporation, bylaws or other equivalent organizational documents, any and all indemnification agreements of or entered into by the Company or any of its Subsidiaries, or applicable Law (whether at Law or in equity).

(d) In the event that Nanometrics Delaware, Surviving Corporation or any of their Subsidiaries (or any of their respective successors or assigns) shall consolidate or merge with any other person and shall not be the continuing or surviving corporation or entity in such consolidation or merger, or transfers at least 50% of its properties and assets to any other person, then in each case proper provision shall be made so that the continuing or surviving corporation or entity (or its successors or assigns, if applicable), or transferee of such assets, as the case may be, shall assume the obligations set forth in this Section 7.10.

(e) Prior to or concurrently with the Acquisition Merger Effective Time, Nanometrics Delaware shall cause to be in effect at the Acquisition Merger Effective Time a policy of directors and officers liability insurance covering claims arising from facts or events that occur after the Acquisition Merger Effective Time for not less than $15 million in coverage.

Section 7.11 *Company Affiliates*. Section 7.11 of the Company Schedule contains a complete and accurate list of those persons who may be deemed to be, in the Company s reasonable judgment, affiliates of the Company within the meaning of Rule 145 promulgated under the Securities Act (each, a Company Affiliate and collectively, the Company Affiliates). The Company shall provide Parent with such information and documents as Parent reasonably requests for purposes of reviewing and evaluating the foregoing schedule of Company Affiliates. Parent will be entitled to place appropriate legends on the certificates evidencing any Nanometrics Delaware Common Stock to be issued to a Company Affiliate pursuant to the terms of this Agreement, and to issue appropriate stop transfer instructions to the transfer agent for the Nanometrics Delaware Common Stock.

Section 7.12 *Tax Matters*. None of Nanometrics Delaware, Parent, Merger Sub 1 or the Company shall, nor shall they permit any of their respective Subsidiaries to, take any action prior to or following the Closing that would reasonably be expected to cause either of the Mergers to fail to qualify as reorganizations within the meaning of Section 368(a) of the Code. Officers of each of Parent (or Nanometrics Delaware, as applicable), Merger Sub 1 and the Company shall execute and deliver to WSGR, counsel to Parent, and to Fredrikson & Byron, P.A., counsel to the Company, certificates containing appropriate representations of Parent (or Nanometrics Delaware, as applicable), Merger Sub 1 and the Company at such time or times as may be reasonably requested by such Law firms, including the effective date of the Registration and the Acquisition Merger Effective Time, in connection with their respective deliveries of opinions with respect to the Tax treatment of the Acquisition Merger.

Section 7.13 *Takeover Statutes*. Notwithstanding any other provision in this Agreement, in no event shall the approval of the Acquisition Merger and this Agreement by the Company Board under Section 302A.673 of the MBCA be withdrawn, revoked or modified by the Company Board. If any Takeover Statute is or may become applicable to the Acquisition Merger or any of the other transactions contemplated by this Agreement, the Company and the Company Board, or Parent and the Parent Board, as applicable, shall promptly grant such approvals and take such Lawful actions as are necessary so that such transactions may be consummated as promptly as practicable on the terms contemplated by this Agreement or the Acquisition Merger, as the case may be, and otherwise take such Lawful actions to eliminate or minimize the effects of such statute, and any regulations promulgated thereunder, on such transactions.

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Section 7.14 *Section 16 Matters*. Prior to the Acquisition Merger Effective Time, each of the Company and Parent shall take all such steps as may be required (to the extent permitted under applicable Law) to cause any dispositions of Company Common Stock or acquisitions of Parent Common Stock (including, in each case, derivative securities) resulting from the transactions contemplated hereby by each individual who is subject to the reporting requirements of Section 16(a) of the Exchange Act with respect to the Company to be exempt under Rule 16b-3 promulgated under the Exchange Act.

Section 7.15 *Directorships*. Effective as of the Acquisition Merger Effective Time, the Board of Directors of Nanometrics Delaware shall be expanded to seven (7) members, consisting of three individuals that prior to the Acquisition Merger Effective Time served as directors of the Company (each, a Company Director); three individuals that prior to the Migratory Merger Effective Time served as directors of Parent (each, a Parent Director); and one individual acceptable to both Parent and the Company (the Independent Director). The organizational documents of Nanometrics Delaware shall provide for three classes of directors and staggered election of directors consistent with the following. Classes I and II shall each consist of one Company Director and one Parent Director. Class III shall consist of one Company Director, one Parent Director and the Independent Director. Class I directors shall serve for an initial term of one year and shall thereafter be elected to three year terms. Class II directors shall serve for an initial term of two years and shall thereafter be elected to three year terms. Class III Directors shall serve for an initial term of three years and thereafter be elected to three year terms.

ARTICLE VIII

CONDITIONS TO THE ACQUISITION MERGER

Section 8.1 *Conditions to Obligations of Each Party to Effect the Acquisition Merger*. The obligation of Parent to effect the Migratory Merger and the Acquisition Merger, and the obligation of the Company to effect the Acquisition Merger, shall be subject to the satisfaction at or prior to the Closing of the following conditions:

(a) *Effectiveness of the Registration Statement*. The Registration Statement shall have been declared effective by the SEC under the Securities Act. No stop order suspending the effectiveness of the Registration Statement shall have been issued by the SEC and no proceedings for that purpose and no similar proceeding in respect of the Joint Proxy Statement/Prospectus shall have been initiated or threatened in writing by the SEC.

(b) *Shareholder Approval*. The Requisite Company Shareholder Approval and the Requisite Parent Shareholder Approval shall have been obtained.

(c) *Antitrust Approvals*. All necessary waiting periods (and all extensions thereof) applicable to the Acquisition Merger under the Antitrust Laws shall have terminated or expired, and all clearances, consents, approvals, orders and authorizations necessary for the consummation of the Acquisition Merger under the Antitrust Laws shall have been received.

(d) *No Injunctions or Restraints*. No temporary restraining order, preliminary or permanent injunction or other order issued by any court of competent jurisdiction or other legal restraint or prohibition preventing the consummation of the Acquisition Merger shall be in effect.

(e) *No Illegality*. No statute, rule, regulation or order shall be enacted, entered, enforced or deemed applicable to the Acquisition Merger by a governmental authority of competent jurisdiction that makes the consummation of the Acquisition Merger illegal.

(f) *NASDAQ Listing*. The shares of Nanometrics Delaware Common Stock issuable in the Acquisition Merger shall have been authorized for listing on the NASDAQ.

(g) *Tax Opinions*. Nanometrics Delaware and the Company shall have received an opinion of WSGR, and Fredrikson & Byron, P.A., respectively, dated as of the Acquisition Merger Effective Time, to the effect that the Acquisition Merger will qualify as a reorganization within the meaning of Section 368(a) of the

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Code; *provided*, *however*, that if (i) Fredrikson & Byron, P.A., fails to render such opinion, this condition shall nonetheless be deemed to be satisfied with respect to the Company if WSGR renders such opinion to the Company and (ii) if WSGR fails to render such opinion, this condition shall nonetheless be deemed to be satisfied with respect to Nanometrics Delaware if Fredrikson & Byron, P.A., renders such opinion to Nanometrics Delaware. The issuance of such opinions shall be conditioned upon the receipt by such counsel of customary representation letters from each of Parent (or Nanometrics Delaware, as applicable), Merger Sub 1 and the Company, in each case, in form and substance reasonably satisfactory to such counsel. Each such representation letter shall be dated on or before the date of such opinion and shall not have been withdrawn or modified in any material respect.

Section 8.2 *Additional Conditions to Obligations of Parent and Merger Sub 1 to Effect the Acquisition Merger*. The obligations of Parent and Merger Sub 1 to effect the Migratory Merger and the Acquisition Merger are also subject to the fulfillment on or prior to the Closing of the following additional conditions (each of which may be waived by Parent and Merger Sub 1 in whole or in part at any time prior to the Closing):

(a) *Representations and Warranties*. Each of the representations and warranties of the Company contained in this Agreement shall be true and correct (without giving effect to any qualification as to materiality or Company Material Adverse Effect contained in any specific representation or warranty), as of the date of this Agreement and as of the Closing Date, except (i) for changes contemplated or permitted by this Agreement, (ii) that the accuracy of representations and warranties that by their terms speak as of another date will be determined as of such date and (iii) where any failures of any such representations and warranties to be true and correct would not reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect; and Parent shall have received a certificate of the Company signed on behalf of the Company by the chief executive officer and chief financial officer of the Company to such effect.

(b) *Agreements and Covenants*. The Company shall have performed or complied in all material respects with all agreements and covenants required by this Agreement to be performed or complied with by it at or prior to the Closing Date; and Parent shall have received a certificate of the Company signed on behalf of the Company by the chief executive officer and the chief financial officer of the Company to such effect.

(c) *No Company Material Adverse Effect*. No Company Material Adverse Effect shall have occurred since the date hereof.

Section 8.3 *Additional Conditions to Obligation of the Company to Effect the Acquisition Merger*. The obligation of the Company to effect the Acquisition Merger is also subject to the fulfillment at or prior to the Closing of the following additional conditions (each of which may be waived by the Company in whole or in part at any time prior to the Closing):

(a) *Representations and Warranties*. Each of the representations and warranties of Parent contained in this Agreement shall be true and correct (without giving effect to any qualification as to materiality or Parent Material Adverse Effect contained in any specific representation or warranty), as of the date of this Agreement and as of the Closing Date, except (i) for changes contemplated or permitted by this Agreement, including the Migratory Merger, (ii) that the accuracy of representations and warranties that by their terms speak as of another date will be determined as of such date and (iii) where any failures of any such representations and warranties to be true and correct would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect; and the Company shall have received a certificate of Parent signed on behalf of Parent by the chief executive officer and chief financial officer of Parent to such effect.

(b) *Agreements and Covenants*. Parent shall have performed or complied in all material respects with all agreements and covenants required by this Agreement to be performed or complied with by it at or prior to the Closing Date; and the Company shall have received a certificate of Parent signed on behalf of Parent by the chief executive officer and the chief financial officer of Parent to such effect.

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(c) *No Parent Material Adverse Effect*. No Parent Material Adverse Effect shall have occurred since the date hereof and be continuing.

Section 8.4 *Migratory Merger Not Condition to Acquisition Merger*. The parties hereto expressly agree that the failure of Parent and Merger Sub 2 to consummate the Migratory Merger at or prior to the Closing shall not be a condition to the obligations of Parent, Merger Sub 1 or the Company to effect the Acquisition Merger and shall not in any way restrict, limit, qualify or otherwise affect the obligations of Parent, Merger Sub 1 and the Company to consummate the Acquisition Merger in accordance with the terms of this Agreement.

ARTICLE IX

TERMINATION

Section 9.1 *Termination*. This Agreement may be terminated at any time prior to the Acquisition Merger Effective Time, notwithstanding approval thereof by the shareholders of the Company and/or Parent:

(a) by mutual written consent duly authorized by the Company Board and the Parent Board (or the Board of Directors of Nanometrics Delaware as the case may be);

(b) by either Parent or the Company, if the Acquisition Merger shall not have been consummated by September 30, 2005 (the *Outside Date*); *provided*, *however*, that the right to terminate this Agreement under this Section 9.1(b) shall not be available to any party that has breached its obligations under this Agreement, *provided*, *further*, that no termination by a party pursuant this Section 9.1(b) shall be effective unless concurrently therewith such party fulfills its obligation under Section 9.3.

(c) by either Parent or the Company, if a court of competent jurisdiction or governmental, regulatory or administrative agency or commission shall have issued a nonappealable final order, decree or ruling or taken any other action having the effect of permanently restraining, enjoining or otherwise prohibiting the Acquisition Merger (*provided* that the party seeking to terminate this Agreement pursuant to this Section 9.1(c) shall have complied with its obligations under Section 7.6 by using its reasonable best efforts to have any such order, decree, ruling or other action vacated or lifted);

(d) by either Parent or the Company, if the Requisite Company Shareholder Approval shall not have been obtained at the Company Shareholder Meeting; *provided*, *however*, that the right to terminate this Agreement under this Section 9.1(d) shall not be available to the Company if the Company shall have breached the provisions of Section 7.2, Section 7.3 or Section 7.4; *provided*, *further*, that no termination by a party pursuant this Section 9.1(d) shall be effective unless concurrently therewith such party fulfills its obligation under Section 9.3.

(e) by either Parent or the Company, if the Requisite Parent Shareholder Approval shall not have been obtained at the Parent Shareholder Meeting; *provided*, *however*, that the right to terminate this Agreement under this Section 9.1(e) shall not be available to Parent if Parent shall have breached the provisions of Section 7.2, Section 7.3 or Section 7.4; *provided*, *further*, that no termination by a party pursuant this Section 9.1(e) shall be effective unless concurrently therewith such party fulfills its obligation under Section 9.3.

(f) by Parent, if the Company shall have breached or failed to perform any of its representations, warranties, or other covenants or agreements contained in this Agreement (other than the covenants set forth in Section 7.2 or Section 7.3, the breach of which shall constitute a Triggering Event pursuant to Section 9.1(h)), which breach or failure to perform would reasonably be expected to cause the conditions set forth in Section 8.2 to not be satisfied at the Closing and which breach or failure, if capable of being cured, shall not have been cured within 20 days following receipt by the Company of written notice of such breach or failure from Parent (it being understood and hereby agreed that Parent may not terminate this Agreement pursuant to this Section 9.1(f) if such breach or failure is cured within such 20 day period);

(g) by the Company, if Parent shall have breached or failed to perform any of its representations, warranties, or other covenants or agreements contained in this Agreement (other than the covenants set forth

in Section 7.2 or Section 7.3, the breach of which shall constitute a Triggering Event pursuant to Section 9.1(h)), which breach or failure to perform would reasonably be expected to cause the conditions set forth in Section 8.3 to not be satisfied at the Closing and which breach or failure, if capable of being cured, shall not have been cured within 20 days following receipt by Parent of written notice of such breach from the Company (it being understood and hereby agreed that the Company may not terminate this Agreement pursuant to this Section 9.1(g) if such breach or failure is cured within such 20 day period) or

(h) by Parent or the Company if a Triggering Event shall have occurred with respect to the other party. For purposes of this Agreement, a *Triggering Event* shall be deemed to have occurred with respect a party if, prior to the Acquisition Merger Effective Time: (A) such party has breached any of the provisions of Section 7.2 or Section 7.3; (B) the Board of Directors (or any committee thereof) of such party shall for any reason have effected a Change of Recommendation; (C) such party shall have entered into any letter of intent or similar document accepting an Acquisition Proposal; or (D) a tender or exchange offer shall have been commenced by any person for such party s shares, and such party shall not have sent to its stockholders pursuant to Rule 14e-2 promulgated under the Securities Act, within ten (10) business days after such tender or exchange offer is first published, sent or given to such stockholders, a statement reaffirming the Parent Voting Proposal or the Company Voting Proposal (as appropriate), and recommending that their stockholders reject such tender or exchange offer.

Section 9.2 *Effect of Termination*. In the event of the termination of this Agreement pursuant to Section 9.1, this Agreement shall forthwith become void and there shall be no liability on the part of any party hereto or any of its affiliates, directors, officers or shareholders except (i) that the provisions of this Section 9.2, Section 9.3 and ARTICLE X hereof shall survive termination and (ii) nothing herein shall relieve any party from liability for any willful or intentional breach of this Agreement. The Confidentiality Agreement shall survive the termination of this Agreement as provided therein.

Section 9.3 *Fees and Expenses*.

(a) Except as set forth in this Section 9.3, all Expenses (as defined below) incurred in connection with this Agreement and the transactions contemplated hereby shall be paid by the party incurring such Expenses, whether or not the Acquisition Merger is consummated; *provided*, *however*, that Parent and the Company shall share equally all Expenses (but not including attorneys fees and expenses) incurred in connection with the printing and filing of the Joint Proxy Statement/Prospectus (including any preliminary materials related thereto), the Registration Statement (including financial statements and exhibits) and any amendments or supplements thereto and filings by Parent and the Company under the HSR Act or any similar filing requirement of any Governmental Entity applicable to the Acquisition Merger or this Agreement. For purposes of this Agreement, *Expenses* includes all reasonable out-of-pocket expenses (including all reasonable fees and expenses of counsel, accountants, investment bakers, experts and consultants to a party hereto and its Affiliates) incurred by a party or on its behalf in connection with or related to the authorization, preparation, negotiation, execution and performance of this Agreement and the transactions contemplated hereby, including the preparation, printing, filing and mailing of the Joint Proxy Statement/Prospectus and Registration Statement and the solicitation of shareholder approvals and all other matters related to the transactions contemplated hereby.

(b) The Company shall pay to Parent (or Nanometrics Delaware as the case may be) a termination fee equal to $8,300,000 (the *Company Termination Fee*), and all Expenses of Parent of within one (1) business day after demand by Parent and by wire transfer of immediately available funds to an account designated in writing by Parent, in the event that: (i) this Agreement is terminated by Parent pursuant to Section 9.1(h); or (ii) this Agreement is terminated pursuant to Section 9.1(b), Section 9.1(d) or Section 9.1(f), provided that following the execution and deliver of this Agreement and prior to such termination pursuant to Section 9.1(b), Section 9.1(d), or Section 9.1(f), an Acquisition Proposal or Acquisition Transaction with respect to the Company shall have been publicly announced or otherwise become publicly known and not withdrawn prior to the Company Shareholders Meeting or such termination, or any person shall have publicly announced an intention (whether or not conditional) to make an Acquisition Proposal or

complete an Acquisition Transaction with respect to the Company and not retracted such intention prior to the Company Shareholders Meeting or such termination.

(c) Parent shall pay to the Company a termination fee equal to $8,300,000 (the *Parent Termination Fee*), and all Expenses of the Company within one (1) business day after demand by the Company and by wire transfer of immediately available funds to an account designated in writing by the Company, in the event that: (i) this Agreement is terminated by the Company pursuant to Section 9.1(h); or (ii) this Agreement is terminated pursuant to Section 9.1(b), Section 9.1(e) or Section 9.1(g), provided that following the execution and deliver of this Agreement and prior to such termination pursuant to any of Section 9.1(b), 9.1(e) or Section 9.1(g), an Acquisition Proposal or Acquisition Transaction with respect to Parent shall have been publicly announced or otherwise become publicly known and not withdrawn prior to the Parent Shareholders Meeting or such termination, or any person shall have publicly announced an intention (whether or not conditional) to make an Acquisition Proposal or complete an Acquisition Transaction with respect to Parent and not retracted such intention prior to the Parent Shareholders Meeting or such termination.

(d) All payments to be made pursuant to this Section 9.3 shall be made by wire transfer of immediately available funds. If either party fails to timely pay the Expenses of the other party or the Parent Termination Fee or Company Termination Fee, as applicable, pursuant to this Section 9.3, then such party shall pay all costs and expenses (including legal fees and expenses) incurred by the other party in connection with any action or proceeding (including the filing of any Lawsuit) taken by it to collect such unpaid amounts, together with interest on such unpaid amounts at the prime lending rate prevailing at such time, as published in the Wall Street Journal, from the date such amounts were required to be paid until the date actually received by the such other party.

(e) The parties acknowledge that the agreements contained in this Section 9.3 are an integral part of the transactions contemplated by this Agreement and constitute liquidated damages and not a penalty, and that, without these agreements, the parties would not have entered into this Agreement.

ARTICLE X

GENERAL PROVISIONS

Section 10.1 *Nonsurvival of Representations, Warranties and Covenants*. None of the representations, warranties, covenants or other agreements in this Agreement or in any certificate or other instrument delivered pursuant to this Agreement shall survive the Acquisition Merger Effective Time, except for the covenants and other agreements contained in: ARTICLE II and ARTICLE III, and Section 7.6 (Reasonable Best Efforts to Complete); Section 7.7 (Public Announcements); Section 7.8 (Company Employee Benefits; Company 401(k) Plan); Section 7.9 (Company Stock Plans), Section 7.10 (Indemnification and Insurance), Section 7.12 (Tax Matters), Section 9.2 (Effect of Termination) and Section 9.3 (Fees and Expenses); and this ARTICLE X. The Confidentiality Agreement shall survive the execution and delivery of this Agreement or the termination of this Agreement in accordance with the provisions of this Agreement, as the case may be, pursuant to its terms and conditions.

Section 10.2 *Notices*. All notices and other communications given or made pursuant hereto shall be in writing and shall be deemed to have been duly given or made if and when delivered personally or by overnight courier to the parties at the following addresses or sent by electronic transmission, with confirmation received, to the telecopy numbers specified below (or at such other address or telecopy number for a party as shall be specified by like notice):

If to Parent, Merger Sub 1 or Merger Sub 2:

1550 Buckeye Drive

Milpitas, California 95035

Attention: John D. Heaton

Facsimile No.: 408.232.5910

Telephone No.: 408.435.9600

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With a copy to (which shall not constitute notice):

Wilson Sonsini Goodrich & Rosati, Professional Corporation

650 Page Mill Road

Palo Alto, California 94304-1050

Attention: Aaron J. Alter

Adam R. Dolinko

Facsimile No.: 650-493-6811

Telephone No.: 650-493-9300

(a) If to the Company:

4900 West 78th Street

Bloomington, Minnesota 55435

Attention: Stan Piekos

Facsimile No.: 952-820-0060

Telephone No.: 952-820-0080

With a copy to (which shall not constitute notice):

Fredrikson & Byron

200 South Sixth Street, Suite 400

Minneapolis, Minnesota 55402-1425

Attention: Robert K. Ranum

Facsimile No.: 612 492-7077

Telephone No.: 612 492-7067

Any such notice or communication shall be deemed to have been delivered and received (i) in the case of personal delivery, on the date of such delivery, (ii) in the case of facsimile, on the date sent if confirmation of receipt is received and such notice is also promptly mailed by registered or certified mail (return receipt requested), (iii) in the case of a nationally-recognized overnight courier in circumstances under which such courier guarantees next business day delivery, on the next business day after the date when sent and (iv) in the case of mailing, on the third business day following that on which the piece of mail containing such communication is posted.

Section 10.3 *Certain Definitions*. For purposes of this Agreement, the term:

(a) *Acquisition Proposal* means any inquiry, proposal or offer, filing of any regulatory application or notice (whether in draft or final form) or disclosure of an intention to do any of the foregoing from any person relating to an Acquisition Transaction.

(b) *Acquisition Transaction* means any (i) direct or indirect acquisition or purchase of a business that constitutes a substantial portion of the net revenues, net income or assets of the Company or any of its significant subsidiaries (as defined under Regulation S-X of the Securities Act), or Parent or any of its significant subsidiaries, as the case may be, (ii) direct or indirect acquisition or purchase of any class of equity securities representing 10% or more of the voting power of the Company or any of its significant subsidiaries, or Parent or any of its significant subsidiaries, as the case may be, (iii) tender offer or exchange offer that if consummated would result in any person beneficially owning 10% or more of the voting power of the Company or Parent, as the case may be, or (iv) merger, consolidation, business combination, recapitalization, liquidation, dissolution or similar transaction involving the Company or Parent or any of their respective Subsidiaries, as the case may be, in each case other than the transactions contemplated by this Agreement.

(c) *Affiliate* means a person that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, the first mentioned person;

(d) *Antitrust Law* means the Sherman Act, as amended, the Clayton Act, as amended, the HSR Act, the Federal Trade Commission Act, as amended, the EC Merger Regulations and all other federal, state and foreign statutes, rules, regulations, orders, decrees, administrative and judicial doctrines, and other Laws that are designed or intended to prohibit, restrict or regulate actions having the purpose or effect of monopolization or restraint of trade;

(e) *Beneficial Owner* with respect to any shares of Company Common Stock means a person who shall be deemed to be the beneficial owner of such shares pursuant to Rule 13d-3 under the Exchange Act;

(f) *Business Day* means any day other than a Saturday or Sunday or any day on which banks in the State of New York are required or authorized to be closed;

(g) *Company Material Adverse Effect* means any change, effect or circumstance that (i) is materially adverse to the business, operations, properties condition (financial or otherwise) or capitalization of the Company and its Subsidiaries, taken as a whole, or (ii) materially and adversely affects the ability of the Company to consummate the transactions contemplated hereby; provided, however, that in no event shall any of the following, either alone or in combination, be deemed to constitute, nor shall any of the following be taken into account in determining whether there has been or will or could be, a Company Material Adverse Effect: (A) any changes resulting from or arising out of general market, economic or political conditions (including any changes arising out of acts of terrorism, war, weather conditions or other force majeure events), provided that such changes do not have a substantially disproportionate impact on the Company and its Subsidiaries, taken as a whole, (B) any changes resulting from or arising out of general market, economic or political conditions in the industries in which the Company or any of its Subsidiaries conduct business (including any changes arising out of acts of terrorism, war, weather conditions or other force majeure events), provided that such changes do not have a substantially disproportionate impact on the Company and its Subsidiaries, taken as a whole, (C) any changes resulting from or arising out of actions taken pursuant to (and required by) this Agreement or at the request of Parent or the failure to take any actions due to restrictions set forth in this Agreement, (D) any changes in the price or trading volume of the Company s stock, in and of itself, (E) any failure by the Company to meet published revenue or earnings projections, in and of itself and (F) any changes or effects arising out of or resulting from any legal claims or other proceedings made by any of the Company s shareholders arising out of or related to this Agreement, the Acquisition Merger or any other transactions contemplated hereby.

(h) *Control* including the terms controlled by and under common control with) means the possession, directly or indirectly or as trustee or executor, of the power to direct or cause the direction of the management or policies of a person, whether through the ownership of stock, as trustee or executor, by contract or credit arrangement or otherwise;

(i) *Employee Benefit Plan* means any employee pension benefit plan (as defined in Section 3(2) of ERISA), any employee welfare benefit plan (as defined in Section 3(1) of ERISA), and any other written or oral plan, agreement or arrangement involving material compensation, including insurance coverage, severance benefits, disability benefits, deferred compensation, bonuses, stock options, stock purchase, phantom stock, stock appreciation or other forms of fringe benefits, perquisites, incentive compensation or post-retirement compensation and all employment, change in control, severance or similar agreements, written or otherwise, for the benefit of, or relating to, any current or former employee, officer or director of the Company or Parent, as applicable, or any of its ERISA Affiliates, as applicable;

(j) *ERISA* means the Employee Retirement Income Security Act of 1974, as amended; and

(k) *ERISA Affiliate* means any entity which is, or at any applicable time was, a member of (A) a controlled group of corporations (as defined in Section 414(b) of the Code), (B) a group of trades or businesses under common control (as defined in Section 414(c) of the Code) or (C) an

affiliated service group (as defined under Section 414(m) of the Code or the regulations under Section 414(o) of the Code), any of which includes or included the Company or Parent, as applicable.

(l) *Exchange Ratio* means 0.6401.

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(m) *Include* or including means include, without limitation or including, without limitation, as the case may be, and the language following include or including shall not be deemed to set forth an exhaustive list;

(n) *Intellectual Property* shall mean the rights associated with trademarks, service marks, trade names, and internet domain names, together with registrations and applications related to the foregoing; patents and industrial design registrations or applications (including any continuations, divisionals, continuations-in-part, renewals, reissues, re-examinations and applications for any of the foregoing); rights in works of authorship protected by copyright for E.U. design registrations; copyrights (including any registrations and applications for any of the foregoing); rights in mask works rights and trade secrets and other confidential information, know-how, proprietary processes, formulae, algorithms, models, and methodologies.

(o) *Law* with respect to any person means any applicable foreign or domestic federal, state, provincial, local, municipal or other Law, statute, code, treaty, ordinance, rule, regulation, administrative, executive or other order (whether temporary, preliminary or permanent) of any Governmental Entity, judgment, writ, stipulation, award, injunction, decree or arbitration award or finding entered or imposed by any Governmental Entity, in any case that are in force as of the date hereof or which come into force during the term of this Agreement;

(p) *Parent Material Adverse Effect* means any change, effect or circumstance that (i) is materially adverse to the business, operations, properties condition (financial or otherwise) or capitalization of Parent and its Subsidiaries, taken as a whole, or (ii) materially and adversely affects the ability of Parent to consummate the transactions contemplated hereby; *provided*, *however*, that in no event shall any of the following, either alone or in combination, be deemed to constitute, nor shall any of the following be taken into account in determining whether there has been or will or could be, a Parent Material Adverse Effect: (A) any changes resulting from or arising out of general market, economic or political conditions (including any changes arising out of acts of terrorism, war, weather conditions or other force majeure events), provided that such changes do not have a substantially disproportionate impact on Parent and its Subsidiaries, taken as a whole, (B) any changes resulting from or arising out of general market, economic or political conditions in the industries in which Parent or any of its Subsidiaries conduct business (including any changes arising out of acts of terrorism, war, weather conditions or other force majeure events), provided that such changes do not have a substantially disproportionate impact on Parent and its Subsidiaries, taken as a whole, (C) any changes resulting from or arising out of actions taken pursuant to (and required by) this Agreement or at the request of the Company or the failure to take any actions due to restrictions set forth in this Agreement, (D) any changes in the price or trading volume of Parent s stock, in and of itself, (E) any failure by Parent to meet published revenue or earnings projections, in and of itself and (F) any changes or effects arising out of or resulting from any legal claims or other proceedings made by any of Parent s shareholders arising out of or related to this Agreement, the Acquisition Merger or any other transactions contemplated hereby.

(q) *Person* means an individual, corporation, partnership, association, trust, unincorporated organization, other entity or group (as defined in Section 13(d)(3) of the Exchange Act); and

(r) *Registered Intellectual Property* means U.S. and foreign (i) patents and pending patent applications, (ii) trademark registrations (including Internet domain registrations) and pending trademark applications, and (iii) copyright registrations and pending copyright applications.

(s) *Subsidiary* means, with respect to any party, any corporation or other organization, whether incorporated or unincorporated, of which (A) such party or any other Subsidiary of such party is a general partner, manager or managing member, (B) such party or any Subsidiary of such party owns at least 50% of the outstanding equity or voting securities or interests or (C) such party or any Subsidiary of such party has the right to elect at least a majority of the board of directors or others performing similar functions with respect to such corporation or other organization.

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(t) *Superior Proposal* means any Acquisition Proposal that the Board of Directors of the party receiving it reasonably determines in good faith (based on (i) the advice of its independent financial advisor or another nationally recognized financial advisor and its outside legal counsel, and (ii) the terms and conditions of such proposal, the financial, legal and regulatory aspects of such proposal and the Person making such proposal) (A) is more favorable to such party s shareholders than the Acquisition Merger or any counterproposal made by the other party hereto pursuant to Section 7.3, (B) is capable of being consummated in a timely manner in the terms being proposed, and (C) is fully capable of being financed by the Person making such proposal, to the extent required, or for which financing has been committed by a reputable financing source, to the extent required.

(u) *Tax* or *Taxes* means (i) taxes, fees, assessments, liabilities, levies, duties, tariffs, imposts and governmental impositions or charges of any kind in the nature of (or similar to) taxes, payable to any federal, state, local or foreign taxing authority, or any agency or subdivision thereof, including income, franchise, profits, gross receipts, *ad valorem*, net worth, value added, sales, use, service, real or personal property, special assessments, capital stock, license, payroll, withholding, employment, social security, workers compensation, unemployment compensation, utility, severance, production, excise, stamp, occupation, premiums, windfall profits, transfer and gains taxes, and including all interest, penalties, fines, additional taxes and additions to tax imposed with respect to any of the foregoing; (ii) any liability for the payment of any amounts of the type described in the foregoing clause (i) as a result of being a member of an affiliated, consolidated, combined or unitary group for any period, and (iii) any liability for the payment of any amounts of the type described in the foregoing clauses (i) or (ii) as a result of any express or implied obligation to indemnify any other person or as a result of any obligations under any agreements or arrangements with any other person with respect to such amounts and including any liability for taxes of a predecessor or transferor entity.

(v) *Tax Returns* shall mean returns, reports and information statements with respect to Taxes required to be filed with a taxing authority, domestic or foreign, including, consolidated, combined or unitary tax returns and any amendments to any of the foregoing.

Section 10.4 *Certain Interpretations*. For purposes of this Agreement:

(a) Unless otherwise specified, all references in this Agreement to Articles, Sections, Schedules and Exhibits shall be deemed to refer to Articles, Sections, Schedules and Exhibits to this Agreement.

(b) The words include , includes and including when used herein shall be deemed in each case to be followed by the words without limitation .

(c) Unless otherwise specified or the context otherwise requires, all references in this Agreement to Parent (including any reference to Parent as a party shall be deemed to include Parent and its Subsidiaries, and all references in this Agreement to the Company (including any reference to the Company as a party) shall be deemed to include the Company and its Subsidiaries.

(d) All references in this Agreement to the Subsidiaries of an entity shall be deemed to include all direct and indirect Subsidiaries of such entity.

(e) The table of contents and the headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement.

(f) The parties hereto agree that they have been represented by legal counsel during the negotiation and execution of this Agreement and, therefore, waive the application of any Law, regulation, holding or rule of construction providing that ambiguities in an agreement or other document shall be construed against the party drafting such agreement or document.

(g) In the event that the Migratory Merger has not occurred or does not occur, all references to Nanometrics Delaware shall be deemed to refer to Parent.

Section 10.5 *Amendment*. This Agreement may be amended by the parties hereto by action taken by or on behalf of their respective Boards of Directors at any time prior to the Acquisition Merger Effective Time;

provided, *however*, that, after approval of the Acquisition Merger by the shareholders of the Company, no amendment may be made which by Law requires further approval by such shareholders without such further approval. This Agreement may not be amended except by an instrument in writing signed by the parties hereto.

Section 10.6 *Extension; Waiver*. At any time prior to the Acquisition Merger Effective Time, the parties hereto, by action taken or authorized by their respective Boards of Directors, may to the extent legally allowed, (a) extend the time for the performance of any of the obligations or other acts of any other party hereto, (b) waive any inaccuracies in the representations and warranties of any other party hereto contained herein or in any document delivered pursuant hereto or (c) waive compliance with any of the agreements or conditions of any other party hereto contained herein. Any agreement on the part of a party hereto to any such extension or waiver shall be valid only if set forth in an instrument in writing signed on behalf of such party.

Section 10.7 *Severability*. If any term or other provision of this Agreement is invalid, illegal or incapable of being enforced by any rule of Law, or public policy, all other conditions and provisions of this Agreement shall nevertheless remain in full force and effect so long as the economic or legal substance of the transactions contemplated hereby is not affected in any manner adverse to any party. Upon such determination that any term or other provision is invalid, illegal or incapable of being enforced, the parties hereto shall negotiate in good faith to modify this Agreement so as to effect the original intent of the parties as closely as possible in an acceptable manner to the end that the transactions contemplated hereby are fulfilled to the fullest extent possible.

Section 10.8 *Entire Agreement; No Third Party Beneficiaries*. This Agreement (including the documents and instruments referred to herein, including the Confidentiality Agreement) (a) constitutes the entire agreement and supersedes all prior agreements and understandings, both written and oral, among the parties, or any of them, with respect to the subject matter hereof, and (b) is not intended to confer upon any person (regardless of any reference to such person in this Agreement) other than the parties hereto any rights or remedies hereunder, other than the persons intended to benefit from the provisions of Section 7.10 (Indemnification and Insurance), who shall have the right to enforce such provisions directly.

Section 10.9 *Assignment*. This Agreement shall not be assigned by operation of Law or otherwise, except that Parent, Merger Sub 1 and Merger Sub 2 may assign all or any of their rights hereunder to any wholly owned subsidiary thereof; provided, however, that no such assignment pursuant to this Section 10.9 shall relieve Parent, Merger Sub 1 or Merger Sub 2 of their respective obligations hereunder.

Section 10.10 *Failure or Indulgence Not Waiver; Remedies Cumulative*. No failure or delay on the part of any party hereto in the exercise of any right hereunder shall impair such right or be construed to be a waiver of, or acquiescence in, any breach of any representation, warranty or agreement herein, nor shall any single or partial exercise of any such right preclude any other or further exercise thereof or of any other right. All rights and remedies existing under this Agreement are cumulative to, and not exclusive of, any rights or remedies otherwise available.

Section 10.11 *Governing Law*. This Agreement shall be governed by, and construed in accordance with, the internal Laws of the State of Delaware, without regard to the conflict of Law provisions thereof.

Section 10.12 *Counterparts*. This Agreement may be executed in two or more counterparts, and by the different parties hereto in separate counterparts, each of which when executed shall be deemed to be an original but all of which taken together shall constitute one and the same agreement.

Section 10.13 *WAIVER OF JURY TRIAL.* EACH OF PARENT, MERGER SUB 1, MERGER SUB 2 AND THE COMPANY HEREBY IRREVOCABLY WAIVES ALL RIGHT TO TRIAL BY JURY IN ANY ACTION, PROCEEDING OR COUNTERCLAIM (WHETHER BASED ON CONTRACT, TORT OR OTHERWISE) ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HERBY OR THE ACTIONS OF PARENT, MERGER SUB 1, MERGER SUB 2 OR THE COMPANY IN THE NEGOTIATION, ADMINISTRATION, PERFORMANCE AND ENFORCEMENT OF THIS AGREEMENT.

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Section 10.14 *Specific Performance*. The parties agree that irreparable damage would occur and that the parties would not have any adequate remedy at Law in the event that any of the provisions of this Agreement were not performed in accordance with their specific terms or were otherwise breached. It is accordingly agreed that the parties shall be entitled to an injunction or injunctions to prevent breaches of this Agreement and to enforce specifically the terms and provisions of this Agreement, this being in addition to any other remedy to which they are entitled at Law or in equity.

Section 10.15 *Disclosure Schedules*.

(a) The information set forth in each section or subsection of the Company Disclosure Schedules shall be deemed to provide the information contemplated by, or otherwise qualify, the representations and warranties of the Company set forth in the corresponding section or subsection of this Agreement and any other section or subsection of ARTICLE IV if and to the extent that it is reasonably apparent on the face of the disclosure that it applies to such other section or subsection of ARTICLE IV.

(b) The information set forth in each section or subsection of the Parent Disclosure Schedules shall be deemed to provide the information contemplated by, or otherwise qualify, the representations and warranties of Parent, Merger Sub 1 and Merger Sub 2 set forth in the corresponding section or subsection of this Agreement and any other section or subsection of ARTICLE V if and to the extent that it is reasonably apparent on the face of the disclosure that it applies to such other section or subsection of ARTICLE V.

[Signature Page Follows]

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IN WITNESS WHEREOF, Parent, Merger Sub 1, Merger Sub 2 and the Company have caused this Agreement to be executed as of the date first written above by their respective officers thereunto duly authorized.

NANOMETRICS INCORPORATED

By _____

Name:
Title:

MAJOR LEAGUE MERGER CORPORATION

By _____

Name:
Title:

MINOR LEAGUE MERGER CORPORATION

By _____

Name:
Title:

AUGUST TECHNOLOGY CORPORATION

By _____

Name:
Title:

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Annex A-1

PARENT SHAREHOLDER VOTING AGREEMENT

This PARENT SHAREHOLDER VOTING AGREEMENT (this *Agreement*) is entered into as of January 21, 2005, by and between August Technology Corporation, a Minnesota corporation (the *Company*), and the undersigned shareholder (the *Shareholder*) of Nanometrics Incorporated, a California corporation (*Parent*).

W I T N E S S E T H:

WHEREAS, Parent, Major League Merger Corporation, a Minnesota corporation and a wholly owned subsidiary of Parent (*Merger Sub 1*), Minor League Merger Corporation, a Delaware corporation and a wholly owned subsidiary of Parent (*Merger Sub 2*), and the Company are entering into an Agreement and Plan of Merger and Reorganization (the *Reorganization Agreement*) concurrently herewith pursuant to which (i) Parent will merge with and into Merger Sub 2 (the *Migratory Merger*), whereupon (A) Merger Sub 2 will succeed to all of the rights and liabilities of Parent, and (B) all outstanding shares of capital stock of Parent will be converted into the right to receive an equivalent number of shares of capital stock of Merger Sub 2, and (ii) Merger Sub 1 will merge with and into the Company (the *Merger*), whereupon (A) the Company will become a wholly owned subsidiary of Merger Sub 2, and (B) all outstanding shares of capital stock of the Company (the *Company Capital Stock*) will be converted into the right to receive a number of shares of common stock of Merger Sub 2 as set forth therein.

WHEREAS, for all purposes of and under this Agreement capitalized terms used but not otherwise defined herein shall have the respective meanings ascribed thereto in the Reorganization Agreement.

WHEREAS, Parent, the Company and Merger Sub (as defined below), have entered into an Agreement and Plan of Merger and Reorganization of even date herewith (the *Merger Agreement*), which provides for the merger (the *Merger*) of the Company with and into a wholly-owned subsidiary of Parent (*Merger Sub*).

WHEREAS, the Shareholder is the beneficial owner (as defined in Rule 13d-3 under the Securities Exchange Act of 1934, as amended (the *Exchange Act*)) of the shares of capital stock of Parent, and options to acquire shares of capital stock of Parent, each as set forth on the signature page of this Agreement.

WHEREAS, in consideration of the execution of the Merger Agreement by the Company, the Shareholder (solely in his capacity as such) is hereby agreeing to vote the Shares (as defined below), so as to facilitate the consummation of the Merger.

NOW, THEREFORE, in consideration of the premises and the covenants and agreements set forth in the Merger Agreement and in this Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged and accepted, the parties hereto hereby agree as follows:

1. *Certain Definitions*. Capitalized terms used but not otherwise defined herein shall have the respective meanings ascribed to them in the Merger Agreement. For purposes of this Agreement, the following terms shall have the following respective meanings:

(a) *Expiration Date* shall mean the earlier to occur of (i) such date and time as the Merger Agreement shall have been validly terminated in accordance with its terms and conditions, or (ii) such date and time as the Merger shall become effective in accordance with its terms and conditions.

(b) *Person* shall mean any individual, any corporation, limited liability company, general or limited partnership, business trust, unincorporated association or other business organization or entity, or any governmental body or authority.

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(c) *Shares* shall mean (i) all voting securities of Parent beneficially owned by the Shareholder as of the date of this Agreement and (ii) all voting securities of Parent which the Shareholder purchases or acquires beneficial ownership of after the date of this Agreement and prior to the Expiration Date, including, without limitation, any shares issued or issuable upon the conversion, exercise or exchange, as the case may be, of any shares held by the Shareholder which are convertible into, or exercisable or exchangeable for, voting securities of Parent.

(d) *Transfer* shall mean a direct or indirect: (i) sale, pledge, encumbrance, grant of an option with respect to, transfer or disposal of a security or any interest in such security, or (ii) entrance into an agreement or commitment providing for the sale of, pledge of, encumbrance of, grant of an option with respect to, transfer of or disposition of such security or any interest therein.

2. *Transfer of Shares*.

(a) *Transferee of Shares to be Bound by this Agreement*. The Shareholder hereby agrees that, at all times during the period commencing with the execution and delivery of this Agreement until the Expiration Date, the Shareholder shall not cause or permit any Transfer of any of the Shares (or any securities convertible into or exercisable or exchangeable for Shares), or any interest in the foregoing, to be effected unless each Person to which any of such Shares (or any securities convertible into or exercisable or exchangeable for Shares), or any interest in any of the foregoing, is or may be Transferred shall have (i) executed a counterpart of this Agreement and an irrevocable proxy in the form attached hereto as *Exhibit A* (the Proxy), and (ii) agreed in writing to hold such Shares (or any securities convertible into or exercisable or exchangeable for Shares), or such interest in the foregoing, subject to the terms and conditions of this Agreement.

(b) *Transfer of Voting Rights*. The Shareholder hereby agrees that, at all times during the period commencing with the execution and delivery of this Agreement until the Expiration Date, the Shareholder shall not deposit (or permit the deposit of) any Shares (or any securities convertible into or exercisable or exchangeable for Shares), or any interest in the foregoing, in a voting trust or grant any proxy, or enter into any voting agreement or similar agreement or arrangement in contravention of the obligations of the Shareholder under this Agreement with respect to any of the Shares (or any securities convertible into or exercisable or exchangeable for Shares), or any interest in the foregoing.

3. *Agreement to Vote Shares*. The Shareholder hereby agrees that, at all times during the period commencing with the execution and delivery of this Agreement until the Expiration Date, at every meeting of the shareholders of Parent called with respect to any of the following, and at every adjournment or postponement thereof, and on every action or approval by written consent of the shareholders of Parent with respect to any of the following, the Shareholder shall vote, to the extent not voted by the person(s) appointed under the Proxy (as defined in *Section 4* hereof), the Shares:

(a) in favor of the adoption and approval of the Merger Agreement and the approval of the Merger, and in favor of each of the other actions contemplated by the Merger Agreement and any action required in furtherance thereof including, without limitation, the Migratory Merger;

(b) against approval of any proposal made in opposition to, or in competition with, consummation of the Merger and the other transactions contemplated by the Merger Agreement including, without limitation, the Migratory Merger;

(c) against any of the following actions (other than those actions that relate to the Merger and the other transactions contemplated by the Merger Agreement including, without limitation, the Migratory Merger): (i) any merger, consolidation, business combination, sale of assets, reorganization or recapitalization of Parent or any subsidiary of Parent with any person, (ii) any sale, lease or transfer of any significant part of

the assets of Parent or any subsidiary of Parent, (iii) any reorganization, recapitalization, dissolution, liquidation or winding up of Parent or any subsidiary of Parent, (iv) any change in the capitalization of Parent or any subsidiary of Parent, or the corporate structure of Parent or any subsidiary of Parent, or (v) any other action

that is intended, or could reasonably be expected to, impede, interfere with, delay, postpone, discourage or adversely affect the Merger or any of the other transactions contemplated by the Merger Agreement; and

(d) in favor of waiving any notice that may have been or may be required relating to any reorganization of Parent or any subsidiary of Parent, any reclassification or recapitalization of the capital stock of Parent or any subsidiary of Parent, or any sale of assets, change of control, or acquisition of Parent or any subsidiary of Parent by any other person, or any consolidation or merger of Parent or any subsidiary of Parent with or into any other person.

Prior to the Expiration Date, the Shareholder shall not enter into any agreement or understanding with any person to vote or give instructions in any manner inconsistent with the terms of this *Section 3*.

4. *Irrevocable Proxy*. The Shareholder hereby agrees to deliver to the Company, concurrently with the execution and delivery of this Agreement, the Proxy in the form attached hereto as *Exhibit A*, which shall be irrevocable to the fullest extent permitted by applicable law, with respect to the Shares. The Shareholder agrees that such Proxy is executed and intended to be irrevocable in accordance with provisions of Section 705 of the California Corporations Code (CGCL) and this Agreement is entered into in accordance with Section 706(a) of the CGCL.

5. *Representations, Warranties and Covenants of the Shareholder*. The Shareholder hereby represents, warrants and covenants to Parent as follows:

(a) The Shareholder is the beneficial or record owner of, or exercises voting power over, the Shares. The Shares constitute the Shareholder s entire interest in the outstanding shares of voting securities of Parent and the Shareholder does not hold any other outstanding shares of capital stock of Parent. No person not a signatory to this Agreement has a beneficial interest in or a right to acquire or vote any of the Shares (other than, (i) if the Shareholder is a partnership, the rights and interest of persons and entities that own partnership interests in the Shareholder under the partnership agreement governing the Shareholder and applicable partnership law or (ii) if the Shareholder is a married individual and resides in a State with community property laws, the community property interest of his or her spouse to the extent applicable under such community property laws). The Shares are and will be at all times up until the Expiration Date free and clear of any security interests, liens, claims, pledges, options, rights of first refusal, co-sale rights, agreements, limitations on the Shareholder s voting rights, charges and other encumbrances of any nature (*Encumbrances*) that would adversely affect the Merger or the exercise or fulfillment of the rights and obligations of Parent under the Merger Agreement or of the parties to this Agreement. The Shareholder s principal residence or place of business is set forth on the signature page hereto.

(b) The Shareholder has all requisite power, capacity and authority to enter into this Agreement and to perform its obligations under this Agreement. The execution and delivery of this Agreement by the Shareholder and the consummation by the Shareholder of the transactions contemplated hereby have been duly authorized by all necessary action, if any, on the part of the Shareholder. This Agreement has been duly executed and delivered by the Shareholder and constitutes a valid and binding obligation of the Shareholder, enforceable against the Shareholder in accordance with its terms, subject only to the effect, if any, of (a) applicable bankruptcy and other similar laws affecting the rights of creditors generally and (b) rules of law governing specific performance, injunctive relief and other equitable remedies.

(c) The execution and delivery of this Agreement by the Shareholder does not, and the Shareholder s performance of the obligations under this Agreement will not: (a) conflict with, or result in any violation of any order, decree or judgment applicable to the Shareholder or by which the Shareholder or any of the Shareholder s properties or the Shares are bound; or (b) result in any breach of or constitute a default (with notice or lapse of time, or both) under, or give to others any rights of termination, amendment, acceleration or cancellation of, or result in the creation of

any Encumbrance on, any of the Shares pursuant to any contract to which the Shareholder is a party or by which the Shareholder or any of the Shareholder s properties (including the Shares) is bound or affected. The execution and delivery of this Agreement by the Shareholder does not, and the performance of this Agreement by the Shareholder will not, require the consent of any third party.

(d) There is (a) no action, suit, proceeding, claim, arbitration or investigation pending before any Governmental Entity or, to the Shareholder s actual knowledge, threatened against, and (b) no judgment, decree or order against, (i) the Shareholder, or (ii) any of (A) the Shareholder s affiliates, (B) the Shareholder s or its affiliates respective properties, (C) the Shareholder s officers or directors (in the case of a corporate entity (in their capacities as such)), or (D) the Shareholder s respective partners (in the case of a partnership), in the case of each of (i) and (ii) that, individually or in the aggregate, would reasonably be expected to materially delay or impair the Shareholder s ability to consummate the transactions contemplated by this Agreement.

6. *Consent and Waiver*. The Shareholder hereby gives any consents or waivers that are reasonably required for the consummation of the Merger under the terms of any agreement or instrument to which the Shareholder is a party or subject or in respect of any rights the Shareholder may have in connection with the Merger or the other transactions provided for in the Merger Agreement (whether such rights exist under the articles of incorporation or bylaws of the Company, any contract or commitment of the Company under statutory or common law or otherwise). Without limiting the generality or effect of the foregoing, the Shareholder hereby waives any and all rights to contest or object to the execution and delivery of the Merger Agreement, Parent Board of Directors actions in approving and recommending the Merger, the consummation of the Merger and the other transactions provided for in the Merger Agreement, or to seek damages or other legal or equitable relief in connection therewith.

7. *Additional Documents*. The Shareholder hereby agrees to execute and deliver any additional documents necessary or desirable, in the reasonable opinion of the Company, to carry out the intent of this Agreement.

8. *Confidentiality*. The Shareholder shall hold any information regarding this Agreement, the Merger, the Merger Agreement and the transactions contemplated thereby, in strict confidence and shall not divulge any such information to any third person until such time as the Merger has been publicly disclosed by the Company. Neither the Shareholder, nor any of its affiliates shall issue or cause the publication of any press release or other public announcement with respect to this Agreement, the Merger, the Merger Agreement or the other transactions contemplated thereby without the prior written consent of the Parent, except as may be required by law or by any listing agreement with, or the policies of, the Nasdaq Stock Market or an applicable national securities exchange in which circumstance such announcing party shall make reasonable efforts to consult with the Company to the extent practicable.

9. *Appraisal Rights*. The Shareholder agrees not to exercise any rights of appraisal or any dissenters rights that the Shareholder may have (whether under applicable law or otherwise) or could potentially have or acquire in connection with the Merger.

10. *Termination*. This Agreement shall terminate and shall have no further force or effect after the Expiration Date.

11. *Miscellaneous*.

(a) *Notices*. All notices and other communications hereunder shall be in writing and shall be deemed given on (i) the date of delivery, if delivered personally or by commercial delivery service, or (ii) on the date of confirmation of receipt (or the next Business Day, if the date of confirmation of receipt is not a Business Day), if sent via facsimile (with confirmation of receipt), to the parties hereto at the following address (or at such other address for a party as shall be specified by like notice):

(i) if to the Company, to:

August Technology Corporation

4900 West 78th Street

Bloomington, Minnesota 55435

Attention: General Counsel

Facsimile No.952-820-0060

Telephone No.:952-820-0080

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with a copy (which shall not constitute notice) to:

Fredrikson & Byron

200 South Sixth Street

Minneapolis, Minnesota 55402-1425

Attention: Robert K. Ranum

Facsimile No.: 612 492-7077

Telephone No.: 612 492-7067

(ii) if to the Shareholder, to the address set forth for the Shareholder on the signature page hereof.

(b) *Interpretation*. When a reference is made in this Agreement to Sections or Exhibits, such reference shall be to a Section of or an Exhibit to this Agreement unless otherwise indicated. The words include, includes and including when used herein shall be deemed in each case to be followed by the words without limitation. The phrases the date of this Agreement , the date hereof , and terms of similar import, unless the context otherwise requires, shall be deemed to refer to the date first above written.

(c) *Specific Performance; Injunctive Relief*. The parties hereto acknowledge that Parent will be irreparably harmed and that there will be no adequate remedy at law for a violation of any of the covenants or agreements of the Shareholder set forth herein. Therefore, it is agreed that, in addition to any other remedies that may be available to Parent upon any such violation of this Agreement Parent shall have the right to enforce such covenants and agreements by specific performance, injunctive relief or by any other means available to Parent at law or in equity and the Shareholder hereby waives any and all defenses which could exist in its favor in connection with such enforcement and waives any requirement for the security or posting of any bond in connection with such enforcement.

(d) *Counterparts*. This Agreement may be executed in one or more counterparts, all of which shall be considered one and the same instrument and shall become effective when one or more counterparts have been signed by each of the parties and delivered to the other parties hereto; it being understood that all parties need not sign the same counterpart.

(e) *Entire Agreement; Nonassignability; Parties in Interest*. This Agreement and the documents and instruments and other agreements specifically referred to herein or delivered pursuant hereto (including the Proxy) (i) constitute the entire agreement among the parties with respect to the subject matter hereof and supersede all prior agreements and understandings, both written and oral, among the parties with respect to the subject matter hereof and (ii) are not intended to confer, and shall not be construed as conferring, upon any person other than the parties hereto any rights or remedies hereunder. Neither this Agreement nor any of the rights, interests, or obligations under this Agreement may be assigned or delegated, in whole or in part, by operation of law or otherwise, by the Shareholder without the prior written consent of the Company, and any such assignment or delegation that is not consented to shall be null and void. This Agreement, together with any rights, interests or obligations of the Company hereunder, may be assigned or delegated in whole or in part by the Company without the consent of or any action by the Shareholder upon notice by the Company to the Shareholder as herein provided. Subject to the preceding sentence, this Agreement shall be binding upon, inure to the benefit of, and be enforceable by, the parties hereto and their respective successors and assigns (including any person to whom any Shares are sold, transferred or assigned).

(f) *Amendment; Waiver*. Subject to the provisions of applicable law, the parties hereto may amend this Agreement at any time pursuant to an instrument in writing signed on behalf of each of the parties hereto. At any time, any party hereto may, to the extent legally allowed, waive any inaccuracies in the representations and warranties made to such party contained herein or in any document delivered pursuant hereto and waive compliance with any of the agreements or conditions for the benefit of such party contained herein. Any agreement on the part of a party hereto to any such waiver shall be valid only if set forth in an instrument in writing signed on behalf of such party. Without limiting the generality or effect of the preceding sentence, no delay in exercising any right under this Agreement shall constitute a waiver of such right, and no waiver of any breach or default shall be deemed a waiver of any other breach or default of the same or any other provision in this Agreement.

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(g) *Severability*. In the event that any provision of this Agreement, or the application thereof, becomes or is declared by a court of competent jurisdiction to be illegal, void or unenforceable, the remainder of this Agreement shall continue in full force and effect and shall be interpreted so as reasonably to effect the intent of the parties hereto. The parties hereto further agree to use their commercially reasonable efforts to replace such void or unenforceable provision of this Agreement with a valid and enforceable provision that shall achieve, to the extent possible, the economic, business and other purposes of such void or unenforceable provision.

(h) *Remedies Cumulative*. Except as otherwise provided herein, any and all remedies herein expressly conferred upon a party shall be deemed cumulative with and not exclusive of any other remedy conferred hereby, or by law or equity upon such party, and the exercise by a party of any one remedy shall not preclude the exercise of any other remedy.

(i) *Governing Law*. This Agreement shall be governed by and construed in accordance with the laws of the State of California without reference to such state s principles of conflicts of law. Each of the parties hereto irrevocably consents to the exclusive jurisdiction of any court located within the State of California, in connection with any matter based upon or arising out of this Agreement or the matters contemplated herein, agrees that process may be served upon them in any manner authorized by the laws of the State of California for such persons and waives and covenants not to assert or plead any objection which they might otherwise have to such jurisdiction and such process.

(j) *Rules of Construction*. The parties hereto agree that they have been represented by counsel during the negotiation, preparation and execution of this Agreement and, therefore, waive the application of any law, regulation, holding or rule of construction providing that ambiguities in an agreement or other document shall be construed against the party drafting such agreement or document.

(k) *WAIVER OF JURY TRIAL.* EACH OF THE PARTIES HERETO HEREBY IRREVOCABLY WAIVES ALL RIGHT TO TRIAL BY JURY IN ANY ACTION, PROCEEDING OR COUNTERCLAIM (WHETHER BASED ON CONTRACT, TORT, OR OTHERWISE) ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE ACTIONS OF ANY PARTY HERETO IN NEGOTIATION, ADMINISTRATION, PERFORMANCE OR ENFORCEMENT HEREOF.

[Signature Page Follows]

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IN WITNESS WHEREOF, the parties hereto have caused this Voting Agreement to be executed as of the date first above written.

AUGUST TECHNOLOGY CORPORATION

By: _____

Name: _____

Title: _____

SHAREHOLDER:

_____

(Print Name of the Shareholder)

_____

(Signature)

_____

(Print name and title if signing on behalf of an entity)

_____

(Print Address)

_____

(Print Address)

_____

(Print Telephone Number)

_____

(Social Security or Tax I.D. Number)

Shares beneficially owned by the Shareholder on the date hereof:

_____ shares of voting securities of Parent

_____ shares of voting securities of Parent subject to options

[SIGNATURE PAGE TO COMPANY VOTING AGREEMENT]

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EXHIBIT A

IRREVOCABLE PROXY

TO VOTE STOCK OF

NANOMETRICS INCORPORATED

The undersigned shareholder of Nanometrics Incorporated, a California corporation (*Parent*), hereby irrevocably (to the fullest extent permitted by applicable law) appoints the members of the Board of Directors of August Technology Corporation, a Minnesota corporation (the *Company*), and each of them, or any other designee of the Company, as the sole and exclusive attorneys and proxies of the undersigned, with full power of substitution and resubstitution, to vote and exercise all voting and related rights (to the fullest extent that the undersigned is entitled to do so) with respect to all of the shares of capital stock of Parent that now are or hereafter may be beneficially owned by the undersigned, and any and all other shares or securities of Parent issued or issuable in respect thereof on or after the date hereof (collectively, the *Shares*) in accordance with the terms of this irrevocable proxy (the *Irrevocable Proxy*). The Shares beneficially owned by the undersigned shareholder of Parent as of the date of this Irrevocable Proxy are listed on the final page of this Irrevocable Proxy. Upon the undersigned s execution of this Irrevocable Proxy, any and all prior proxies given by the undersigned with respect to any Shares are hereby revoked and the undersigned agrees not to grant any subsequent proxies or enter into any agreement or understanding with any person to vote or give instructions with respect to the Shares in any manner inconsistent with the terms of this Irrevocable Proxy until after the Expiration Date (as defined below).

This Irrevocable Proxy is irrevocable (to the fullest extent permitted by applicable law), is coupled with an interest, is granted pursuant to that certain Voting Agreement dated as of even date herewith by and between Parent and the undersigned (the *Voting Agreement*), and is granted in consideration of Parent entering into that certain Agreement and Plan of Merger of even date herewith (the *Merger Agreement*), which provides for the merger (the *Merger*) of the Company with and into a wholly-owned subsidiary of Parent (*Merger Sub*). The undersigned shareholder agrees that the Irrevocable Proxy is executed and intended to be irrevocable in accordance with provisions of Section 705 of the California Corporations Code (CGCL) and this Agreement is entered into in accordance with Section 706(a) of the CGCL. As used herein, the term *Expiration Date* shall mean the earlier to occur of (i) such date and time as the Merger Agreement shall have been validly terminated in accordance with its terms and conditions, or (ii) such date and time as the Merger shall become effective in accordance with its terms and conditions.

The attorneys and proxies named above, and each of them, are hereby authorized and empowered by the undersigned, at any time prior to the Expiration Date, to act as the undersigned s attorney and proxy to vote the Shares, and to exercise all voting and other rights of the undersigned with respect to the Shares (including, without limitation, the power to execute and deliver written consents pursuant to the California General Corporation Law), at every annual, special or adjourned meeting of the shareholders of the Company and in every written consent in lieu of such meeting as follows: (a) in favor of the adoption and approval of the Merger Agreement and the approval of the Merger, and in favor of each of the other actions contemplated by the Merger Agreement including, without limitation, the Migratory Merger, and any action required in furtherance thereof; (b) against approval of any proposal made in opposition to, or in competition with, consummation of the Merger and the other transactions contemplated by the Merger Agreement including, without limitation, the Migratory Merger; (c) against any of the following actions (other than those actions that relate to the Merger and the other transactions contemplated by the Merger Agreement, including, without limitation, the Migratory Merger): (i) any merger, consolidation, business combination, sale of assets, reorganization or recapitalization of Parent or any subsidiary of the Company with any person, (ii) any sale, lease or transfer of any significant part of the assets of the Company or any subsidiary of the Company, (iii) any reorganization, recapitalization, dissolution, liquidation or winding up of Parent or any subsidiary of Parent, (iv) any change in the capitalization of Parent or any subsidiary of Parent, or the corporate structure of Parent or any subsidiary of Parent, or (v) any other action that is intended, or could reasonably be expected to, impede, interfere with, delay, postpone, discourage or

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adversely affect the Merger or any of the other transactions contemplated by the Merger Agreement; and (d) in favor of waiving any notice that may have been or may be required relating to any reorganization of Parent or any subsidiary of Parent, any reclassification or recapitalization of the capital stock of Parent or any subsidiary of Parent, or any sale of assets, change of control, or acquisition of Parent or any subsidiary of Parent by any other person, or any consolidation or merger of Parent or any subsidiary of Parent with or into any other person.

The attorneys and proxies named above may not exercise this Irrevocable Proxy on any other matter except as provided above. The undersigned shareholder may vote the Shares on all other matters.

All authority herein conferred shall survive the death or incapacity of the undersigned and any obligation of the undersigned hereunder shall be binding upon the heirs, personal representatives, successors and assigns of the undersigned.

[Signature Page Follows]

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This Irrevocable Proxy is coupled with an interest as aforesaid and is irrevocable. This Irrevocable Proxy may not be amended or otherwise modified without the prior written consent of the Company. This Irrevocable Proxy shall terminate, and be of no further force and effect, automatically upon the Expiration Date.

Dated: January 21, 2005

_____

(Print Name of the Shareholder)

_____

(Signature of the Shareholder)

_____

(Print name and title if signing on behalf of an entity)

Shares beneficially owned on the date hereof:

_____shares of voting securities of Parent

_____shares of voting securities of Parent subject to options

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Annex A-2

COMPANY SHAREHOLDER VOTING AGREEMENT

THIS COMPANY SHAREHOLDER VOTING AGREEMENT (this *Agreement*) is entered into as of January 21, 2005, by and between Nanometrics Incorporated, a California corporation (*Parent*), Minor League Merger Corporation, a Delaware corporation and a wholly owned subsidiary of Parent (*Merger Sub 2*) and the undersigned shareholder (the *Shareholder*) of August Technology Corporation, a Minnesota corporation (the *Company*).

W I T N E S S E T H:

WHEREAS, Parent, Major League Merger Corporation, a Minnesota corporation and a wholly owned subsidiary of Parent (*Merger Sub 1*), Merger Sub 2 and the Company are entering into an Agreement and Plan of Merger and Reorganization (the *Reorganization Agreement*) concurrently herewith pursuant to which (i) Parent will merge with and into Merger Sub 2 (the *Migratory Merger*), whereupon (A) Merger Sub 2 will succeed to all of the rights and liabilities of Parent, and (B) all outstanding shares of capital stock of Parent will be converted into the right to receive an equivalent number of shares of capital stock of Merger Sub 2, and (ii) Merger Sub 1 will merge with and into the Company (the *Merger*), whereupon (A) the Company will become a wholly owned subsidiary of Merger Sub 2, and (B) all outstanding shares of capital stock of the Company (the *Company Capital Stock*) will be converted into the right to receive a number of shares of common stock of Merger Sub 2 (the *Parent Common Stock*) as set forth therein.

WHEREAS, for all purposes of and under this Agreement, (i) capitalized terms used but not otherwise defined herein shall have the respective meanings ascribed thereto in the Reorganization Agreement, and (ii) references to Parent or Parent Common Stock shall be deemed to refer to Parent or Parent Common Stock, as the case may be, prior to the effective time of the Migratory Merger and shall be deemed to refer to Merger Sub 2 and Merger Sub 2 Common Stock, as the case may be, from and after the effective time of the Migratory Merger.

WHEREAS, the Shareholder is the beneficial owner (as defined in Rule 13d-3 under the Securities Exchange Act of 1934, as amended (the *Exchange Act*)) of the shares of capital stock of the Company, and options to acquire shares of capital stock of the Company, each as set forth on the signature page of this Agreement.

WHEREAS, in consideration of the execution of the Merger Agreement by Parent, the Shareholder (solely in his capacity as such) is hereby agreeing to vote the Shares (as defined below), so as to facilitate the consummation of the Merger.

NOW, THEREFORE, in consideration of the premises and the covenants and agreements set forth in the Merger Agreement and in this Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged and accepted, the parties hereto hereby agree as follows:

1. *Certain Definitions*. Capitalized terms used but not otherwise defined herein shall have the respective meanings ascribed to them in the Merger Agreement. For purposes of this Agreement, the following terms shall have the following respective meanings:

(a) *Expiration Date* shall mean the earlier to occur of (i) such date and time as the Merger Agreement shall have been validly terminated in accordance with its terms and conditions, or (ii) such date and time as the Merger shall become effective in accordance with its terms and conditions.

(b) *Person* shall mean any individual, any corporation, limited liability company, general or limited partnership, business trust, unincorporated association or other business organization or entity, or any governmental body or authority.

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(c) *Shares* shall mean (i) all voting securities of the Company beneficially owned by the Shareholder as of the date of this Agreement and (ii) all voting securities of the Company which the Shareholder purchases or acquires beneficial ownership of after the date of this Agreement and prior to the Expiration Date, including, without limitation, any shares issued or issuable upon the conversion, exercise or exchange, as the case may be, of any shares held by the Shareholder which are convertible into, or exercisable or exchangeable for, voting securities of the Company.

(d) *Transfer* shall mean a direct or indirect: (i) sale, pledge, encumbrance, grant of an option with respect to, transfer or disposal of a security or any interest in such security, or (ii) entrance into an agreement or commitment providing for the sale of, pledge of, encumbrance of, grant of an option with respect to, transfer of or disposition of such security or any interest therein.

2. *Transfer of Shares*.

(a) *Transferee of Shares to be Bound by this Agreement*. The Shareholder hereby agrees that, at all times during the period commencing with the execution and delivery of this Agreement until the Expiration Date, the Shareholder shall not cause or permit any Transfer of any of the Shares (or any securities convertible into or exercisable or exchangeable for Shares), or any interest in the foregoing, to be effected unless each Person to which any of such Shares (or any securities convertible into or exercisable or exchangeable for Shares), or any interest in any of the foregoing, is or may be Transferred shall have (i) executed a counterpart of this Agreement and an irrevocable proxy in the form attached hereto as *Exhibit A* (the Proxy), and (ii) agreed in writing to hold such Shares (or any securities convertible into or exercisable or exchangeable for Shares), or such interest in the foregoing, subject to the terms and conditions of this Agreement.

(b) *Transfer of Voting Rights*. The Shareholder hereby agrees that, at all times during the period commencing with the execution and delivery of this Agreement until the Expiration Date, the Shareholder shall not deposit (or permit the deposit of) any Shares (or any securities convertible into or exercisable or exchangeable for Shares), or any interest in the foregoing, in a voting trust or grant any proxy, or enter into any voting agreement or similar agreement or arrangement in contravention of the obligations of the Shareholder under this Agreement with respect to any of the Shares (or any securities convertible into or exercisable or exchangeable for Shares), or any interest in the foregoing.

3. *Agreement to Vote Shares*. The Shareholder hereby agrees that, at all times during the period commencing with the execution and delivery of this Agreement until the Expiration Date, at every meeting of shareholders of the Company called with respect to any of the following, and at every adjournment or postponement thereof, and on every action or approval by written consent of shareholders of the Company with respect to any of the following, the Shareholder shall vote, to the extent not voted by the person(s) appointed under the Proxy (as defined in *Section 4* hereof), the Shares:

(a) in favor of the adoption and approval of the Merger Agreement and the approval of the Merger, and in favor of each of the other actions contemplated by the Merger Agreement and any action required in furtherance thereof;

(b) against approval of any proposal made in opposition to, or in competition with, consummation of the Merger and the other transactions contemplated by the Merger Agreement;

(c) against any of the following actions (other than those actions that relate to the Merger and the other transactions contemplated by the Merger Agreement): (i) any merger, consolidation, business combination, sale of assets, reorganization or recapitalization of the Company or any subsidiary of the Company with any person, (ii) any sale, lease or transfer of any significant part of the assets of the Company or any subsidiary

of the Company, (iii) any reorganization, recapitalization, dissolution, liquidation or winding up of the Company or any subsidiary of the Company, (iv) any change in the capitalization of the Company or any subsidiary of the Company, or the corporate structure of the Company or any subsidiary of the Company, or

(v) any other action that is intended, or could reasonably be expected to, impede, interfere with, delay, postpone, discourage or adversely affect the Merger or any of the other transactions contemplated by the Merger Agreement; and

(d) in favor of waiving any notice that may have been or may be required relating to any reorganization of the Company or any subsidiary of the Company, any reclassification or recapitalization of the capital stock of the Company or any subsidiary of the Company, or any sale of assets, change of control, or acquisition of the Company or any subsidiary of the Company by any other person, or any consolidation or merger of the Company or any subsidiary of the Company with or into any other person.

Prior to the Expiration Date, the Shareholder shall not enter into any agreement or understanding with any person to vote or give instructions in any manner inconsistent with the terms of this *Section 3*.

4. *Irrevocable Proxy*. The Shareholder hereby agrees to deliver to Parent, concurrently with the execution and delivery of this Agreement, the Proxy in the form attached hereto as *Exhibit A*, which shall be irrevocable to the fullest extent permitted by applicable law, with respect to the Shares.

5. *Representations, Warranties and Covenants of Shareholder*. The Shareholder hereby represents, warrants and covenants to Parent as follows:

(a) The Shareholder is the beneficial or record owner of, or exercises voting power over, the Shares. The Shares constitute the Shareholder s entire interest in the outstanding shares of voting securities of the Company and the Shareholder does not hold any other outstanding shares of capital stock of the Company. No person not a signatory to this Agreement has a beneficial interest in or a right to acquire or vote any of the Shares (other than, (i) if the Shareholder is a partnership, the rights and interest of persons and entities that own partnership interests in the Shareholder under the partnership agreement governing the Shareholder and applicable partnership law or (ii) if the Shareholder is a married individual and resides in a State with community property laws, the community property interest of his or her spouse to the extent applicable under such community property laws). The Shares are and will be at all times up until the Expiration Date free and clear of any security interests, liens, claims, pledges, options, rights of first refusal, co-sale rights, agreements, limitations on the Shareholder s voting rights, charges and other encumbrances of any nature (*Encumbrances*) that would adversely affect the Merger or the exercise or fulfillment of the rights and obligations of the Company under the Merger Agreement or of the parties to this Agreement. The Shareholder s principal residence or place of business is set forth on the signature page hereto.

(b) The Shareholder has all requisite power, capacity and authority to enter into this Agreement and to perform its obligations under this Agreement. The execution and delivery of this Agreement by the Shareholder and the consummation by the Shareholder of the transactions contemplated hereby have been duly authorized by all necessary action, if any, on the part of the Shareholder. This Agreement has been duly executed and delivered by the Shareholder and constitutes a valid and binding obligation of the Shareholder, enforceable against the Shareholder in accordance with its terms, subject only to the effect, if any, of (a) applicable bankruptcy and other similar laws affecting the rights of creditors generally and (b) rules of law governing specific performance, injunctive relief and other equitable remedies.

(c) The execution and delivery of this Agreement by the Shareholder does not, and the Shareholder s performance of the obligations under this Agreement will not: (a) conflict with, or result in any violation of any order, decree or judgment applicable to the Shareholder or by which the Shareholder or any of the Shareholder s properties or the Shares are bound; or (b) result in any breach of or constitute a default (with notice or lapse of time, or both) under, or give to others any rights of termination, amendment, acceleration or cancellation of, or result in the creation of any Encumbrance on, any of the Shares pursuant to any contract to which the Shareholder is a party or by which the Shareholder or any of the Shareholder s properties (including the Shares) is bound or affected. The execution and delivery of this Agreement by the Shareholder does not,

and the performance of this Agreement by the Shareholder will not, require the consent of any third party.

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(d) There is (a) no action, suit, proceeding, claim, arbitration or investigation pending before any Governmental Entity or, to the Shareholder s actual knowledge, threatened against, and (b) no judgment, decree or order against, (i) the Shareholder, or (ii) any of (A) the Shareholder s affiliates, (B) the Shareholder s or its affiliates respective properties, (C) the Shareholder s officers or directors (in the case of a corporate entity (in their capacities as such)), or (D) the Shareholder s respective partners (in the case of a partnership), in the case of each of (i) and (ii) that, individually or in the aggregate, would reasonably be expected to materially delay or impair the Shareholder s ability to consummate the transactions contemplated by this Agreement.

6. *Consent and Waiver*. The Shareholder hereby gives any consents or waivers that are reasonably required for the consummation of the Merger under the terms of any agreement or instrument to which the Shareholder is a party or subject or in respect of any rights the Shareholder may have in connection with the Merger or the other transactions provided for in the Merger Agreement (whether such rights exist under the articles of incorporation or bylaws of the Company, any contract or commitment of the Company under statutory or common law or otherwise). Without limiting the generality or effect of the foregoing, the Shareholder hereby waives any and all rights to contest or object to the execution and delivery of the Merger Agreement, the Company Board of Directors actions in approving and recommending the Merger, the consummation of the Merger and the other transactions provided for in the Merger Agreement, or to seek damages or other legal or equitable relief in connection therewith.

7. *Additional Documents*. The Shareholder hereby agrees to execute and deliver any additional documents necessary or desirable, in the reasonable opinion of Parent, to carry out the intent of this Agreement.

8. *Confidentiality*. The Shareholder shall hold any information regarding this Agreement, the Merger, the Merger Agreement and the transactions contemplated thereby, in strict confidence and shall not divulge any such information to any third person until such time as the Merger has been publicly disclosed by Parent. Neither the Shareholder, nor any of its affiliates shall issue or cause the publication of any press release or other public announcement with respect to this Agreement, the Merger, the Merger Agreement or the other transactions contemplated thereby without the prior written consent of the Parent, except as may be required by law or by any listing agreement with, or the policies of, the Nasdaq Stock Market or an applicable national securities exchange in which circumstance such announcing party shall make reasonable efforts to consult with the Parent to the extent practicable.

9. *Appraisal Rights*. The Shareholder hereby agrees not to exercise any rights of appraisal or any dissenters rights that the Shareholder may have (whether under applicable law or otherwise) or could potentially have or acquire in connection with the Merger.

10. *Termination*. This Agreement shall terminate and shall have no further force or effect after the Expiration Date.

11. *Miscellaneous*.

(a) *Notices*. All notices and other communications hereunder shall be in writing and shall be deemed given on (i) the date of delivery, if delivered personally or by commercial delivery service, or (ii) on the date of confirmation of receipt (or the next Business Day, if the date of confirmation of receipt is not a Business Day), if sent via facsimile (with confirmation of receipt), to the parties hereto at the following address (or at such other address for a party as shall be specified by like notice):

(i) if to Parent, to:

Nanometrics Incorporated

1550 Buckeye Drive

Milpitas, California

Attention: General Counsel

Facsimile No.:408-232-5910

Telephone No.:408-435-9600

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with a copy (which shall not constitute notice) to:

Wilson Sonsini Goodrich & Rosati, Professional Corporation

Attention: Aaron J. Alter, Esq.

Adam R. Dolinko, Esq.

Facsimile No.: (650) 493-6811

Telephone No.: (650) 493-9300

(ii) if to the Shareholder, to the address set forth for the Shareholder on the signature page hereof.

(b) *Interpretation*. When a reference is made in this Agreement to Sections or Exhibits, such reference shall be to a Section of or an Exhibit to this Agreement unless otherwise indicated. The words include, includes and including when used herein shall be deemed in each case to be followed by the words without limitation. The phrases the date of this Agreement , the date hereof , and terms of similar import, unless the context otherwise requires, shall be deemed to refer to the date first above written.

(c) *Specific Performance; Injunctive Relief*. The parties hereto acknowledge that Parent will be irreparably harmed and that there will be no adequate remedy at law for a violation of any of the covenants or agreements of the Shareholder set forth herein. Therefore, it is agreed that, in addition to any other remedies that may be available to Parent upon any such violation of this Agreement Parent shall have the right to enforce such covenants and agreements by specific performance, injunctive relief or by any other means available to Parent at law or in equity and the Shareholder hereby waives any and all defenses which could exist in its favor in connection with such enforcement and waives any requirement for the security or posting of any bond in connection with such enforcement.

(d) *Counterparts*. This Agreement may be executed in one or more counterparts, all of which shall be considered one and the same instrument and shall become effective when one or more counterparts have been signed by each of the parties and delivered to the other parties hereto; it being understood that all parties need not sign the same counterpart.

(e) *Entire Agreement; Nonassignability; Parties in Interest*. This Agreement and the documents and instruments and other agreements specifically referred to herein or delivered pursuant hereto (including the Proxy) (i) constitute the entire agreement among the parties with respect to the subject matter hereof and supersede all prior agreements and understandings, both written and oral, among the parties with respect to the subject matter hereof and (ii) are not intended to confer, and shall not be construed as conferring, upon any person other than the parties hereto any rights or remedies hereunder. Neither this Agreement nor any of the rights, interests, or obligations under this Agreement may be assigned or delegated, in whole or in part, by operation of law or otherwise, by the Shareholder without the prior written consent of Parent, and any such assignment or delegation that is not consented to shall be null and void. This Agreement, together with any rights, interests or obligations of Parent hereunder, may be assigned or delegated in whole or in part by Parent without the consent of or any action by the Shareholder upon notice by Parent to the Shareholder as herein provided. Subject to the preceding sentence, this Agreement shall be binding upon, inure to the benefit of, and be enforceable by, the parties hereto and their respective successors and assigns (including any person to whom any Shares are sold, transferred or assigned).

(f) *Amendment; Waiver*. Subject to the provisions of applicable law, the parties hereto may amend this Agreement at any time pursuant to an instrument in writing signed on behalf of each of the parties hereto. At any time, any party hereto may, to the extent legally allowed, waive any inaccuracies in the representations and warranties made to such party contained herein or in any document delivered pursuant hereto and waive compliance with any of the agreements or conditions for the benefit of such party contained herein. Any agreement on the part of a party hereto to any such waiver shall be valid only if set forth in an instrument in writing signed on behalf of such party. Without limiting the generality or effect of the preceding sentence, no delay in exercising any right under this Agreement shall constitute a waiver of such right, and no waiver of any breach or default shall be deemed a waiver of any other breach or default of the same or any other provision in this Agreement.

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(g) *Severability*. In the event that any provision of this Agreement, or the application thereof, becomes or is declared by a court of competent jurisdiction to be illegal, void or unenforceable, the remainder of this Agreement shall continue in full force and effect and shall be interpreted so as reasonably to effect the intent of the parties hereto. The parties hereto further agree to use their commercially reasonable efforts to replace such void or unenforceable provision of this Agreement with a valid and enforceable provision that shall achieve, to the extent possible, the economic, business and other purposes of such void or unenforceable provision.

(h) *Remedies Cumulative*. Except as otherwise provided herein, any and all remedies herein expressly conferred upon a party shall be deemed cumulative with and not exclusive of any other remedy conferred hereby, or by law or equity upon such party, and the exercise by a party of any one remedy shall not preclude the exercise of any other remedy.

(i) *Governing Law*. This Agreement shall be governed by and construed in accordance with the laws of the State of Minnesota without reference to such state s principles of conflicts of law. Each of the parties hereto irrevocably consents to the exclusive jurisdiction of any court located within the State of California, in connection with any matter based upon or arising out of this Agreement or the matters contemplated herein, agrees that process may be served upon them in any manner authorized by the laws of the State of California for such persons and waives and covenants not to assert or plead any objection which they might otherwise have to such jurisdiction and such process.

(j) *Rules of Construction*. The parties hereto agree that they have been represented by counsel during the negotiation, preparation and execution of this Agreement and, therefore, waive the application of any law, regulation, holding or rule of construction providing that ambiguities in an agreement or other document shall be construed against the party drafting such agreement or document.

(k) *WAIVER OF JURY TRIAL.* EACH OF THE PARTIES HERETO HEREBY IRREVOCABLY WAIVES ALL RIGHT TO TRIAL BY JURY IN ANY ACTION, PROCEEDING OR COUNTERCLAIM (WHETHER BASED ON CONTRACT, TORT, OR OTHERWISE) ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE ACTIONS OF ANY PARTY HERETO IN NEGOTIATION, ADMINISTRATION, PERFORMANCE OR ENFORCEMENT HEREOF.

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IN WITNESS WHEREOF, the parties hereto have caused this Voting Agreement to be executed as of the date first above written.

NANOMETRICS INCORPORATED

By: _____

Name: Vincent J. Coates
Title: Chairman of the Board and Secretary

MINOR LEAGUE MERGER CORPORATION

By: _____

Name: John D. Heaton
Title: Chief Executive Officer

SHAREHOLDER:

_____

(Print Name of Shareholder)

_____

(Signature)

_____

(Print name and title if signing for an entity)

_____

(Print Address)

_____

(Print Telephone Number)

_____

(Social Security or Tax I.D. Number)

Shares beneficially owned by Shareholder on the date hereof:

_____ shares of voting securities of the Company

_____ shares of voting securities of the Company subject to options

[SIGNATURE TO COMPANY VOTING AGREEMENT]

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EXHIBIT A

IRREVOCABLE PROXY

TO VOTE STOCK OF

AUGUST TECHNOLOGY CORPORATION

The undersigned shareholder of August Technology Corporation, a Minnesota corporation (the *Company*), hereby irrevocably (to the fullest extent permitted by applicable law) appoints the members of the Board of Directors of Nanometrics Incorporated, a California corporation (*Parent*), and each of them, or any other designee of Parent, as the sole and exclusive attorneys and proxies of the undersigned, with full power of substitution and resubstitution, to vote and exercise all voting and related rights (to the fullest extent that the undersigned is entitled to do so) with respect to all of the shares of capital stock of the Company that now are or hereafter may be beneficially owned by the undersigned, and any and all other shares or securities of the Company issued or issuable in respect thereof on or after the date hereof (collectively, the *Shares*) in accordance with the terms of this irrevocable proxy (the *Irrevocable Proxy*). The Shares beneficially owned by the undersigned shareholder of the Company as of the date of this Irrevocable Proxy are listed on the final page of this Irrevocable Proxy. Upon the undersigned s execution of this Irrevocable Proxy, any and all prior proxies given by the undersigned with respect to any Shares are hereby revoked and the undersigned agrees not to grant any subsequent proxies or enter into any agreement or understanding with any person to vote or give instructions with respect to the Shares in any manner inconsistent with the terms of this Irrevocable Proxy until after the Expiration Date (as defined below).

This Irrevocable Proxy is irrevocable (to the fullest extent permitted by applicable law), is coupled with an interest, is granted pursuant to that certain Voting Agreement dated as of even date herewith by and between Parent and the undersigned (the *Voting Agreement*), and is granted in consideration of Parent entering into the Reorganization Agreement referenced therein. All capitalized terms that are used but not defined herein shall have the respective meanings ascribed thereto in the Reorganization Agreement. As used herein, the term *Expiration Date* shall mean the earlier to occur of (i) such date and time as the Merger Agreement shall have been validly terminated in accordance with its terms and conditions, or (ii) such date and time as the Merger shall become effective in accordance with its terms and conditions.

The attorneys and proxies named above, and each of them, are hereby authorized and empowered by the undersigned, at any time prior to the Expiration Date, to act as the undersigned s attorney and proxy to vote the Shares, and to exercise all voting and other rights of the undersigned with respect to the Shares (including, without limitation, the power to execute and deliver written consents pursuant to the Minnesota Business Corporation Act), at every annual, special or adjourned meeting of the shareholders of the Company and in every written consent in lieu of such meeting as follows: (a) in favor of the adoption and approval of the Merger Agreement and the approval of the Merger, and in favor of each of the other actions contemplated by the Merger Agreement and any action required in furtherance thereof; (b) against approval of any proposal made in opposition to, or in competition with, consummation of the Merger and the other transactions contemplated by the Merger Agreement; (c) against any of the following actions (other than those actions that relate to the Merger and the other transactions contemplated by the Merger Agreement): (i) any merger, consolidation, business combination, sale of assets, reorganization or recapitalization of the Company or any subsidiary of the Company with any person, (ii) any sale, lease or transfer of any significant part of the assets of the Company or any subsidiary of the Company, (iii) any reorganization, recapitalization, dissolution, liquidation or winding up of the Company or any subsidiary of the Company, (iv) any change in the capitalization of the Company or any subsidiary of the Company, or the corporate structure of the Company or any subsidiary of the Company, or (v) any other action that is intended, or could reasonably be expected to, impede, interfere with, delay, postpone, discourage or adversely affect the Merger or any of the other transactions contemplated by the Merger Agreement; and (d) in favor of waiving any notice that may have been or may be required relating to any reorganization of the Company or any subsidiary of the Company, any reclassification or recapitalization of the capital stock of the Company or any subsidiary of the Company, or any sale of assets, change of control, or

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acquisition of the Company or any subsidiary of the Company by any other person, or any consolidation or merger of the Company or any subsidiary of the Company with or into any other person.

The attorneys and proxies named above may not exercise this Irrevocable Proxy on any other matter except as provided above. The undersigned shareholder may vote the Shares on all other matters.

All authority herein conferred shall survive the death or incapacity of the undersigned and any obligation of the undersigned hereunder shall be binding upon the heirs, personal representatives, successors and assigns of the undersigned.

[*Remainder of Page Intentionally Left Blank*]

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This Irrevocable Proxy is coupled with an interest as aforesaid and is irrevocable. This Irrevocable Proxy may not be amended or otherwise modified without the prior written consent of Parent. This Irrevocable Proxy shall terminate, and be of no further force and effect, automatically upon the Expiration Date.

Dated: January 21, 2005

_____

(Print Name of Shareholder)

_____

(Signature of Shareholder)

_____

(Print name and title if signing on behalf of an entity)

Shares beneficially owned on the date hereof:

_____ shares of voting securities of the Company

_____ shares of voting securities of the Company subject to options

[SIGNATURE PAGE TO IRREVOCABLE PROXY]

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Annex B

RESTATED

CERTIFICATE OF INCORPORATION

AUGUST NANOMETRICS INC.

August Nanometrics Inc., a corporation organized and existing under the laws of the State of Delaware, hereby certifies as follows:

A. The corporation was originally incorporated under the name of Minor League Merger Corporation, and the original Certificate of Incorporation of the corporation was filed with the Secretary of State of the State of Delaware on January 18, 2005.

B. Pursuant to Section 251 of the General Corporation Law of the State of Delaware (the **DGCL**), this Restated Certificate of Incorporation amends and restates the provisions of the original Certificate of Incorporation of the corporation.

C. This Restated Certificate of Incorporation has been duly approved by the Board of Directors of the corporation in accordance with Section 251 of the DGCL.

D. The Certificate of Incorporation of the corporation is hereby amended and restated in its entirety to read as follows:

ARTICLE I

The name of the corporation is August Nanometrics Inc.

ARTICLE II

The address of the corporation s registered office in the State of Delaware is Corporation Trust Center, 1209 Orange Street, Wilmington, New Castle County, Delaware 19801. The name of its registered agent at such address is The Corporation Trust Company.

ARTICLE III

The purpose of the corporation is to engage in any lawful act or activity for which corporations may be organized under the DGCL.

ARTICLE IV

The corporation shall have authority to issue shares as follows:

47,000,000 shares of Common Stock, par value $0.001 per share. Each share of Common Stock shall entitle the holder thereof to one (1) vote on each matter submitted to a vote at a meeting of stockholders.

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3,000,000 shares of Preferred Stock, par value $0.001 per share, which may be issued from time to time in one or more series pursuant to a resolution or resolutions providing for such issue duly adopted by the Board of Directors of the corporation (authority to do so being hereby expressly vested in the Board of Directors of the corporation). The Board of Directors of the corporation is further authorized, subject to limitations prescribed by law, to fix by resolution or resolutions the designations, powers, preferences and rights, and the qualifications, limitations or restrictions thereof, of any wholly unissued series of Preferred Stock, including without limitation authority to fix by resolution or resolutions the dividend rights, dividend rate, conversion rights, voting rights, rights and terms of redemption (including sinking fund provisions), redemption price or prices, and liquidation preferences of any such series, and the number of shares constituting any such series and the designation thereof, or any of the foregoing.

The Board of Directors of the corporation is further authorized to increase (but not above the total number of authorized shares of the class) or decrease (but not below the number of shares of any such series then outstanding) the number of shares of any series, the number of which was fixed by it, subsequent to the issuance of shares of such series then outstanding, subject to the powers, preferences and rights, and the qualifications, limitations and restrictions thereof stated in this Certificate of Incorporation or the resolution of the Board of Directors of the corporation originally fixing the number of shares of such series. If the number of shares of any series is so decreased, then the shares constituting such decrease shall resume the status which they had prior to the adoption of the resolution originally fixing the number of shares of such series.

ARTICLE V

The number of directors that constitutes the entire Board of Directors of the corporation shall be determined in the manner set forth in the Bylaws of the corporation. At each annual meeting of stockholders, each director of the corporation shall be elected to hold office, and shall serve, until the expiration of the term for which he or she is elected and until his or her successor is duly elected and qualified or until his or her death, resignation, or removal; except that if any such election shall not be so held, such election shall take place at a stockholders meeting called and held in accordance with the DGCL.

Any director may be removed from office by the stockholders of the corporation only for cause. Vacancies occurring on the Board of Directors of the corporation for any reason and newly created directorships resulting from an increase in the authorized number of directors may be filled only by vote of a majority of the remaining members of the Board of Directors of the corporation, although less than a quorum, at any meeting of the Board of Directors of the corporation. A person so elected by the Board of Directors of the corporation to fill a vacancy or newly created directorship shall hold office until the next election of the class for which such director shall have been chosen and until his or her successor shall have been duly elected and qualified.

ARTICLE VI

In furtherance and not in limitation of the powers conferred by statute, the Board of Directors of the corporation is expressly authorized to adopt, amend or repeal the Bylaws of the corporation. Notwithstanding the foregoing, the holders of at least 66.67% of the shares of capital stock of the corporation issued and outstanding and entitled to vote may by affirmative vote adopt, amend, alter or repeal the Bylaws of the corporation.

ARTICLE VII

The election of directors need not be by written ballot unless the Bylaws of the corporation shall so provide.

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ARTICLE VIII

Special meetings of the stockholders of the corporation for any purpose or purposes may be called at any time by the chairperson of the Board of Directors of the corporation or a majority of the authorized number of directors, but such special meetings may not be called by any other person or persons. No action shall be taken by the stockholders of the corporation except at an annual or special meeting of the stockholders called in accordance with this Certificate of Incorporation or the Bylaws of the corporation, and no action shall be taken by the stockholders by written consent.

ARTICLE IX

The corporation shall indemnify and hold harmless, to the fullest extent permitted by the DGCL as it presently exists or may hereafter be amended, any director or officer of the corporation who was or is made or is threatened to be made a party or is otherwise involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative (a **Proceeding**) by reason of the fact that he or she, or a person for whom he or she is the legal representative, is or was a director, officer, employee or agent of the corporation or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust, enterprise or non-profit entity, including service with respect to employee benefit plans, against all liability and loss suffered and expenses reasonably incurred by such person in connection with any such Proceeding. The corporation shall be required to indemnify a person in connection with a Proceeding initiated by such person only if the Proceeding was authorized by the Board of Directors of the corporation.

The corporation shall have the power to indemnify and hold harmless, to the extent permitted by applicable law as it presently exists or may hereafter be amended, any employee or agent of the corporation who was or is made or is threatened to be made a party or is otherwise involved in any Proceeding by reason of the fact that he or she, or a person for whom he or she is the legal representative, is or was an employee or agent of the corporation or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust, enterprise or non-profit entity, including service with respect to employee benefit plans, against all liability and loss suffered and expenses reasonably incurred by such person in connection with any such Proceeding.

Neither any amendment nor repeal of this Article IX, nor the adoption of any provision of this Certificate of Incorporation inconsistent with this Article IX, shall eliminate or reduce the effect of this Article IX in respect of any matter occurring, or any cause of action, suit or claim accruing or arising or that, but for this Article IX, would accrue or arise, prior to such amendment, repeal or adoption of an inconsistent provision.

ARTICLE X

Except as provided in Article IX above, the corporation reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon stockholders herein are granted subject to this reservation. Notwithstanding the foregoing, any other provision of law, this Certificate of Incorporation or the Bylaws of the corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least 66.67% of the shares of capital stock of the corporation issued and outstanding and entitled to vote shall be required to amend or repeal, or to adopt any provision inconsistent with, Article IV, Article VI, Article VIII or Article X of this Certificate of Incorporation.

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IN WITNESS WHEREOF, August Nanometrics Inc. has caused this Restated Certificate of Incorporation to be signed by the President and Chief Executive Officer of the corporation on this day of 2005.

By: _____

John D. Heaton

President and Chief Executive Officer

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Annex B-1

AMENDED AND RESTATED BYLAWS OF

AUGUST NANOMETRICS INC.

(initially adopted on January 18, 2005)

(as amended and restated on [, 2005])

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AMENDED AND RESTATED BYLAWS

OF

AUGUST NANOMETRICS INC.

ARTICLE I - CORPORATE OFFICES

1.1 REGISTERED OFFICE.

The registered office of August Nanometrics Inc. shall be fixed in the corporation s certificate of incorporation, as the same may be amended from time to time.

1.2 OTHER OFFICES.

The corporation s board of directors (the *Board*) may at any time establish other offices at any place or places where the corporation is qualified to do business.

ARTICLE II - MEETINGS OF STOCKHOLDERS

2.1 PLACE OF MEETINGS.

Meetings of stockholders shall be held at any place, within or outside the State of Delaware, designated by the Board. In the absence of any such designation or determination, stockholders meetings shall be held at the corporation s principal executive office.

2.2 ANNUAL MEETING.

The annual meeting of stockholders shall be held each year. The Board shall designate the date and time of the annual meeting. In the absence of such designation the annual meeting of stockholders shall be held on the second Tuesday of May of each year at 10:00 a.m. However, if such day falls on a legal holiday, then the meeting shall be held at the same time and place on the next succeeding business day. At the annual meeting, directors shall be elected and any other proper business may be transacted.

2.3 SPECIAL MEETING.

A special meeting of the stockholders may be called as provided in the certificate of incorporation.

No business may be transacted at such special meeting other than the business specified in such notice to stockholders. Nothing contained in this paragraph of this Section 2.3 shall be construed as limiting, fixing, or affecting the time when a meeting of stockholders called by action of the Board may be held.

2.4 ADVANCE NOTICE PROCEDURES; NOTICE OF STOCKHOLDERS MEETINGS.

(i) At an annual meeting of the stockholders, only such business shall be conducted as shall have been properly brought before the meeting. To be properly brought before an annual meeting, business must be: (A) specified in the notice of meeting (or any supplement thereto) given by or at the direction of the Board, (B) otherwise properly brought before the meeting by or at the direction of the Board, or (C) otherwise properly brought before the meeting by a stockholder. For business to be properly brought before an annual meeting by a stockholder, the stockholder must have given timely notice thereof in writing to the secretary of the corporation. To be timely, a stockholder s notice must be delivered to or mailed and received at the principal executive offices of the corporation not less than one hundred twenty (120) calendar days before the one year anniversary of the date on which the corporation first mailed its proxy statement to stockholders in connection with the previous year s annual meeting of stockholders; *provided*, *however*, that in the event that no annual meeting was held in the previous year or the date of the annual meeting has been

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changed by more than thirty (30) days from the date of the prior year s meeting, notice by the stockholder to be timely must be so received not later than the close of business on the later of one hundred twenty (120) calendar days in advance of such annual meeting and ten (10) calendar days following the date on which public announcement of the date of the meeting is first made. A stockholder s notice to the secretary shall set forth as to each matter the stockholder proposes to bring before the annual meeting: (a) a brief description of the business desired to be brought before the annual meeting and the reasons for conducting such business at the annual meeting, (b) the name and address, as they appear on the corporation s books, of the stockholder proposing such business, (c) the class and number of shares of the corporation that are beneficially owned by the stockholder, (d) any material interest of the stockholder in such business, and (e) any other information that is required to be provided by the stockholder pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended (the 1934 Act), in his capacity as a proponent to a stockholder proposal. Notwithstanding the foregoing, in order to include information with respect to a stockholder proposal in the proxy statement and form of proxy for a stockholder s meeting, stockholders must provide notice as required by the regulations promulgated under the 1934 Act. Notwithstanding anything in these bylaws to the contrary, no business shall be conducted at any annual meeting except in accordance with the procedures set forth in this paragraph (i). The chairman of the annual meeting shall, if the facts warrant, determine and declare at the meeting that business was not properly brought before the meeting and in accordance with the provisions of this paragraph (i), and, if he should so determine, he shall so declare at the meeting that any such business not properly brought before the meeting shall not be transacted.

(ii) Only persons who are nominated in accordance with the procedures set forth in this paragraph (ii) shall be eligible for election as directors. Nominations of persons for election to the Board may be made at a meeting of stockholders by or at the direction of the Board or by any stockholder of the corporation entitled to vote in the election of directors at the meeting who complies with the notice procedures set forth in this paragraph (ii). Such nominations, other than those made by or at the direction of the Board, shall be made pursuant to timely notice in writing to the secretary of the corporation in accordance with the provisions of paragraph (i) of this Section 2.4. Such stockholder s notice shall set forth (a) as to each person, if any, whom the stockholder proposes to nominate for election or re-election as a director: (A) the name, age, business address and residence address of such person, (B) the principal occupation or employment of such person, (C) the class and number of shares of the corporation that are beneficially owned by such person, (D) a description of all arrangements or understandings between the stockholder and each nominee and any other person or persons (naming such person or persons) pursuant to which the nominations are to be made by the stockholder, and (E) any other information relating to such person that is required to be disclosed in solicitations of proxies for elections of directors, or is otherwise required, in each case pursuant to Regulation 14A under the 1934 Act (including without limitation such person s written consent to being named in the proxy statement, if any, as a nominee and to serving as a director if elected); and (b) as to such stockholder giving notice, the information required to be provided pursuant to paragraph (i) of this Section 2.4. At the request of the Board, any person nominated by a stockholder for election as a director shall furnish to the secretary of the corporation that information required to be set forth in the stockholder s notice of nomination which pertains to the nominee. No person shall be eligible for election as a director of the corporation unless nominated in accordance with the procedures set forth in this paragraph (ii). The chairman of the meeting shall, if the facts warrant, determine and declare at the meeting that a nomination was not made in accordance with the procedures prescribed by these bylaws, and if he should so determine, he shall so declare at the meeting, and the defective nomination shall be disregarded.

These provisions shall not prevent the consideration and approval or disapproval at an annual meeting of reports of officers, directors and committees of the Board, but in connection therewith no new business shall be acted upon at any such meeting unless stated, filed and received as herein provided. Notwithstanding anything in these bylaws to the contrary, no business brought before a meeting by a stockholder shall be conducted at an annual meeting except in accordance with procedures set forth in this Section 2.4.

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All notices of meetings of stockholders shall be sent or otherwise given in accordance with either Section 2.5 or Section 8.1 of these bylaws not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting. The notice shall specify the place, if any, date and hour of the meeting, the means of remote communication, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such meeting, and, in the case of a special meeting, the purpose or purposes for which the meeting is called.

2.5 MANNER OF GIVING NOTICE; AFFIDAVIT OF NOTICE.

Notice of any meeting of stockholders shall be given:

(i) if mailed, when deposited in the United States mail, postage prepaid, directed to the stockholder at his or her address as it appears on the corporation s records; or

(ii) if electronically transmitted as provided in Section 8.1 of these bylaws.

An affidavit of the secretary or an assistant secretary of the corporation or of the transfer agent or any other agent of the corporation that the notice has been given by mail or by a form of electronic transmission, as applicable, shall, in the absence of fraud, be prima facie evidence of the facts stated therein.

2.6 QUORUM.

The holders of a majority of the stock issued and outstanding and entitled to vote, present in person or represented by proxy, shall constitute a quorum for the transaction of business at all meetings of the stockholders. If, however, such quorum is not present or represented at any meeting of the stockholders, then either (i) the chairperson of the meeting, or (ii) the stockholders entitled to vote at the meeting, present in person or represented by proxy, shall have power to adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum is present or represented. At such adjourned meeting at which a quorum is present or represented, any business may be transacted that might have been transacted at the meeting as originally noticed.

2.7 ADJOURNED MEETING; NOTICE.

When a meeting is adjourned to another time or place, unless these bylaws otherwise require, notice need not be given of the adjourned meeting if the time, place if any thereof, and the means of remote communications if any by which stockholders and proxy holders may be deemed to be present in person and vote at such adjourned meeting are announced at the meeting at which the adjournment is taken. At the adjourned meeting, the corporation may transact any business which might have been transacted at the original meeting. If the adjournment is for more than 30 days, or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

2.8 CONDUCT OF BUSINESS.

The chairperson of any meeting of stockholders shall determine the order of business and the procedure at the meeting, including such regulation of the manner of voting and the conduct of business.

2.9 VOTING.

The stockholders entitled to vote at any meeting of stockholders shall be determined in accordance with the provisions of Section 2.12 of these bylaws, subject to Section 217 (relating to voting rights of fiduciaries, pledgors and joint owners of stock) and Section 218 (relating to voting trusts and other voting agreements) of the Delaware General Corporation Law (the *DGCL*).

Except as may be otherwise provided in the certificate of incorporation or these bylaws, each stockholder shall be entitled to one vote for each share of capital stock held by such stockholder.

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2.10 RECORD DATE FOR STOCKHOLDER NOTICE; VOTING; GIVING CONSENTS.

In order that the corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof, or entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for the purpose of any other lawful action, the Board may fix, in advance, a record date, which record date shall not precede the date on which the resolution fixing the record date is adopted and which shall not be more than 60 nor less than 10 days before the date of such meeting, nor more than 60 days prior to any other such action.

If the Board does not so fix a record date:

(i) The record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held.

(ii) The record date for determining stockholders for any other purpose shall be at the close of business on the day on which the Board adopts the resolution relating thereto.

A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; *provided, however*, that the Board may fix a new record date for the adjourned meeting.

2.11 PROXIES.

Each stockholder entitled to vote at a meeting of stockholders may authorize another person or persons to act for such stockholder by proxy authorized by an instrument in writing or by a transmission permitted by law filed in accordance with the procedure established for the meeting, but no such proxy shall be voted or acted upon after three years from its date, unless the proxy provides for a longer period. The revocability of a proxy that states on its face that it is irrevocable shall be governed by the provisions of Section 212 of the DGCL.

2.12 LIST OF STOCKHOLDERS ENTITLED TO VOTE.

The officer who has charge of the stock ledger of the corporation shall prepare and make, at least 10 days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. The corporation shall not be required to include electronic mail addresses or other electronic contact information on such list. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting for a period of at least 10 days prior to the meeting: (i) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (ii) during ordinary business hours, at the corporation s principal executive office. In the event that the corporation determines to make the list available on an electronic network, the corporation may take reasonable steps to ensure that such information is available only to stockholders of the corporation. If the meeting is to be held at a place, then the list shall be produced and kept at the time and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present. If the meeting is to be held solely by means of remote communication, then the list shall also be open to the examination of any stockholder during the whole time of the meeting on a reasonably accessible electronic network, and the information required to access such list shall be provided with the notice of the meeting. Such list shall presumptively determine the identity of the stockholders entitled to vote at the

meeting and the number of shares held by each of them.

2.13 INSPECTORS OF ELECTION

A written proxy may be in the form of a telegram, cablegram, or other means of electronic transmission which sets forth or is submitted with information from which it can be determined that the telegram, cablegram, or other means of electronic transmission was authorized by the person.

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Before any meeting of stockholders, the Board shall appoint an inspector or inspectors of election to act at the meeting or its adjournment. The number of inspectors shall be either one (1) or three (3). If any person appointed as inspector fails to appear or fails or refuses to act, then the chairperson of the meeting may, and upon the request of any stockholder or a stockholder s proxy shall, appoint a person to fill that vacancy.

Such inspectors shall:

(i) determine the number of shares outstanding and the voting power of each, the number of shares represented at the meeting, the existence of a quorum, and the authenticity, validity, and effect of proxies;

(ii) receive votes, ballots or consents;

(iii) hear and determine all challenges and questions in any way arising in connection with the right to vote;

(iv) count and tabulate all votes or consents;

(v) determine when the polls shall close;

(vi) determine the result; and

(vii) do any other acts that may be proper to conduct the election or vote with fairness to all stockholders.

The inspectors of election shall perform their duties impartially, in good faith, to the best of their ability and as expeditiously as is practical. If there are three (3) inspectors of election, the decision, act or certificate of a majority is effective in all respects as the decision, act or certificate of all. Any report or certificate made by the inspectors of election is prima facie evidence of the facts stated therein.

ARTICLE III - DIRECTORS

3.1 POWERS.

Subject to the provisions of the DGCL and any limitations in the certificate of incorporation or these bylaws relating to action required to be approved by the stockholders or by the outstanding shares, the business and affairs of the corporation shall be managed and all corporate powers shall be exercised by or under the direction of the Board.

3.2 NUMBER OF DIRECTORS.

The authorized number of directors shall be determined from time to time by resolution of the Board. No reduction of the authorized number of directors shall have the effect of removing any director before that director s term of office expires.

3.3 ELECTION, QUALIFICATION AND TERM OF OFFICE OF DIRECTORS.

Except as provided in Section 3.5 of these bylaws, each director, including a director elected to fill a vacancy, shall hold office until the expiration of the term for which elected and until such director s successor is elected and qualified or until such director s earlier death, resignation or removal. Directors need not be stockholders unless so required by the certificate of incorporation or these bylaws. The certificate of incorporation or these bylaws may prescribe other qualifications for directors.

3.4 CLASS OF DIRECTORS

The directors shall be divided into three classes as nearly equal in size as is practicable, hereby designated Class I, Class II and Class III. The term of office of the initial Class I directors shall expire at the first regularly-scheduled annual meeting of the stockholders following the effective date of these bylaws (the **Effective**

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Date), the term of office of the initial Class II directors shall expire at the second annual meeting of the stockholders following the Effective Date and the term of office of the initial Class III directors shall expire at the third annual meeting of the stockholders following the Effective Date. At each annual meeting of stockholders, commencing with the first regularly-scheduled annual meeting of stockholders following the Effective Date, each of the successors elected to replace the directors of a Class whose term shall have expired at such annual meeting shall be elected to hold office until the third annual meeting next succeeding his or her election and until his or her respective successor shall have been duly elected and qualified.

If the number of directors is hereafter changed, any newly created directorships or decrease in directorships shall be so apportioned among the classes as to make all classes as nearly equal in number as is practicable, provided that no decrease in the number of directors constituting the Board shall shorten the term of any incumbent director.

3.5 RESIGNATION AND VACANCIES.

Any director may resign at any time upon notice given in writing or by electronic transmission to the corporation. When one or more directors so resigns and the resignation is effective at a future date, a majority of the directors then in office, including those who have so resigned, shall have power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective, and each director so chosen shall hold office as provided in this section in the filling of other vacancies.

Unless otherwise provided in the certificate of incorporation or these bylaws, vacancies and newly created directorships resulting from any increase in the authorized number of directors elected by all of the stockholders having the right to vote as a single class may be filled by a majority of the directors then in office, although less than a quorum, or by a sole remaining director. A person so elected by the directors then in office to fill a vacancy or newly created directorship shall hold office until the next election of the class for which such director shall have been chosen and until his or her successor shall have been duly elected and qualified.

If at any time, by reason of death or resignation or other cause, the corporation should have no directors in office, then any officer or any stockholder or an executor, administrator, trustee or guardian of a stockholder, or other fiduciary entrusted with like responsibility for the person or estate of a stockholder, may call a special meeting of stockholders in accordance with the provisions of the certificate of incorporation or these bylaws, or may apply to the Court of Chancery for a decree summarily ordering an election as provided in Section 211 of the DGCL.

If, at the time of filling any vacancy or any newly created directorship, the directors then in office constitute less than a majority of the whole Board (as constituted immediately prior to any such increase), then the Court of Chancery may, upon application of any stockholder or stockholders holding at least 10% of the total number of the shares at the time outstanding having the right to vote for such directors, summarily order an election to be held to fill any such vacancies or newly created directorships, or to replace the directors chosen by the directors then in office as aforesaid, which election shall be governed by the provisions of Section 211 of the DGCL as far as applicable.

3.6 PLACE OF MEETINGS; MEETINGS BY TELEPHONE.

The Board may hold meetings, both regular and special, either within or outside the State of Delaware.

Unless otherwise restricted by the certificate of incorporation or these bylaws, members of the Board, or any committee designated by the Board, may participate in a meeting of the Board, or any committee, by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and such participation in a meeting shall constitute presence in person at the meeting.

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3.7 REGULAR MEETINGS.

Regular meetings of the Board may be held without notice at such time and at such place as shall from time to time be determined by the Board.

3.8 SPECIAL MEETINGS; NOTICE.

Special meetings of the Board for any purpose or purposes may be called at any time by the chairperson of the Board, the chief executive officer, the president, the secretary or a majority of the authorized number of directors.

Notice of the time and place of special meetings shall be:

(i) delivered personally by hand, by courier or by telephone;

(ii) sent by United States first-class mail, postage prepaid;

(iii) sent by facsimile; or

(iv) sent by electronic mail,

directed to each director at that director s address, telephone number, facsimile number or electronic mail address, as the case may be, as shown on the corporation s records.

If the notice is (i) delivered personally by hand, by courier or by telephone, (ii) sent by facsimile or (iii) sent by electronic mail, it shall be delivered or sent at least 24 hours before the time of the holding of the meeting. If the notice is sent by United States mail, it shall be deposited in the United States mail at least four days before the time of the holding of the meeting. Any oral notice may be communicated to the director. The notice need not specify the place of the meeting (if the meeting is to be held at the corporation s principal executive office) nor the purpose of the meeting.

3.9 QUORUM.

At all meetings of the Board, a majority of the authorized number of directors shall constitute a quorum for the transaction of business. The vote of a majority of the directors present at any meeting at which a quorum is present shall be the act of the Board, except as may be otherwise specifically provided by statute, the certificate of incorporation or these bylaws. If a quorum is not present at any meeting of the Board, then the directors present thereat may adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum is

present.

A meeting at which a quorum is initially present may continue to transact business notwithstanding the withdrawal of directors, if any action taken is approved by at least a majority of the required quorum for that meeting.

3.10 BOARD ACTION BY WRITTEN CONSENT WITHOUT A MEETING.

Unless otherwise restricted by the certificate of incorporation or these bylaws, any action required or permitted to be taken at any meeting of the Board, or of any committee thereof, may be taken without a meeting if all members of the Board or committee, as the case may be, consent thereto in writing or by electronic transmission and the writing or writings or electronic transmission or transmissions are filed with the minutes of proceedings of the Board or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

3.11 FEES AND COMPENSATION OF DIRECTORS.

Unless otherwise restricted by the certificate of incorporation or these bylaws, the Board shall have the authority to fix the compensation of directors.

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3.12 REMOVAL OF DIRECTORS.

Any director may be removed from office by the stockholders of the corporation only for cause.

No reduction of the authorized number of directors shall have the effect of removing any director prior to the expiration of such director s term of office.

ARTICLE IV - COMMITTEES

4.1 COMMITTEES OF DIRECTORS.

The Board may, by resolution passed by a majority of the authorized number of directors, designate one or more committees, each committee to consist of one or more of the directors of the corporation. The Board may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the Board to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the Board or in these bylaws, shall have and may exercise all the powers and authority of the Board in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers that may require it; but no such committee shall have the power or authority to (i) approve or adopt, or recommend to the stockholders, any action or matter expressly required by the DGCL to be submitted to stockholders for approval, or (ii) adopt, amend or repeal any bylaw of the corporation.

4.2 COMMITTEE MINUTES.

Each committee shall keep regular minutes of its meetings and report the same to the Board when required.

4.3 MEETINGS AND ACTION OF COMMITTEES.

Meetings and actions of committees shall be governed by, and held and taken in accordance with, the provisions of:

(i) Section 3.6 (place of meetings and meetings by telephone);

(ii) Section 3.7 (regular meetings);

(iii) Section 3.8 (special meetings and notice);

(iv) Section 3.9 (quorum);

(v) Section 7.12 (waiver of notice); and

(vi) Section 3.10 (board action by written consent without a meeting)

with such changes in the context of those bylaws as are necessary to substitute the committee and its members for the Board and its members. *However*:

(i) the time of regular meetings of committees may be determined either by resolution of the Board or by resolution of the committee;

(ii) special meetings of committees may also be called by resolution of the Board; and

(iii) notice of special meetings of committees shall also be given to all alternate members, who shall have the right to attend all meetings of the committee. The Board may adopt rules for the government of any committee not inconsistent with the provisions of these bylaws.

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ARTICLE V - OFFICERS

5.1 OFFICERS.

The officers of the corporation shall be a president and a secretary. The corporation may also have, at the discretion of the Board, a chairperson of the Board, a vice chairperson of the Board, a chief executive officer, a chief financial officer or treasurer, one or more vice presidents, one or more assistant vice presidents, one or more assistant treasurers, one or more assistant secretaries, and any such other officers as may be appointed in accordance with the provisions of these bylaws. Any number of offices may be held by the same person.

5.2 APPOINTMENT OF OFFICERS.

The Board shall appoint the officers of the corporation, except such officers as may be appointed in accordance with the provisions of Sections 5.3 and 5.5 of these bylaws, subject to the rights, if any, of an officer under any contract of employment.

5.3 SUBORDINATE OFFICERS.

The Board may appoint, or empower the chief executive officer or, in the absence of a chief executive officer, the president, to appoint, such other officers and agents as the business of the corporation may require. Each of such officers and agents shall hold office for such period, have such authority, and perform such duties as are provided in these bylaws or as the Board may from time to time determine.

5.4 REMOVAL AND RESIGNATION OF OFFICERS.

Subject to the rights, if any, of an officer under any contract of employment, any officer may be removed, either with or without cause, by an affirmative vote of the majority of the Board at any regular or special meeting of the Board or, except in the case of an officer chosen by the Board, by any officer upon whom such power of removal may be conferred by the Board.

Any officer may resign at any time by giving written notice to the corporation. Any resignation shall take effect at the date of the receipt of that notice or at any later time specified in that notice. Unless otherwise specified in the notice of resignation, the acceptance of the resignation shall not be necessary to make it effective. Any resignation is without prejudice to the rights, if any, of the corporation under any contract to which the officer is a party.

5.5 VACANCIES IN OFFICES.

Any vacancy occurring in any office of the corporation shall be filled by the Board or as provided in Section 5.2.

5.6 REPRESENTATION OF SHARES OF OTHER CORPORATIONS.

The chairperson of the Board, the president, any vice president, the treasurer, the secretary or assistant secretary of this corporation, or any other person authorized by the Board or the president or a vice president, is authorized to vote, represent, and exercise on behalf of this corporation all rights incident to any and all shares of any other corporation or corporations standing in the name of this corporation. The authority granted herein may be exercised either by such person directly or by any other person authorized to do so by proxy or power of attorney duly executed by such person having the authority.

5.7 AUTHORITY AND DUTIES OF OFFICERS.

All officers of the corporation shall respectively have such authority and perform such duties in the management of the business of the corporation as may be designated from time to time by the Board or the stockholders and, to the extent not so provided, as generally pertain to their respective offices, subject to the control of the Board.

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ARTICLE VI - RECORDS AND REPORTS

6.1 MAINTENANCE AND INSPECTION OF RECORDS.

The corporation shall, either at its principal executive office or at such place or places as designated by the Board, keep a record of its stockholders listing their names and addresses and the number and class of shares held by each stockholder, a copy of these bylaws as amended to date, accounting books, and other records.

Any stockholder of record, in person or by attorney or other agent, shall, upon written demand under oath stating the purpose thereof, have the right during the usual hours for business to inspect for any proper purpose the corporation s stock ledger, a list of its stockholders, and its other books and records and to make copies or extracts therefrom. A proper purpose shall mean a purpose reasonably related to such person s interest as a stockholder. In every instance where an attorney or other agent is the person who seeks the right to inspection, the demand under oath shall be accompanied by a power of attorney or such other writing that authorizes the attorney or other agent so to act on behalf of the stockholder. The demand under oath shall be directed to the corporation at its registered office in Delaware or at its principal executive office.

6.2 INSPECTION BY DIRECTORS.

Any director shall have the right to examine the corporation s stock ledger, a list of its stockholders, and its other books and records for a purpose reasonably related to his or her position as a director. The Court of Chancery is hereby vested with the exclusive jurisdiction to determine whether a director is entitled to the inspection sought. The Court may summarily order the corporation to permit the director to inspect any and all books and records, the stock ledger, and the stock list and to make copies or extracts therefrom. The Court may, in its discretion, prescribe any limitations or conditions with reference to the inspection, or award such other and further relief as the Court may deem just and proper.

ARTICLE VII - GENERAL MATTERS

7.1 EXECUTION OF CORPORATE CONTRACTS AND INSTRUMENTS.

The Board, except as otherwise provided in these bylaws, may authorize any officer or officers, or agent or agents, to enter into any contract or execute any instrument in the name of and on behalf of the corporation; such authority may be general or confined to specific instances. Unless so authorized or ratified by the Board or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

7.2 STOCK CERTIFICATES; PARTLY PAID SHARES.

The shares of the corporation shall be represented by certificates, provided that the Board may provide by resolution or resolutions that some or all of any or all classes or series of its stock shall be uncertificated shares. Any such resolution shall not apply to shares represented by a certificate until such certificate is surrendered to the corporation. Notwithstanding the adoption of such a resolution by the Board, every holder of stock represented by certificates and upon request every holder of uncertificated shares shall be entitled to have a certificate signed by, or in the name of the corporation by the chairperson or vice-chairperson of the Board, or the president or vice-president, and by the treasurer or an assistant treasurer, or the secretary or an assistant secretary of such corporation representing the number of shares registered in certificate form.

Any or all of the signatures on the certificate may be a facsimile. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate has ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the corporation with the same effect as if he were such officer, transfer agent or registrar at the date of issue.

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The corporation may issue the whole or any part of its shares as partly paid and subject to call for the remainder of the consideration to be paid therefor. Upon the face or back of each stock certificate issued to represent any such partly paid shares, upon the books and records of the corporation in the case of uncertificated partly paid shares, the total amount of the consideration to be paid therefor and the amount paid thereon shall be stated. Upon the declaration of any dividend on fully paid shares, the corporation shall declare a dividend upon partly paid shares of the same class, but only upon the basis of the percentage of the consideration actually paid thereon.

7.3 SPECIAL DESIGNATION ON CERTIFICATES.

If the corporation is authorized to issue more than one class of stock or more than one series of any class, then the powers, the designations, the preferences, and the relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of the certificate that the corporation shall issue to represent such class or series of stock; *provided, however*, that, except as otherwise provided in Section 202 of the DGCL, in lieu of the foregoing requirements there may be set forth on the face or back of the certificate that the corporation shall issue to represent such class or series of stock a statement that the corporation will furnish without charge to each stockholder who so requests the powers, the designations, the preferences, and the relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

7.4 LOST CERTIFICATES.

Except as provided in this Section 7.5, no new certificates for shares shall be issued to replace a previously issued certificate unless the latter is surrendered to the corporation and cancelled at the same time. The corporation may issue a new certificate of stock or uncertificated shares in the place of any certificate theretofore issued by it, alleged to have been lost, stolen or destroyed, and the corporation may require the owner of the lost, stolen or destroyed certificate, or such owner s legal representative, to give the corporation a bond sufficient to indemnify it against any claim that may be made against it on account of the alleged loss, theft or destruction of any such certificate or the issuance of such new certificate or uncertificated shares.

7.5 CONSTRUCTION; DEFINITIONS.

Unless the context requires otherwise, the general provisions, rules of construction and definitions in the DGCL shall govern the construction of these bylaws. Without limiting the generality of this provision, the singular number includes the plural, the plural number includes the singular, and the term person includes both a corporation and a natural person.

7.6 DIVIDENDS.

The Board, subject to any restrictions contained in either (i) the DGCL, or (ii) the certificate of incorporation, may declare and pay dividends upon the shares of its capital stock. Dividends may be paid in cash, in property, or in shares of the corporation s capital stock.

The Board may set apart out of any of the funds of the corporation available for dividends a reserve or reserves for any proper purpose and may abolish any such reserve. Such purposes shall include but not be limited to equalizing dividends, repairing or maintaining any property of the corporation, and meeting contingencies.

7.7 FISCAL YEAR.

The fiscal year of the corporation shall be fixed by resolution of the Board and may be changed by the Board.

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7.8 SEAL.

The corporation may adopt a corporate seal, which shall be adopted and which may be altered by the Board. The corporation may use the corporate seal by causing it or a facsimile thereof to be impressed or affixed or in any other manner reproduced.

7.9 TRANSFER OF STOCK.

Upon surrender to the corporation or the transfer agent of the corporation of a certificate for shares duly endorsed or accompanied by proper evidence of succession, assignation or authority to transfer, it shall be the duty of the corporation to issue a new certificate to the person entitled thereto, cancel the old certificate, and record the transaction in its books.

7.10 STOCK TRANSFER AGREEMENTS.

The corporation shall have power to enter into and perform any agreement with any number of stockholders of any one or more classes of stock of the corporation to restrict the transfer of shares of stock of the corporation of any one or more classes owned by such stockholders in any manner not prohibited by the DGCL.

7.11 REGISTERED STOCKHOLDERS.

The corporation:

(i) shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends and to vote as such owner;

(ii) shall be entitled to hold liable for calls and assessments the person registered on its books as the owner of shares; and

(iii) shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of another person, whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

7.12 WAIVER OF NOTICE.

Whenever notice is required to be given under any provision of the DGCL, the certificate of incorporation or these bylaws, a written waiver, signed by the person entitled to notice, or a waiver by electronic transmission by the person entitled to notice, whether before or after the time of the event for which notice is to be given, shall be deemed equivalent to notice. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the stockholders need be specified in any written waiver of notice or any waiver by electronic transmission

unless so required by the certificate of incorporation or these bylaws.

ARTICLE VIII - NOTICE BY ELECTRONIC TRANSMISSION

8.1 NOTICE BY ELECTRONIC TRANSMISSION.

Without limiting the manner by which notice otherwise may be given effectively to stockholders pursuant to the DGCL, the certificate of incorporation or these bylaws, any notice to stockholders given by the corporation under any provision of the DGCL, the certificate of incorporation or these bylaws shall be effective if given by a form of electronic transmission consented to by the stockholder to whom the notice is given. Any such consent shall be revocable by the stockholder by written notice to the corporation. Any such consent shall be deemed revoked if:

(i) the corporation is unable to deliver by electronic transmission two consecutive notices given by the corporation in accordance with such consent; and

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(ii) such inability becomes known to the secretary or an assistant secretary of the corporation or to the transfer agent, or other person responsible for the giving of notice.

However, the inadvertent failure to treat such inability as a revocation shall not invalidate any meeting or other action.

Any notice given pursuant to the preceding paragraph shall be deemed given:

(i) if by facsimile telecommunication, when directed to a number at which the stockholder has consented to receive notice;

(ii) if by electronic mail, when directed to an electronic mail address at which the stockholder has consented to receive notice;

(iii) if by a posting on an electronic network together with separate notice to the stockholder of such specific posting, upon the later of (A) such posting and (B) the giving of such separate notice; and

(iv) if by any other form of electronic transmission, when directed to the stockholder.

An affidavit of the secretary or an assistant secretary or of the transfer agent or other agent of the corporation that the notice has been given by a form of electronic transmission shall, in the absence of fraud, be prima facie evidence of the facts stated therein.

8.2 DEFINITION OF ELECTRONIC TRANSMISSION.

An electronic transmission means any form of communication, not directly involving the physical transmission of paper, that creates a record that may be retained, retrieved, and reviewed by a recipient thereof, and that may be directly reproduced in paper form by such a recipient through an automated process.

8.3 INAPPLICABILITY.

Notice by a form of electronic transmission shall not apply to Sections 164, 296, 311, 312 or 324 of the DGCL.

ARTICLE IX - INDEMNIFICATION

9.1 INDEMNIFICATION OF DIRECTORS AND OFFICERS

The corporation shall indemnify and hold harmless, to the fullest extent permitted by the DGCL as it presently exists or may hereafter be amended, any director or officer of the corporation who was or is made or is threatened to be made a party or is otherwise involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative (a **Proceeding**) by reason of the fact that he or she, or a person for whom he or she is the legal representative, is or was a director, officer, employee or agent of the corporation or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust, enterprise or non-profit entity, including service with respect to employee benefit plans, against all liability and loss suffered and expenses reasonably incurred by such person in connection with any such Proceeding. The corporation shall be required to indemnify a person in connection with a Proceeding initiated by such person only if the Proceeding was authorized by the Board.

9.2 INDEMNIFICATION OF OTHERS

The corporation shall have the power to indemnify and hold harmless, to the extent permitted by applicable law as it presently exists or may hereafter be amended, any employee or agent of the corporation who was or is made or is threatened to be made a party or is otherwise involved in any Proceeding by reason of the fact that he or she, or a person for whom he or she is the legal representative, is or was an employee or agent of the corporation or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust, enterprise or non-profit entity, including service with

respect to employee benefit plans, against all liability and loss suffered and expenses reasonably incurred by such person in connection with any such Proceeding.

9.3 PREPAYMENT OF EXPENSES

The corporation shall pay the expenses incurred by any officer or director of the corporation, and may pay the expenses incurred by any employee or agent of the corporation, in defending any Proceeding in advance of its final disposition; *provided, however*, that the payment of expenses incurred by a person in advance of the final disposition of the Proceeding shall be made only upon receipt of an undertaking by the person to repay all amounts advanced if it should be ultimately determined that the person is not entitled to be indemnified under this Article IX or otherwise.

9.4 DETERMINATION; CLAIM

If a claim for indemnification or payment of expenses under this Article IX is not paid in full within sixty days after a written claim therefor has been received by the corporation the claimant may file suit to recover the unpaid amount of such claim and, if successful in whole or in part, shall be entitled to be paid the expense of prosecuting such claim. In any such action the corporation shall have the burden of proving that the claimant was not entitled to the requested indemnification or payment of expenses under applicable law.

9.5 NON-EXCLUSIVITY OF RIGHTS

The rights conferred on any person by this Article IX shall not be exclusive of any other rights which such person may have or hereafter acquire under any statute, provision of the certificate of incorporation, these bylaws, agreement, vote of stockholders or disinterested directors or otherwise.

9.6 INSURANCE

The corporation may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against him or her and incurred by him or her in any such capacity, or arising out of his or her status as such, whether or not the corporation would have the power to indemnify him or her against such liability under the provisions of the DGCL.

9.7 OTHER INDEMNIFICATION

The corporation s obligation, if any, to indemnify any person who was or is serving at its request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust, enterprise or non-profit entity shall be reduced by any amount such person may collect as indemnification from such other corporation, partnership, joint venture, trust, enterprise or non-profit enterprise.

9.8 AMENDMENT OR REPEAL

Any repeal or modification of the foregoing provisions of this Article IX shall not adversely affect any right or protection hereunder of any person in respect of any act or omission occurring prior to the time of such repeal or modification.

ARTICLE X - AMENDMENTS

These bylaws may be adopted, amended or repealed by the affirmative vote of the holders of at least 66.67% of the shares of capital stock of the corporation issued and outstanding and entitled to vote. However, the corporation may, in its certificate of incorporation, confer the power to adopt, amend or repeal these bylaws upon the directors. The fact that such power has been so conferred upon the directors shall not divest the stockholders of the power, nor limit their power to adopt, amend or repeal these bylaws as set forth above.

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AUGUST NANOMETRICS INC.

CERTIFICATE OF AMENDMENT OF BYLAWS

The undersigned hereby certifies that he or she is the duly elected, qualified, and acting Secretary of August Nanometrics Inc., a Delaware corporation and that the foregoing bylaws, comprising eighteen (18) pages, were amended and restated on , 2005 by the corporation s board of directors.

IN WITNESS WHEREOF, the undersigned has hereunto set his or her hand this day of , 2005.

Secretary

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Annex C

Opinion of Adams Harkness, Inc.

Adams Harkness

99 High Street

Boston, MA 02110

617.371.3900

http://www.adamsharkness.com

January 20, 2005

The Board of Directors

Nanometrics Incorporated

1550 Buckeye Drive

Milpitas, CA 95035

Members of The Board of Directors:

You have requested our opinion as to the fairness, from a financial point of view, to holders of common stock, no par value, of Nanometrics Incorporated (Nanometrics), a California corporation (Nanometrics Common Stock), of the Exchange Ratio (as defined below) set forth in that certain draft Agreement and Plan of Merger and Reorganization, dated as of January 20, 2005 (the Agreement), among Nanometrics, Major League Merger Corporation (Merger Sub 1), a Minnesota corporation and a wholly-owned subsidiary of Nanometrics, Minor League Merger Corporation (Merger Sub 2), a Delaware corporation and a wholly-owned subsidiary of Nanometrics and August Technology Corporation (August), a Minnesota corporation. The Agreement provides for, among other things, (a) the merger of Nanometrics with and into Merger Sub 2 (the Migratory Merger), with Merger Sub 2 as the surviving corporation of such merger (such surviving corporation being referred to in the Agreement and herein as August Nanometrics), and (b) the merger of Merger Sub 1 with and into August (the August Merger), in a transaction pursuant to which each outstanding share of common stock, no par value of August (August Common Stock), will be converted into the right to receive 0.6401 of a share (the Exchange Ratio) of common stock, par value $0.001 per share, of August Nanometrics (August Nanometrics Common Stock). You have informed us, and we have assumed, that the Migratory Merger and the August Merger (the Mergers) each will be treated as a tax-free reorganization within the meaning of Section 368(a) of the Internal Revenue Code of 1986, as amended. The terms and conditions of the Mergers are more fully set out in the Agreement.

Adams Harkness, Inc. (Adams Harkness), as part of its investment banking activities, is regularly engaged in the valuation of businesses and their securities in connection with mergers and acquisitions, underwritings, distributions of listed and unlisted securities, private placements and valuations for corporate and other purposes. In the ordinary course of our business, we may actively trade or hold long or short positions of the equity securities of Nanometrics and/or August for either our customers or our own account. We have been engaged to act as financial advisor to the Board of Directors of Nanometrics in connection with this transaction and will receive a fee for our services, a portion of which is contingent upon the consummation of the Mergers. In addition, Nanometrics has agreed to indemnify us against certain liabilities arising out of our engagement including the rendering of our opinion set forth herein (our Fairness Opinion) and other matters, all as more fully described in that certain letter agreement dated December 9, 2004, by and between Adams Harkness and Nanometrics. Adams Harkness also acted as a managing underwriter in August s June 2000 initial public offering and in August s September 2003 follow-on equity offering.

For purposes of developing our Fairness Opinion, we have among other things:

1. reviewed certain publicly available financial statements and other business and financial information of Nanometrics and August, respectively, and have assumed that there has been no material change in the assets, financial condition, business or prospects of Nanometrics or August, since the respective dates of the most recent financial statements made available to us;

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2. reviewed certain internal financial statements and other financial and operating data concerning Nanometrics and August prepared by the management teams of Nanometrics and August, respectively;

3. considered certain financial forecasts, projections and analyses and other forward-looking financial information prepared by the management teams of Nanometrics and August, respectively, and have assumed that the financial results reflected in such forecasts, projections and analyses and other forward-looking financial information will be realized in the amounts and at the times projected;

4. discussed the past and current operations and financial condition, and the prospects of Nanometrics and August, including information relating to strategic, financial and operational benefits anticipated from the Mergers, with senior executives of Nanometrics and August, respectively, including discussions with such senior executives concerning cost savings and other synergies that are expected to result from the Mergers as well as their assessment of the strategic rationale for, and potential benefits of, the Mergers;

5. reviewed certain publicly available research estimates of research analysts regarding Nanometrics and August, respectively;

6. reviewed the reported trading prices and trading activity for Nanometrics Common Stock and August Common Stock, respectively, as well as publicly-available earnings estimates for Nanometrics and August, respectively;

7. compared the financial performance of Nanometrics and August and the trading prices and trading activity of Nanometrics Common Stock and August Common Stock, respectively, with that of certain other publicly-traded companies and their securities that we deemed relevant;

8. reviewed the financial terms, to the extent publicly available, of certain acquisition and merger of equals transactions that we deemed relevant;

9. reviewed and analyzed the potential pro forma financial effects of the Mergers;

10. reviewed and analyzed the capitalization of Nanometrics and August, respectively, as well as the projected pro forma capitalization of August Nanometrics after giving effect to the Mergers;

11. reviewed drafts of the Agreement and certain related documentation dated January 20, 2005 (collectively, the Draft Merger Documentation), and the financial terms and conditions set forth therein, as well as the schedules thereto, and have assumed that the final forms of the Agreement and related documentation and the schedules thereto will not vary in any regard that is material to our analysis from the versions included in the Draft Merger Documentation, and that the Mergers will be consummated in accordance with the terms thereof, including that in all respects material to our analysis, the representations and warranties made by the parties thereto are accurate and complete and the parties will comply with all of their covenants set forth therein; and

12. made such other studies and inquiries, and reviewed such other data, and considered such other factors as we have deemed, in our sole judgment, to be necessary, appropriate or relevant.

In connection with our review and arriving at our Fairness Opinion, we have not independently verified any information received from Nanometrics and August or their representatives or otherwise made available to us, have relied on such information, and have assumed that all such information is complete and accurate in all material respects. We have also relied on the assurances of the respective management teams of Nanometrics and August that they are not aware of any facts that would make such information misleading. With respect to any forecasts, projections and analyses and other forward-looking financial information reviewed by us relating to the prospects of Nanometrics and August, respectively, including information relating to the strategic, financial and operational benefits anticipated from the Mergers, we have assumed that such forecasts, projections and analyses and other forward-looking information have been reasonably prepared or developed on bases reflecting the best currently available estimates and judgments of the management teams of Nanometrics and August, respectively.

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We have not conducted, nor have we received copies of, any independent valuation or appraisal of any of the assets of Nanometrics or August, nor have we been furnished with any such appraisals. We have not been requested to conduct and have not conducted a physical inspection of the properties or facilities of Nanometrics or August. We have assumed that any material liabilities (contingent or otherwise, known or unknown) of Nanometrics and August are as set forth in the historic and projected financial statements of each company, respectively. In addition, we have not made an independent evaluation or appraisal of August Nanometrics after the Mergers and accordingly, we express no opinion as to the future prospects, plans or viability of August Nanometrics after the Mergers. We have made no independent investigation of any legal matters involving Nanometrics or August, and we have assumed the correctness of all statements with respect to legal matters made or otherwise provided to you and us by Nanometrics counsel or by August s counsel.

Our Fairness Opinion is necessarily based on financial, economic and securities market conditions prevailing as of the date hereof, and on the conditions and prospects, financial and otherwise, of Nanometrics and August as known to us on the date hereof. We have also taken into account our assessment of general economic, market and financial conditions and our experience in similar transactions, as well as our experience in securities valuation in general. It should be understood that (i) subsequent developments may affect the conclusions expressed in this Fairness Opinion if it were to be rendered as of a later date, and (ii) we disclaim any obligation to advise any person of any change in any matter affecting this Fairness Opinion that may come to our attention after the date of this Fairness Opinion. We have not undertaken to reaffirm or revise this Fairness Opinion or otherwise comment upon any events occurring after the delivery hereof and do not have any obligation to update, revise or reaffirm this Fairness Opinion.

We have also assumed that, in the course of obtaining necessary regulatory and third party approvals and consents for the Mergers, no modification, delay, limitation, restriction, or conditions will be imposed that will have an adverse effect on Nanometrics, August, August Nanometrics or the contemplated benefits of the Mergers, and that the Mergers will be consummated in accordance with the terms of the Agreement, without waiver, modification or amendment of any material term, condition or agreement therein.

This letter and our Fairness Opinion set forth herein are directed to and for the information of the Board of Directors of Nanometrics only and may not be relied upon by any other person or used for any other purpose without our prior written consent, except that a copy of this letter may be included in its entirety in any filing required to be made by Nanometrics with the Securities and Exchange Commission in connection with the Agreement or the Mergers. This Fairness Opinion does not address the relative merits of the Agreement or the Mergers or other business strategies that might be available to Nanometrics, the decision of the Board of Directors of Nanometrics to proceed with the Agreement or the Mergers, or the prices at which (i) Nanometrics Common Stock will trade following the announcement of the Agreement; or (ii) August Nanometrics Common Stock will trade following the consummation of the Mergers. We express no opinion or recommendation as to how the stockholders of Nanometrics should vote at the stockholders meeting held in connection with the proposed adoption of the Agreement and approval of the Mergers by such stockholders.

Except as provided above, this letter is not to be reproduced, summarized, described or referred to or given to any other person or otherwise made public or used for any other purpose, or published or referred to at any time, in whole or in part, without our prior written consent.

Based upon and subject to the foregoing, and in reliance thereon, it is our opinion that, as of the date hereof, the Exchange Ratio is fair, from a financial point of view, to holders of Nanometrics Common Stock.

Sincerely,

/s/ ADAMS HARKNESS, INC.

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Annex D

Opinion of Needham & Company, Inc.

Needham & Company, Inc. 445 Park Avenue, New York, NY 10022-4406 (212) 371-8300

January 20, 2005

Board of Directors

August Technology Corporation

4900 West 78th Street

Bloomington, MN 55435

Ladies and Gentlemen:

We understand that Nanometrics Incorporated (Nanometrics), August Technology Corporation (August), and two wholly-owned subsidiaries of Nanometrics (Merger Sub 1 and Merger Sub 2) propose to enter into an Agreement and Plan of Merger and Reorganization (the Merger Agreement) whereby, upon the terms and subject to the conditions set forth in the Merger Agreement, Merger Sub 1 will be merged with and into August and August will continue as a wholly-owned subsidiary of Nanometrics (the Merger). Immediately prior to the Merger, Nanometrics will have reincorporated into Delaware through a merger with and into Merger Sub 2 (unless the context otherwise requires, both the predecessor and surviving corporation are herein referred to as Nanometrics, while the surviving corporation is sometimes referred to herein as B). The terms and conditions of the Merger will be set forth more fully in the Merger Agreement.

Pursuant to the proposed Merger Agreement, we understand that at the August Merger Effective Time (as defined in the Merger Agreement), each issued and outstanding share of common stock, no par value per share, of August (August Common Stock) will be converted into the right to receive shares of common stock, $0.001 par value, of Nanometrics Delaware (Nanometrics Delaware Common Stock) equal to the Exchange Ratio (as defined below). The Exchange Ratio shall equal 0.6401 shares of Nanometrics Delaware Common Stock for each share of August Common Stock.

You have asked us to advise you as to the fairness, from a financial point of view, to the holders of August Common Stock of the Exchange Ratio pursuant to the Merger Agreement.

For purposes of this opinion we have, among other things: (i) reviewed a draft of the Merger Agreement dated January 20, 2005; (ii) reviewed certain publicly available information concerning Nanometrics and August and certain other relevant financial and operating data of Nanometrics and August furnished to us by Nanometrics and August; (iii) reviewed the historical stock prices and trading volumes of the common stock of Nanometrics (Nanometrics Common Stock) and August Common Stock; (iv) held discussions with members of management of Nanometrics and August concerning their current and future business prospects and joint prospects for the combined companies, including the potential cost savings and other synergies that may be achieved by the combined companies; (v) reviewed certain research analyst projections with respect to Nanometrics and held discussions with members of the management of Nanometrics concerning those projections; (vi) reviewed certain financial forecasts with respect to August and Nanometrics prepared by the respective managements of August and Nanometrics and held discussions with members of such management concerning those forecasts; (vii) compared certain publicly available financial data of companies whose securities are traded in the public markets and that we deemed relevant to similar data for August; (viii) reviewed the financial terms of certain other business combinations that we deemed generally relevant; and (ix) performed and/or considered such other studies, analyses, inquiries and investigations as we deemed appropriate.

Needham & Company, Inc.

In connection with our review and in arriving at our opinion, we have assumed and relied on the accuracy and completeness of all of the financial and other information reviewed by us for purposes of this opinion and have neither attempted to verify independently nor assumed responsibility for verifying any of such information. In addition, we have assumed, with your consent, that the Merger will qualify as a reorganization within the meaning of Section 368(a) of the Internal Revenue Code of 1986 and that the Merger will be consummated upon the terms and subject to the conditions set forth in the draft Merger Agreement dated January 20, 2005 without material alteration or waiver thereof. With respect to the financial forecasts for August and Nanometrics provided to us by their respective management and the joint prospects of the combined companies, we have assumed, with your consent and based upon discussions with such management, that such forecasts have been reasonably prepared on bases reflecting the best currently available estimates and judgments of such management, at the time of preparation, of the future operating and financial performance of August and Nanometrics and the combined companies, and we have relied, without independent verification, upon the estimates of such management of the potential cost savings and other synergies, including the amount and timing thereof, that may be achieved as a result of the proposed Merger. With respect to the research analyst projections for Nanometrics, we have assumed, with your consent and based upon discussions with the management of Nanometrics, that such projections represent reasonable estimates as to the future financial performance of Nanometrics. We express no opinion with respect to any of such forecasts, projections or estimates or the assumptions on which they were based. We have relied on advice of counsel and independent accountants to August as to all legal and financial reporting matters with respect to August, the Merger and the Merger Agreement. We have not assumed any responsibility for or made or obtained any independent evaluation, appraisal or physical inspection of the assets or liabilities of Nanometrics or August. Further, our opinion is based on economic, monetary and market conditions as they exist and can be evaluated as of the date hereof and we assume no responsibility to update or revise our opinion based upon circumstances and events occurring after the date hereof. Our opinion as expressed herein is limited to the fairness, from a financial point of view, to the holders of August Common Stock of the Exchange Ratio pursuant to the Merger Agreement and does not address August s underlying business decision to engage in the Merger or the relative merits of the Merger as compared to other business strategies that might be available to August. Our opinion does not constitute a recommendation to any shareholder of August as to how such shareholder should vote with respect to the proposed Merger.

We are not expressing any opinion as to the value of Nanometrics Delaware Common Stock when issued pursuant to the Merger or the prices at which Nanometrics Delaware Common Stock, Nanometrics Common Stock or August Common Stock will actually trade at any time.

Needham & Company, Inc., as part of its investment banking business, is regularly engaged in the valuation of businesses and their securities in connection with mergers and acquisitions, negotiated underwritings, secondary distributions of securities, private placements and other purposes. We have been engaged by August as financial advisor in connection with the Merger and to render this opinion and will receive a fee for our services, a substantial portion of which is contingent on the consummation of the Merger. In addition, August has agreed to indemnify us for certain liabilities arising out of our role as financial advisor and out of the rendering of this opinion and to reimburse us for our reasonable out-of-pocket expenses. We have in the past provided and may in the future provide investment banking and financial advisory services to August and Nanometrics unrelated to the proposed Merger, for which services we have received and expect to receive compensation. In the ordinary course of our business, we may actively trade the equity securities of August and Nanometrics for our own account or for the accounts of customers or affiliates and, accordingly, may at any time hold a long or short position in such securities.

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Needham & Company, Inc.

This letter and the opinion expressed herein are provided at the request and for the information of the Board of Directors of August and may not be quoted or referred to or used for any purpose without our prior written consent, except that this letter may be disclosed in connection with any registration statement or proxy statement used in connection with the Merger provided that this letter is quoted in full in such registration statement or proxy statement.

Based upon and subject to the foregoing, it is our opinion that, as of the date hereof, the Exchange Ratio pursuant to the Merger Agreement is fair to the holders of August Common Stock from a financial point of view.

Very truly yours,

NEEDHAM & COMPANY, INC.

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PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 20. Indemnification of Directors and Officers

Sections 204 (a) and 317 of the California Corporations Code authorize a corporation to indemnify its directors and officers against certain liabilities and to eliminate their liability to the corporation except in certain circumstances. The Registrant s Amended and Restated Articles of Incorporation contain a provision eliminating the liability of the Registrant s directors for monetary damages to the fullest extent permitted by California law. The Registrant s Amended and Restated Articles of Incorporation also contain a provision pursuant to which the Registrant is authorized to indemnify its directors, officers, employees and other agents through bylaw provisions in excess of the indemnification permitted by Section 317 of the California Corporations Code subject only to the applicable limits as set forth in Section 204 of the California Corporations Code. In addition, the Registrant s bylaws contain a provision limiting the liability of the Registrant s directors for monetary damages to the fullest extent permitted by California law and providing for indemnification to its directors, officers, employees and other agents.

Item 21. Exhibits and Financial Statement Schedules

(a) The following exhibits are filed herewith or incorporated herein by reference:

Exhibit Number	Exhibit Description
2.1	Agreement and Plan of Merger and Reorganization, dated as of January 21, 2005, by and among Nanometrics Incorporated, Major League Merger Corporation, Minor League Merger Corporation and August Technology Corporation. (1)
3.1	Amended and Restated Articles of Incorporation of Nanometrics Incorporated. (2)
3.2	Restated Bylaws of Nanometrics Incorporated. (3)
3.3	Certificate of Amendment of Amended and Restated Bylaws of Nanometrics Incorporated. (4)
4.1	Specimen Common Stock Certificate of Nanometrics Incorporated. (5)
5.1	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation regarding the validity of the securities registered hereunder.*
8.1	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation relating to tax matters.
8.2	Opinion of Fredrikson & Byron, P.A. relating to tax matters.
8.3	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation relating to tax matters.
23.1	Consent of Deloitte & Touche, LLP, Independent Registered Public Accounting Firm (related to the consolidated financial statements of Nanometrics Incorporated)
23.2	Consent of BDO Seidman, LLP, Independent Registered Public Accounting Firm (related to the consolidated financial statements of Nanometrics Incorporated).

23.3	Consent of KPMG LLP, Independent Registered Public Accounting Firm (related to the consolidated financial statements of August Technology).
23.4	Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (included in Exhibits 5.1 and 8.1).
23.5	Consent of Fredrikson & Byron, P.A.
24.1	Power of Attorney (included in Part II to this Registration Statement).

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Exhibit Number	Exhibit Description
99.1	Consent of Adams Harkness, Inc.
99.2	Consent of Needham & Company, LLC (f/k/a Needham & Company, Inc.).
99.4	Form of Proxy of Nanometrics Incorporated.
99.5	Form of Proxy of August Technology Corporation.
99.6	Complaint of John E. Silliman v. August Technology Corporation, et. al.*
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(4) Incorporated by reference to Exhibit 3.10 of Nanometrics Annual Report on Form 10-K for the year ended December 31, 2000, filed with the Securities and Exchange Commission on March 30, 2001.
(5) Incorporated by reference to an exhibit to Nanometrics Registration Statement on Form S-1 (File No. 2-93949), which became effective on November 28, 1984.
* Previously filed.

Item 22. Undertakings

(1) The undersigned registrant hereby undertakes as follows: that prior to any public reoffering of the securities registered hereunder through use of a prospectus which is a part of this registration statement, by any person or party who is deemed to be an underwriter within the meaning of Rule 145(c), the issuer undertakes that such reoffering prospectus will contain the information called for by the applicable registration form with respect to reofferings by persons who may be deemed underwriters, in addition to the information called for by the other items of the applicable form.

(2) The registrant undertakes that every prospectus (i) that is filed pursuant to paragraph (i) immediately preceding, or (ii) that purports to meet the requirements of Section 10(a)(3) of the Securities Act of 1933 (the Act), and is used in connection with an offering of securities subject to Rule 415, will be filed as a part of an amendment to the registration statement and will not be used until such amendment is effective, and that, for purposes of determining any liability under the Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant s annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan s annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(4) Insofar as indemnification for liabilities arising under the Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions hereof, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by

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a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

(5) The undersigned registrant hereby undertakes to respond to requests for information that is incorporated by reference into the prospectus pursuant to Items 4, 10(b), 11 or 13 of this form, within one business day of receipt of such request, and to send the incorporated documents by first class mail or other equally prompt means. This includes information contained in documents filed subsequent to the effective date of the registration statement through the date of responding to the request.

(6) The undersigned registrant hereby undertakes to supply by means of a post-effective amendment all information concerning a transaction, and the company being acquired involved therein, that was not the subject of and included in the registration statement when it became effective.

(7) The undersigned registrant hereby undertakes:

(A) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) under the Act if, in the aggregate, the changes in amount and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the Calculation of Registration Fee table in the effective registration statement;

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (A)(i) and (A)(ii) do not apply if the registration statement is on Form S-3, Form S-8 or Form F-3, and the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference into the registration statement.

(B) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the

initial bona fide offering thereof.

(C) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

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SIGNATURE

Pursuant to the requirements of the Securities Act of 1933, as amended, Nanometrics Incorporated has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized at Milpitas, California, on June 8, 2005.

NANOMETRICS INCORPORATED

By: /s/ PAUL B. NOLAN

Paul B. Nolan
Chief Financial Officer and Vice President

POWER OF ATTORNEY

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed below by the following persons on behalf of the registrant and in the capacities indicated on June 8, 2005.

Signature	Title
*	Chairman of the Board and Secretary
Vincent J. Coates	
/s/ JOHN D. HEATON	President, Chief Executive Officer and Director (Principal Executive Officer)
John D. Heaton	
*	Chief Financial Officer and Vice President (Principal Financial and Accounting Officer)
Paul B. Nolan	
*	Director
William Oldham	
	Director
Edmond R. Ward	
*	Director
Stephen J Smith	
*	Director

J. Thomas Bentley	
*	Director
Norman V. Coates	

* Executed by John D. Heaton as attorney-in-fact under power of attorney granted in the Registration Statement previously filed on March 28, 2005.

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Exhibit Number	Exhibit Description
2.1	Agreement and Plan of Merger and Reorganization, dated as of January 21, 2005, by and among Nanometrics Incorporated, Major League Merger Corporation, Minor League Merger Corporation and August Technology Corporation. (1)
3.1	Amended and Restated Articles of Incorporation of Nanometrics Incorporated. (2)
3.2	Restated Bylaws of Nanometrics Incorporated. (3)
3.3	Certificate of Amendment of Amended and Restated Bylaws of Nanometrics Incorporated. (4)
4.1	Specimen Common Stock Certificate of Nanometrics Incorporated. (5)
5.1	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation regarding the validity of the securities registered hereunder.*
8.1	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation relating to tax matters.
8.2	Opinion of Fredrikson & Byron, P.A. relating to tax matters.
8.3	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation relating to tax matters.
23.1	Consent of Deloitte & Touche, LLP, Independent Registered Public Accounting Firm (related to the consolidated financial statements of Nanometrics Incorporated)
23.2	Consent of BDO Seidman, LLP, Independent Registered Public Accounting Firm (related to the consolidated financial statements of Nanometrics Incorporated).
23.3	Consent of KPMG LLP, Independent Registered Public Accounting Firm (related to the consolidated financial statements of August Technology).
23.4	Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (included in Exhibits 5.1 and 8.1).
23.5	Consent of Fredrikson & Byron, P.A.
24.1	Power of Attorney (included in Part II to this Registration Statement).
99.1	Consent of Adams Harkness, Inc.
99.2	Consent of Needham & Company, LLC (f/k/a Needham & Company, Inc.).
99.4	Form of Proxy of Nanometrics Incorporated.
99.5	Form of Proxy of August Technology Corporation.
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