

IPG PHOTONICS CORP
Form 424B3
February 27, 2012
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The information in this prospectus supplement is not complete and may be changed. This prospectus supplement is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

Filed Pursuant to Rule 424(b)(3)
Registration No. 333-179722

Subject to Completion

Preliminary Prospectus Supplement dated February 27, 2012

PROSPECTUS SUPPLEMENT

(to prospectus dated February 27, 2012)

3,000,000 Shares

Common Stock

We are selling 2,800,000 shares of our common stock and our chairman and chief executive officer is selling an additional 200,000 shares of our common stock.

Our shares trade on the Nasdaq Global Market under the symbol IPGP. On February 24, 2012, the last sale price of the shares as reported on the Nasdaq Global Market was \$56.50 per share.

Investing in the common stock involves risks that are described in the Risk Factors section beginning on page S-6 of this prospectus supplement.

| | Per Share | Total |
|---|-----------|-------|
| Public offering price | \$ | \$ |
| Underwriting discount | \$ | \$ |
| Proceeds, before expenses, to us | \$ | \$ |
| Proceeds, before expenses, to the selling stockholder | \$ | \$ |

The underwriters may also exercise their option to purchase up to an additional 450,000 shares from us, at the public offering price, less the underwriting discount, for 30 days after the date of this prospectus supplement.

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Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement is truthful or complete. Any representation to the contrary is a criminal offense.

The shares will be ready for delivery on or about _____, 2012.

Sole Bookrunning Manager

BofA Merrill Lynch

Needham & Company

Stifel Nicolaus Weisel

The date of this prospectus supplement is _____, 2012

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You should rely only on the information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus. We and the selling stockholder have not, and the underwriters have not, authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We and the selling stockholder are not, and the underwriters are not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed since those dates.

About This Prospectus Supplement

This document is in two parts. The first part is this prospectus supplement, which describes the terms of the offering of common stock, contains information about us and specific information about the selling stockholder, and also adds to and updates information contained in the accompanying prospectus as well as the documents incorporated by reference into this prospectus supplement and the accompanying prospectus. The second part, the accompanying prospectus, gives more general information. This prospectus supplement incorporates by reference important business and financial information about us that is not included in or delivered with this prospectus supplement. To the extent any inconsistency or conflict exists between the information included or incorporated by reference in this prospectus supplement and the information included in the accompanying prospectus, the information included or incorporated by reference in this prospectus supplement updates and supersedes the information in the accompanying prospectus.

In this prospectus supplement, references to IPG Photonics, our company, we, us and our refer to IPG Photonics Corporation and its consolidated subsidiaries, except where the context otherwise indicates.

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PROSPECTUS SUPPLEMENT SUMMARY

*The following summary is qualified in its entirety by the more detailed information included elsewhere in, or incorporated by reference into, this prospectus supplement or the accompanying prospectus. Because this is a summary, it does not contain all of the information that may be important to you or that you should consider before investing in the common stock. You should read the entire prospectus supplement and the accompanying prospectus, including the section entitled *Risk Factors* and the documents incorporated by reference, which are described under *Where You Can Find More Information* and *Incorporation of Certain Information by Reference* before making an investment decision.*

Our Company

We are the leading developer and manufacturer of a broad line of high-performance fiber lasers, fiber amplifiers and diode lasers that are used in numerous applications in diverse end markets. Fiber lasers are a type of laser that combines the advantages of semiconductor diodes, such as long life and high efficiency, with the high amplification and precise beam qualities of specialty optical fibers to deliver superior performance, reliability and usability at a generally lower cost compared to competing lasers.

Our diverse lines of low, mid and high-power lasers and amplifiers are used in materials processing, advanced, communications and medical applications. For the year ended December 31, 2011, we reported net sales of \$474.5 million, an increase of 58.6% from the year ended December 31, 2010, and net income attributable to common shareholders of \$117.8 million. We sell our products globally to original equipment manufacturers (OEMs), system integrators and end users. We market our products internationally primarily through our direct sales force. We have sales offices in the United States, Germany, Italy, the United Kingdom, France, Spain, Japan, China, South Korea, Singapore, India and Russia.

We design and manufacture most of our key components used in our finished products, from semiconductor diodes to optical fibers and other components, finished fiber lasers and amplifiers. We also manufacture certain complementary products used with our lasers, including optical delivery cables, fiber couplers, beam switches, optical heads and chillers. Our vertically integrated operations allow us to reduce manufacturing costs, ensure access to critical components, rapidly develop and integrate advanced products and protect our proprietary technology.

Industry Background

Since the laser was invented over 50 years ago, laser technology has revolutionized a broad range of applications and products in various industries, including general manufacturing, automotive, shipbuilding, consumer products, electronics, semiconductors, research, medical and communications. Lasers provide flexible, non-contact and high-speed ways to process and treat various materials. For a wide variety of applications, lasers provide superior performance and a more cost-effective solution than non-laser technologies.

Historically, CO₂ gas lasers and crystal lasers have been the two principal laser types used in materials processing and many other applications. Traditional lasers have a number of disadvantages and limitations, including low beam quality, low reliability, limited output powers and wavelength choices, high energy consumption, large size, lack of mobility, the need for expensive replacement parts and complex cooling and maintenance requirements. In addition, the operating parameters of traditional lasers are difficult to control precisely.

We believe that fiber lasers represent a disruptive technology, a technology that is displacing traditional laser technologies and processes. Fiber lasers use semiconductor diodes as the light source to pump specialty

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optical fibers, which are infused with rare earth ions. Technological improvements in active optical fibers, semiconductor diodes and other optical components have resulted in performance improvements and increases in cost effectiveness, reliability and output power levels of fiber lasers. Also, component prices for fiber lasers have decreased as production volumes have risen, making fiber lasers cost-competitive and generally priced lower than competing lasers. As a result, fiber lasers have gained market share by replacing traditional lasers in existing laser applications and enabling new applications by addressing customer needs that are not met by traditional lasers and non-laser processes. We believe that fiber lasers provide a combination of benefits that include:

Superior Performance. Fiber lasers provide high beam quality over the entire power range.

Lower Cost. Fiber lasers offer strong value to customers because of their generally lower required maintenance costs, high reliability and energy efficiency. Many high-power lasers have lower acquisition costs.

Ease of Use. The all solid-state design and integrated fiber delivery of fiber lasers make them easy to operate, maintain and integrate into laser-based systems.

Compact Size and Portability. Fiber lasers are typically smaller and lighter than traditional lasers, and their portability and versatility allow them to be used in new laser applications.

Choice of Wavelengths and Precise Control of Beam. The design of fiber lasers generally provides a broad range of wavelength choices and increased beam control, allowing users to select the precise wavelength and beam parameter that best match their application and materials.

Our Competitive Strengths

We believe that our key strengths and competitive advantages include:

World's Leading Producer of Fiber Laser Technology. As a pioneer and technology leader in fiber lasers, we have built leading positions in our various end markets with a large and diverse customer base. Based on our leadership position, we are able to leverage our scale to lower costs for our customers and drive the proliferation of fiber lasers in existing and new applications.

Vertically Integrated Development and Manufacturing. We develop and manufacture all of our key high-volume specialty components, including semiconductor diodes, active fibers, passive fibers and specialty optical components. We believe that our vertical integration and our high-volume production enhances our ability to meet customer requirements, accelerate development, manage costs, improve component yields and protect our intellectual property, while maintaining high performance and quality standards.

Breadth and Depth of Expertise. We have extensive know-how in materials sciences, which enables us to make our specialty optical fibers, semiconductor diodes and other critical components. We also have expertise in optical, electrical, mechanical and semiconductor engineering, which we use to develop and manufacture our proprietary components, products and systems.

Diverse Customer Base, End Markets and Applications. Our diverse customer base, end markets and applications provide us with many growth opportunities. In 2011, we shipped more than 15,000 units to over 1,700 customers worldwide, with no single customer representing more than 8% of our sales. Our products are used in a variety of applications and end markets worldwide. Our principal end markets include general manufacturing, automotive, heavy industry, aerospace, consumer, semiconductor and electronics. In these markets, our customers use our lasers to cut, weld, mark, engrave and perform numerous micro-processing functions.

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Broad Product Portfolio and Ability to Meet Customer Requirements. We offer a broad range of standard and custom fiber lasers and amplifiers, enabling deployment of our products in a wide variety of applications and end markets. Our vertically integrated manufacturing and broad technology expertise enable us to design, prototype and commence high-volume production of our products rapidly, allowing our customers to meet their time-to-market requirements.

Our Strategy

Our objective is to maintain and extend our leadership position by pursuing the following key elements of our strategy:

Leverage Our Technology to Increase Sales. As fiber lasers become more widely accepted, we plan to leverage our position as the leader in fiber lasers and our applications expertise to develop solutions for customers and increase our position in the broader laser market. We believe that our fiber lasers will continue to displace traditional lasers in many existing applications due to their superior performance and value.

Target New Applications for Lasers and Expand into Broader Markets. We intend to expand the use of fiber lasers into additional applications where higher power, portability, efficiency, size and flexible fiber cable delivery can lead customers to adopt fiber lasers instead of non-laser solutions. We believe that the advantages of fiber laser technology can overcome many of the limitations that have hindered the adoption of conventional lasers in broader industrial markets and processes.

Expand Our Product Portfolio. We plan to continue to invest in research and development to add additional wavelengths, power levels and other parameters while also improving beam quality, as well as developing new product lines and laser-based systems.

Lower Our Costs Through Manufacturing Improvements and Innovation. We plan to seek further improvements in component manufacturing processes and device assembly as well as innovation in components and device designs to improve performance and decrease the overall cost per watt for our products.

Expand Global Reach to Attract Customers Worldwide. Our customers' manufacturing operations have expanded in emerging markets and are moving to lower-cost international locations. We have increased and will continue to increase our international sales and service locations to respond to our customers' needs.

Corporate Information

We were incorporated in Delaware in 1998. Our principal executive office is located at 50 Old Webster Road, Oxford, Massachusetts 01540. Our telephone number is (508) 373-1100. Our website is located at www.ipgphotonics.com.

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The Offering

| | |
|---|-------------------|
| Common stock offered by IPG Photonics | 2,800,000 shares |
| Common stock offered by the selling stockholder | 200,000 shares |
| Shares to be outstanding after the offering | 50,480,519 shares |

Use of proceeds We estimate that our net proceeds from this offering without exercise of the option to purchase additional shares will be approximately \$ million. We intend to use these net proceeds for general corporate purposes and to fund our capital expenditures and working capital requirements. We may also use some of the net proceeds for acquisitions of complementary businesses and technologies, although no such acquisitions are currently pending.

The selling stockholder, our chairman and chief executive officer, will receive all proceeds from the offering of his shares. See Selling Stockholder.

See Use of Proceeds on page S-23 of this prospectus supplement.

Risk factors See Risk Factors beginning on page S-6 of this prospectus supplement and other information included in this prospectus supplement and the accompanying prospectus for a discussion of factors you should carefully consider before deciding to invest in shares of the common stock.

Nasdaq Global Market symbol IPGP

The number of shares outstanding after the offering excludes 6,640,170 shares reserved for issuance under our stock option plans as of February 23, 2012, of which (1) outstanding options to purchase 2,932,332 shares of our common stock at an average option price of \$25.68 and (2) unvested outstanding restricted stock units with respect to 88,016 shares of our common stock have been issued. This number assumes that the underwriters' option to purchase additional shares is not exercised. If the option to purchase additional shares is exercised in full, we will issue and sell an additional 450,000 shares.

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The following tables summarize our consolidated financial data for the periods indicated. The summary consolidated statement of income data for the years ended December 31, 2011, 2010 and 2009, and the summary consolidated balance sheet data as of December 31, 2011 have been derived from our audited consolidated financial statements, which are incorporated by reference from our Annual Report on Form 10-K for the year ended December 31, 2011. Our historical results are not necessarily indicative of the results for any future period.

| | Year Ended December 31, | | |
|--|-------------------------|------------|------------|
| | 2011 | 2010 | 2009 |
| (In thousands, except per share data) | | | |
| Consolidated Statement of Income Data: | | | |
| Net sales | \$ 474,482 | \$ 299,256 | \$ 185,894 |
| Cost of sales | 217,227 | 152,798 | 121,626 |
| Gross profit | 257,255 | 146,458 | 64,268 |
| Operating expenses: | | | |
| Sales and marketing | 21,731 | 19,100 | 15,157 |
| Research and development | 25,422 | 19,160 | 18,543 |
| General and administrative expenses | 37,442 | 28,645 | 20,489 |
| (Gain) loss on foreign exchange | (2,862) | (848) | 1,022 |
| Total operating expenses | 81,733 | 66,057 | 55,211 |
| Operating income | 175,522 | 80,401 | 9,057 |
| Interest (expense) income, net | (681) | (1,188) | (1,252) |
| Other (expense) income, net | (257) | 39 | (36) |
| Income before provision for income taxes | 174,584 | 79,252 | 7,769 |
| Provision for income taxes | (53,575) | (24,900) | (2,485) |
| Net income | 121,009 | 54,352 | 5,284 |
| Less: Net income (loss) attributable to noncontrolling interests | 3,250 | 361 | (135) |
| Net income attributable to IPG Photonics Corporation | 117,759 | 53,991 | 5,419 |
| Net income attributable to common shareholders | \$ 117,759 | \$ 53,991 | \$ 5,419 |
| Net income per share: | | | |
| Basic | \$ 2.48 | \$ 1.16 | \$ 0.12 |
| Diluted | \$ 2.41 | \$ 1.13 | \$ 0.12 |
| Weighted-average number of shares outstanding: | | | |
| Basic | 47,365 | 46,424 | 45,489 |
| Diluted | 48,685 | 47,594 | 46,595 |

| | As of December 31, | |
|---|--------------------|---------|
| | 2011 | |
| (In thousands) | | |
| Consolidated Balance Sheet Data: | | |
| Cash and cash equivalents | \$ | 180,234 |
| Short-term investments | | 25,451 |
| Working capital, excluding cash and cash equivalents and short-term investments | | 135,060 |
| Total assets | | 608,132 |
| Revolving line-of-credit facilities | | 7,057 |

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| | |
|---|---------|
| Long-term debt, including current portion | 17,339 |
| Redeemable noncontrolling interests | 46,123 |
| Stockholders' equity | 443,323 |

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RISK FACTORS

An investment in our common stock involves risks. You should carefully consider the risks set forth below, as well as all of the other information contained in this prospectus supplement and the accompanying prospectus and the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, including our Annual Report on Form 10-K for the year ended December 31, 2011, before deciding to invest in our common stock. The occurrence of any of the following risks could materially and adversely affect our business, financial condition, prospects, results of operations and cash flows. In such case, the trading price of our common stock could decline and you could lose all or part of your investment. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial may also materially adversely affect our business, prospects, financial condition, results of operations and cash flows.

Risks Relating to Our Business

Downturns in the geographic areas and markets we serve, particularly materials processing, could have a material adverse effect on our sales and profitability.

Our business depends substantially upon capital expenditures by our customers, particularly by manufacturers in the materials processing market, which includes general manufacturing, automotive, heavy industry, aerospace, consumer, semiconductor and electronics. Approximately 88.4% of our revenues in 2011 were from customers in the materials processing market. Although applications in this market are broad, sales for these applications are cyclical and have historically experienced sudden and severe downturns and periods of oversupply, resulting in significantly reduced demand for capital equipment, including the products that we manufacture and market. For example, in 2009, our sales decreased by 25% in the materials processing market as a result of the global economic recession. For the foreseeable future, our operations will continue to depend upon capital expenditures by customers in this market, which, in turn, depend upon the demand for their products or services. Our sales have materially benefited in 2010 and 2011 from our increased sales of mid- and high-power lasers to end users in China. A slowing of economic growth, or a recession in China, would slow our growth rates or may result in a decrease in our sales. Decreased demand for products and services from customers for materials processing applications during an economic downturn or a decrease in purchases from end users in China may lead to decreased demand for our products, which would reduce our sales and margins. We may not be able to respond by decreasing our expenses quickly enough, due in part, to our fixed overhead structure related to our vertically integrated operations and our commitments to continuing investment in research and development.

Our business is impacted by global economic conditions and macroeconomic downturns can disrupt our business and sales and may harm our financial condition.

We have customers in many geographic areas. If a global economic downturn were to occur, we believe many of our customers would significantly decrease their capital expenditures to cut their costs. Accordingly, we believe our ability to generate sales is particularly sensitive to global and regional macroeconomic conditions. Adverse changes have occurred and may occur in the future as a result of declining or flat global or regional economic conditions, fluctuations in currency and commodity prices, wavering confidence, capital expenditure reductions, unemployment, declines in stock markets, contraction of credit availability, declines in real estate values, or other factors affecting economic conditions generally. These changes may negatively affect the sales of our lasers and amplifiers, increase exposure to losses from bad debts, increase the cost and decrease the availability of financing, increase the risk of loss on investments, or increase costs associated with manufacturing and distributing products. A prolonged economic downturn could have a material adverse effect on our business, financial condition and results of operations.

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Uncertainty in the general economic conditions of markets in which we participate negatively affect our ability to estimate future income and expenditures.

Current and future conditions in the economy have an inherent degree of uncertainty. As a result, it is difficult to estimate the level of growth or contraction for the economy as a whole. It is even more difficult to estimate growth or contraction in various parts, sectors and regions of the economy, including the materials processing, telecommunications, advanced and medical markets and applications in which we participate. Because all components of our budgeting and forecasting are dependent upon estimates of growth or contraction in the markets and applications we serve and demand for our products, the prevailing economic uncertainties render estimates of future income and expenditures very difficult to make.

Our sales depend upon our ability to penetrate new applications for fiber lasers and increase our market share in existing applications.

Our level of sales will depend on our ability to generate sales of fiber lasers in applications where conventional lasers, such as CO₂ and YAG lasers, have been used or in new and developing markets and applications for lasers where they have not been used previously. To date, a significant portion of our revenue growth has been derived from sales of fiber lasers primarily for applications where CO₂ and YAG lasers historically have been used. In order to maintain or increase market demand for our fiber laser products, we will need to devote substantial resources to:

demonstrate the effectiveness of fiber lasers in new applications;

increase our direct and indirect sales efforts;

effectively service and support our installed product base on a global basis;

extend our product line to address new applications;

develop new applications for our products; and

continue to reduce our manufacturing costs and enhance our competitive position.

Fiber lasers are relatively new when compared to conventional lasers and our future success depends on the development and broader acceptance of fiber lasers. Potential customers may be reluctant to adopt fiber lasers as an alternative to conventional lasers, such as CO₂ and YAG, and non-laser methods, such as mechanical tools. Such potential customers may have substantial investments and know-how related to their existing laser and non-laser technologies, and may perceive risks relating to the reliability, quality, usefulness and cost-effectiveness of fiber lasers when compared to other laser or non-laser technologies available in the market. If we are unable to implement our strategy to develop new applications for our products, our revenues, operating results and financial condition could be adversely affected. We cannot assure you that we will be able to successfully implement our business strategy. In addition, our newly developed or enhanced products may not achieve market acceptance or may be rendered obsolete or less competitive by the introduction of new products by other companies.

Our vertically integrated business results in high levels of fixed costs and inventory levels that may adversely impact our gross profits and our operating results in the event that demand for our products declines or we maintain excess inventory levels.

We have a high fixed cost base due to our vertically integrated business model, including the fact that approximately 77% of our 2,137 employees as of December 31, 2011 were employed in our manufacturing operations. We may not adjust these fixed costs quickly enough to adapt to rapidly changing market conditions. Our gross profit, in absolute dollars and as a percentage of net sales, is impacted by our sales volume, the corresponding absorption of fixed manufacturing overhead expenses and manufacturing yields. In addition, because we are a vertically integrated manufacturer and design and manufacture our key specialty components,

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insufficient demand for our products may subject us to the risks of high inventory carrying costs and increased inventory obsolescence. If our capacity and production levels are not properly sized in relation to expected demand, we may need to record write-downs for excess or obsolete inventory. Because we are vertically integrated, the rate at which we turn inventory has historically been low when compared to our cost of sales. We do not expect this to change significantly in the future and believe that we will have to maintain a relatively high level of inventory compared to our cost of sales. As a result, we continue to expect to have a significant amount of working capital invested in inventory. Changes in our level of inventory lead to an increase in cash generated from our operations when inventory is sold or a decrease in cash generated from our operations at times when the amount of inventory increases.

The markets for our products are highly competitive and increased competition could increase our costs, reduce our sales or cause us to lose market share.

The industries in which we operate are characterized by significant price and technological competition. Our fiber laser and amplifier products compete with conventional laser technologies and amplifier products offered by several well-established companies, some of which are larger and have substantially greater financial, managerial and technical resources, more extensive distribution and service networks, greater sales and marketing capacity, and larger installed customer bases than we do. Also, we compete with widely used non-laser production methods, such as resistance welding. We believe that competition will be particularly intense from makers of CO₂, YAG, disc and direct diode lasers, as these makers of laser solutions may lower prices to maintain or increase current market share and have committed significant research and development resources to pursue opportunities related to these technologies.

In addition, we face competition from a growing number of fiber laser makers, including Rofin-Sinar Technologies, Inc., Trumpf GmbH + Co. KG, GSI Group Inc., Coherent Inc., Hypertherm, Inc., Newport Corporation, The Furukawa Electric Co., Ltd., Keopsys SA, Mitsubishi Cable Industries, Ltd., Miyachi Unitek Corporation, Raycus Fiber Laser Technologies Co. Ltd. and JDS Uniphase Corporation. Competition from other fiber laser makers has increased and some have introduced fiber lasers or announced plans to introduce fiber lasers that compete with our products. We may not be able to successfully differentiate our current and proposed products from our competitors' products and current or prospective customers may not consider our products to be superior to competitors' products. To maintain our competitive position, we believe that we will be required to continue a high level of investment in research and development, application development and customer service and support, and to react to market pricing conditions. We may not have sufficient resources to continue to make these investments and we may not be able to make the technological advances or price adjustments necessary to maintain our competitive position. We also compete against our OEM customers' internal production of competitive laser technologies.

Our manufacturing capacity and operations may not be appropriate for future levels of demand and may adversely affect our gross margins.

In response to an increase in demand for our fiber lasers, we added substantial manufacturing capacity at our facilities in the United States, Germany and Russia in the period from 2005 to 2008. Beginning in 2010, we entered another phase of expanding capacity at those manufacturing facilities. We continue to expand our capacity further in Russia. A significant portion of our manufacturing facilities and production equipment, such as our semiconductor production and processing equipment, diode packaging equipment and diode burn-in stations, are special-purpose in nature and cannot be adapted easily to make other products. If the demand for fiber lasers or amplifiers does not increase or decreases from current levels, we may have significant excess manufacturing capacity and under-absorption of our fixed costs, which could in turn adversely affect our gross margins and profitability.

To maintain our competitive position as the leading developer and manufacturer of fiber lasers and to meet anticipated demand for our products, we invested significantly in the expansion of our manufacturing and

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operations throughout the world and will do so in the future. We incurred in the past and will incur significant costs associated with the acquisition, build-out and preparation of our facilities. We had capital expenditures of \$53.0 million and \$28.4 million in 2011 and 2010, respectively, and we expect to incur approximately \$55 million to \$60 million in capital expenditures, excluding acquisitions, in 2012. In connection with these projects, we may incur cost overruns, construction delays, labor difficulties or regulatory issues which could cause our capital expenditures to be higher than what we currently anticipate, possibly by a material amount, which would in turn adversely impact our operating results. Moreover, we may experience higher costs due to yield loss, production inefficiencies and equipment problems until any operational issues associated with the opening of new manufacturing facilities are resolved.

The laser and amplifier industries are experiencing declining average selling prices, which could cause our gross margins to decline and harm our operating results.

Products in the laser and amplifier industries generally, and our products specifically, are experiencing and may in the future continue to experience a decline in average selling prices, or ASPs, as a result of new product and technology introductions, increased competition and price pressures from significant customers. If the ASPs of our products decline further and we are unable to increase our unit volumes, introduce new or enhanced products with higher margins or reduce manufacturing costs to offset anticipated decreases in the prices of our existing products, our operating results may be adversely affected. In addition, because of our significant fixed costs, we are limited in our ability to reduce total costs quickly in response to any revenue shortfalls. Because of these factors, we have experienced and we may experience in the future material adverse fluctuations in our operating results on a quarterly or annual basis if the ASPs of our products continue to decline.

Because we lack long-term purchase commitments from our customers, our sales can be difficult to predict, which could lead to excess or obsolete inventory and adversely affect our operating results.

We generally do not enter into long-term agreements with our customers obligating them to purchase our fiber lasers or amplifiers. Our business is characterized by short-term purchase orders and shipment schedules and, in some cases, orders may be cancelled or delayed without significant penalty. As a result, it is difficult to forecast our revenues and to determine the appropriate levels of inventory required to meet future demand. In addition, due to the absence of long-term volume purchase agreements, we forecast our revenues and plan our production and inventory levels based upon the demand forecasts of our OEM customers, end users and distributors, which are highly unpredictable and can fluctuate substantially. This could lead to increased inventory levels and increased carrying costs and risk of excess or obsolete inventory due to unanticipated reductions in purchases by our customers. In this regard, we recorded provisions for inventory totaling \$6.1 million, \$2.7 million and \$5.3 million in 2011, 2010 and 2009, respectively. These provisions were recorded as a result of changes in market prices of certain components, the value of those inventories that was realizable through finished product sales and uncertainties related to the recoverability of the value of inventories due to technological changes and excess quantities. If our OEM customers, end users or distributors fail to accurately forecast the demand for our products, fail to accurately forecast the timing of such demand, or are unable to consistently negotiate acceptable purchase order terms with customers, our results of operations may be adversely affected.

We may experience lower than expected manufacturing yields, which would adversely affect our gross margins.

The manufacture of semiconductor diodes and the packaging of them is a highly complex process. Manufacturers often encounter difficulties in achieving acceptable product yields from diode and packaging operations. We have from time to time experienced lower than anticipated manufacturing yields for our diodes and packaged diodes. This occurs during the production of new designs and the installation and start-up of new process technologies. If we do not achieve planned yields, our product costs could increase resulting in lower gross margins, and key component availability would decrease.

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We are subject to litigation alleging that we are infringing third-party intellectual property rights. Intellectual property claims could result in costly litigation and harm our business.

In recent years, there has been significant litigation involving intellectual property rights in many technology-based industries, including our own. We face risks and uncertainties in connection with such litigation, including the risk that patents issued to others may harm our ability to do business; that there could be existing patents of which we are unaware that could be pertinent to our business; and that it is not possible for us to know whether there are patent applications pending that our products might infringe upon, since patent applications often are not disclosed until a patent is issued or published. Moreover, the frequency with which new patents are granted and the diversity of jurisdictions in which they are granted make it impractical and expensive for us to monitor all patents that may be relevant to our business.

From time to time, we have been notified of allegations and claims that we may be infringing patents or intellectual property rights owned by third parties. In 2007, we settled two patent infringement lawsuits filed against us and in 2010 we settled another patent infringement lawsuit filed against us.

In November 2006, IMRA America, Inc. filed an action against us alleging that certain products we produce infringe one U.S. patent allegedly owned by IMRA America. IMRA America alleged willful infringement and sought damages, including for alleged lost profits, of at least \$26 million through June 2011, treble damages, attorneys' fees and injunctive relief. IMRA America also alleged inducement of infringement and contributory infringement. We filed an answer in which we denied infringement and also filed declaratory judgment counterclaims based on this and other defenses. This lawsuit concerns products made, used, sold or offered for sale in or imported into the United States and therefore the lawsuit affects products that account for a substantial portion of our revenues. This lawsuit does not concern products, or revenues that are derived from products, that are not made, used, sold or offered for sale in or imported into the United States. In June 2008, the U.S. Patent and Trademark Office, or USPTO, ordered re-examination of the patent claims asserted by IMRA America against the Company. In July 2009, the USPTO confirmed the patentability of all of the claims in the IMRA America patent over the prior art cited in the re-examination, as well as of new claims added during the re-examination. In August 2009, we submitted an additional re-examination request, which was denied by the USPTO. The USPTO issued a re-examination certificate in October 2009. The U.S. District Court for the Eastern District of Michigan adopted the claim construction of IMRA America on one of the four claim terms, but did not decide the others. In March 2011, the District Court granted our motion for partial summary judgment of no marking or no statutory notice, which had the effect of precluding IMRA America from seeking damages for any alleged infringing products sold prior to November 16, 2006, the date the lawsuit was filed, with the exception of four particular alleged infringing products, as to which IMRA America is precluded from seeking damages for sales prior to August 6, 2006. The U.S. District Court denied our motions for summary judgment on non-infringement, invalidity, no willful infringement and laches, and granted IMRA America's motions for summary judgment on no invalidity for derivation and no equitable misconduct. The trial occurred in September and October 2011, and the jury returned a unanimous verdict that we did not infringe IMRA America's patent. IMRA America has filed post-trial motions seeking to set aside the jury verdict. IMRA America also has the right to appeal the verdict. IMRA America has also informed us that it has patents and applications in the United States and in foreign jurisdictions directed to fiber lasers and fiber amplifiers, but has not asserted them against us. The Company has filed oppositions in Japan and Germany to two patents owned by IMRA America. In Japan, the patent office invalidated two claims and maintained 49 claims of the IMRA America patent, and we are appealing the decision. The German opposition is pending and there has been no decision.

There can be no assurance that we will be able to dispose without a material effect any post-trial motions or appeals made in the litigation with IMRA America, or claims or other allegations made or asserted in the future. The outcome of any litigation is uncertain. Even if we ultimately are successful on the merits of any such litigation or re-examination, legal and administrative proceedings related to intellectual property are typically expensive and time-consuming, generate negative publicity and divert financial and managerial resources. Some litigants may have greater financial resources than we have and may be able to sustain the costs of complex intellectual property litigation more easily than we can.

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If we do not prevail in any intellectual property litigation brought against us, including the IMRA America litigation, it could affect our ability to sell our products and materially harm our business, financial condition and results of operations. These developments could adversely affect our ability to compete for customers and increase our revenues. Plaintiffs in intellectual property cases often seek, and sometimes obtain, injunctive relief. Intellectual property litigation commenced against us could force us to take actions that could be harmful to our business, competitive position, results of operations and financial condition, including the following:

stop selling our products or using the technology that contains the allegedly infringing intellectual property;

pay actual monetary damages, royalties, lost profits or increased damages and the plaintiff's attorneys' fees, which individually or in the aggregate may be substantial; and

attempt to obtain a license to use the relevant intellectual property, which may not be available on reasonable terms or at all. In addition, intellectual property lawsuits can be brought by third parties against OEMs and end users that incorporate our products into their systems or processes. In some cases, we indemnify OEMs against third-party infringement claims relating to our products and we often make representations affirming, among other things, that our products do not infringe the intellectual property rights of others. As a result, we may incur liabilities in connection with lawsuits against our customers. Any such lawsuits, whether or not they have merit, could be time-consuming to defend, damage our reputation or result in substantial and unanticipated costs.

Our inability to protect our intellectual property and proprietary technologies could result in the unauthorized use of our technologies by third parties, hurt our competitive position and adversely affect our operating results.

We rely on patents, trade secret laws, contractual agreements, technical know-how and other unpatented proprietary information to protect our products, product development and manufacturing activities from unauthorized copying by third parties. Although we acquired a patent portfolio in 2008 and started a program in 2007 to increase the number of patent applications we file, our patents do not cover all of our technologies, systems, products and product components and may not prevent third parties from unauthorized copying of our technologies, products and product components. We seek to protect our proprietary technology under laws affording protection for trade secrets. We also seek to protect our trade secrets and proprietary information, in part, by requiring employees to enter into agreements providing for the maintenance of confidentiality and the assignment of rights to inventions made by them while employed by us. We have significant international operations and we are subject to foreign laws which differ in many respects from U.S. laws. Policing unauthorized use of our trade secret technologies throughout the world and proving misappropriation of our technologies are particularly difficult, especially due to the number of our employees and operations in numerous foreign countries. The steps that we take to acquire ownership of our employees' inventions and trade secrets in foreign countries may not have been effective under all such local laws, which could expose us to potential claims or the inability to protect intellectual property developed by our employees. Furthermore, any changes in, or unexpected interpretations of, the trade secret and other intellectual property laws in any country in which we operate may adversely affect our ability to enforce our trade secret and intellectual property positions. Costly and time-consuming litigation could be necessary to determine the scope of our confidential information and trade secret protection. We also enter into confidentiality agreements with our consultants and other suppliers to protect our confidential information that we deliver to them. However, there can be no assurance that our confidentiality agreements will not be breached, that we will be able to effectively enforce them or that we will have adequate remedies for any breach.

Given our reliance on trade secret laws, others may independently develop similar or alternative technologies or duplicate our technologies and commercialize discoveries that we have made. Therefore, our intellectual property efforts may be insufficient to maintain our competitive advantage or to stop other parties

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from commercializing similar products or technologies. Many countries outside of the United States afford little or no protection to trade secrets and other intellectual property rights. Intellectual property litigation can be time-consuming and expensive, and there is no guarantee that we will have the resources to fully enforce our rights. If we are unable to prevent misappropriation or infringement of our intellectual property rights, or the independent development or design of similar technologies, our competitive position and operating results could suffer.

We depend upon internal production and on outside single or limited-source suppliers for many of our key components and raw materials. Any interruption in the supply of these key components and raw materials could adversely affect our results of operations.

We rely exclusively on our own production capabilities to manufacture certain of our key components, such as semiconductor diodes, specialty optical fibers and optical components. We do not have redundant production lines for some of our components, such as our diodes and some other components, which are made at a single manufacturing facility. These may not be readily available from other sources at our current costs. If our manufacturing facilities were damaged significantly or incapacitated, it could take a considerable length of time, or it could increase our costs, for us to resume manufacturing or find alternative sources of supply. Many of the tools and equipment we use are custom-designed, and it could take a significant period of time to repair or replace them. Our three major manufacturing facilities are located in Oxford, Massachusetts; Burbach, Germany; and Fryazino, Russia. If, as a result of a flood, fire, natural disaster, political unrest, act of terrorism, war, outbreak of disease or other similar event, any of our three major manufacturing facilities or equipment should become inoperable, inaccessible, damaged or destroyed, our business could be adversely affected to the extent that we do not have redundant production capabilities.

Also, we purchase certain raw materials used to manufacture our products and other components, such as semiconductor wafer substrates, modulators, micro-optics and bulk optics, from single or limited-source suppliers. In general, we have no long-term contractual supply arrangements with these suppliers. Some of our suppliers are also our competitors. Some of our suppliers reduced their inventory levels and manufacturing capacity because of the recent recession. As a result, we experienced and may in the future experience longer lead times or delays in fulfillment of our orders. Furthermore, other than our current suppliers, there are a limited number of entities from whom we could obtain these supplies. We do not anticipate that we would be able to purchase these components or raw materials that we require in a short period of time or at the same cost from other sources in commercial quantities or that have our required performance specifications. Any interruption or delay in the supply of any of these components or materials, or the inability to obtain these components and materials from alternate sources at acceptable prices and within a reasonable amount of time, could adversely affect our business. If our suppliers face financial or other difficulties, if our suppliers do not maintain sufficient inventory on hand or if there are significant changes in demand for the components and materials we obtain from them, they could limit the availability of these components and materials to us, which in turn could adversely affect our business.

We rely on the significant experience and specialized expertise of our senior management and scientific staff and if we are unable to retain these key employees and attract other highly skilled personnel necessary to grow our business successfully, our business and results of operations could suffer.

Our future success is substantially dependent on the continued service of our executive officers, particularly our founder and chief executive officer, Dr. Valentin P. Gapontsev, age 73, and the managing director of our German subsidiary IPG Laser GmbH, Dr. Eugene Scherbakov, age 64, our highly trained team of scientists, many of whom have numerous years of experience and specialized expertise in optical fibers, semiconductors and optical component technology, and other key engineering, sales, marketing, manufacturing and support personnel, any of whom may leave, which could harm our business. The members of our scientific staff who are expected to make significant individual contributions to our business are also members of our executive management team. Furthermore, our business requires scientists and engineers with experience in several disciplines, including physics, optics, materials sciences, chemistry and electronics. We will need to

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continue to recruit and retain highly skilled scientists and engineers for certain functions. Our future success also depends on our ability to identify, attract, hire, train, retain and motivate highly skilled research and development, managerial, operations, sales, marketing and customer service personnel. If we fail to attract, integrate and retain the necessary personnel, our ability to extend and maintain our scientific expertise and grow our business could suffer significantly.

We may pursue acquisitions and investments in new businesses, products, patents or technologies. These may involve risks which could disrupt our business and may harm our financial condition.

While we currently have no binding commitments or agreements to make any acquisitions or investments, in the future we may make acquisitions of and investments in new businesses, products, patents and technologies that we believe could complement, enhance or expand our current businesses or product lines or that might otherwise offer us growth opportunities.

We have limited experience in making acquisitions and, therefore, we may have difficulty identifying appropriate opportunities. Any acquisition or investment opportunities that we are able to identify may present a number of risks and challenges, including:

inability to negotiate or finance the acquisition on favorable terms;

diversion of management's attention from our existing businesses to integration of the operations and personnel of the acquired or combined business;

possible adverse effects on our operating results during the integration process;

failure of the acquired business or investment to achieve our long-term objectives, including operational, profitability and investment return objectives; and

the inability to achieve other intended objectives of the transaction.

In addition, we may not be able to successfully or profitably integrate, operate, maintain and manage our newly acquired businesses, products, patents or technologies. We may not be able to maintain uniform standards, controls, procedures and policies, which may lead to operational inefficiencies. To complete future acquisitions, we may issue equity securities, incur debt, assume contingent liabilities or have amortization expenses and write-downs of acquired assets, which could adversely affect our profitability and result in dilution to our existing and future stockholders.

In addition, any future acquisition may involve companies, products or technologies located outside of the United States, which may further complicate the consummation and integration of the acquisition.

Failure to effectively build and expand our direct field service and support organization could have an adverse effect on our business.

We believe that it will become increasingly important for us to provide rapid, responsive service directly to our customers throughout the world and to build and expand our own personnel resources to provide these services. Any actual or perceived lack of direct field service in the locations where we sell or try to sell our products may negatively impact our sales efforts and, consequently, our revenues. Accordingly, we have an ongoing effort to develop our direct support systems worldwide. This requires us to recruit and train additional qualified field service and support personnel as well as maintain effective and highly trained organizations that can provide service to our customers in various countries. We may not be able to attract and train additional qualified personnel to expand our direct support operations successfully. We may not be able to find and engage additional qualified third-party resources to supplement and enhance our direct support operations. Further, we may incur significant costs in providing these direct field and support services. Failure to implement our direct support operation effectively could adversely affect our relationships with our customers, and our operating results may suffer.

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A few customers account for a significant portion of our sales, and if we lose any of these customers or they significantly curtail their purchases of our products, our results of operations could be adversely affected.

We rely on a few customers for a significant portion of our sales. In the aggregate, our top five customers accounted for 17%, 19% and 12% of our consolidated net sales in 2011, 2010 and 2009, respectively. We generally do not enter into agreements with our customers obligating them to purchase our fiber lasers or amplifiers. Our business is characterized by short-term purchase orders and shipment schedules. If any of our principal customers discontinues its relationship with us, replaces us as a vendor for certain products or suffers downturns in its business, our business and results of operations could be adversely affected.

We have experienced, and expect to experience in the future, fluctuations in our quarterly operating results. These fluctuations may increase the volatility of our stock price.

We have experienced, and expect to continue to experience, fluctuations in our quarterly operating results. We believe that fluctuations in quarterly results may cause the market price of our common stock to fluctuate, perhaps substantially. Factors which may have an influence on our operating results in a particular quarter include:

the increase, decrease, cancellation or rescheduling of significant customer orders;

the timing of revenue recognition based on the delivery, installation or acceptance of certain products shipped to our customers;

seasonality attributable to different purchasing patterns and levels of activity throughout the year in the areas where we operate;

the timing of customer qualification of our products and commencement of volume sales of systems that include our products;

our ability to obtain export licenses for our products and components on a timely basis or at all;

the rate at which our present and future customers and end users adopt our technologies;

the gain or loss of a key customer;

product or customer mix;

competitive pricing pressures;

the relative proportions of our U.S. and international sales;

our ability to design, manufacture and introduce new products on a cost-effective and timely basis;

our ability to manage our inventory levels;

any inventory write-downs related to excess quantities and obsolete items;

the incurrence of expenses to develop and improve application and support capabilities, the benefits of which may not be realized until future periods, if at all;

different capital expenditure and budget cycles for our customers, which affect the timing of their spending;

foreign currency fluctuations; and

our ability to control expenses.

These factors make it difficult for us to accurately predict our operating results. In addition, our ability to accurately predict our operating results is complicated by the fact that many of our products have long sales cycles, some lasting as long as twelve months. Once a sale is made, our delivery schedule typically ranges from

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four weeks to four months, and therefore our sales will often reflect orders shipped in the same quarter that they are received and will not enhance our ability to predict our results for future quarters. In addition, long sales cycles may cause us to incur significant expenses without offsetting revenues since customers typically expend significant effort in evaluating, testing and qualifying our products before making a decision to purchase them. Moreover, customers may cancel or reschedule shipments, and production difficulties could delay shipments. Accordingly, our results of operations are subject to significant fluctuations from quarter to quarter, and we may not be able to accurately predict when these fluctuations will occur.

Foreign currency transaction and translation risk may negatively affect our net sales, cost of sales and operating margins and could result in exchange losses.

We conduct our business and incur costs in the local currency of most countries in which we operate. In 2011, our net sales outside the United States represented a significant portion of our total sales. We incur currency transaction risk whenever one of our operating subsidiaries enters into either a purchase or a sales transaction using a different currency from the currency in which it receives revenues because exchange rates between two currencies can change between the transaction date and the time of settlement. Changes in exchange rates can also affect our results of operations by changing the translated U.S. dollar value of sales and expenses denominated in foreign currencies. We cannot accurately predict the impact of future exchange rate fluctuations on our results of operations. Further, given the volatility of exchange rates, we may not be able to effectively manage our currency transaction or translation risks, and any volatility in currency exchange rates may increase the price of our products in local currency to our foreign customers, which may have an adverse effect on our financial condition, cash flows and profitability.

We depend on our OEM customers and system integrators and their ability to incorporate our products into their systems.

Our sales depend in part on our ability to maintain existing and secure new OEM customers. Our revenues also depend in part upon the ability of our current and potential OEM customers and system integrators to develop and sell systems that incorporate our laser and amplifier products. The commercial success of these systems depends to a substantial degree on the efforts of these OEM customers and system integrators to develop and market products that incorporate our technologies. Relationships and experience with traditional laser makers, limited marketing resources, reluctance to invest in research and development and other factors affecting these OEM customers and third-party system integrators could have a substantial impact upon our financial results. If OEM customers or integrators are not able to adapt existing tools or develop new systems to take advantage of the features and benefits of fiber lasers, then the opportunities to increase our revenues and profitability may be severely limited or delayed. Furthermore, if our OEM customers or third-party system integrators experience financial or other difficulties that adversely affect their operations, our financial condition or results of operations may also be adversely affected.

We may not be able to effectively manage our growth and we may need to incur significant costs to address the operational requirements related to our growth, either of which could harm our business and operating results.

We have been experiencing a period of significant growth and expansion, both in the United States and internationally, which has required, and will continue to require, increased efforts of our management and other resources. Our recent and anticipated growth has placed, and is expected to continue to place, significant strain on our research and development, sales and marketing, operational and administrative resources. To manage our growth, we will need to continue to monitor our operational and financial systems and expand, train and manage our employees. For example, we must implement new modules of our management information and customer relationship management systems, hire and train new sales representatives, service, application, financial and information technology personnel, and expand our supply chain management and quality control operations. These may require substantial managerial and financial resources, and our efforts in this regard may not be

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successful. If we fail to adequately manage our expected growth, or to improve our operational, financial and management information systems, or fail to effectively motivate or manage our new and future employees, the quality of our products and the management of our operations could suffer and our operating results could be adversely affected.

Our inability to manage risks associated with our international customers and operations could adversely affect our business.

We have significant facilities in and our products are sold in numerous countries. The United States, Germany, Japan, Russia and China are our principal markets. A significant amount of our revenues are derived from customers, and we have substantial tangible assets, outside of the United States. We anticipate that foreign sales will continue to account for a significant portion of our revenues in the foreseeable future. Our operations and sales in these markets are subject to risks inherent in international business activities, including:

longer accounts receivable collection periods and less-developed credit assessment and collection procedures;

fluctuations in the values of foreign currencies;

changes in a specific country's or region's economic conditions, such as recession;

compliance with a wide variety of domestic and foreign laws and regulations and unexpected changes in those laws and regulatory requirements, including uncertainties regarding taxes, tariffs, quotas, export controls, export licenses and other trade barriers;

certification requirements;

environmental regulations;

less effective protection of intellectual property rights in some countries;

potentially adverse tax consequences;

different capital expenditure and budget cycles for our customers, which affect the timing of their spending;

political, legal and economic instability, foreign conflicts, and the impact of regional and global infectious illnesses in the countries in which we and our customers, suppliers, manufacturers and subcontractors are located;

preference for locally produced products;

difficulties and costs of staffing and managing international operations across different geographic areas and cultures;

seasonal reductions in business activities; and

fluctuations in freight rates and transportation disruptions.

Political and economic instability and changes in governmental regulations could adversely affect both our ability to effectively operate our foreign sales offices and the ability of our foreign suppliers to supply us with required materials or services. Any interruption or delay in the supply of our required components, products, materials or services, or our inability to obtain these components, materials, products or services from alternate sources at acceptable prices and within a reasonable amount of time, could impair our ability to meet scheduled product deliveries to our customers and could cause customers to cancel orders.

We are also subject to risks of doing business in Russia through our subsidiary, NTO IRE-Polus, which provides components and test equipment to us and sells finished fiber devices to customers in Russia and neighboring countries. The results of operations, business prospects and facilities of NTO IRE-Polus are subject

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to the economic and political environment in Russia. In 2010, a Russian investor purchased a minority interest in NTO IRE-Polus. As a minority investor, it has rights under Russian law, as well as under our negotiated agreements with it. Even though we control a supermajority of the shares and a majority of the board, certain actions require unanimous shareholder approval, including changes to capital, additional investments, use of proceeds other than initially agreed to uses and amounts, distributions, transactions in excess of agreed upon amounts and related party transactions. In recent years Russia has undergone substantial political, economic and social change. As is typical of an emerging market, Russia does not possess a well-developed business, legal and regulatory infrastructure that would generally exist in a more mature free market economy. In addition, the tax, currency and customs legislation within Russia is subject to varying interpretations and changes, which can occur frequently. The future economic direction of Russia remains largely dependent upon the effectiveness of economic, financial and monetary measures undertaken by the government, together with tax, legal, regulatory and political developments. Our failure to manage the risks associated with NTO IRE-Polus and our other existing and potential future international business operations could have a material adverse effect upon our results of operations.

Our products could contain defects, which may reduce sales of those products, harm market acceptance of our fiber laser products or result in claims against us.

The manufacture of our fiber lasers and amplifiers involves highly complex and precise processes. Despite testing by us and our customers, errors have been found, and may be found in the future, in our products. These defects may cause us to incur significant warranty, support and repair costs, incur additional costs related to a recall, divert the attention of our engineering personnel from our product development efforts and harm our relationships with our customers. These problems could result in, among other things, loss of revenues or a delay in revenue recognition, loss of market share, harm to our reputation or a delay or loss of market acceptance of our fiber laser products. Defects, integration issues or other performance problems in our fiber laser and amplifier products could also result in personal injury or financial or other damages to our customers, which in turn could damage market acceptance of our products. Our customers could also seek damages from us for their losses. A product liability claim brought against us, even if unsuccessful, could be time-consuming and costly to defend.

We are subject to export control regulations that could restrict our ability to increase our international sales and may adversely affect our business.

A significant part of our business involves the export of our products to other countries. The U.S. government has in place a number of laws and regulations that control the export, re-export or transfer of U.S.-origin products, software and technology. The governments of other countries in which we do business have similar regulations regarding products, software and technology originating in those countries. These laws and regulations may require that we obtain a license before we can export, re-export or transfer certain products, components, software or technology. The requirement to obtain a license could put us at a competitive disadvantage by restricting our ability to sell products to, or service products for, customers in certain countries or by giving rise to delays or expenses related to obtaining a license. In applying for a license and responding to questions from licensing authorities, we have experienced and, in the future, may experience delays in obtaining export licenses based on issues solely within the control of the applicable government agency. Under the discretion of the issuing government agency, an export license may permit the export of one unit to a single customer or multiple units to one or more customers. Licenses may also include conditions that limit the use, resale, transfer, re-export, modification, disassembly, or transfer of a product, software or technology after it is exported without first obtaining permission from the relevant government agency. Failure to comply with these laws and regulations could result in government sanctions, including substantial monetary penalties, denial of export privileges, debarment from government contracts and a loss of revenues. Delays in obtaining or failure to obtain required export licenses may require us to defer shipments for substantial periods or cancel orders. Any of these circumstances could adversely affect our operations and, as a result, our financial results could suffer.

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Our ability to access financial markets to finance a portion of our working capital requirements and support our liquidity needs may be adversely affected by factors beyond our control and could negatively impact our ability to finance our operations, meet certain obligations or implement our operating strategy.

We occasionally borrow under our existing credit facilities to fund operations, including working capital investments. Our major credit lines in the U.S. and Germany expire in June 2015 and June 2012, respectively. In the past, market disruptions experienced in the United States and abroad have materially impacted liquidity in the credit and debt markets, making financing terms for borrowers less attractive, and, in certain cases, have resulted in the unavailability of certain types of financing. Uncertainty in the financial markets may negatively impact our ability to access additional financing or to refinance our existing credit facilities or existing debt arrangements on favorable terms or at all, which could negatively affect our ability to fund current and future expansion as well as future acquisitions and development. These disruptions may include turmoil in the financial services industry, unprecedented volatility in the markets where our outstanding securities trade, and general economic downturns in the areas where we do business. If we are unable to access funds at competitive rates, or if our short-term or long-term borrowing costs increase, our ability to finance our operations, meet our short-term obligations and implement our operating strategy could be adversely affected.

Our ability to raise capital in the future may be limited, and our failure to raise capital when needed could prevent us from growing.

We may in the future be required to raise capital through public or private financing or other arrangements. Such financing may not be available on acceptable terms, or at all, and our failure to raise capital when needed could harm our business. Additional equity financing may be dilutive to the holders of our common stock, and debt financing, if available, may involve restrictive covenants and could reduce our profitability. If we cannot raise funds on acceptable terms, we may not be able to grow our business or respond to competitive pressures.

We are subject to various environmental laws and regulations that could impose substantial costs upon us and may adversely affect our business, operating results and financial condition.

Some of our operations use substances regulated under various federal, state, local and international laws governing the environment, including those relating to the storage, use, discharge, disposal, product composition and labeling of, and human exposure to, hazardous and toxic materials. We 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 we 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 our ability to expand our facilities or require us to acquire additional expensive equipment, modify our manufacturing processes, or incur other significant expenses in order to remain in compliance with such laws and regulations. At this time, we do not believe the costs to maintain compliance with current environmental laws to be material. Although we do not currently anticipate that such costs will become material, if such costs were to become material in the future, whether due to unanticipated changes in environmental laws, unanticipated changes in our operations or other unanticipated changes, we may be required to dedicate additional staff or financial resources in order to maintain compliance. There can be no assurance that violations of environmental laws or regulations will not occur in the future as a result of the lack of, or failure to obtain, permits, human error, accident, equipment failure or other causes.

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Risks Relating to Our Common Stock

The market price of our common stock is subject to volatility, which could result in substantial losses for investors purchasing shares in this offering.

The market price of our common stock is subject to volatility. Fluctuations in market price and volume are particularly common among securities of technology companies. As a result, you may be unable to sell your shares of common stock at or above the offering price. The market price of our common stock may fluctuate significantly in response to the following factors, among others, some of which are beyond our control:

general market conditions;

U.S. and international economic factors;

actual or anticipated fluctuations in our quarterly operating results;

changes in or failure to meet publicly disclosed expectations as to our future financial performance;

changes in securities analysts' estimates of our financial performance or lack of research and reports by industry analysts;

changes in market valuations or earnings of similar companies;

announcements by us or our competitors of significant products, contracts, acquisitions or strategic partnerships;

developments or disputes concerning intellectual property or proprietary rights, including increases or decreases in litigation expenses associated with intellectual property lawsuits we may initiate, or in which we may be named as defendants, and the outcome of such litigation;

failure to complete significant sales;

any future sales of our common stock or other securities;

additions or departures of key personnel;

investor perception of our prospects, our industry or the business of our competitors;

loss of one or more of our significant customers;

changes in governmental regulation;

major catastrophic events; and

changes in our pricing policies or the pricing policies of our competitors.

We could be the subject of securities class action litigation due to future stock price volatility, which could divert management's attention and adversely affect our operating results.

The stock market in general, and market prices for the securities of technology companies like ours in particular, have experienced volatility from time to time that often has been unrelated to the operating performance of the underlying companies. These broad market and industry fluctuations may adversely affect the market price of our common stock, regardless of our operating performance. In several recent situations where the market price of a stock has been volatile, holders of that stock have instituted securities class action litigation against the company that issued the stock. If any of our stockholders were to bring a lawsuit against us, the defense and disposition of such lawsuit could be costly and divert the time and attention of management and harm our business.

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Dr. Valentin P. Gapontsev, our chairman, chief executive officer, and two trusts he created will collectively control approximately 35.4% of our voting power after the completion of this offering, and will have a significant influence on the outcome of director elections and other matters requiring stockholder approval, including a change in corporate control.

After giving effect to the offering, Dr. Valentin P. Gapontsev, our Chairman and Chief Executive Officer, and IP Fibre Devices (UK) Ltd. (IPFD), of which Dr. Gapontsev is the managing director, together with two trusts he created, will beneficially own approximately 35.4% of our common stock. Trustees of the trusts are officers or employees of the Company. Dr. Gapontsev and the trusts have a significant influence on the outcome of matters requiring stockholder approval, including:

election of our directors;

amendment of our certificate of incorporation or by-laws; and

approval of mergers, consolidations or the sale of all or substantially all of our assets.

Dr. Gapontsev and the trusts may vote their shares of our common stock in ways that are adverse to the interests of other holders of our common stock, including investors in this offering. These significant ownership interests could delay, prevent or cause a change in control of our company, any of which could adversely affect the market price of our common stock.

Anti-takeover provisions in our charter documents and Delaware law could prevent or delay a change in control of our company, even if a change in control would be beneficial to our stockholders.

Provisions of our certificate of incorporation and by-laws, including certain provisions that will take effect when Dr. Valentin P. Gapontsev, together with his affiliates and associates, ceases to beneficially own an aggregate of 25% or more of our outstanding voting securities, may discourage, delay or prevent a merger, acquisition or change of control, even if it would be beneficial to our stockholders. The existence of these provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock. These provisions include:

authorizing the issuance of blank check preferred stock;

establishing a classified board;

providing that directors may only be removed for cause;

prohibiting stockholder action by written consent;

limiting the persons who may call a special meeting of stockholders;

establishing advance notice requirements for nominations for election to the board of directors and for proposing matters to be submitted to a stockholder vote; and

supermajority stockholder approval to change these provisions.

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Provisions of Delaware law may also discourage, delay or prevent someone from acquiring or merging with our company or obtaining control of our company. Specifically, Section 203 of the Delaware General Corporation Law, which will apply to our company following such time as Dr. Gapontsev, together with his affiliates and associates, ceases to beneficially own 25% or more of the total voting power of our outstanding shares, may prohibit business combinations with stockholders owning 15% or more of our outstanding voting stock.

Investors in this offering will pay a higher price than the book value of our common stock.

You will suffer substantial dilution in the net tangible book value of the common stock you purchase in this offering because the price per share being offered hereby is substantially higher than the book value per share of our common stock. Based on an assumed public offering price of \$56.50 per share in this offering

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(the last reported price of our common stock on the NASDAQ Global Market on February 24, 2012), if you purchase shares in this offering, you will suffer immediate and substantial dilution in the net tangible book value of the common stock.

Substantial sales of our common stock, including shares issued upon the exercise of currently outstanding options or pursuant to our universal shelf registration statement or our common stock shelf registration statement, could cause our stock price to decline.

Sales of a substantial number of shares of common stock, or the perception that sales could occur, could adversely affect the market price of our common stock. On completion of this offering, we will have 50,480,519 shares of common stock outstanding and approximately 2,932,332 shares subject to outstanding options. We have registered all shares of common stock that we may issue under our stock option plans and our employee stock ownership plan. As these shares are issued, they may be freely sold in the public market subject, in the case of any awards under our stock-based compensation plans, to applicable vesting requirements. In addition, all of the unregistered shares of our common stock are now eligible for sale under Rule 144 or Rule 701 under the Securities Act.

We currently have the ability to offer and sell common stock, preferred stock, warrants, debt and convertible securities under a currently effective universal shelf registration statement and common stock under a currently effective shelf registration statement. In the future, we may issue additional options, warrants or other securities convertible into our common stock. Sales of substantial amounts of shares of our common stock or other securities under our universal shelf registration statement or our common stock shelf registration statement could lower the market price of our common stock and impair our ability to raise capital through the sale of equity securities.

Our directors, executive officers and other stockholders holding in the aggregate approximately 39.7% of our outstanding shares prior to giving effect to this offering have agreed not to sell or otherwise dispose of more than 100,000 shares of common stock for a period ending at least 90 days after the date of this prospectus supplement without the prior written approval of Merrill Lynch, Pierce, Fenner & Smith Incorporated, which could be given at any time. When the lock-up agreements expire or are terminated, approximately 19,329,000 shares of our common stock will be eligible for sale.

We do not anticipate paying dividends on our capital stock in the foreseeable future.

We have never declared or paid any cash dividends on our capital stock. We anticipate that we will retain any future earnings to support operations and to finance the growth and development of our business. Therefore, we do not expect to pay cash dividends in the foreseeable future. Our payment of any future dividends will be at the discretion of our Board of Directors after taking into account any business conditions, any contractual and legal restrictions on our payment of dividends, and our financial condition, operating results, cash needs and growth plans. In addition, current agreements with certain of our lenders contain, and future loan agreements may contain, restrictive covenants that generally prohibit us from paying cash dividends, making any distribution on any class of stock or making stock repurchases.

If securities analysts stop publishing research or reports about our business, or if they downgrade our stock, the price of our stock could decline.

The trading market for our common stock relies in part on the research and reports that industry or financial analysts publish about us. If one or more of these analysts who cover us downgrade our stock, our stock price would likely decline. Further, if one or more of these analysts cease coverage of our company, we could lose visibility in the market, which in turn could cause our stock price to decline.

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FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the information incorporated by reference herein and therein contain certain statements that constitute forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. The words anticipate, expect, believe, goal, plan, intend, estimate, may, will, and similar expressions and variations thereof are intended to identify forward-looking statements, but are not the exclusive means of identifying such statements. Those statements appear in this prospectus supplement, the accompanying prospectus and the documents incorporated herein and therein by reference, particularly in the sections entitled Prospectus Supplement Summary, Risk Factors, Management's Discussion and Analysis of Financial Condition and Results of Operations and Business, and include statements regarding the intent, belief or current expectations of the Company and management that are subject to known and unknown risks, uncertainties and assumptions.

This prospectus supplement, the accompanying prospectus and the information incorporated by reference herein and therein also contain statements that are based on the current expectations of our Company and management. These statements, including information regarding our backlog and other matters, are forward-looking statements. You are cautioned that any such forward-looking statements are not guarantees of future performance and involve risks and uncertainties, and that actual results may differ materially from those projected in the forward-looking statements as a result of various factors.

Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely upon forward-looking statements as predictions of future events. The events and circumstances reflected in the forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Except as required by applicable law, including the securities laws of the United States and the rules and regulations of the Securities and Exchange Commission, we do not plan to publicly update or revise any forward-looking statements contained herein after we distribute this prospectus supplement and the accompanying prospectus, whether as a result of any new information, future events or otherwise.

Table of Contents**USE OF PROCEEDS**

We expect to receive net proceeds from this offering, without the exercise of the option to purchase additional shares, of approximately \$ after deducting underwriting discounts and commissions, and estimated transaction expenses payable by us of approximately \$. We intend to use these net proceeds for general corporate purposes and to fund our capital expenditures and working capital requirements. We may also use some of the net proceeds for acquisitions of complementary businesses and technologies, although no such acquisitions are currently pending. The selling stockholder, our chairman and chief executive officer, will receive all net proceeds from the sale of his shares. See Selling Stockholder.

PRICE RANGE OF OUR COMMON STOCK

Our common stock trades on the NASDAQ Global Market under the symbol IPGP. As of February 23, 2012, there were 47,680,519 shares of our common stock outstanding. As of February 23, 2012, there were approximately 60 stockholders of record. The following table provides the high and low intraday sales prices per share during the periods indicated as reported on the NASDAQ Global Market.

| | | |
|---------------------------------|-------------|------------|
| 2010 | High | Low |
| First Quarter | \$ 17.42 | \$ 13.32 |
| Second Quarter | \$ 19.20 | \$ 14.57 |
| Third Quarter | \$ 25.29 | \$ 13.93 |
| Fourth Quarter | \$ 33.43 | \$ 19.87 |
| 2011 | High | Low |
| First Quarter | \$ 61.63 | \$ 29.37 |
| Second Quarter | \$ 78.59 | \$ 53.08 |
| Third Quarter | \$ 76.07 | \$ 42.66 |
| Fourth Quarter | \$ 58.16 | \$ 33.33 |
| 2012 | High | Low |
| First Quarter (through Feb. 24) | \$ 60.43 | \$ 35.33 |

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock. We anticipate that we will retain any future earnings to support operations and to finance the growth and development of our business. Therefore, we do not expect to pay cash dividends in the foreseeable future. Our payment of any future dividends will be at the discretion of our Board of Directors after taking into account any business conditions, any contractual and legal restrictions on our payment of dividends, and our financial condition, operating results, cash needs and growth plans. In addition, current agreements with certain of our lenders contain, and future loan agreements may contain, restrictive covenants that generally prohibit us from paying cash dividends, making any distribution on any class of stock or making stock repurchases.

Table of Contents**SELLING STOCKHOLDER**

The following table provides information about the beneficial ownership of our common stock as of February 23, 2012 by the selling stockholder.

In accordance with SEC rules, beneficial ownership includes any shares for which a person or group of affiliated persons has sole or shared voting power or investment power and any shares for which the person or entity has the right to acquire beneficial ownership within 60 days through the exercise of any option or otherwise. We believe that the person named in the table has sole voting and investment power with respect to the shares of common stock set forth opposite his name. The address of the selling stockholder is in care of IPG Photonics Corporation, 50 Old Webster Road, Oxford, Massachusetts 01540.

The percentages of beneficial ownership are based on 47,680,519 shares of common stock outstanding as of February 23, 2012 and 50,480,519 shares of common stock that will be outstanding after completion of this offering, assuming no exercise of the underwriters' option to purchase additional shares.

| Name of Beneficial Owner | Beneficial Ownership Prior to Offering | | Shares Being Offered | Beneficial Ownership After Offering | |
|---------------------------------|---|------------|----------------------------|--|------------|
| | Number | Percentage | | Number | Percentage |
| Valentin P. Gapontsev, Ph.D.(1) | 9,180,933 | 19.3% | 200,000 | 8,980,933 | 17.8% |

- (1) Includes shares beneficially owned by IP Fibre Devices (UK) Ltd. (IPFD), of which Dr. Gapontsev is the managing director. Dr. Gapontsev has sole voting and investment power with respect to the shares held of record by IPFD. Dr. Gapontsev has a 5% economic interest in IPFD.

CERTAIN MATERIAL U.S. FEDERAL INCOME TAX**CONSEQUENCES TO NON-U.S. HOLDERS**

The following summary describes certain material U.S. federal income tax consequences of the ownership and disposition of our common stock by a Non-U.S. Holder (as defined below) holding shares of our common stock as capital assets (i.e., generally for investment) as of the date of this prospectus supplement. This discussion does not address all aspects of U.S. federal income taxation and does not deal with estate, gift, foreign, state and local tax consequences that may be relevant to such Non-U.S. Holders in light of their personal circumstances. Special U.S. tax rules may apply to certain Non-U.S. Holders, such as controlled foreign corporations, passive foreign investment companies, corporations that accumulate earnings to avoid U.S. federal income tax, investors in partnerships or other pass-through entities for U.S. federal income tax purposes, dealers in securities, holders of securities held as part of a straddle, hedge, conversion transaction or other risk reduction transaction, and certain former citizens or long-term residents of the United States that are subject to special treatment under the Internal Revenue Code of 1986, as amended (the Code). Such entities and persons should consult their own tax advisors to determine the U.S. federal, state, local and other tax consequences that may be relevant to them. Furthermore, the discussion below is based upon the provisions of the Code, and Treasury regulations promulgated thereunder, rulings and judicial decisions thereunder as of the date hereof, and such authorities may be repealed, revoked or modified with or without retroactive effect so as to result in U.S. federal income tax consequences different from those discussed below.

If a partnership or other pass-through entity holds our common stock, the tax treatment of a partner in the partnership or an owner of an interest in the entity generally will depend on the status of the partner or owner and the activities of the partnership or entity. Persons who are partners in partnerships or owners of pass-through entities holding our common stock should consult their own tax advisors.

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The authorities on which this summary is based are subject to various interpretations, and any views expressed within this summary are not binding on the Internal Revenue Service (the IRS) or the courts. No assurance can be given that the IRS or the courts will agree with the tax consequences described in this prospectus supplement.

As used herein, a Non-U.S. Holder means a beneficial owner of our common stock that is not any of the following for U.S. federal income tax purposes:

a citizen or resident of the United States;

a corporation, or other entity treated as a corporation for U.S. federal income tax purposes, created or organized in or under the laws of the United States, any state thereof or the District of Columbia;

an estate the income of which is subject to U.S. federal income taxation regardless of its source; or

a trust (i) which is subject to primary supervision by a court situated within the United States and as to which one or more U.S. persons have the authority to control all substantial decisions of the trust, or (ii) that has a valid election in effect under applicable U.S. Treasury regulations to be treated as a U.S. person.

This summary of certain material U.S. federal income tax consequences to Non-U.S. Holders is for general information only and is not tax advice. Prospective purchasers are urged to consult their own tax advisors regarding the U.S. federal income tax consequences, as well as other U.S. federal, state, and local income and estate tax consequences, and non-U.S. tax consequences, to them of acquiring, owning, and disposing of our common stock.

Dividends

If we make distributions on our common stock, such distributions paid to a Non-U.S. Holder generally will constitute dividends for U.S. federal income tax purposes to the extent such distributions are paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated as a tax-free return of the Non-U.S. Holder's investment to the extent of the Non-U.S. Holder's adjusted tax basis in our common stock. Any remaining excess will be treated as capital gain. See [Gain on Disposition of Common Stock](#) for additional information.

Dividends paid to a Non-U.S. Holder generally will be subject to withholding of United States federal income tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty. A Non-U.S. Holder of common stock who wishes to claim the benefit of an applicable treaty rate for dividends generally will be required to complete IRS Form W-8BEN (or other applicable form) and certify, under penalty of perjury, that such holder is not a U.S. person and is eligible for the benefits with respect to dividends allowed by such treaty. This certification must be provided to us or our paying agent before the payment of dividends and must be updated periodically. Special certification requirements apply to certain Non-U.S. Holders that are pass-through entities for U.S. federal income tax purposes. A Non-U.S. Holder eligible for a reduced rate of U.S. withholding tax pursuant to an income tax treaty generally may obtain a refund from the IRS of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS.

This U.S. withholding tax generally will not apply to dividends that are effectively connected with the conduct of a trade or business by the Non-U.S. Holder within the United States, and, if a treaty applies, attributable to a United States permanent establishment or fixed base of the Non-U.S. Holder. Dividends effectively connected with the conduct of a trade or business, as well as those attributable to a United States permanent establishment or fixed base of the Non-U.S. Holder under an applicable treaty, are subject to U.S. federal income tax generally in the same manner as if the Non-U.S. Holder were a U.S. person, as defined under the Code. Certain IRS certification and disclosure requirements must be complied with in order for effectively

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connected dividends to be exempt from withholding. Any such effectively connected dividends received by a Non-U.S. Holder that is a foreign corporation may, under certain circumstances, be subject to an additional branch profits tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty.

Gain on Disposition of Common Stock

A Non-U.S. Holder generally will not be subject to U.S. federal income tax (or any withholding thereof) with respect to gain recognized on a sale or other disposition of common stock unless:

the gain is effectively connected with a trade or business of the Non-U.S. Holder in the United States and, where a tax treaty applies, is attributable to a United States permanent establishment or fixed base of the Non-U.S. Holder;

the Non-U.S. Holder is an individual who is present in the United States for 183 or more days during the taxable year of disposition and meets certain other requirements; or

we are or have been a U.S. real property holding corporation within the meaning of Section 897(c)(2) of the Code, also referred to as a USRPHC, for United States federal income tax purposes at any time within the five-year period preceding the disposition (or, if shorter, the Non-U.S. Holder's holding period for the common stock).

Gain recognized on the sale or other disposition of common stock and effectively connected with a U.S. trade or business, or attributable to a U.S. permanent establishment or fixed base of the Non-U.S. Holder under an applicable treaty, is subject to U.S. federal income tax on a net income basis generally in the same manner as if the Non-U.S. Holder were a U.S. person, as defined under the Code. Any such effectively connected gain from the sale or disposition of common stock received by a Non-U.S. Holder that is a foreign corporation may, under certain circumstances, be subject to an additional branch profits tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty.

An individual Non-U.S. Holder who is present in the United States for 183 or more days during the taxable year of disposition generally will be subject to a 30% tax imposed on the gain derived from the sale or disposition of our common stock, which may be offset by U.S. source capital losses realized in the same taxable year.

In general, a corporation is a USRPHC if the fair market value of its U.S. real property interests equals or exceeds 50% of the sum of the fair market value of its worldwide (domestic and foreign) real property interests and its other assets used or held for use in a trade or business. For this purpose, real property interests include land, improvements and associated personal property.

We believe that we currently are not a USRPHC. In addition, based on these financial statements and current expectations regarding the value and nature of our assets and other relevant data, we do not anticipate becoming a USRPHC.

If we become a USRPHC, a Non-U.S. Holder nevertheless will not be subject to United States federal income tax by virtue of our becoming a USRPHC if our common stock is regularly traded on an established securities market, within the meaning of applicable Treasury regulations, and the Non-U.S. Holder holds no more than five percent of our outstanding common stock, directly or indirectly, during the applicable testing period. Our common stock is listed on the Nasdaq Global Market and we expect that our common stock will be regularly traded on an established securities market in the United States so long as it is so listed.

Information Reporting and Backup Withholding

We must report annually to the IRS and to each Non-U.S. Holder the amount of dividends paid to such holder and the tax withheld with respect to such dividends, regardless of whether withholding was required.

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Copies of the information returns reporting such dividends and withholding may also be made available to the tax authorities in the country in which the Non-U.S. Holder resides under the provisions of an applicable income tax treaty.

The United States imposes a backup withholding tax on dividends and certain other types of payments to U.S. persons (currently at a rate of 28%) of the gross amount. Dividends paid to a Non-U.S. Holder generally will not be subject to backup withholding if proper certification of foreign status (usually on an IRS Form W-8BEN) is provided, and the payor does not have actual knowledge or reason to know that the beneficial owner is a U.S. person, or the holder is a corporation or one of several types of entities and organizations that qualify for exemption.

Any amounts withheld under the backup withholding rules generally may be allowed as a refund from the IRS or a credit against such holder's U.S. federal income tax liability provided the required information is timely furnished to the IRS.

Recently Enacted Legislation

Recently enacted legislation, which is effective with respect to amounts paid after December 31, 2012, generally imposes a U.S. federal withholding tax at a rate of 30% on dividends and the gross proceeds from a disposition of our common stock paid to certain foreign entities (including foreign financial institutions and certain non-financial foreign entities), unless such foreign entity satisfies various U.S. information reporting and due diligence requirements (generally relating to ownership by U.S. persons of interests in or accounts with the entity) including in the case of a foreign financial institution, entering into an agreement with the U.S. Treasury regarding such requirements. Non-U.S. holders should consult their own tax advisors regarding the possible implications of this legislation on their investment in our common stock. Under applicable IRS guidance, the legislation's implementation has been delayed and any withholding obligation under such legislation on payments to noncompliant foreign entities is currently set to apply (i) to dividends paid by us starting on January 1, 2014 and (ii) to gain from the disposition of our common stock starting on January 1, 2015.

Table of Contents**UNDERWRITING**

Merrill Lynch, Pierce, Fenner & Smith Incorporated is acting as the representative of each of the underwriters named below. Subject to the terms and conditions set forth in an underwriting agreement among us and the underwriters, we and the selling stockholder have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us and the selling stockholder, the number of shares of common stock set forth opposite its name below.

| Underwriter | Number of Shares |
|---|---------------------|
| Merrill Lynch, Pierce, Fenner & Smith Incorporated | |
| Needham & Company, LLC | |
| Stifel, Nicolaus & Company, Incorporated | |
| Total | 3,000,000 |

Subject to the terms and conditions set forth in the underwriting agreement, the underwriters have agreed, severally and not jointly, to purchase all of the shares sold under the underwriting agreement if any of these shares are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the nondefaulting underwriters may be increased or the underwriting agreement may be terminated.

We and the selling stockholder have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the underwriters may be required to make in respect of those liabilities.

The underwriters are offering the shares, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of legal matters by their counsel, including the validity of the shares, and other conditions contained in the underwriting agreement, such as the receipt by the underwriters of officer's certificates and legal opinions. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Commissions and Discounts

The representative has advised us and the selling stockholder that the underwriters propose initially to offer the shares to the public at the public offering price set forth on the cover page of this prospectus supplement and to dealers at that price less a concession not in excess of \$ per share. After the initial offering, the public offering price, concession or any other term of the offering may be changed.

The following table shows the public offering price, underwriting discount and proceeds before expenses to us and the selling stockholder. The information assumes either no exercise or full exercise by the underwriters of their option to purchase additional shares.

| | Per Share | Without Option | With Option |
|--|-----------|--|-------------|
| Public offering price | \$ | \$ | \$ |
| Underwriting discount | \$ | \$ | \$ |
| Proceeds, before expenses, to IPG Photonics | \$ | \$ | \$ |
| Proceeds, before expenses, to the selling stockholder | \$ | \$ | \$ |
| The expenses of the offering, not including the underwriting discount, are estimated at \$ | | and are payable by us and the selling stockholder. | |

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Option to Purchase Additional Shares

We have granted an option to the underwriters, exercisable for 30 days after the date of this prospectus supplement, to purchase up to 450,000 additional shares at the public offering price, less the underwriting discount. If the underwriters exercise this option, each will be obligated, subject to conditions contained in the underwriting agreement, to purchase a number of additional shares proportionate to that underwriter's initial amount reflected in the above table.

No Sales of Similar Securities

We, our executive officers and directors, the selling stockholder and certain of our other stockholders have agreed not to sell or transfer any common stock or securities convertible into, exchangeable for, exercisable for, or repayable with common stock, for a period ending 90 days after the date of this prospectus supplement without first obtaining the written consent of Merrill Lynch, Pierce, Fenner & Smith Incorporated; provided, however, that our executive officers and directors, other than the selling stockholder, may sell or transfer up to 100,000 shares of our common stock in the aggregate during such period without first obtaining such written consent. Specifically, we, the selling stockholder and these other persons have agreed, with certain limited exceptions, not to directly or indirectly

offer, pledge, sell or contract to sell any common stock,

sell any option or contract to purchase any common stock,

purchase any option or contract to sell any common stock,

grant any option, right or warrant for the sale of any common stock,

lend or otherwise dispose of or transfer any common stock,

request or demand that we file a registration statement related to the common stock, or

enter into any swap or other agreement that transfers, in whole or in part, the economic consequence of ownership of any common stock whether any such swap or transaction is to be settled by delivery of shares or other securities, in cash or otherwise.

This lock-up provision applies to common stock and to securities convertible into or exchangeable or exercisable for or repayable with common stock. It also applies to common stock owned now or acquired later by the person executing the agreement or for which the person executing the agreement later acquires the power of disposition. In the event that either (x) during the last 17 days of the lock-up period referred to above, we issue an earnings release or material news or a material event relating to the Company occurs or (y) prior to the expiration of the lock-up period, we announce that we will release earnings results or become aware that material news or a material event will occur during the 16-day period beginning on the last day of the lock-up period, the restrictions described above shall continue to apply until the expiration of the 18-day period beginning on the issuance of the earnings release or the occurrence of the material news or material event.

Nasdaq Global Market Listing

The shares are listed on the Nasdaq Global Market under the symbol IPGP.

Price Stabilization; Short Positions

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Until the distribution of the shares is completed, SEC rules may limit underwriters and selling group members from bidding for and purchasing our common stock. However, the representative may engage in transactions that stabilize the price of the common stock, such as bids or purchases to peg, fix or maintain that price.

In connection with the offering, the underwriters may purchase and sell our common stock in the open market. These transactions may include short sales, purchases on the open market to cover positions created by

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short sales and stabilizing transactions. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in the offering. Covered short sales are sales made in an amount not greater than the underwriters' option to purchase additional shares described above. The underwriters may close out any covered short position by either exercising their option to purchase additional shares or purchasing shares in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option granted to them. Naked short sales are sales in excess of such option. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of our common stock in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions consist of various bids for or purchases of shares of common stock made by the underwriters in the open market prior to the completion of the offering.

Similar to other purchase transactions, the underwriters' purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. The underwriters may conduct these transactions on the Nasdaq Global Market, in the over-the-counter market or otherwise.

Neither we, the selling stockholder nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. In addition, neither we, the selling stockholder nor any of the underwriters make any representation that the representative will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Passive Market Making

In connection with this offering, underwriters and selling group members may engage in passive market making transactions in the common stock on the Nasdaq Global Market in accordance with Rule 103 of Regulation M under the Exchange Act during a period before the commencement of offers or sales of common stock and extending through the completion of distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker's bid, that bid must then be lowered when specified purchase limits are exceeded. Passive market making may cause the price of our common stock to be higher than the price that otherwise would exist in the open market in the absence of those transactions. The underwriters and dealers are not required to engage in passive market making and may end passive market making activities at any time.

Electronic Distribution

In connection with the offering, certain of the underwriters or securities dealers may distribute prospectuses by electronic means, such as e-mail.

Other Relationships

Some of the underwriters and their affiliates have engaged in, and may in the future engage in, investment banking and other commercial dealings in the ordinary course of business with us or our affiliates. They have received, or may in the future receive, customary fees and commissions for these transactions. In particular, we have paid, and will continue to pay, customary fees to Bank of America, N.A., an affiliate of Merrill Lynch, Pierce, Fenner & Smith Incorporated, in connection with our credit facility.

In addition, in the ordinary course of their business activities, the underwriters and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve securities and/or instruments of ours or our

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affiliates. The underwriters and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Notice to Prospective Investors in the European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a Relevant Member State), with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State (the Relevant Implementation Date), no offer of shares may be made to the public in that Relevant Member State other than:

- A. to any legal entity which is a qualified investor as defined in the Prospectus Directive;
- B. to fewer than 100, or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the representative; or
- C. in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of shares shall require the Company, the selling stockholder or the representative to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

Each person in a Relevant Member State (other than a Relevant Member State where there is a permitted public offer) who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged and agreed that (A) it is a qualified investor within the meaning of the law in that Relevant Member State implementing Article 2(1)(e) of the Prospectus Directive, and (B) in the case of any shares acquired by it as a financial intermediary, as that term is used in Article 3(2) of the Prospectus Directive, the shares acquired by it in the offering have not been acquired on behalf of, nor have they been acquired with a view to their offer or resale to, persons in any Relevant Member State other than qualified investors as defined in the Prospectus Directive, or in circumstances in which the prior consent of the representative has been given to the offer or resale. In the case of any shares being offered to a financial intermediary as that term is used in Article 3(2) of the Prospectus Directive, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer of any shares to the public other than their offer or resale in a Relevant Member State to qualified investors as so defined or in circumstances in which the prior consent of the representative has been obtained to each such proposed offer or resale.

The Company, the selling stockholder, the underwriters and their affiliates will rely upon the truth and accuracy of the foregoing representation, acknowledgement and agreement.

This prospectus supplement has been prepared on the basis that any offer of shares in any Relevant Member State will be made pursuant to an exemption under the Prospectus Directive from the requirement to publish a prospectus for offers of shares. Accordingly any person making or intending to make an offer in that Relevant Member State of shares which are the subject of the offering contemplated in this prospectus supplement may only do so in circumstances in which no obligation arises for the Company, the selling stockholder or any of the underwriters to publish a prospectus pursuant to Article 3 of the Prospectus Directive in relation to such offer. Neither the Company, the selling stockholder nor the underwriters have authorized, nor do they authorize, the making of any offer of shares in circumstances in which an obligation arises for the Company, the selling stockholder or the underwriters to publish a prospectus for such offer.

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For the purpose of the above provisions, the expression "an offer to the public" in relation to any shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase or subscribe the shares, as the same may be varied in the Relevant Member State by any measure implementing the Prospectus Directive in the Relevant Member State, the expression "Prospectus Directive" means Directive 2003/71/EC (including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member States) and includes any relevant implementing measure in the Relevant Member State and the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

Notice to Prospective Investors in the United Kingdom

In addition, in the United Kingdom, this document is being distributed only to, and is directed only at, and any offer subsequently made may only be directed at persons who are, "qualified investors" (as defined in the Prospectus Directive) (i) who have professional experience in matters relating to investments falling within Article 19 (5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "Order") and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as "relevant persons"). This document must not be acted on or relied on in the United Kingdom by persons who are not relevant persons. In the United Kingdom, any investment or investment activity to which this document relates is only available to, and will be engaged in with, relevant persons.

Notice to Prospective Investors in Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange ("SIX") or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, the Company or the shares has been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes ("CISA"). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

Notice to Prospective Investors in the Dubai International Financial Centre

This prospectus supplement relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority ("DFSA"). This prospectus supplement is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus supplement nor taken steps to verify the information set forth herein and has no responsibility for the prospectus supplement. The shares to which this prospectus supplement relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the shares offered should conduct their own due diligence on the shares. If you do not understand the contents of this prospectus supplement you should consult an authorized financial advisor.

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VALIDITY OF COMMON STOCK

The validity of the shares of common stock being offered hereby will be passed upon for us and the selling stockholder by Winston & Strawn LLP, New York, New York, and will be passed upon for the underwriters by Wilson Sonsini Goodrich & Rosati, Professional Corporation, Palo Alto, California and New York, New York.

EXPERTS

The financial statements incorporated in this prospectus supplement by reference to our Annual Report on Form 10-K and the effectiveness of IPG Photonics Corporation's internal control over financial reporting have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their reports, which are incorporated herein by reference. Such financial statements have been so incorporated in reliance upon the reports of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at www.sec.gov. The SEC's website contains reports, proxy and information statements and other information regarding issuers, such as us, that file electronically with the SEC. You may read and copy any document we file with the SEC at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You may also obtain copies of these documents at prescribed rates by writing to the SEC. Please call the SEC at 1-800-SEC-0330 for further information on the operation of its Public Reference Room. Certain of our filings with the SEC are available on our website at www.ipgphotonics.com. Information contained on our website is not and should not be deemed a part of this prospectus supplement and the accompanying prospectus or any other report or filing filed with the SEC.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference the information we file with it which means that we can disclose important information to you by referring you to those documents instead of having to repeat the information in this prospectus supplement. The information incorporated by reference is considered to be part of this prospectus supplement, and later information that we file with the SEC will automatically update and supersede this information. We incorporate by reference the following documents:

our Annual Report on Form 10-K for our fiscal year ended December 31, 2011, filed on February 27, 2012;

our Definitive Proxy Statement on Schedule 14A filed on April 14, 2011;

our Current Report on Form 8-K filed on February 21, 2012; and

the description of our common stock, \$0.0001 par value per share, as contained in our Registration Statement on Form 8-A/A filed on December 7, 2006 pursuant to Section 12 of the Securities Exchange Act of 1934, including any amendments or reports filed for the purpose of updating such description.

We incorporate by reference any additional documents that we may file with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 (other than the portions of those made pursuant to Item 2.02 or Item 7.01 of Form 8-K or other information furnished to the SEC) between the date that we initially filed the registration statement to which this prospectus supplement relates and the termination

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of the offering of the securities. These documents may include periodic reports, like Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as Proxy Statements. Any material that we subsequently file with the SEC will automatically update and replace the information previously filed with the SEC.

This prospectus supplement and the accompanying prospectus may contain information that updates, modifies or is contrary to information in one or more of the documents incorporated by reference in this prospectus supplement and the accompanying prospectus. You should rely only on the information incorporated by reference or provided in this prospectus supplement and the accompanying prospectus. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus supplement and the accompanying prospectus is accurate as of any date other than the date thereof or the date of the documents incorporated by reference in this prospectus supplement and the accompanying prospectus.

We will provide to each person, including any beneficial owner, to whom this prospectus supplement and the accompanying prospectus is delivered, upon written or oral request, at no cost, a copy of any and all of the information that is incorporated by reference in this prospectus supplement and the accompanying prospectus.

Requests for such documents should be directed to:

ANGELO P. LOPRESTI, ESQ.

General Counsel, Secretary and Vice President

IPG Photonics Corporation

50 Old Webster Road

Oxford, Massachusetts 01540

(508) 373-1100

You may also access the documents incorporated by reference in this prospectus supplement and the accompanying prospectus through our website at www.ipgphotonics.com. Except for the specific incorporated documents listed above, no information available on or through our website shall be deemed to be incorporated in this prospectus supplement and the accompanying prospectus or the registration statement of which it forms a part.

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PROSPECTUS

Common Stock

We and any selling stockholder may offer and sell shares of our common stock from time to time in amounts, at prices and on terms that will be determined at the time of any such offering.

We will provide specific terms of any offering in a supplement to this prospectus. The prospectus supplement will contain more specific information about the offering, including the number of shares of our common stock to be sold by us or any selling stockholder. Any prospectus supplement may also add, update or change information contained in this prospectus. You should carefully read this prospectus and the applicable prospectus supplement as well as the documents incorporated or deemed to be incorporated by reference in this prospectus before you purchase any of the securities offered hereby.

These securities may be offered and sold in the same offering or in separate offerings; to or through underwriters, dealers, and agents; or directly to purchasers. The names of any underwriters, dealers or agents involved in the sale of our securities and their compensation will be described in the applicable prospectus supplement. See Plan of Distribution.

INVESTING IN OUR SECURITIES INVOLVES SIGNIFICANT RISKS. SEE RISK FACTORS BEGINNING ON PAGE 1 OF THIS PROSPECTUS AND IN THE APPLICABLE PROSPECTUS SUPPLEMENT BEFORE INVESTING IN ANY SECURITIES.

Our common stock is listed on the Nasdaq Global Market under the symbol IPGP.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ADEQUACY OR ACCURACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is February 27, 2012

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PROSPECTUS SUMMARY

The following summary does not contain all of the information that may be important to purchasers of our securities. Prospective purchasers of securities should carefully review the detailed information and financial statements, including the notes thereto, appearing elsewhere in or incorporated by reference into this prospectus and any prospectus supplement.

We are the leading developer and manufacturer of a broad line of high-performance fiber lasers, fiber amplifiers and diode lasers that are used in numerous applications in diverse end markets. Fiber lasers are a type of laser that combines the advantages of semiconductor diodes, such as long life and high efficiency, with the high amplification and precise beam qualities of specialty optical fibers to deliver superior performance, reliability and usability at a generally lower cost compared to competing lasers.

Our diverse lines of low, mid and high-power lasers and amplifiers are used in materials processing, advanced, communications and medical applications. We sell our products globally to original equipment manufacturers, or OEMs, system integrators and end users. We market our products internationally primarily through our direct sales force. We have sales offices in the United States, Germany, Italy, the United Kingdom, France, Spain, Japan, China, South Korea, Singapore, India and Russia.

We design and manufacture most of our key components used in our finished products, from semiconductor diodes to optical fibers and other components, finished fiber lasers and amplifiers. We also manufacture certain complimentary products used with our lasers including optical delivery cables, fiber couplers, beam switches, optical heads and chillers. Our vertically integrated operations allow us to reduce manufacturing costs, ensure access to critical components, rapidly develop and integrate advanced products and protect our proprietary technology.

IPG Photonics Corporation was incorporated in Delaware in 1998. Our principal executive offices are located at 50 Old Webster Road, Oxford, Massachusetts 01540, and our telephone number is (508) 373-1100. Our website is located at www.ipgphotonics.com. Information on our website should not be considered part of this prospectus.

Unless the context requires otherwise, the terms IPG, the Company, the Registrant, we, us or our refer to IPG Photonics Corporation and consolidated subsidiaries.

RISK FACTORS

Investing in our securities involves risks. Please see the risk factors described under the caption Risk Factors in our Annual Report on Form 10-K for the fiscal year ended December 31, 2011, which is on file with the SEC and is incorporated by reference in this prospectus and in any accompanying prospectus supplement. Before making an investment decision, you should carefully consider these risks as well as information we include or incorporate by reference in this prospectus and in any accompanying prospectus supplement. The risks and uncertainties we have described are not the only ones that we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our business or operations.

FORWARD-LOOKING STATEMENTS

This prospectus, each prospectus supplement and the information incorporated by reference in this prospectus and each prospectus supplement contain certain statements that constitute forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. The words anticipate, expect, believe, goal, plan, intend, estimate, may,

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will and similar expressions and variations thereof are intended to identify forward-looking statements, but are not the exclusive means of identifying such statements. Those statements appear in this prospectus, any accompanying prospectus supplement and the documents incorporated herein and therein by reference, particularly in the sections entitled Prospectus Summary, Risk Factors, Management's Discussion and Analysis of Financial Condition and Results of Operations and Business, and include statements regarding the intent, belief or current expectations of the Company and management that are subject to known and unknown risks, uncertainties and assumptions.

This prospectus, any prospectus supplement and the information incorporated by reference in this prospectus and any prospectus supplement also contain statements that are based on the current expectations of our Company and management. You are cautioned that any such forward-looking statements are not guarantees of future performance and involve risks and uncertainties, and that actual results may differ materially from those projected in the forward-looking statements as a result of various factors.

Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely upon forward-looking statements as predictions of future events. The events and circumstances reflected in the forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Except as required by applicable law, including the securities laws of the United States and the rules and regulations of the SEC, we do not plan to publicly update or revise any forward-looking statements contained herein after we distribute this prospectus, whether as a result of any new information, future events or otherwise.

USE OF PROCEEDS

Unless otherwise indicated in the applicable prospectus supplement, we will use the net proceeds from the sale of the securities for general corporate purposes and to fund our capital expenditures and working capital requirements. We may also use some of the net proceeds for acquisitions of complementary businesses and technologies, although no such acquisitions are currently pending.

In the event that our common stock is sold by a selling stockholder, we will not receive any proceeds from such sale.

DESCRIPTION OF CAPITAL STOCK

We are authorized to issue 175,000,000 shares of common stock, par value \$ 0.0001 per share, and 5,000,000 shares of preferred stock, par value \$0.0001 per share. As of February 23, 2012, there were 47,680,519 shares of our common stock outstanding, held of record by 60 holders. As of such date, no shares of our preferred stock were outstanding and no shares of our capital stock were held in our treasury.

The following description of our capital stock is intended as a summary only and is qualified by reference to our second amended and restated certificate of incorporation (the "Certificate of Incorporation") and our amended and restated by-laws (the "By-laws").

Common Stock

The holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of the stockholders. The holders of our common stock do not have any cumulative voting rights. Holders of our common stock are entitled to receive proportionally any dividends declared by our board of directors, subject to any preferential dividend rights of any outstanding preferred stock.

In the event of our liquidation or dissolution, holders of our common stock are entitled to share ratably in all assets remaining after payment of all debts and other liabilities, subject to the prior rights of any outstanding preferred stock. Holders of our common stock have no preemptive, subscription, redemption or conversion rights.

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Preferred Stock

Our board of directors is authorized, without action by the stockholders, to designate and issue up to 5,000,000 shares of preferred stock in one or more series. Currently, no shares of preferred stock are designated or outstanding. The board of directors can fix the rights, preferences and privileges of the shares of each series of preferred stock and any of its qualifications, limitations or restrictions. Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of common stock. The issuance of preferred stock, while providing flexibility in connection with possible future financings and acquisitions and other corporate purposes could, under certain circumstances, have the effect of delaying, deferring or preventing a change in control of our company and might harm the market price of our common stock.

Our board of directors will make any determination to issue such shares based on its judgment as to our company's best interests and the best interests of our stockholders. We have no current plans to issue any shares of preferred stock.

Certain Anti-Takeover Provisions

Our Certificate of Incorporation and our By-laws include a number of provisions that may have the effect of delaying, deferring or discouraging another party from acquiring control of us and encouraging persons considering unsolicited tender offers or other unilateral takeover proposals to negotiate with our board of directors rather than pursue non-negotiated takeover attempts. Further, these provisions protect against an unsolicited proposal for our takeover that may affect the long-term value of our stock or that may otherwise be unfair to our stockholders. These provisions include the items described below.

Board Composition and Filling Vacancies. In accordance with our Certificate of Incorporation, after Dr. Valentin P. Gapontsev, our Chief Executive Officer and Chairman of our Board of Directors (together with his affiliates and associates), ceases to beneficially own 25% or more of the total voting power of the outstanding shares of all classes of stock entitled to vote generally for the election of our directors, our directors, other than those elected by any preferred stockholders, will be divided into three classes serving staggered three-year terms, with one class being elected each year. The classification of directors will have the effect of making it more difficult for stockholders to change the composition of our board. Our Certificate of Incorporation also provides that, after Dr. Gapontsev (together with his affiliates and associates) ceases to beneficially own 25% or more of the total voting power, directors may be removed only for cause by the affirmative vote of the holders of a majority in voting power of the shares then entitled to vote at an election of directors. Furthermore, any vacancy on our board of directors, however occurring, including a vacancy resulting from an increase in the size of our board, may be filled by the affirmative vote of a majority of our directors then in office even if such majority is less than a quorum.

No Written Consent of Stockholders. Our Certificate of Incorporation provides that, after Dr. Gapontsev (together with his affiliates and associates) ceases to beneficially own 25% or more of the total voting power of the outstanding shares of all classes of stock entitled to vote generally for the election of our directors, stockholders may not take any action by written consent in lieu of a meeting. This provision may lengthen the amount of time required to take stockholder actions and would prevent the amendment of our By-laws or removal of directors by our stockholders without a meeting of stockholders.

Meetings of Stockholders. Our Certificate of Incorporation provides that only a majority of the members of our board of directors then in office may call special meetings of stockholders and only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders. Our Certificate of Incorporation and our By-laws limit the business that may be conducted at an annual meeting of stockholders to those matters properly brought before the meeting.

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Advance Notice Requirements. Our By-laws establish advance notice procedures with regard to stockholder proposals relating to the nomination of candidates for election as directors or new business to be brought before meetings of our stockholders. These procedures provide that notice of stockholder proposals must be timely given in writing to our corporate secretary prior to the meeting at which the action is to be taken. Generally, to be timely, notice must be received at our principal executive offices not less than 90 days nor more than 120 days prior to the first anniversary date of the annual meeting for the preceding year. The notice must contain certain information specified in the By-laws. These provisions may impede the stockholders' ability to bring matters before an annual meeting of stockholders or make nominations for directors at an annual meeting of stockholders.

Amendment to By-laws and Certificate of Incorporation. As required by the Delaware General Corporation Law, any amendment of our Certificate of Incorporation must first be approved by a majority of our board of directors, and if required by law or our Certificate of Incorporation, thereafter be approved by 66 2/3% of the outstanding shares of our capital stock entitled to vote on the amendment, and a majority of the outstanding shares of each class entitled to vote thereon as a class. Our By-laws may be amended by the affirmative vote of a majority vote of the directors then in office, subject to any limitations set forth in the By-laws, or by the affirmative vote of at least 66 2/3% of the outstanding shares of our capital stock entitled to vote on the amendment.

Undesignated Preferred Stock. Our Certificate of Incorporation provides for 5,000,000 authorized shares of preferred stock. The issuance of preferred stock, while providing desirable flexibility in connection with possible acquisitions and other corporate purposes, could make it more difficult for a third party to, or discourage an attempt to, obtain control of us by means of a merger, tender offer, proxy contest or otherwise. For example, if in the due exercise of its fiduciary obligations, our board of directors were to determine that a takeover proposal is not in the best interests of us or our stockholders, our board of directors could cause shares of preferred stock to be issued without stockholder approval in one or more private offerings or other transactions that might dilute the voting or other rights of the proposed acquirer or insurgent stockholder or stockholder group. The issuance of shares of preferred stock could decrease the amount of earnings and assets available for distribution to holders of shares of common stock.

Section 203 of the Delaware General Corporation Law

We have expressly elected in Article XI of our Certificate of Incorporation not to be subject to Section 203 until such time as Dr. Gapontsev (together with his affiliates and associates) ceases to beneficially own 25% or more of the total voting power of our outstanding shares. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a business combination with an interested stockholder for a three-year period following the time that the stockholder becomes an interested stockholder, unless the business combination or transaction in which the person became an interested stockholder is approved in a prescribed manner. A business combination includes, among other things, a merger, asset or stock sale or other transaction resulting in a financial benefit to the interested stockholder. An interested stockholder is a person who, together with affiliates and associates, owns, or did own within three years prior to the determination of interested stockholder status, 15% or more of the corporation's voting stock. Under Section 203, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions:

before the stockholder became an interested stockholder, the board of directors approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;

upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding, for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers and some employee stock plans; or

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at or after the time the stockholder became an interested stockholder, the business combination was approved by the board of directors of the corporation and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock that is not owned by the interested stockholder.

Listing

Our common stock is listed on the Nasdaq Global Market under the symbol IPGP.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A. Its address is 250 Royall Street, Canton, MA 02021.

SELLING STOCKHOLDERS

Information regarding the beneficial ownership of our common stock by a selling stockholder, the number of shares being offered by a selling stockholder and the number of shares beneficially owned by a selling stockholder after the applicable offering will be set forth in a prospectus supplement, in a post-effective amendment or in filings we make with the SEC under the Securities Act that are incorporated by reference.

PLAN OF DISTRIBUTION

We and any selling stockholders may sell the offered securities in one or more of the following ways:

through an underwriter or underwriters;

through dealers;

through agents;

directly to one or more purchasers, including affiliates of ours; or

through a combination of any of these methods of sale.

The applicable prospectus supplement will contain the terms of the offerings of any securities. The public offering price and any discount or concessions allowed or reallocated to dealers may be changed from time to time. The applicable prospectus supplement will contain the expected time of delivery of the securities for which this prospectus is delivered.

Unless otherwise indicated in the applicable prospectus supplement, if underwriters are used in the sale of the securities, the underwriting agreement will provide that the obligations of the underwriters are subject to certain conditions precedent and that the underwriters will be obligated to purchase all of the securities if any are purchased. In connection with the sale of securities, underwriters may receive compensation from us, any selling stockholder or purchasers of securities for whom they may act as agents in the form of discounts, concessions or commissions. Underwriters may sell securities to or through dealers, and dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for whom they may act as agent.

Underwriters, agents or dealers participating in the distribution of securities may be deemed to be underwriters, and any discounts and commissions received by them and any profit realized by them on resale of the securities may be deemed to be underwriting discounts and commissions under the Securities Act. The securities may be sold in one or more transactions either at a fixed price or at prices which may be changed based on market prices prevailing at the time of sale, at prices related to the prevailing market prices or at negotiated prices.

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We and any selling stockholder may indemnify the underwriters, agents or dealers who participate in the distribution of securities against certain liabilities, including liabilities under the Securities Act. We and any selling stockholder may also contribute to payments that the underwriters, dealers or agents or any of their controlling persons may be required to make in respect of such liabilities. Underwriters, agents or dealers may be customers of, engage in transactions with or perform services for us or our subsidiaries in the ordinary course of business.

If so indicated in a prospectus supplement, we or any selling stockholder will authorize underwriters, dealers and agents to solicit offers by certain institutions to purchase securities from us or such selling stockholder pursuant to delayed delivery contracts providing for payment and delivery on the date stated in the prospectus supplement. These contracts will be subject only to those conditions contained in the prospectus supplement. The prospectus supplement will also contain the commission payable for solicitation of any of these contracts.

Offers to purchase securities may be solicited directly by us or any selling stockholder and sales of securities may be made by us or any selling stockholder directly to institutional investors or others who may be deemed to be underwriters within the meaning of the Securities Act, with respect to any resale of the securities. The terms of any such sales will be described in the prospectus supplement relating to the securities. Except as contained in the applicable prospectus supplement, no director, officer or employee of ours will solicit or receive a commission in connection with the direct sales by us or any selling stockholder of the securities, although these persons may respond to inquiries by potential purchasers and perform ministerial and clerical work in connection with any such direct sales.

LEGAL MATTERS

The validity of the securities offered hereby will be passed upon for us by Winston & Strawn LLP, New York, New York.

EXPERTS

The financial statements incorporated in this prospectus by reference to our Annual Report on Form 10-K and the effectiveness of IPG Photonics Corporation's internal control over financial reporting have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their reports, which are incorporated herein by reference. Such financial statements have been so incorporated in reliance upon the reports of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at www.sec.gov. The SEC's website contains reports, proxy and information statements and other information regarding issuers, such as us, that file electronically with the SEC. You may read and copy any document we file with the SEC at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You may also obtain copies of these documents at prescribed rates by writing to the SEC. Please call the SEC at 1-800-SEC-0330 for further information on the operation of its Public Reference Room.

We have filed with the SEC a registration statement under the Securities Act relating to the offering of these securities. The registration statement, including the attached exhibits, contains additional relevant information about us and the securities. This prospectus does not contain all of the information set forth in the registration

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statement. You can obtain a copy of the registration statement, at prescribed rates, from the SEC at the address listed above. The registration statement and the documents referred to below under Incorporation by Reference are also available on our Internet website, www.ipgphotonics.com. We have not incorporated by reference into this prospectus the information on our website, and you should not consider it to be a part of this prospectus.

INCORPORATION BY REFERENCE

The SEC allows us to incorporate by reference in this prospectus the information that we file with it. This means that we can disclose important information to you in this document by referring you to other filings we have made with the SEC. The information incorporated by reference is considered to be part of this prospectus. The information incorporated by reference in this prospectus is accurate only as of the date of the information on the front cover of the applicable document, or such earlier date as is expressly stated or otherwise apparent with respect to such incorporated information in the applicable document, regardless of the time of delivery of this prospectus or any sale of securities.

This prospectus incorporates by reference the documents listed below, which we have filed with the SEC:

our Annual Report on Form 10-K for our fiscal year ended December 31, 2011, filed on February 27, 2012;

our Definitive Proxy Statement on Schedule 14A filed on April 14, 2011;

our Current Report on Form 8-K filed on February 21, 2012; and

the description of our common stock, \$0.0001 par value per share, as contained in our Registration Statement on Form 8-A/A filed on December 7, 2006 pursuant to Section 12 of the Securities Exchange Act of 1934, including any amendments or reports filed for the purpose of updating such description.

We incorporate by reference any additional documents that we may file with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 (other than the portions of those made pursuant to Item 2.02 or Item 7.01 of Form 8-K or other information furnished to the SEC) between the date that we initially filed the registration statement to which this prospectus relates and the termination of the offering of the securities. These documents may include periodic reports, like Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as Proxy Statements. Any material that we subsequently file with the SEC will automatically update and replace the information previously filed with the SEC.

This prospectus may contain information that updates, modifies or is contrary to information in one or more of the documents incorporated by reference in this prospectus. You should rely only on the information incorporated by reference or provided in this prospectus. Neither we nor any selling stockholder has authorized anyone else to provide you with different information. You should not assume that the information in this prospectus is accurate as of any date other than the date of this prospectus or the date of the documents incorporated by reference in this prospectus.

We will provide to each person, including any beneficial owner, to whom this prospectus is delivered, upon written or oral request, at no cost, a copy of any and all of the information that is incorporated by reference in this prospectus.

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Requests for such documents should be directed to:

ANGELO P. LOPRESTI, ESQ.

General Counsel, Secretary and Vice President

IPG Photonics Corporation

50 Old Webster Road

Oxford, Massachusetts 01540

(508) 373-1100

You may also access the documents incorporated by reference in this prospectus through our website at www.ipgphotonics.com. Except for the specific incorporated documents listed above, no information available on or through our website shall be deemed to be incorporated in this prospectus or the registration statement of which it forms a part.

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3,000,000 Shares

Common Stock

PROSPECTUS SUPPLEMENT

Sole Bookrunning Manager

BofA Merrill Lynch

Needham & Company

Stifel Nicolaus Weisel

, 2012