IPG PHOTONICS CORP
Form S-1/A
November 24, 2006

Table of Contents

As filed with the Securities and Exchange Commission on November 24, 2006

Registration No. 333-136521

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Amendment No. 4
to
Form S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

IPG Photonics Corporation
(Exact name of Registrant as specified in its charter)

Delaware	**3674**	**04-3444218**
(State or other jurisdiction of incorporation or organization)	*(Primary Standard Industrial Classification Code Number)*	*(I.R.S. employer identification number)*

50 Old Webster Road
Oxford, Massachusetts 01540
(508) 373-1100

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

Valentin P. Gapontsev, Ph.D.
Chief Executive Officer and Chairman of the Board
IPG Photonics Corporation
50 Old Webster Road
Oxford, Massachusetts 01540
(508) 373-1100
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies To:

Robert W. Ericson, Esq.
David A. Sakowitz, Esq.
Winston & Strawn LLP
200 Park Avenue
New York, New York 10166- 4193
(212) 294-6700

Robert G. Day, Esq.
Wilson Sonsini Goodrich & Rosati
Professional Corporation
650 Page Mill Road
Palo Alto, California 94304- 1050
(650) 493-9300
Adam M. Dinow, Esq.
Wilson Sonsini Goodrich & Rosati
Professional Corporation

1301 Avenue of the Americas
New York, New York 10019
(212) 999-5800

Approximate date of commencement of proposed sale to the public: As soon as practicable after the effectiveness of this registration statement.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, please check the following box. o

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

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

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

If delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box. o

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

Table of Contents

The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

Subject to Completion
Preliminary Prospectus dated , 2006

PROSPECTUS

9,000,000 Shares
Common Stock

This is IPG Photonics Corporation s initial public offering of its common stock. We are offering 6,241,379 shares of common stock. The selling stockholders named in this prospectus, including our chairman and chief executive officer, two other members of our board of directors and entities affiliated with Merrill Lynch & Co., one of the underwriters participating in this offering, are offering an additional 2,758,621 shares of common stock. We expect the public offering price to be between $13.50 and $15.50 per share.

Currently, no public market exists for our common stock. After pricing of the offering, we expect that our common stock will be quoted on the Nasdaq Global Market under the symbol IPGP.

Investing in our common stock involves risks that are described in the Risk Factors section beginning on page 7 of this prospectus.

	Per Share	Total
Public offering price	$	$
Underwriting discount	$	$
Proceeds, before expenses, to IPG Photonics	$	$
Proceeds, before expenses, to selling stockholders	$	$

The underwriters may also purchase up to an additional 1,350,000 shares of common stock from the selling stockholders at the public offering price, less the underwriting discount, within 30 days from the date of this prospectus to cover overallotments.

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

The shares will be ready for delivery on or about , 2006.

Merrill Lynch & Co. **Lehman Brothers**

Needham & Company, LLC
Jefferies & Company
Thomas Weisel Partners LLC

The date of this prospectus is , 2006.

Table of Contents

TABLE OF CONTENTS

You should rely only on the information contained in this prospectus or any free writing prospectus prepared by or on behalf of us. We have not, and the underwriters have not, authorized anyone to provide you with additional information or information different from that contained in this prospectus. We are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of shares of our common stock.

In this prospectus, 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.

The market and industry data and forecasts included in this prospectus are based upon independent industry sources, including Strategies Unlimited and Frost & Sullivan. Although we believe that these independent sources are reliable, we have not independently verified the accuracy and completeness of this information, nor have we independently verified the underlying economic assumptions relied upon in preparing any data or forecasts.

Through and including , 2006 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to the dealers obligation to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

Table of Contents

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus. Because it is a summary, it does not contain all of the information that you should consider before investing in our common stock. You should read the entire prospectus carefully, including our financial statements and the related notes and the risks of investing in our common stock discussed under Risk Factors before making an investment decision.

IPG Photonics Corporation

Overview

We are the leading developer and manufacturer of a broad line of high-performance fiber lasers for diverse applications in numerous markets. Since our founding in 1990, we have pioneered the development and commercialization of optical fiber-based lasers. Fiber lasers are a new generation of lasers that combine the advantages of semiconductor diodes, such as their 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 total cost of ownership compared to CO_2 and crystal lasers. Our products are displacing traditional lasers in many current applications and enabling new applications for lasers. Our vertically integrated operations allow us to rapidly develop and integrate advanced products, protect our proprietary technology and ensure access to critical components while reducing manufacturing costs.

Our diverse lines of low, mid and high-power lasers and amplifiers are used in materials processing, communications, medical and advanced applications. For the year ended December 31, 2005, we reported net sales of $96.4 million and net income of $7.4 million. For the nine months ended September 30, 2006, we reported net sales of $101.1 million and net income of $12.6 million.

Our headquarters and manufacturing facilities are located in Oxford, Massachusetts. We have additional manufacturing facilities in Germany, Russia and Italy, and regional sales offices in the United States, Japan, South Korea, India and the United Kingdom.

Industry Background

Historically, CO_2 gas lasers and crystal lasers have been the two principal laser types used in materials processing and many other applications. A CO_2 laser produces light by electrically stimulating a gas-filled tube, while a crystal laser uses a lamp, diode stack or array to optically pump a special crystal. 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 has the potential to displace traditional laser technologies and processes because it constitutes a fundamental shift, not merely an incremental advance, in laser technology. Fiber lasers use semiconductor diodes as the light source to pump specialty optical fibers, which are infused with rare earth ions. The laser emission is created within optical fibers and delivered through a flexible cable. Over the last several years, 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. 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 Total Cost of Ownership.*** Fiber lasers offer strong value to customers because of their generally lower total operating costs due to their lower required maintenance costs, high reliability and energy efficiency.

Table of Contents

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.

Notwithstanding the benefits offered by fiber lasers, there remain applications and processes where traditional laser technologies may provide superior performance with respect to particular features. For example, crystal lasers can provide higher peak power pulses and fiber lasers do not generate the deep ultraviolet light that is used for photolithography in many semiconductor applications.

According to Strategies Unlimited, sales of fiber lasers are estimated to grow at a compound annual growth rate of approximately 39%, from $131 million in 2005 to $674 million by 2010. Strategies Unlimited also estimates the total available market for fiber lasers to be growing at 9% annually from $1.8 billion in 2005 to $2.8 billion by 2010. The penetration of fiber lasers is estimated to grow from 7% to 24% of the total available market for fiber lasers during that time period.

Our Strengths

Our key strengths and competitive advantages include:

Differentiated Proprietary Technology Platform. Our proprietary technology platform allows our products to have higher output powers and superior beam quality than are achievable through traditional techniques. In addition, we have developed a wide range of advanced proprietary optical components that contribute to the superior performance and reliability of our products.

Leading Market Position. 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.

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 products.

Vertically Integrated Development and Manufacturing. We believe that we are the only fiber laser manufacturer that is vertically integrated. We develop and manufacture all of the key components of our fiber lasers, including semiconductor diodes, specialty optical fibers and other advanced optical components. We believe our vertical integration enhances our ability to meet customer requirements, accelerate development, manage costs and improve component yields, while maintaining high performance and quality standards.

Diverse Customer Base, End Markets and Applications. Our diverse customer base, end markets and applications provide us with many growth opportunities. We have shipped more than 21,000 units and, in 2005, we shipped to more than 300 customers worldwide.

Broad Product Portfolio and Ability to Meet Customer Requirements. We offer a broad range of standard and custom fiber lasers and amplifiers ranging in power from one watt to 50 kilowatts. As a result of our modular, scalable technology platform, we are able to easily customize and upgrade our products to meet customer requirements.

2

Table of Contents

Our Strategy

We intend to maintain and extend our leadership position by pursuing the following key elements of our strategy:

Leverage Our Technology to Gain Market Share. We plan to leverage our brand and position as the leader in developing and commercializing fiber lasers to increase our market share in the broader 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. We intend to continue to enable and penetrate additional applications where lasers have not traditionally been used. We believe that fiber laser technology can overcome many of the limitations that have slowed the adoption of traditional lasers.

Expand Our Product Portfolio. We plan to continue to invest in research and development to add additional wavelengths, power levels and other parameters, improve beam quality and develop new products.

Optimize Our Manufacturing Capabilities. We plan to seek further increases in the automation of our component manufacturing processes and device assembly to improve component yields and increase the power outputs and capacities of the various components that we make.

Expand Global Reach to Attract Customers Worldwide. We intend to capitalize on and grow our global customer base by opening new application development centers as well as sales and service offices in Asia, Europe and the United States.

Risk Factors

Our business is subject to numerous risks and uncertainties, including those highlighted in the section entitled Risk Factors immediately following this prospectus summary. The principal risks that we face relate to the following factors:

Application Penetration and Increasing Market Share. Our future growth depends upon our ability to penetrate new applications for fiber lasers and increase our market share in existing applications.

Acceptance and Rate of Penetration. If fiber lasers do not achieve broader market acceptance or if market penetration occurs more slowly than we expect, prospects for our growth and profitability may be negatively impacted.

Effectively Managing Our Growth. We may not be able to effectively manage our growth, which may harm our business and operating results.

High Levels of Fixed Costs. Our vertical integration strategy results in high levels of fixed costs, and our manufacturing capacity may not be at the appropriate size for future levels of demand.

Intellectual Property Infringement Claims. We are currently subject to claims that we are infringing third-party intellectual property rights and other claims may arise in the future, which could result in costly and lengthy litigation, the outcome of which is unknown.

Corporate Information

We began our operations in Russia in 1990 and were 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.

3

Table of Contents

THE OFFERING

Common stock offered by IPG Photonics	6,241,379 shares
Common stock offered by the selling stockholders	2,758,621 shares
Common stock to be outstanding after the offering	43,498,926 shares
Use of proceeds	We expect to receive net proceeds from the offering of approximately $81.8 million. We expect to use the net proceeds from the offering to repurchase our series B warrants, to repay certain of our outstanding indebtedness and for general corporate purposes, which may include working capital, expansion of our manufacturing facilities, purchases of equipment and expansion of our applications development and service capabilities. We will not receive any proceeds from the shares sold by the selling stockholders. The selling stockholders include our chairman and chief executive officer and two other members of our board of directors. See Principal and Selling Stockholders. Entities that are affiliates of Merrill Lynch & Co., one of the underwriters in this offering, will also be selling stock in this offering and will receive a portion of the proceeds of this offering as a result of our repurchase of series B warrants held by them. See Principal and Selling Stockholders and Underwriting Certain Relationships; NASD Conduct Rules. One of our directors, Michael C. Child, is a managing director of TA Associates, Inc., which will receive a portion of the proceeds of this offering as a result of our repurchase of the series B warrants held by it. See Use of Proceeds.
Nasdaq Global Market Symbol	IPGP

The number of shares of common stock to be outstanding after the offering is based on 27,343,330 shares outstanding as of September 30, 2006 and includes 9,914,217 shares that we will issue upon conversion of our outstanding preferred stock upon completion of the offering assuming an initial public offering price of $14.50 per share, which is the midpoint of the range set forth on the cover page of this prospectus.

The number of shares of common stock to be outstanding after the offering excludes:

- 4,411,923 shares issuable upon exercise of stock options outstanding as of September 30, 2006, which have a weighted average exercise price of $2.68 per share;
- 3,131,384 additional shares reserved as of September 30, 2006 for future issuance under our stock-based compensation plans;
- warrants to purchase shares of our common stock that will be repurchased at the closing of this offering; and
- 17,746 shares issued upon the exercise of options after September 30, 2006.

Unless otherwise stated, all information contained in this prospectus:

- gives effect to the conversion of our outstanding preferred stock into a combination of common stock and subordinated notes;
- gives effect to a 2-for-3 reverse stock split to be effective prior to the pricing of this offering;

gives effect to amendments to our certificate of incorporation and by-laws that will become effective upon completion of this offering; and

assumes no exercise of the option to purchase up to 1,350,000 additional shares of common stock from the selling stockholders that has been granted to the underwriters.

Table of Contents

SUMMARY CONSOLIDATED FINANCIAL DATA

The following summary consolidated financial data should be read together with the more detailed information contained in Selected Consolidated Financial Data, Management s Discussion and Analysis of Financial Condition and Results of Operations and our consolidated financial statements and the related notes included elsewhere in this prospectus. The data for the years ended December 31, 2003, 2004 and 2005, and the nine months ended September 30, 2006 is derived from our audited consolidated financial statements and related notes included elsewhere in this prospectus. The data for the years ended December 31, 2001 and 2002, is derived from our audited consolidated financial statements and related notes not included in this prospectus. The summary interim consolidated financial data for the nine months ended September 30, 2005 is derived from our unaudited consolidated financial statements and related notes included elsewhere in this prospectus. We have prepared our unaudited interim consolidated financial data on a basis consistent with our audited consolidated financial statements except that, effective January 1, 2006, we were required to begin accounting for stock-based payments at fair value, as discussed in note 2 to the consolidated financial statements. In the opinion of our management, our unaudited interim consolidated financial statements reflect all adjustments, consisting only of normal recurring adjustments, necessary for a fair presentation of our results of operations and financial position. Our historical results are not necessarily indicative of the results for any future period.

	Year Ended December 31,					Nine Months Ended September 30,	
	2001	**2002**	**2003**	**2004**	**2005**	**2005**	**2006**
	(in thousands, except per share data)						
Consolidated Statement of Operations Data:(1)							
Net sales	$ 26,490	$ 22,180	$ 33,740	$ 60,707	$ 96,385	$ 62,238	$ 101,128
Cost of sales	26,223	23,277	38,583	42,274	62,481	41,763	57,983
Gross profit (loss)	267	(1,097)	(4,843)	18,433	33,904	20,475	43,145
Operating expenses:							
Sales and marketing	21,240	19,910	2,110	2,363	3,236	2,354	4,111
Research and development	8,407	8,383	10,063	4,831	5,788	4,177	4,314
General and administrative	18,875	13,354	9,998	8,179	10,598	6,689	9,352
Other operating expenses	15,042	9,474					
Total operating expenses	63,564	51,121	22,171	15,373	19,622	13,220	17,777
Operating (loss) income	(63,297)	(52,218)	(27,014)	3,060	14,282	7,255	25,368
Interest income (expense), net	1,857	(1,089)	(1,505)	(2,150)	(1,840)	(1,410)	(1,051)
Fair value adjustment to series B warrants(2)	6,862	2,518	(3,664)	(615)	(745)	(477)	(4,356)
Other income, net	975	2,414	1,647	196	236	196	143
(Loss) income before benefit from (provision	(53,603)	(48,375)	(30,536)	491	11,933	5,564	20,104

for) income taxes and minority interests in consolidated subsidiaries							
Benefit from (provision for) income taxes	3,985	(1,175)	2,205	1,601	(4,080)	(2,037)	(6,597)
Minority interests in consolidated subsidiaries	(4)	165	121	(80)	(426)	(25)	(910)
Net (loss) income	$ (49,622)	$ (49,385)	$ (28,210)	$ 2,012	$ 7,427	$ 3,502	$ 12,597
Net (loss) income per share:							
Basic	$ (2.17)	$ (2.13)	$ (1.40)	$ (0.01)	$ 0.16	$ 0.06	$ 0.34
Diluted	$ (2.17)	$ (2.13)	$ (1.40)	$ (0.01)	$ 0.16	$ 0.06	$ 0.31
Weighted average shares outstanding:							
Basic	23,973	24,317	25,534	25,698	26,232	26,105	27,052
Diluted	23,973	24,317	25,534	25,698	30,167	30,040	32,987
Supplementary pro forma net income per share(3)					$ 0.21		$ 0.42

(footnotes on following page)

Table of Contents

(1) Due primarily to certain stock-based compensation awarded primarily in 2000 and 2001, we have recorded significant stock-based compensation during the years ended December 31, 2001, 2002 and 2003. Those awards became fully vested during the year ended December 31, 2004. See Management s Discussion and Analysis of Financial Condition and Results of Operations Critical Accounting Policies and Estimates Stock-Based Compensation.

(2) The change in value of the series B warrants is a non-cash charge related to recording the increase or decrease in the fair value of the warrants. The change in fair value for this derivative instrument is directly related to the probability that the warrants will be exercised prior to their expiration in April 2008. We intend to use a portion of the net proceeds from this offering to repurchase the series B warrants. See Management s Discussion and Analysis of Financial Condition and Results of Operations Factors and Trends That Affect our Operations and Financial Results Effect of Preferred Stock On Net Income and Net Income Per Share.

(3) The supplemental pro forma disclosures are intended to demonstrate the effects on net income per share of the completion of this offering and the related impacts of the conversion of our preferred stock and the repurchase of the series B warrants with a portion of the net proceeds of this offering. The number of shares used in the calculation of supplementary pro forma net income per common share includes (a) the basic weighted average common stock outstanding, (b) 9,914,217 shares of common stock, which will be issued upon completion of this offering upon the conversion of our preferred stock, assuming an offering price of $14.50 per share, the midpoint of the range set forth on the cover page of this prospectus and (c) 3,407,383 shares related to the additional dilutive impact of existing assuming options assuming that the fair value of the common stock increases to $14.50. Supplementary pro forma net income used in the calculation of supplementary pro forma net income per share reflects the elimination of the increase in value of the series B warrants, which will be repurchased upon the completion of this offering, totaling $745,000 for the year ended December 31, 2005 and $4.4 million for the nine months ended September 30, 2006. In addition, all accretion of preferred stock has been eliminated in the determination of net income attributable to common stockholders. See Use of Proceeds, Management s Discussion and Analysis of Financial Condition and Results of Operations Critical Accounting Policies and Estimates Fair Value Adjustment of Warrants and Certain Relationships and Related Party Transactions.

The table below summarizes our consolidated balance sheet as of September 30, 2006 on an actual basis, on a pro forma basis to give effect to the conversion of all outstanding shares of preferred stock as of that date into common stock and the issuance of subordinated notes totaling $20.0 million, which will occur upon closing of this offering, and on a pro forma as adjusted basis to reflect the transactions described above as well as the sale of 6,241,379 shares of our common stock in this offering at an assumed offering price of $14.50 per share and the application of the estimated net proceeds therefrom as described in Use of Proceeds.

	As of September 30, 2006		
	Actual	Pro Forma	Pro Forma as Adjusted
		(unaudited) (in thousands)	
Consolidated Balance Sheet Data:			
Cash and cash equivalents	$ 11,357	$ 11,357	$ 40,652
Working capital	37,994	37,994	85,200
Total assets	141,401	141,401	170,041
Long-term debt, including current portion	23,151	43,151	20,000
Series B warrants	19,000	19,000	

Convertible redeemable preferred stock	97,902		
Preferred stock	4,880		
Stockholders (deficit) equity	(31,411)	46,491	125,168

Table of Contents

RISK FACTORS

This offering involves a high degree of risk. You should carefully consider the risks and uncertainties below, together with the financial and other information contained in this prospectus, before you decide to buy our common stock. If any of the following risks and uncertainties actually occur, our business, prospects, financial condition and results of operations would likely suffer. In these circumstances, the market price of our common stock could decline, and you could lose all or part of your investment in our common stock.

Risks Related To Our Business

Our future growth depends upon our ability to penetrate new applications for fiber lasers and increase our market share in existing applications.

Our future growth will depend on our ability to generate sales of fiber lasers in applications where traditional lasers, such as CO_2 and yttrium aluminum garnet (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 CO_2 and YAG lasers historically have been used. In order to 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;
- extend our product line to address new applications for our products;
- continue to reduce our manufacturing costs and enhance our competitive position; and
- effectively service and support our installed product base.

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.

If fiber lasers do not achieve broader market acceptance or if market penetration occurs more slowly than we expect, prospects for our growth and profitability may be negatively impacted.

The fiber laser market is relatively new when compared to the conventional laser market and our future success depends on the development and broader market acceptance of fiber lasers. Potential customers may be reluctant to adopt fiber lasers as an alternative to traditional lasers, such as CO_2 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. Many of our target markets, such as the automotive, machine tool and other manufacturing, communications and medical industries, have historically adopted new technologies slowly. These markets often require long test and qualification periods or lengthy government approval processes before adopting new technologies. As a result, we may expend significant resources and time to qualify our products for a new customer application, and we cannot assure that our products will be qualified or approved for such markets. If acceptance of fiber laser technology, and of our fiber lasers in particular, does not continue to grow within the markets that we serve, then the opportunities to increase our revenues and profitability may be severely limited.

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 improve our operational and financial systems and expand, train and manage our employees. For example, we must implement new modules of our management information system, hire and train new sales representatives, service and application personnel, and expand our supply chain management and quality control operations. This may require substantial managerial and financial resources, and our efforts in this regard may not be 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 vertically integrated business results in high levels of fixed costs that may adversely impact our gross profits and our operating results in the event of a reduction in demand for our products.

We have a high fixed cost base due to our vertically integrated business model, including the fact that approximately 770 of our 1,000 employees as of September 30, 2006 were employed in our manufacturing operations. We cannot adjust these fixed costs quickly to adapt to rapidly changing market conditions. Our gross profit, in absolute dollars and as a percentage of net sales, is greatly impacted by our sales volume and the corresponding absorption of fixed manufacturing overhead expenses. In addition, because we are a vertically integrated manufacturer and design and manufacture our key specialty components, insufficient demand for our products may subject us to the risk of high inventory carrying costs and increased inventory obsolescence. Given our vertical integration, 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 and changes in our level of inventory to lead to an increase in cash generated from our operations when it is sold or a decrease in cash generated from our operations at times when the amount of inventory is increasing. We may be required to write down inventory costs in the future as we have done in the past, and the high inventory costs may have an adverse effect on our gross profits and our operating results.

We are subject to lawsuits 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. We are presently defending three patent infringement lawsuits brought by the Scientific-Atlanta division of Cisco Systems, Inc., Spectra-Physics, Inc., a subsidiary of Newport Corporation, and IMRA America, Inc. See Business Legal Proceedings. The Scientific-Atlanta allegations generally relate to erbium and ytterbium co-doped optical fiber, and certain products that incorporate such fiber. Scientific-Atlanta in its complaint alleges willful infringement

Table of Contents

of one U.S. patent and seeks damages in an unspecified amount, treble damages and injunctive relief. Spectra-Physics allegations generally relate to certain of our fiber lasers and amplifiers. Spectra-Physics in its complaint alleges willful infringement of one U.S. patent and seeks damages of over $20.0 million, treble damages and injunctive relief. IMRA America s allegations generally relate to certain unspecified fiber amplifiers that we produce and also allege inducement of infringement and contributory infringement without specifying any of our products. IMRA America in its complaint alleges willful infringement of one U.S. patent and seeks damages in an unspecified amount, treble damages and injunctive relief. These lawsuits concern products made, used, sold, offered for sale, or imported in the United States and therefore these lawsuits affect products that contribute a substantial portion of our revenues. These lawsuits do not affect revenues that are derived from products that are not made, used, sold, offered for sale or imported in the United States. IMRA America and other parties have notified us that they believe certain of our fiber lasers and amplifiers, or the use of these products, infringe the respective parties patents. The subject matter of these assertions are products that contribute a substantial portion of our revenues. There can be no assurance that we will be able to amicably dispose of our pending litigations with Scientific-Atlanta, Spectra-Physics and IMRA America, claims or other allegations made against us and claims that may be asserted in the future. The outcome of any litigation, including the pending litigations, is uncertain. Even if we ultimately are successful on the merits of any such litigation, 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 against us may have greater financial resources and may be able to sustain the costs of complex intellectual property litigation more easily than we can.

If we do not prevail in any intellectual property litigation brought against us, including the lawsuits brought by Scientific-Atlanta, Spectra-Physics and IMRA America, 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, including the lawsuits brought by Scientific-Atlanta, Spectra-Physics and IMRA America that we are presently defending, 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;
- attempt to obtain a license to use the relevant intellectual property, which may not be available on reasonable terms or at all; and
- attempt to redesign the products that allegedly infringed upon intellectual property of others, which may be costly or impractical.

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 on 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 and 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 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. While we own a small number of patents, we have not historically emphasized patents as a source of significant competitive advantage, and we do not expect these patents alone to prevent third parties from unauthorized copying of our technologies, products and product components. Rather, 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 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 activities were obstructed or hampered significantly, 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. In particular, we use complex tools in the production of our semiconductor diodes that may be taken out of production for months to be serviced and the tools must be recertified before they are put back into production. If we are unable to successfully recommission these tools in a timely fashion, our results of operations and business may be adversely affected. 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,

Table of Contents

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 in the manufacture of our products and other components, such as semiconductor wafer substrates, modulators and high-power beam delivery products, 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. 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 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, and our managing director of IPG Laser, Dr. Eugene Shcherbakov, our highly trained team of scientists, many of whom have several 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 as disclosed under Management below. Furthermore, our business requires scientists and engineers with experience in several disciplines, including physics, optics, materials sciences, chemistry and electronics. We will need to 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.

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. Accordingly, we have an ongoing effort to develop our direct support systems in Asia, one of our largest markets. 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.

The laser and amplifier industries may experience 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, have in the past and may in the future continue to experience a decline in average selling prices (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 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 may experience material adverse fluctuations in our future operating results on a quarterly or annual basis if the ASPs of our products continue to decline.

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. Our top five customers accounted for an aggregate of between 37% and 38% of our consolidated net sales for each of the past three years and 31% for the nine months ended September 30, 2006. Our largest customer has accounted for at least 10% of our net sales for each of the last three years and accounted for approximately 13% of our consolidated net sales in 2005 and approximately 12% for the nine months ended September 30, 2006. 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 installation or acceptance of certain products shipped to our customers;
- the timing of customer qualification of our products and commencement of volume sales of systems that include our products;
- 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;
- 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;

12

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 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.

Our manufacturing capacity may not be at the appropriate size for future levels of demand.

In response to an increase in demand for our fiber lasers over the last three years, we started adding substantial manufacturing capacity at our facilities in the United States, Germany and Russia beginning in early 2005, and we are continuing to expand our capacity further. 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 from current levels, we may have significant excess manufacturing capacity, which could in turn adversely affect our business.

Conversely, if demand for fiber lasers or amplifiers increases substantially more than we anticipate, our manufacturing capacity may not be adequate to meet the increased customer demand. As a result, we might not be able to fulfill customer orders in a timely manner, which could adversely affect our customer relationships and operating results. Moreover, our efforts to increase our production capacity may not succeed in enabling us to manufacture the required quantities of our products in a timely manner or at gross profit margins that we have achieved in the past. As a result, the profit margins we ultimately achieve on sales of fiber lasers and amplifiers may be lower than our historical profit margins.

Future downturns in the economy, particularly in the materials processing and communications markets, 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 and communications markets. We estimate that approximately 79% of our revenues during 2005 were in these two markets. Although these industries are broad, they 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 the foreseeable future, our operations will continue to depend upon capital expenditures by customers in these markets, which, in turn, depend upon the demand for their products or services. Decreased demand for products and services from customers in these industries during an economic downturn may lead to decreased demand for our products, which would reduce our sales or sales growth rate.

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

Our future growth will 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. 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.

Because we lack long-term purchase commitments from our customers, our sales can be difficult to predict, which could 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 $8.3 million, $0.0 million and $2.4 million in 2003, 2004 and 2005, 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.

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 CO_2 and YAG lasers, as these makers of traditional solutions may lower prices to maintain current market share and have committed significant research and development resources to pursue opportunities related to these technologies.

Further, we face competition from a growing number of fiber laser makers. We also expect competition from established laser makers which may have started or may start programs to develop and sell fiber lasers or alternative new solid state laser technologies. Because many of the components required to develop and produce low-power fiber lasers and amplifiers are commercially available, barriers to entry into these submarkets are relatively low, and we expect new competitive product entries in these submarkets. We may not be able to successfully differentiate our current and proposed products from the products of our competitors and the market may not consider our products to be superior to competing

Table of Contents

products. To maintain our competitive position in these markets, 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 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 inability to manage risks associated with our international customers and operations could adversely affect our business.

Our products are currently marketed and sold in numerous countries. The United States, Germany, Japan and Russia are our principal markets. A significant amount of our revenues are derived from customers 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;
- changes 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 indirect subsidiary, NTO IRE-Polus, which conducts research and development and provides components and test equipment to us. The results of operations, business prospects and facilities of NTO IRE-Polus are subject to the economic and political environment in Russia. 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.

Foreign currency transaction 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 2005, 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. We currently do not hedge against foreign currency exchange risks, and therefore the impact of future exchange rate fluctuations on our results of operations cannot be accurately predicted. 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.

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

We currently have no commitments or agreements to make any acquisitions and have limited experience in making acquisitions. In the future, we may make acquisitions of and investments in new businesses, products, technologies and geographic areas, or we may acquire operations that expand our current capabilities. Acquisitions present a number of potential risks and challenges that could, if not met, disrupt our business operations, increase our operating costs and reduce the value of the acquired company to us. For example, if we identify an acquisition candidate, we may not be able to successfully negotiate or finance the acquisition on favorable terms. Even if we are successful, we may not be able to integrate the acquired businesses, products or technologies into our existing business and products. As a result of the rapid pace of technological change in our industry, we may misgauge the long-term potential of the acquired business or technology, or the acquisition may not be complementary to our existing business. Furthermore, potential acquisitions and investments, whether or not consummated, may divert our management s attention and require considerable cash outlays at the expense of our existing operations. In addition, 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.

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, labeling, 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. There can be no assurance that violations of environmental laws or regulations will not occur in the future as a result of the inability to obtain permits, human error, accident, equipment failure or other causes.

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 is the export of our products to other countries. Because our products can be used or adapted for military, weapons or other similar uses, our products are subject to the Export Administration Regulations, administered by the Department of Commerce and the Bureau of Industry Security, and their foreign counterpart laws and regulations which require that we obtain an export license before we can export certain products, components or technology to specified countries. Under applicable regulations, some of our laser products, components and technology are treated differently than traditional lasers or mechanical tools and, in some cases, the export of our products, components and technology to certain countries requires an export license even though an export license would not be required for the export of a CO_2 or YAG laser or mechanical tool. Unless a license exception is available, the stricter controls applicable to some products could put us at a competitive disadvantage in selling our products to customers in certain countries that require an export license, restrict our ability to sell products to customers in certain countries, or give rise to delays or expenses in obtaining appropriate licenses. Export licenses can permit the export of a unit to a single customer, or multiple units over a period of time to one or more customers, and may include conditions limiting the use of the product, resale, transfer, re-export, modification, disassembly or transfer of data. We have experienced and, in the future, may experience delays in obtaining export licenses as we respond to questions from licensing authorities on license requests and await their determination to grant permission in instances where a license is required. 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 also may require us to defer shipments to subsequent periods or cancel orders. Any of these could adversely affect our operations and, as a result, our financial results could suffer.

Risks Related To This Offering

The market price of our common stock may be volatile, which could result in substantial losses for investors purchasing shares in this offering.

Prior to this offering, there has not been a public market for our common stock, and an active market for our common stock may not develop or be sustained after this offering. The market price of our common stock after this offering may vary from its initial public offering price. 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 initial 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;
- failure to complete significant sales;
- any future sales of our common stock or other securities; and
- additions or departures of key personnel.

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. A certain degree of stock price volatility can be attributed to being a newly public company. 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.

Dr. Valentin P. Gapontsev, our chairman, chief executive officer and principal stockholder, will control more than 46.0% 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 and majority owner, will beneficially own an aggregate of 19,999,245 shares of our common stock, or approximately 46.0% of our common stock. In addition, after giving effect to the offering, Dr. Denis Gapontsev, our Vice President of Research and Development and the son of Dr. Valentin P. Gapontsev, will beneficially own 1,718,902 shares of our common stock, or approximately 3.9% of our common stock, and collectively with Dr. Valentin P. Gapontsev, approximately 49.9%

of our common stock. As a result,

Table of Contents

Dr. Valentin P. Gapontsev will continue to 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. Valentin P. Gapontsev may vote his 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. Dr. Valentin P. Gapontsev s significant ownership interest 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.

Dr. Valentin P. Gapontsev, our chairman, chief executive officer and principal stockholder, owns a material portion of one of our operating subsidiaries, which creates the possibility of a conflict of interest.

Although we own 51.0% of NTO IRE-Polus, our Russian subsidiary, Dr. Valentin P. Gapontsev owns 26.7%, and the remaining 22.3% is owned by unaffiliated third parties and certain current and former employees of NTO IRE-Polus. NTO IRE-Polus conducts research and development for us and provides us with components and test equipment. Transactions between us and NTO IRE-Polus generated approximately $7.8 million and $8.8 million of revenues for NTO IRE-Polus for the year ended December 31, 2005 and the nine months ended September 30, 2006, respectively. Dr. Gapontsev s significant ownership interest in this entity creates the possibility of a conflict of interest since, by having an ownership interest in both our company and NTO IRE-Polus, his economic interests may be affected by transactions between the two entities. Under Russian law and NTO IRE-Polus s charter, supermajority or unanimous stockholder approval is required to take certain significant non-operational actions, such as amending NTO IRE-Polus s charter, electing the executive body or altering certain fundamental stockholder rights. Although we have taken steps to address possible conflicts of interests and potential issues concerning the requirement to obtain supermajority approval, these steps may not prove effective. See Certain Relationships and Related Party Transactions Transactions with NTO-IRE Polus.

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 that will be in effect upon completion of this offering, 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.

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. Valentin P. 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.

Substantial sales of our common stock could cause our stock price to decline.

Sales of a substantial number of shares of common stock after the completion of this offering, 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 43,498,926 shares of common stock outstanding and 4,411,923 shares subject to outstanding options. The shares sold in this offering will be freely tradable without restriction or further registration under the federal securities laws. Our directors, executive officers and other stockholders holding in the aggregate approximately 99% of our outstanding shares prior to giving effect to this offering have agreed not to sell or otherwise dispose of any shares of common stock for a period of at least 180 days after the date of this prospectus without the prior written approval of Merrill Lynch & Co. and Lehman Brothers Inc., which could be given at any time. When the lock-up agreements expire or are terminated, approximately 34,432,260 shares of our common stock will be eligible for sale under Rule 144, Rule 144(k) or Rule 701. After the completion of this offering, the holders of an aggregate of approximately 7,144,498 shares of common stock will have registration rights, including the right to require us to register the sale of their shares and the right to include their shares in public offerings we undertake in the future. After the completion of this offering, we intend to register all shares of common stock that we may issue under our stock option plans. Once we register these shares, they may be freely sold in the public market, subject to the lock-up restrictions described above, and subject, in the case of any awards under our stock-based compensation plans, to applicable vesting requirements.

We will incur increased costs and demands upon management as a result of complying with the laws and regulations affecting public companies, which could adversely affect our operating results.

As a public company, we will incur significant legal, accounting and other expenses that we did not incur as a private company, including costs associated with public company reporting requirements. We also have incurred and will incur costs associated with recently adopted corporate governance requirements, including requirements under the Sarbanes-Oxley Act of 2002, as well as new rules implemented by the SEC and the Nasdaq Global Market. The expenses incurred by public companies generally for reporting and corporate governance purposes have been increasing. We expect these rules and regulations to significantly increase our legal and financial compliance costs and to make some activities more time-consuming and costly, and we may be required to hire additional personnel. We also expect these rules and regulations may make it more difficult and more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. As a result, it may be more difficult for us to attract and retain qualified individuals to serve on our board of directors or as our executive officers.

Table of Contents

We will be required to evaluate our internal control over financial reporting under Section 404 of the Sarbanes-Oxley Act of 2002, and any adverse results from such evaluation could result in a loss of investor confidence in our financial reports and have an adverse effect on our stock price.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, beginning as early as the time of the filing of our Annual Report on Form 10-K for the fiscal year ending December 31, 2007, we will be required to furnish a report by our management on our internal control over financial reporting. Such a report will contain, among other matters, an assessment of the effectiveness of our internal control over financial reporting as of the end of our fiscal year, including a statement as to whether or not our internal control over financial reporting is effective. This assessment must include disclosure of any material weaknesses in our internal control over financial reporting identified by management. Such report must also contain a statement that our independent registered public accounting firm has issued an attestation report on management s assessment of such internal controls.

We have begun the systems and process documentation and evaluation needed to comply with Section 404. If our management identifies one or more material weaknesses in our internal control over financial reporting, we will be unable to assert that such internal control is effective. If we are unable to assert that our internal control over financial reporting is effective, or if our independent registered public accounting firm is unable to attest that our management s report is fairly stated or it is unable to express an opinion on the effectiveness of our internal controls, investors could lose confidence in the accuracy and completeness of our financial reports, which could have an adverse effect on our stock price.

Investors in this offering will experience immediate and substantial dilution.

The initial public offering price of our common stock will be substantially higher than the net tangible book value per share of our common stock immediately after the completion of this offering. Therefore, if you purchase our common stock in this offering, you will incur an immediate dilution of $11.62 in net tangible book value per share from the price you paid. In the past, we issued options to acquire common stock at prices significantly below the initial public offering price. To the extent these outstanding options are ultimately exercised, there will be further dilution to investors.

Table of Contents

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements that involve substantial risk and uncertainties. All statements, other than statements of historical facts, included in this prospectus are forward-looking statements, including, but not limited to, statements regarding our strategy, future operations, future financial position, future revenues, projected costs and prospects. In some cases, you can identify forward-looking statements by terminology such as may, could, should, expect, intend, plan, anticipate, believe, estimate, predict, potential similar expressions, whether in the negative or affirmative. These statements are only predictions and may be inaccurate. Actual events or results may differ materially and adversely from those anticipated, estimated or expected. In evaluating these statements, you should specifically consider various factors, including the risks outlined under Risk Factors and in other parts of this prospectus. These factors may cause our actual results to differ materially from any forward-looking statement. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements and you should not place undue reliance on our forward-looking statements. The forward-looking statements made in this prospectus relate only to events as of the dates on which the statements are made. We do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

This prospectus also contains market data related to our business and industry. This market data includes projections that are based on a number of assumptions. If these assumptions turn out to be incorrect, actual results may differ from the projections based on these assumptions. As a result, our markets may not grow at the rates projected by this data, or at all. The failure of these markets to grow at these projected rates may have a material adverse effect on our business, results of operations and financial condition and the market price of our common stock.

USE OF PROCEEDS

We estimate that the net proceeds from the sale of the shares of common stock we are offering will be approximately $81.8 million after the underwriting discount, commissions and expenses, assuming an initial public offering price of $14.50 per share, the midpoint of the price range set forth on the cover of this prospectus. We will not receive any proceeds from the sale of shares of common stock by the selling stockholders. Our chairman and chief executive officer, two other members of our board of directors and entities affiliated with Merrill Lynch & Co., one of the underwriters participating in this offering, are selling shares of common stock in this offering. See Principal and Selling Stockholders and Underwriting Certain Relationships; NASD Conduct Rules.

A $1.00 increase (decrease) in the assumed initial public offering price of $14.50 per share would increase (decrease) the net proceeds to us from this offering by approximately $5.8 million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

We intend to use the net proceeds from this offering as follows:

- approximately $22.1 million to repurchase the warrants to purchase shares of our common stock that are owned by holders of the series B preferred stock;
- approximately $5.5 million to repay Euro-denominated construction loans due from 2006 to 2010 that bear annual interest at 5.25%;
- approximately $5.6 million to repay a U.S. construction loan due January 2007 that bears annual interest at 7.9%;
- approximately $10.6 million to repay other Euro-denominated term debt with various maturities ranging from 2006 to 2019 with fixed and variable interest rates ranging from 4.2% to 6.5%;
- approximately $0.2 million to repay Euro-denominated line-of-credit facilities that bear annual interest at rates ranging from 6.0% to 7.6%;
- approximately $4.5 million to repay a U.S. demand line-of-credit facility that bears interest at a variable rate of LIBOR plus 3.0% (8.3% at September 30, 2006);
- approximately $3.3 million to repay Japanese Yen line-of-credit facilities that bear interest at approximately 2.0%; and
- the balance of the net proceeds for general corporate purposes.

Approximately $6.3 million of the $10.6 million Euro-denominated term debt was incurred within the past year to repay existing term debt, to finance construction and for general working capital purposes.

Until we use our net proceeds of the offering, we intend to invest the funds in U.S. government securities and other short-term, investment-grade, interest-bearing instruments or high-grade corporate notes. Management will have significant flexibility in applying the net proceeds of the offering.

TA Associates, Inc. beneficially owns 2,000,000 shares of our series B preferred stock and will beneficially own 9.5% of our common stock after the completion of this offering. TA Associates, Inc. will receive approximately $11.6 million of the proceeds of this offering as a result of our repurchase of the series B warrants held by it. One of our directors, Michael C. Child, is a managing director of TA Associates, Inc. See Principal and Selling Stockholders.

Entities that are affiliates of Merrill Lynch & Co., one of the underwriters in this offering, will sell 670,510 shares in this offering and receive approximately $3.5 million of the proceeds of this offering as a result of our repurchase of series B warrants held by them. If the underwriters overallotment option is exercised in full, these entities will sell an additional 437,718 shares in this offering. See Principal and Selling Stockholders and

Underwriting   Certain Relationships; NASD Conduct Rules.

Table of Contents

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 general economic and 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

CAPITALIZATION

The following table sets forth our capitalization as of September 30, 2006:

- on an actual basis;
- on a pro forma basis to give effect to the conversion of all outstanding shares of preferred stock upon the closing of this offering into 9,914,217 shares of common stock, assuming an initial offering price of $14.50 per share, and the issuance of subordinated notes totaling $20.0 million to the holders of our series B preferred stock; and
- on a pro forma as adjusted basis to give effect to the transactions described above as well as our sale of 6,241,379 shares of our common stock in this offering and the application of the estimated net proceeds therefrom as described in Use of Proceeds.

You should read the following table together with Management s Discussion and Analysis of Financial Condition and Results of Operations, Use of Proceeds, Selected Consolidated Financial Data and Certain Relationships and Related Party Transactions and our consolidated financial statements and the related notes included elsewhere in this prospectus.

	As of September 30, 2006		
	Actual	**Pro Forma**	**Pro Forma As Adjusted**
		(unaudited)	
	(in thousands, except share and per share data)		
Short-term debt:			
Revolving line-of-credit facilities	$ 7,886	$ 7,886	$
Subordinated notes		20,000	20,000
Other long-term debt (including current maturities)	23,151	23,151	
Total debt	31,037	51,037	20,000
Series B warrants	19,000	19,000	
Convertible redeemable preferred stock, par value $0.0001 per share:			
Series B preferred stock, 3,800,000 shares designated, issued and outstanding, actual; no shares designated, issued or outstanding, pro forma and pro forma as adjusted	92,802		
Series D preferred stock, 5,400,000 shares designated, 2,684,211 shares issued and outstanding, actual; no shares designated, issued or outstanding, pro forma and pro forma as adjusted	5,100		
Stockholders (deficit) equity:			
Preferred stock, par value $0.0001 per share, 15,000,000 shares authorized, actual; Series A preferred stock, 500,000 shares designated, 488,000 shares issued	4,880		

and outstanding, actual; 5,000,000 shares authorized, no shares issued or outstanding, pro forma and pro forma as adjusted						
Common stock, par value $0.0001 per share, 70,000,000 shares authorized, 27,343,330 shares issued and outstanding, actual; 175,000,000 shares authorized, pro forma and pro forma as adjusted; 37,257,547 shares issued and outstanding, pro forma; 43,498,926 shares issued and outstanding, pro forma as adjusted		4		4		5
Additional paid-in capital		94,714		177,496		259,260
Notes receivable from stockholders		(23)		(23)		(23)
Accumulated deficit		(137,028)		(137,028)		(140,116)
Accumulated other comprehensive income		6,042		6,042		6,042
Total stockholders (deficit) equity		(31,411)		46,491		125,168
Total capitalization	$	116,528	$	116,528	$	145,168

Table of Contents

DILUTION

Our pro forma net tangible book value as of September 30, 2006 was approximately $46.5 million, or $1.25 per share of common stock. Pro forma net tangible book value per share represents the amount of our total tangible assets less our total liabilities, divided by the number of shares of common stock outstanding as of September 30, 2006 and reflects the conversion of all of our preferred stock upon the closing of this offering and the issuance of subordinated notes to the holders of our series B preferred stock.

After giving effect to the transactions described above and the sale by us of 6,241,379 shares of common stock in this offering after deducting underwriting discounts and commissions and estimated offering expenses payable by us and the use of the proceeds therefrom, our adjusted pro forma net tangible book value as of September 30, 2006 would have been approximately $125.2 million, or approximately $2.88 per share. This amount represents an immediate increase in pro forma net tangible book value of $1.63 per share to our existing stockholders and an immediate dilution in pro forma net tangible book value of approximately $11.62 per share to new investors purchasing shares of common stock in this offering. We determine dilution by subtracting the adjusted pro forma net tangible book value per share immediately after the completion of this offering from the amount of cash that a new investor paid for a share of our common stock. The following table illustrates this dilution on a per share basis:

Assumed initial public offering price per share	