

COHERENT INC  
Form 10-K  
November 29, 2016

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

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FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the Fiscal Year Ended October 1, 2016

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Commission File Number: 001-33962

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COHERENT, INC.

Delaware	94-1622541
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

5100 Patrick Henry Drive, Santa Clara, California 95054  
(Address of principal executive offices) (Zip Code)  
Registrant's telephone number, including area code: (408) 764-4000  
Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, \$0.01 par value	The NASDAQ Stock Market LLC Nasdaq Global Select Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes  No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 (the "Exchange Act"). Yes  No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days. Yes  No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§229.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files. Yes  No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements

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incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definitions of "large accelerated filer", "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer  Accelerated filer  Non-accelerated filer  Smaller reporting  
(Do not check if a smaller reporting company) company

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes  No

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As of November 28, 2016, 24,552,429 shares of common stock were outstanding. The aggregate market value of the voting shares (based on the closing price reported on the NASDAQ Global Select Market on April 2, 2016, of Coherent, Inc., held by nonaffiliates was approximately \$1,492,502,204. For purposes of this disclosure, shares of common stock held by persons who own 5% or more of the outstanding common stock and shares of common stock held by each officer and director have been excluded in that such persons may be deemed to be "affiliates" as that term is defined under the Rules and Regulations of the Exchange Act. This determination of affiliate status is not necessarily conclusive.

**DOCUMENT INCORPORATED BY REFERENCE**

Portions of the registrant's Proxy Statement for the registrant's 2017 Annual Meeting of Stockholders are incorporated by reference into Part III of the Form 10-K to the extent stated herein. The Proxy Statement or an amended report on Form 10-K will be filed within 120 days of the registrant's fiscal year ended October 1, 2016.

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SPECIAL NOTE REGARDING FORWARD LOOKING STATEMENTS

This annual report contains certain forward-looking statements. These forward-looking statements include, without limitation, statements relating to:

- expansion into, and financial returns from, new markets;
- maintenance and development of current and new customer relationships;
- enhancement of market position through existing or new technologies;
- timing of new product introductions and shipments;
- optimization of product mix;
- future trends in microelectronics, scientific research and government programs, OEM components and instrumentation and materials processing;
- utilization of vertical integration;
- adoption of our products or lasers generally;
- applications and processes that will use lasers, including the suitability of our products;
- capitalization on market trends;
- alignment with current and new customer demands;
- positioning in the marketplace and gains of market share;
- design and development of products, services and solutions;
- control of supply chain and partners;
- protection of intellectual property rights;
- compliance with environmental and safety regulations;
- net sales and operating results;
- capital spending;
- order volumes;
- variations in stock price;
- growth in our operations;
- market acceptance of products;
- controlling our costs;
- sufficiency and management of cash, cash equivalents and investments;
- acquisition efforts, payment methods for acquisitions and utilization of technology from our acquisitions;
- sales by geography;
- effect of legal claims;
- expectations regarding the payment of future dividends;
- effect of competition on our financial results;
- plans to renew leases when they expire;
- compliance with standards;
- future dividends;

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- effect of our internal controls;
- optimization of financial results;
- repatriation of funds;
- accounting for goodwill and intangible assets, inventory valuation, warranty reserves and taxes; and
- impact from our use of financial instruments.

In addition, we include forward-looking statements under the "Our Strategy" and "Future Trends" headings set forth below in "Business" and under the "Bookings and Book-to-Bill Ratio" heading set forth below in "Management's Discussion and Analysis of Financial Condition and Results of Operations."

You can identify these and other forward-looking statements by the use of the words such as "may," "will," "could," "would," "should," "expects," "plans," "anticipates," "estimates," "intends," "potential," "projected," "continue," "our observation," or the negative of such terms, or other comparable terminology. Forward-looking statements also include the assumptions underlying or relating to any of the foregoing statements.

Our actual results could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth below in "Business," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and under the heading "Risk Factors." All forward-looking statements included in this document are based on information available to us on the date hereof. We undertake no obligation to update these forward-looking statements as a result of events or circumstances or to reflect the occurrence of unanticipated events or non-occurrence of anticipated events, except to the extent required by law.

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PART I

ITEM 1. BUSINESS

GENERAL

Business Overview

Our fiscal year ends on the Saturday closest to September 30. Fiscal years 2016, 2015 and 2014 ended on October 1, October 3, and September 27, respectively, and are referred to in this annual report as fiscal 2016, fiscal 2015 and fiscal 2014 for convenience. Fiscal years 2016 and 2014 included 52 weeks and fiscal year 2015 included 53 weeks. We are one of the world's leading providers of lasers and laser-based technology in a broad range of scientific, commercial and industrial applications. We design, manufacture, service and market lasers and related accessories for a diverse group of customers. Since inception in 1966, we have grown through internal expansion and through strategic acquisitions of complementary businesses, technologies, intellectual property, manufacturing processes and product offerings.

We are organized into two operating segments: Specialty Lasers and Systems ("SLS") and Commercial Lasers and Components ("CLC"). This segmentation reflects the go-to-market strategies for various products and markets. While both segments deliver cost-effective photonics solutions, SLS develops and manufactures configurable, advanced performance products largely serving the microelectronics, scientific research and government programs and original equipment manufacturer ("OEM") components and instrumentation markets. The size and complexity of many of the SLS products require service to be performed at the customer site by factory-trained field service engineers. CLC focuses on higher volume products that are offered in set configurations. The product architectures are designed for easy exchange at the point of use such that substantially all product service and repairs are based upon advanced replacement and depot (i.e., factory) repair. CLC's primary markets include materials processing, OEM components and instrumentation and microelectronics.

Income from operations is the measure of profit and loss that our chief operating decision maker ("CODM") uses to assess performance and make decisions. Income from operations represents the sales less the cost of sales and direct operating expenses incurred within the operating segments as well as allocated expenses such as shared sales and manufacturing costs. We do not allocate to our operating segments certain operating expenses, which we manage separately at the corporate level. These unallocated costs include stock-based compensation and corporate functions (certain advanced research and development, management, finance, legal and human resources) and are included in Corporate and other. Management does not consider unallocated Corporate and other costs in its measurement of segment performance.

We were originally incorporated in California on May 26, 1966 and reincorporated in Delaware on October 1, 1990. Our common stock is listed on the NASDAQ Global Select Market and we are a member of the Standard & Poor's SmallCap 600 Index and the Russell 2000 Index.

Additional information about Coherent, Inc. (referred to herein as the Company, we, our, or Coherent) is available on our web site at [www.coherent.com](http://www.coherent.com). We make available, free of charge on our web site, access to our annual report on Form 10-K, our quarterly reports on Form 10-Q, our current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as soon as reasonably practicable after we file or furnish them electronically with the Securities and Exchange Commission ("SEC"). Information contained on our web site is not part of this annual report or our other filings with the SEC. Any product, product name, process, or technology described in these materials is the property of Coherent.

RECENT EVENTS

On November 7, 2016, we completed our previously announced acquisition of Rofin-Sinar Technologies Inc. ("Rofin") pursuant to the Merger Agreement dated March 16, 2016. Rofin is one of the world's leading developers and manufacturers of high-performance industrial laser sources and laser-based solutions and components. As a condition of the acquisition, we are required to divest ourselves of Rofin's low power CO2 laser business based in Hull, United Kingdom, and will report this business separately as a discontinued operation until it is divested. The acquisition was an all-cash transaction at a price of \$32.50 per share of Rofin common stock. The aggregate consideration paid by us

to the former Rofin stockholders was approximately \$904.5 million, excluding related transaction fees and expenses. We also paid \$15.3 million due to the cancellation of options held by employees of Rofin. We funded the payment of the aggregate consideration with a combination of our available cash on hand and the proceeds from the Euro Term Loan described below.

As a result of the acquisition of Rofin, and subsequent to fiscal 2016 year-end, we announced that in the first quarter of fiscal 2017 we will reorganize our existing two segments into two new reporting segments for the combined company, OEM

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Laser Systems and Industrial Lasers and Systems. Accordingly, our segment information will be restated retroactively in the first quarter of fiscal 2017.

On November 7, 2016, we entered into a Credit Agreement (the "Credit Agreement") with Barclays Bank PLC, Bank of America, N.A., and The Bank of Tokyo-Mitsubishi UFJ, Ltd. The Credit Agreement provided for a 670.0 million Euro senior secured term loan facility and a \$100.0 million senior secured revolving credit facility. On November 7, 2016, the Euro Term Loan was drawn in full and its proceeds were used to finance the acquisition of Rofin and pay related fees and expenses. Also, on November 7, 2016, we used 10.0 million Euro of the capacity under the revolving credit facility for the issuance of a letter of credit.

### INDUSTRY BACKGROUND

The word "laser" is an acronym for "light amplification by stimulated emission of radiation." A laser emits an intense coherent beam of light with some unique and highly useful properties. Most importantly, a laser is orders of magnitude brighter than any lamp. As a result of its coherence, the beam can be focused to a very small and intense spot, useful for applications requiring very high power densities including cutting and other materials processing procedures. The laser's high spatial resolution is also useful for microscopic imaging and inspection applications. Laser light can be monochromatic—all of the beam energy is confined to a narrow wavelength band. Some lasers can be used to create ultrafast output—a series of pulses with pulse durations as short as attoseconds (i.e.,  $10^{-18}$  seconds).

There are many types of lasers and one way of classifying them is by the material or medium used to create the lasing action. This can be in the form of a gas, liquid, semiconductor, solid state crystal or fiber. Lasers can also be classified by their output wavelength: ultraviolet, visible, infrared or wavelength tunable. We manufacture all of these laser types. There are also many options in terms of pulsed output versus continuous wave, pulse duration, output power, beam dimensions, etc. In fact, each application has its specific requirements in terms of laser performance. The broad technical depth at Coherent enables us to offer a diverse set of product lines characterized by lasers targeted at growth opportunities and key applications. In all cases, we aim to be the supplier of choice by offering a high-value combination of superior technical performance and high reliability.

Photonics has taken its place alongside electronics as a critical enabling technology for the twenty-first century. Photonics based solutions are entrenched in a broad array of industries that include industrial automation, textile processing, microelectronics, flat panel displays and medical diagnostics, with adoption continuing in ever more diverse applications. Growth in these applications stems from two sources. First, there are many applications where the laser is displacing conventional technology because it can do the job faster, better or more economically. Second, there are new applications where the laser is the enabling tool that makes the work possible (e.g., the production of sub 50 micron microvias); these lasers are used in the manufacturing of high density printed circuit boards ("PCBs") found in the latest smart phones and tablet computers.

Key laser applications include: semiconductor inspection; manufacturing of advanced PCBs; flat panel display manufacturing; solar cell production; medical and bio-instrumentation; materials processing; metals cutting and welding; industrial process and quality control; marking; imaging and printing; graphic arts and display; and, research and development. For example, ultraviolet ("UV") lasers are enabling the move towards miniaturization, which drives innovation and growth in many markets. In addition, the advent of industrial grade ultrafast lasers continues to open up new applications for laser processing.

### OUR STRATEGY

We strive to develop innovative and proprietary products and solutions that meet the needs of our customers and that are based on our core expertise in lasers and optical technologies. In pursuit of our strategy, we intend to:

- Leverage our technology portfolio and application engineering to lead the proliferation of photonics into broader markets—We will continue to identify opportunities in which our technology portfolio and application engineering can be used to offer innovative solutions and gain access to new markets. We plan to utilize our expertise to increase our market share in the mid to high power material processing applications.

- Optimize our leadership position in existing markets—There are a number of markets where we have historically been at the forefront of technological development and product deployment and from which we have derived a substantial portion of our revenues. We plan to optimize our financial returns from these markets.

Maintain and develop additional strong collaborative customer and industry relationships—We believe that the Coherent brand name and reputation for product quality, technical performance and customer satisfaction will help us to further develop our loyal customer base. We plan to maintain our current customer relationships and

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develop new ones with customers who are industry leaders and work together with these customers to design and develop innovative product systems and solutions as they develop new technologies.

Develop and acquire new technologies and market share—We will continue to enhance our market position through our existing technologies and develop new technologies through our internal research and development efforts, as well as through the acquisition of additional complementary technologies, intellectual property, manufacturing processes and product offerings.

Streamline our manufacturing structure and improve our cost structure—We will focus on optimizing the mix of products that we manufacture internally and externally. We will utilize vertical integration where our internal manufacturing process is considered proprietary and seek to leverage external sources when the capabilities and cost structure are well developed and on a path towards commoditization.

Focus on long-term improvement of adjusted EBITDA, in dollars and as a percentage of net sales—We define adjusted EBITDA as operating income adjusted for depreciation, amortization, stock-based compensation expense, major restructuring costs and certain other non-operating income and expense items. Key initiatives to reach our goals for EBITDA improvements include utilization of our Asian manufacturing locations, rationalizing our supply chain and continued leveraging of our infrastructure.

### APPLICATIONS

Our products address a broad range of applications that we group into the following markets: Microelectronics, Materials Processing, OEM Components and Instrumentation and Scientific Research and Government Programs.

#### Microelectronics

Nowhere is the trend towards miniaturization more prevalent than in the Microelectronics market where smart phones, tablets, personal computers ("PC's"), televisions ("TV's") and "wearables" are driving advances in displays, integrated circuits and PCBs. In response to market demands and expectations, semiconductor and device manufacturers are continually seeking to improve their process and design technologies in order to manufacture smaller, more powerful and more reliable devices at lower cost. New laser applications and new laser technologies are a key element in delivering higher resolution and higher precision at lower manufacturing cost.

We support three major markets in the microelectronics industry: (1) flat panel display ("FPD") manufacturing, (2) advanced packaging and interconnects ("API") and (3) semiconductor front-end ("SEMI").

#### Microelectronics—flat panel display manufacturing

The high-volume consumer market is driving the production of FPDs in applications such as mobile phones, tablets, laptop computers, TVs and wearables. There are several types of established and emerging displays based on quite different technologies, including liquid crystal ("LCD") and organic light emitting diodes ("OLED"). Each of these technologies utilize laser applications due to the fact that lasers enable higher process speed, better yield, improved battery life, lower cost and/or superior display brightness and resolution.

Several display types require a high-density pattern of silicon thin film transistors ("TFTs"). If this silicon is polycrystalline as opposed to amorphous, the display performance is greatly enhanced. In the past, these polysilicon layers could only be produced on expensive special glass at high temperatures. However, excimer-based processes, such as excimer laser annealing ("ELA") have allowed high-volume production of low-temperature polysilicon ("LTPS") on conventional glass substrates as well as flexible displays on plastic substrates. Our excimer lasers provide a unique solution for LTPS because they are the only industrial-grade excimer lasers optimized for this application. The current state-of-the-art product for this application is our excimer VYPER laser, which delivers over 1000W of power, enabling customers to scale to current Generation 5.5 & 6 substrates all the way up to Generation 8 sizes. These systems are integral to the manufacturing process on all leading LTPS-based smart phone displays, with the highest commercially available pixel densities of greater than 300 pixels per inch (ppi), with the current trends going to even higher ppi (>500 ppi) for high end smart phones, and hold the potential for deployment in tablet display and OLED TV manufacturing. Excimer based LTPS is also enabling a new generation of flexible OLED displays which have already seen some implementation in leading smart phones and wearables and are poised for rapid growth in the near future.

Our AVIA, Rapid, Talisker, Monaco and DIAMOND CO<sub>2</sub> and CO lasers are also used in other production processes for FPDs. These processes include drilling, cutting, patterning, marking and yield improvement.

Microelectronics—advanced packaging and interconnects

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After a wafer is patterned, there are then a host of other processes, referred to as back-end processing, which finally result in a packaged encapsulated silicon chip. Ultimately, these chips are then assembled into finished products. The advent of high-speed logic and high-memory content devices has caused chip manufacturers to look for alternative technologies to improve performance and lower process costs. In terms of materials, this search includes new types of materials, such as low-k and thinner silicon. Our AVIA, Rapid, Talisker, Monaco and Matrix lasers provide economical methods of cutting and scribing these wafers while delivering higher yields than traditional mechanical methods.

There are similar trends in chip packaging and PCB manufacturing requiring more compact packaging and denser interconnects. In many cases, lasers present enabling technologies. For instance, lasers are now the only economically practical method for drilling microvias in chip substrates and in both rigid and flexible PCBs. These microvias are tiny interconnects that are essential for enabling high-density circuitry commonly used in smart phones, tablets and advanced computing systems. Our DIAMOND CO<sub>2</sub> and AVIA diode pumped solid state ("DPSS") lasers are the lasers of choice in this application. The ability of these lasers to operate at very high repetition rates translates into faster drilling speeds and increased throughput in microvia processing applications. In addition, multi-layer circuit boards require more flexible production methods than conventional printing technologies can offer, which has led to widespread adoption of laser direct imaging ("LDI"). Our Paladin laser is used for this application.

Lasers have also become a valuable tool in high-brightness ("HB") light-emitting diode ("LED") manufacturing, improving LED performance and yield. LEDs have widespread adoption as the light source in all categories of LCD displays, from phones all the way to full size TVs and moving into general lighting. Our lasers are used in back-end processing of HB-LEDs.

### Microelectronics—semiconductor front-end

The term "front-end" refers to the production of semiconductor devices which occurs prior to packaging.

As semiconductor device geometries decrease in size, devices become increasingly susceptible to smaller defects during each phase of the manufacturing process and these defects can negatively impact yield. One of the semiconductor industry's responses to the increasing vulnerability of semiconductor devices to smaller defects has been to use defect detection and inspection techniques that are closely linked to the manufacturing process. For example, automated laser-based inspection systems are now used to detect and locate defects as small as 0.01 micron, which may not be observable by conventional optical microscopes.

Detecting the presence of defects is only the first step in preventing their recurrence. After detection, defects must be examined in order to identify their size, shape and the process step in which the defect occurred. This examination is called defect classification. Identification of the sources of defects in the lengthy and complex semiconductor manufacturing process has become essential for maintaining high yield production. Semiconductor manufacturing has become an around-the-clock operation and it is important for products used for inspection, measurement and testing to be reliable and to have long lifetimes. Our Azure, Paladin and Excimer lasers are used to detect and characterize defects in semiconductor chips.

### Materials processing

Lasers are widely accepted today in many important industrial manufacturing applications including cutting, welding, joining, drilling, perforating, and marking of metals and nonmetals. We supply high-power lasers for metal processing and low-to-medium power lasers for laser marking, nonmetals processing and precision micromachining.

Our high power industrial laser systems are used for cutting, welding, cladding and hardening of metals, as well as other materials processing applications.

Our Semiconductor business provides higher power arrays with powers in excess of 50 kilowatts through proprietary cooling and stacking technology. This unique technology provides the engine for both our Highlight direct diode systems as well as our Highlight multi-kilowatt class fiber lasers. Our differentiated fiber laser design offers our customers a higher level of integration and additional options for product serviceability. Our fiber lasers are used for metal cutting, cladding, welding and additive manufacturing applications.

Complementing our high power solid state lasers is our industry leading DIAMOND E1000 CO<sub>2</sub> laser. This laser remains in high demand due to its high power, small size and completely sealed design—all ideal for materials processing.

With the broadest product portfolio in the laser industry, we offer solutions for almost any application on any material to our customers. Combining the high power Direct Diode, Fiber and CO<sub>2</sub> products with our META flatbed cutting tool provides a strong, compelling four-pronged approach to meeting the needs of our diverse high power materials processing customers. We are vertically integrated with world class diode and active fiber manufacturing, which makes us very well positioned to succeed in both the near and long term in the high power fiber laser market.

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We also participate in the low to medium power area, including such applications as the cutting, drilling and joining of a host of materials using our DIAMOND CO and CO<sub>2</sub> lasers; Highlight fiber array product ("FAP") semiconductor lasers in OEM opportunities and direct end user applications with META cutting tools; applications including cutting, perforating and scoring of paper, thin metals and packaging materials; and various cutting and patterning applications in the textile, wood and sign industries. In the specific area of textiles and clothing, our DIAMOND lasers service older applications, such as cutting complex shapes in leather for footwear, as well as newer applications such as creating detailed fade patterns on designer denims.

Laser marking and coding are generally considered part of the precision materials processing applications market for which we remain a leading supplier. The optimum choice of laser depends on the material being marked, whether it is a surface mark (engraved) or a sub-surface mark, and the specific economics of the application. Our DIAMOND J, C and GEM Series of CO<sub>2</sub> lasers provide many systems manufacturers with a reliable cost effective source for marking and engraving on non-metals. In addition, our Matrix and Helios product lines of reliable, compact and low-cost DPSS lasers provide an ideal solution for marking of other materials in high volume manufacturing.

With our large portfolio of Ultrafast laser technology, we serve customers with a variety of laser micromachining solutions, including our Integrated Optics Systems group which will develop sub systems and new applications in the fast growing micro materials processing market.

### OEM components and instrumentation

Instrumentation is one of our more mature commercial applications. Representative applications within this market include bio-instrumentation, medical OEMs, graphic arts and display and machine vision. We also support the laser-based instrumentation market with a range of laser-related components, including diode lasers for optical pumping. Our OEM component business includes sales to other, less integrated laser manufacturers participating in OEM markets such as materials processing, scientific, and medical.

### Bio-instrumentation

Bio-instrumentation applications for lasers include bio-agent detection for point source and standoff detection of pathogens or other bio-toxins; confocal microscopy for biological imaging that allows researchers and clinicians to visualize cellular and subcellular structures and processes with an incredible amount of detail; DNA sequencing that provides automation and data acquisition rates that would be impossible by any other method; drug discovery—genomic and proteomic analyses that enable drug discovery to proceed at very high throughput rates; and flow cytometry for analyzing single cells or populations of cells in a heterogeneous mixture, including blood samples. Our OBIS, Flare, Galaxy, Sapphire, BioRay and Genesis lasers are used in several bio-instrumentation applications.

### Medical Therapy

We sell a variety of components and lasers to medical laser companies in end-user applications such as ophthalmology, aesthetic, surgical, therapeutic and dentistry. Our DIAMOND series CO<sub>2</sub> lasers are widely used in ophthalmic, aesthetic and surgical markets. We have a leading position in Lasik and photorefractive keratectomy surgery methods with our ExciStar XS excimer laser platform. We also provide ultrafast lasers for use in cataract surgery, a growing applications space.

The unique ability of our optically pumped semiconductor lasers ("OPSL") technology to match a wavelength to an application has led to the development of a high-power yellow (577nm) laser for the treatment of eye related diseases, such as Age Related Macular Degeneration and retinal diseases associated with diabetes. The 577nm wavelength was designed to match the peak in absorption of oxygenated hemoglobin thereby allowing treatment to occur at a lower power level, and thus reducing stress and heat-load placed on the eye with traditional green-based (530nm) solid state lasers. Other applications where our OBIS, Genesis and Sapphire series of lasers are used include the retinal scanning market in diagnostic imaging systems as well as new ground breaking in-vivo imaging.

### Scientific research and government programs

We are widely recognized as a technology innovator and the scientific market has historically provided an ideal "test market" for our leading-edge innovations. These have included ultrafast lasers, DPSS lasers, continuous-wave ("CW") systems, excimer gas lasers and water-cooled ion gas lasers. Our portfolio of lasers that address the scientific research market is broad and includes our Chameleon, COMPexPro, Evolution, Fidelity, Legend, Libra, MBD, MBR, Monaco, Vitara, Mephisto, Mira and Verdi lasers. Many of the innovations and products pioneered in the scientific marketplace

have become commercial successes for both our OEM customers and us.

We have a large installed base of scientific lasers which are used in a wide range of applications spanning virtually every branch of science and engineering. These applications include biology and life science, engineering, physical chemistry and

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physics. Most of these applications require the use of ultrafast lasers that enable the generation of pulses short enough to be measured in femto- or attoseconds ( $10^{-15}$  to  $10^{-18}$  seconds). Because of these very short pulse durations, ultrafast lasers enable the study of fundamental physical and chemical processes with temporal resolution unachievable with any other tool. These lasers also deliver very high peak power and large bandwidths, which can be used to generate many exotic effects. Some of these are now finding their way into mainstream applications, such as microscopy or materials processing. The use of ultrafast lasers such as the Chameleon in microscopy is now a common occurrence in bio-imaging labs, and they have become a crucial tool in modern brain research. We recently released a new product called the Chameleon Discovery targeted to this market.

### FUTURE TRENDS

#### Microelectronics

Lasers are widely used in mass production microelectronics applications largely because they enable entirely new application capabilities that cannot be realized by any other known means. These laser-based fabrication and testing methods provide a level of precision, typically on a micrometer and nanometer level, that are unique, faster, are touch free, deliver superior end products, increase yields, and/or cut production costs. We anticipate this trend to continue, driven primarily by the increasing sophistication and miniaturization of consumer electronic goods and their convergence via the internet, resulting in increasing demand for better displays, more bandwidth and memory, and all packaged into devices which are lighter, thinner and consume less power. Although this market follows the macro-economic trends and carries inherent risks, we believe that we are well positioned to continue to capitalize on the current market trends and that we will see continued increased adoption of our solid-state, CO<sub>2</sub>, fiber, direct diode and excimer lasers, as all these lasers enable entirely new applications, performance improvements and reduced process costs.

Excimer laser based LTPS is a key technology for producing high resolution OLED displays in general and flexible OLED displays in particular. We believe we are well positioned to take advantage of the rapid growth that is projected for OLED displays in smart phones and other mobile devices over the next several years with our Vyper and LineBeam systems.

CO<sub>2</sub>, Avia, Matrix, Rapid, Talisker, Helios and direct diode lasers all seem aligned with the need for related FPD touch panel, film cutting, light guide technology, repair, frit welding, as well as sapphire and glass-cutting applications.

The trend for thinner and lighter devices is impacting the glass substrates used in today's mobile devices requiring thinner glass with higher degrees of mechanical strength and scratch resistance. This trend also includes use of sapphire instead of glass. Mechanical means of cutting these glass and sapphire pieces are no longer adequate to meet future requirements and we expect lasers to play an increased role. Our CO, CO<sub>2</sub>, Monaco and Rapid lasers are well positioned to take advantage of this trend.

Semiconductor devices look set to continue Moore's Law, shrinking device geometries for at least another decade, as well as expanding vertically into new 3D structures. As a result we believe our many UV laser sources (such as Azure, Paladin, Avia, Rapid, ExiStar and Matrix) will continue to find increasing adoption, since their unique optical properties align well with the process demands of a nanometer scale world.

The same lasers plus Monaco, Rapid FX, CO and CO<sub>2</sub> are also widely adopted for back end Advanced Packaging and Interconnect (API) applications. With dimension roadmaps showing a decade of dimension shrink on PCBs, interconnects, Silicon & LED scribe widths and wafer thickness, we believe that our portfolio of lasers aligns well with these demands as well as new processes that seem likely to be enabled by our lasers, to meet the increasing demands and decreasing tolerances of these markets.

#### Materials processing

The market for low to medium power CO<sub>2</sub>, solid state and semiconductor lasers used in industrial materials processing is very diverse. New product introductions such as our Diamond J-series CO<sub>2</sub> and CO lasers continue to support our growth in this area. These lasers represent a cost-effective manufacturing solution for cutting, joining, marking and engraving of non-metal materials including marking/coding, flat bed cutting, engraving, as well as the production of capital equipment for apparel and leather goods manufacturing.

The market for kW class fiber lasers has seen strong growth in recent years, replacing legacy multi-kW CO<sub>2</sub> lasers in metal cutting and other applications. This trend will likely continue into the future. The favorable cost of ownership of high power diode and fiber lasers has expanded their use in a number of metal processing applications in addition to cutting. They have seen adoption in welding and brazing applications as well as newer growth areas in additive manufacturing like cladding and 3D printing. We believe we are well positioned to benefit from these large and growing markets with our line of kW fiber and diode lasers.

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We have developed an expanded portfolio of lasers with a broad spectrum of wavelengths and power levels, enabling optimum solutions for virtually every metal and non-metal material type. At the same time, the higher reliability of these products has lowered the cost of ownership.

OEM components and instrumentation

The bio instrumentation market is on a steady path in the most important areas: microscopy, flow cytometry and DNA sequencing, which all are enjoying solid research funding on a worldwide basis with some local variations. In this field, our OPSL technology gives us differentiated products at a number of important wavelengths. This advantage coupled with strong focus on meeting our customers' demands for more compact and cost effective sources has made us very successful and we expect that to continue. Our OPSL technology resulted in the first truly continuous wave solid-state UV laser which enables the use of UV in a clinical as well as a research environment.

In the medical therapeutic area, we see solid business with several opportunities for growth. We supply excimer lasers used in refractive eye surgery and are actively involved in further developments in laser vision correction including the use of ultrafast lasers in applications such as laser cataract surgery where higher precision and use of advanced implants enable better and more reliable patient outcomes. Laser cataract surgery is still at a relatively early stage of adoption and is expected to see continued growth over the next several years. We also have opportunities in dental procedures for both hard and soft tissue ablation, with greatly improved patient comfort and outcome. In the area of photocoagulation, our Genesis OPSL yellow lasers are being used as the wavelength is particularly suitable for the treatment of blood vessels. In aesthetic laser procedures, we are an OEM supplier of CO<sub>2</sub> and semiconductor lasers to the major manufacturers of equipment used in the latest procedures in dermatology and hair removal.

Scientific research and government programs

Worldwide scientific funding seems very stable overall, with some regions growing and others just holding their current level. Bright spots include the strong push in neuroscience to better understand how the brain functions. Lasers play a very important role in imaging brain structure as well as tracking activity in animal brains using techniques such as optogenetics. We believe that our current and upcoming products are well positioned to take advantage of this exciting opportunity. In physics and chemistry applications, our recent product introductions of high performance and industrially hardened ultrafast products have been very well received. While this is a very competitive market, we expect that our new products will position us for growth.

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## MARKET APPLICATIONS

We design, manufacture and market lasers, laser tools, precision optics and related accessories for a diverse group of customers. The following table lists our major markets and the Coherent technologies serving these markets.\*

Market	Application	Technology
Microelectronics	Flat panel display	CO, CO <sub>2</sub>
		DPSS
		Excimer Ultrafast Semiconductor
Materials processing	Advanced packaging and interconnects	CO, CO <sub>2</sub>
		DPSS
		Excimer Ultrafast CO <sub>2</sub> DPSS
Materials processing	Semiconductor front-end	OPSL
		Excimer
		Ion CO <sub>2</sub>
Materials processing	Metal cutting, drilling, joining, cladding, surface treatment and additive manufacturing	Fiber
		Semiconductor Laser Machine Tools Ultrafast CO <sub>2</sub>
		DPSS Ultrafast CO, CO <sub>2</sub> DPSS
Materials processing	Laser marking and coding	Ultrafast CO, CO <sub>2</sub> DPSS
		Ultrafast
		Excimer
Materials processing	Non-metal cutting, drilling	Semiconductor Laser Machine Tools DPSS
		OPSL
		Semiconductor
OEM components and instrumentation	Bio-Instrumentation	OPSL
		CO <sub>2</sub> CO, CO <sub>2</sub> DPSS
		Ultrafast Excimer OPSL Semiconductor
OEM components and instrumentation	Graphic arts and display	OPSL
		CO <sub>2</sub> CO, CO <sub>2</sub> DPSS
		Ultrafast Excimer OPSL Semiconductor
OEM components and instrumentation	Medical therapy (OEM)	DPSS
		Excimer
		OPSL Semiconductor
Scientific research and government programs	All scientific applications	DPSS
		Excimer
		OPSL Ultrafast

\*Coherent sells its laser measurement and control products into a number of these applications.

In addition to products we provide, we invest routinely in the core technologies needed to create substantial differentiation for our products in the marketplace. Our semiconductor, crystal, fiber and large form factor optics facilities all maintain an external customer base providing value-added solutions. We direct significant engineering efforts to produce unique solutions targeted for internal consumption. These investments, once integrated into our broader product portfolio, provide our customers with uniquely differentiated solutions and the opportunity to substantially enhance the performance, reliability and capability of the products we offer.

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### TECHNOLOGIES

#### Diode-pumped solid-state lasers

DPSS lasers use semiconductor lasers to pump a crystal to produce a laser beam. By changing the energy, optical components and the types of crystals used in the laser, different wavelengths and types of laser light can be produced. The efficiency, reliability, longevity and relatively low cost of DPSS lasers make them ideally suited for a wide range of OEM and end-user applications, particularly those requiring 24-hour operations. Our DPSS systems are compact and self-contained sealed units. Unlike conventional tools and other lasers, our DPSS lasers require minimal maintenance since they do not have internal controls or components that require adjusting and cleaning to maintain consistency. They are also less affected by environmental changes in temperature and humidity, which can alter alignment and inhibit performance in many systems.

We manufacture a variety of types of DPSS lasers for different applications including semiconductor inspection; advanced packaging and interconnects; laser pumping; spectroscopy; bio-agent detection; DNA sequencing; drug discovery; flow cytometry; forensics; computer-to-plate printing; entertainment lighting (display); medical; rapid prototyping and marking, welding, engraving, cutting and drilling.

#### Fiber lasers

Fiber lasers use semiconductor lasers to pump a doped optical fiber to produce a laser beam. The unique features of a fiber laser make them suitable for producing high power, continuous wave laser beams. We introduced a multi kilowatt fiber laser platform in fiscal 2015. Our fiber laser design has several unique features including a modular design for improved serviceability and diode bar based pumping. Due to packaging efficiency, diode bars reduce the overall cost of a fiber laser. Some of the most critical components inside a fiber laser include the gain fiber itself and the diodes providing the pump power. We are well positioned as a fiber laser supplier since we are vertically integrated with respect to these key technologies; we use diode bars and fiber manufactured in-house. We plan to continue to drive cost reduction in our diode laser pumps and demonstrate the scalability of the platform by moving up the power scale into the multi kilowatt regime. This platform will address the large growing high power metal cutting and joining market.

#### Gas lasers (CO, CO<sub>2</sub>, Excimer, Ion)

The breadth of our gas laser portfolio is industry leading, encompassing CO, CO<sub>2</sub>, excimer and ion laser technologies. Gas lasers derive their name from the use of one or more gases as a lasing medium. They collectively span an extremely diverse and useful emission range, from the very deep ultraviolet to the far infrared. This diverse range of available wavelengths, coupled with high optical output power, and an abundance of other attractive characteristics, makes gas lasers extremely useful and popular for a variety of microelectronics, scientific, medical therapeutic and materials processing applications.

#### Optically Pumped Semiconductor Lasers ("OPSL")

Our OPSL platform is a surface emitting semiconductor laser that is energized or pumped by a semiconductor laser. The use of optical pumping circumvents inherent power scaling limitations of electrically pumped lasers, enabling very high powered devices. A wide range of wavelengths can be achieved by varying the semiconductor materials used in the device and changing the frequency of the laser beam using techniques common in solid state lasers. The platform leverages high reliability technologies developed for telecommunications and produces a compact, rugged, high power, single-mode laser.

Our OPSL products are well suited to a wide range of applications, including the bio-instrumentation, medical therapeutics and graphic arts and display markets. We continue to expand our ultraviolet version of the OPSL platform called the Genesis, which was developed for the bio-instrumentation market.

#### Semiconductor lasers

High power edge emitting semiconductor diode lasers use the same principles as widely-used CD and DVD lasers, but produce significantly higher power levels. The advantages of this type of laser include smaller size, longer life, enhanced reliability and greater efficiency. We manufacture a wide range of discrete semiconductor laser products with wavelengths ranging from 650nm to over 1000nm and output powers ranging from 1W to over 100W, with highly integrated products in the kW range. These products are available in a variety of industry standard form factors including the following: bare die, packaged and fiber coupled single emitters and bars, monolithic stacks and fully

integrated modules with microprocessor controlled units that contain power supplies and active coolers. Our semiconductor lasers are used internally as the pump lasers in DPSS, fiber and OPSL products that are manufactured by us, as well as a wide variety of external medical, OEM, military and industrial applications, including aesthetic (hair

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removal, cosmetic dentistry), graphic arts, counter measures, rangefinders, target designators, cladding, hardening and plastic welding.

### Ultrafast ("UF") Lasers

Ultrafast lasers are lasers generating light pulses with durations of a few femtoseconds ( $10^{-15}$  seconds) to a few tens of picoseconds ( $10^{-11}$  seconds). These types of lasers are used for medical, advanced microelectronics and materials processing applications as well as scientific research. UF laser oscillators generate a train of pulses at 50-100 MHz, with peak powers of tens of kilowatts, and UF laser amplifiers generate pulses at 1-2000 kHz, with peak powers up to several Terawatts.

The extremely short duration of UF laser pulses enables temporally resolving fast events like the dynamics of atoms or electrons. In addition, the high peak power enables so-called non-linear effects where several photons can be absorbed by a molecule at the same time. This type of process enables applications like multi-photon excitation microscopy or UF ablation of materials with high precision and minimal thermal damage. The use of our ultrafast lasers in applications outside science has been growing rapidly over the last several years, particularly in microelectronics and materials processing applications.

### SALES AND MARKETING

We primarily market our products in the United States through a direct sales force. We sell internationally through direct sales personnel located in Canada, France, Germany, Italy, Japan, the Netherlands, China, South Korea, Taiwan and the United Kingdom, as well as through independent representatives in certain jurisdictions around the world. Our foreign sales are made principally to customers in South Korea, Japan, Germany, China and other European and Asia-Pacific countries. Foreign sales accounted for 76% of our net sales in fiscal 2016, 73% of our net sales in fiscal 2015 and 74% of our net sales in fiscal 2014. Sales made to independent representatives and distributors are generally priced in U.S. dollars. A large portion of foreign sales that we make directly to customers are priced in local currencies and are therefore subject to currency exchange fluctuations. Foreign sales are also subject to other normal risks of foreign operations such as protective tariffs, export and import controls and political instability.

We had one customer, Advanced Process Systems Corporation, who contributed more than 10% of revenue during fiscal 2016, 2015 and 2014. We had another major customer, Japanese Steel Works, Ltd., who contributed more than 10% of revenue during fiscal 2016.

To support our sales efforts we maintain and continue to invest in a number of applications centers around the world, where our applications experts work closely with customers on developing laser processes to meet their manufacturing needs. The applications span a wide range, but are mostly centered around the materials processing and microelectronics markets. Locations include several facilities in the US, Europe and Asia.

We maintain customer support and field service staff in major markets within the United States, Europe, Japan, China, South Korea, Taiwan and other Asia-Pacific countries. This organization works closely with customers, customer groups and independent representatives in servicing equipment, training customers to use our products and exploring additional applications of our technologies.

We typically provide parts and service warranties on our lasers, laser-based systems, optical and laser components and related accessories and services. Warranties on some of our products and services may be shorter or longer than one year. Warranty reserves, as reflected on our consolidated balance sheets, have generally been sufficient to cover product warranty repair and replacement costs. The weighted average warranty period covered is approximately 15 months.

### RESEARCH AND DEVELOPMENT

We are constantly developing and introducing new products as well as improving and refining existing products to better serve the markets we participate in. Our development efforts are focused on designing and developing products, services and solutions that anticipate customers' changing needs and emerging technological trends. Our efforts are also focused on identifying the areas where we believe we can make valuable contributions. Research and development expenditures for fiscal 2016 were \$81.8 million, or 9.5% of net sales compared to \$81.5 million, or 10.2% of net sales for fiscal 2015 and \$79.1 million, or 10.0% of net sales for fiscal 2014. We work closely with customers, both individually and through our sponsored seminars, to develop products to meet customer application and performance needs. In addition, we are working with leading research and educational institutions to develop new

photonics based solutions.

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MANUFACTURING

Strategies

One of our core manufacturing strategies is to tightly control our supply of key parts, components, sub-assemblies and outsourcing partners. We primarily utilize vertical integration when we have proprietary internal capabilities that are not cost-effectively available from external sources. We believe this is essential to maintain high quality products and enable rapid development and deployment of new products and technologies. We provide customers with 24-hour technical expertise and quality that is International Organization for Standardization ("ISO") certified at our principal manufacturing sites.

Committed to quality and customer satisfaction, we design and produce many of our own components and sub-assemblies in order to retain quality and performance control. We have also outsourced certain components, sub-assemblies and finished goods where we can maintain our high quality standards while improving our cost structure.

As part of our strategy to increase our market share and customer support in Asia as well as our continuing efforts to manage costs, we have transferred the production of additional products into both of our Singapore and Malaysia factories. In addition, we expanded our repair activities in our China and South Korea operations and also opened a tube refurbishment manufacturing site in South Korea. This has allowed us to reduce service response time and inventories, providing benefits to us and to our customers. We have also established an International Procurement Office in Singapore and have been increasing our sourcing of materials from Asia to reduce material costs on a global basis. In fiscal 2015, we increased our vertical integration capabilities with the asset acquisition of the Tinsley Optics business from L-3 Communications Corporation.

We have designed and implemented proprietary manufacturing tools, equipment and techniques in an effort to provide products that differentiate us from our competitors. These proprietary manufacturing techniques are utilized in a number of our product lines including our gas laser production, crystal growth, beam alignment as well as the wafer growth for our semiconductor and optically pumped semiconductor laser product family.

Raw materials or sub-components required in the manufacturing process are generally available from several sources. However, we currently purchase several key components and materials, including exotic materials, crystals and optics, used in the manufacture of our products from sole source or limited source suppliers. We also purchase assemblies and turnkey solutions from contract manufacturers based on our proprietary designs. We rely on our own production and design capability to manufacture and specify certain strategic components, crystals, fibers, semiconductor lasers, lasers and laser based systems.

For a discussion of the importance to our business of, and the risks attendant to sourcing, see "Risk Factors" in item 1A — "We depend on sole source or limited source suppliers, both internal and external, for some of our key components and materials, including exotic materials, certain cutting-edge optics and crystals, in our products, which make us susceptible to supply shortages or price fluctuations that could adversely affect our business."

Operations

Our products are manufactured at our sites in Santa Clara, Sunnyvale and Richmond, California; Wilsonville, Oregon; East Hanover, New Jersey; Bloomfield, Connecticut; Salem, New Hampshire; Lübeck, Germany; Göttingen, Germany; Kaiserslautern, Germany; Glasgow, Scotland; YongIn-Si, South Korea; Kallang Sector, Singapore; and Penang, Malaysia. In addition, we also use contract manufacturers for the production of certain assemblies and turnkey solutions. Our ion gas lasers, a portion of our DPSS lasers that are used in microelectronics, scientific research and materials processing applications, semiconductor lasers, OPS lasers, fiber lasers and ultrafast scientific lasers are manufactured at our Santa Clara, California site. Our laser diode module products, laser instrumentation products, test and measurement equipment products are manufactured in Wilsonville, Oregon. We manufacture exotic crystals in East Hanover, New Jersey and both active and passive fibers are manufactured in our Salem, New Hampshire facility. Our CO<sub>2</sub> and CO gas lasers are manufactured in Bloomfield, Connecticut. We manufacture our LMT products in Bloomfield, Connecticut and Singapore. We manufacture a portion of our DPSS lasers used in microelectronics and OEM components and instrumentation applications in Lübeck, Germany. We manufacture a portion of our DPSS lasers used in microelectronics, OEM components and instrumentation and materials processing applications in Kaiserslautern, Germany. Our excimer gas laser products are manufactured in Göttingen, Germany. We refurbish

excimer tubes at our manufacturing site in South Korea. We manufacture the fiber-based lasers and a portion of our DPSS lasers used in microelectronics and scientific research applications in Glasgow, Scotland. Our facility in Sunnyvale, California grows the aluminum-free materials that are incorporated into our semiconductor lasers. Our facility in Richmond, California manufactures large form factor optics for our Linebeam excimer laser annealing systems. We have transferred several products and subassemblies for manufacture at our Singapore and Malaysia facilities and are continuing to transfer additional product manufacturing to Singapore and Malaysia as part of our worldwide manufacturing cost reduction strategy.

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### INTELLECTUAL PROPERTY

We rely on a combination of patent, copyright, trademark and trade secret laws and restrictions on disclosure to protect our intellectual property rights. As of October 1, 2016, we held approximately 565 U.S. and foreign patents, which expire from 2016 through 2032 (depending on the payment of maintenance fees) and we have approximately 133 additional pending patent applications that have been filed. The issued patents cover various products in all of the major markets that we serve.

For a discussion of the importance to our business of, and the risks attendant to intellectual property rights, see "Risk Factors" in Item 1A — "We may not be able to protect our proprietary technology which could adversely affect our competitive advantage" and "We may, in the future, be subject to claims or litigation from third parties, for claims of infringement of their proprietary rights or to determine the scope and validity of our proprietary rights or the proprietary rights of competitors or other rights holders. These claims could result in costly litigation and the diversion of our technical and management personnel. Adverse resolution of litigation may harm our operating results or financial condition."

### COMPETITION

Competition in the various photonics markets in which we provide products is very intense. We compete against a number of large public and private companies including CVI Melles Griot, Novanta Inc., IPG Photonics Corporation, Lumentum Holdings Inc., MKS Instruments, Inc., and Trumpf GmbH, as well as other smaller companies. We compete globally based on our broad product offering, reliability, cost, and performance advantages for the widest range of commercial and scientific research applications. Other considerations by our customers include warranty, global service and support and distribution.

### BACKLOG

At fiscal 2016 year-end, our backlog of orders scheduled for shipment (within one year) was \$605.3 million compared to \$309.5 million at fiscal 2015 year-end. By segment, backlog for SLS was \$515.2 million and \$219.3 million, respectively, at fiscal 2016 and 2015 year-ends. Backlog for CLC was \$90.1 million and \$90.2 million, respectively, at fiscal 2016 and 2015 year-ends. The increase in SLS backlog from fiscal 2015 to fiscal 2016 year-end is primarily due to timing of large excimer laser annealing system orders, net of shipments, for the flat panel display market, which explains the increase in overall company backlog as well. Orders used to compute backlog are generally cancelable and, depending on the notice period, are subject to rescheduling by our customers without substantial penalties. Historically, we have not experienced a significant rate of cancellation or rescheduling, though we cannot guarantee that the rate of cancellations or rescheduling will not increase in the future.

### SEASONALITY

We have historically experienced decreased revenue in the first fiscal quarter compared to other quarters in our fiscal year due to the impact of time off and business closures at our facilities and those of many of our customers due to year-end holidays. For example over the past 10 years we have noted, excluding certain recovery years, our first fiscal quarter revenues have ranged 2%-12% below the fourth quarter of the prior fiscal years. This historical pattern should not be considered a reliable indicator of the Company's future net sales or financial performance.

### EMPLOYEES

As of fiscal 2016 year-end, we had 2,787 employees. Approximately 396 of our employees are involved in research and development; 1,786 of our employees are involved in operations, manufacturing, service and quality assurance; and 605 of our employees are involved in sales, order administration, marketing, finance, information technology, general management and other administrative functions. Our success will depend in large part upon our ability to attract and retain employees. We face competition in this regard from other companies, research and academic institutions, government entities and other organizations. We consider our relations with our employees to be good.

### ACQUISITIONS

On November 7, 2016, we acquired Rofin, one of the world's leading developers and manufacturers of high-performance industrial laser sources and laser-based solutions and components. See "Recent Developments" for further discussion of the acquisition and the Credit Agreement.

In July 2015, we acquired certain assets of Raydiance, Inc. ("Raydiance") for approximately \$5.0 million, excluding transaction costs. Raydiance manufactured complete tools and lasers for ultrafast processing systems and subsystems

in the precision micromachining processing market. The Raydiance assets have been included in our Specialty Lasers and Systems segment.

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In July 2015, we acquired the assets and certain liabilities of the Tinsley Optics ("Tinsley") business from L-3 Communications Corporation for approximately \$4.3 million, excluding transaction costs. Tinsley is a specialized manufacturer of high precision optical components and subsystems sold primarily in the aerospace and defense industry. Tinsley manufactures the large form factor optics for our excimer laser annealing systems. The Tinsley assets have been included in our Specialty Lasers and Systems segment. Please refer to "Note 3. Business Combinations" of Notes to Consolidated Financial Statements under Item 15 of this annual report for further discussion of recent acquisitions completed.

### GOVERNMENT REGULATION

#### Environmental regulation

Our operations are subject to various federal, state, local and foreign environmental regulations relating to the use, storage, handling and disposal of regulated materials, chemicals, various radioactive materials and certain waste products. In the United States, we are subject to the federal regulation and control of the Environmental Protection Agency. Comparable authorities are involved in other countries. Such rules are subject to change by the governing agency and we monitor those changes closely. We expect all operations to meet the legal and regulatory environmental requirements and believe that compliance with those regulations will not have a material adverse effect on our capital expenditures, earnings and competitive and financial position.

Although we believe that our safety procedures for using, handling, storing and disposing of such materials comply with the standards required by federal and state laws and regulations, we cannot completely eliminate the risk of accidental contamination or injury from these materials. In the event of such an accident involving such materials, we could be liable for damages and such liability could exceed the amount of our liability insurance coverage and the resources of our business.

We may face the potential of increasing complexity in our product designs and procurement operations due to the evolving nature of product compliance standards. Those standards may impact the material composition of our products entering specific markets. Such regulations went into effect in the European Union ("EU") in 2006, (The Restriction of Hazardous Substances Directive (RoHS)) and 2007 (Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)), and China in 2007 (Management Methods for Controlling Pollution Caused by Electronic Information Products Regulation (China-RoHS)), and the US Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. Furthermore, we could face costs and liabilities in connection with product take-back legislation. Beginning in 2006, the EU Waste Electrical and Electronic Equipment Directive made producers of electrical goods financially responsible for specified collection, recycling, treatment and disposal of past and future covered products. Similar laws are now pending in various jurisdictions around the world, including the United States.

#### Environmental liabilities

Our operations are subject to various laws and regulations governing the environment, including the discharge of pollutants and the management and disposal of hazardous substances. As a result of our historic as well as on-going operations, we could incur substantial costs, including remediation costs. The costs under environmental laws and the timing of these costs are difficult to predict. Our accruals for such costs and liabilities may not be adequate because the estimates on which the accruals are based depend on a number of factors including the nature of the matter, the complexity of the site, site geology, the nature and extent of contamination, the type of remedy, the outcome of discussions with regulatory agencies and other Potentially Responsible Parties (PRPs) at multi-party sites and the number and financial viability of other PRPs.

We further discuss the impact of environmental regulation under "Risk Factors" in Item 1A — "Compliance or the failure to comply with current and future environmental regulations could cause us significant expense."

### SEGMENT INFORMATION

We are organized into two operating segments: SLS and CLC. This segmentation reflects the go-to-market strategies for various products and markets. While both segments deliver cost-effective photonics solutions, SLS develops and manufactures configurable, advanced performance products largely serving the microelectronics, scientific research and government programs and OEM components and instrumentation markets. The size and complexity of many of the SLS products require service to be performed at the customer site by factory-trained field service engineers. CLC

focuses on higher volume products that are offered in set configurations. The product architectures are designed for easy exchange at the point of use such that substantially all product service and repairs are based upon advanced replacement and depot (i.e., factory) repair. CLC's primary markets include materials processing, OEM components and instrumentation and microelectronics.

We have identified SLS and CLC as operating segments for which discrete financial information was available. Both units have dedicated engineering, manufacturing, product business management and product line management functions. A

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small portion of our outside revenue is attributable to projects and recently developed products for which a segment has not yet been determined. The associated direct and indirect costs are presented in the category of Corporate and other, along with other corporate costs.

**FINANCIAL INFORMATION ABOUT FOREIGN AND DOMESTIC OPERATIONS AND EXPORT SALES**

Financial information relating to foreign and domestic operations for fiscal years 2016, 2015 and 2014, is set forth in Note 15, "Segment and Geographic Information" of our Notes to Consolidated Financial Statements under Item 15 of this annual report.

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ITEM 1A. RISK FACTORS

You should carefully consider the followings risks when considering an investment in our Common Stock. These risks could materially affect our business, results of operations or financial condition, cause the trading price of our Common Stock to decline materially or cause our actual results to differ materially from those expected or those expressed in any forward-looking statements made by us. These risks are not exclusive, and additional risks to which we are subject include, but are not limited to, the factors mentioned under “Forward-Looking Statements” and the risk of our businesses described elsewhere in this annual report. Additionally, these risks and uncertainties described herein are not the only ones facing us. Other events that we do not currently anticipate or that we currently deem immaterial also may affect our business, results of operations or financial condition.

RISKS RELATED TO THE MERGER WITH ROFIN

We may not be able to integrate the business of Rofin successfully with our own or realize the anticipated benefits of the merger.

We will be required to devote significant management attention and resources to integrating our business practices with those of Rofin. Potential difficulties that we may encounter as part of the integration process include the following:

- the inability to successfully combine our business with Rofin in a manner that permits the combined company to achieve the full synergies and other benefits anticipated to result from the merger;
  - complexities associated with managing the combined businesses, including difficulty addressing possible differences in corporate cultures and management philosophies and the challenge of integrating products, services, complex and different information technology systems, technology, networks and other assets of each of the companies in a cohesive manner; and

• potential unknown liabilities and unforeseen increased expenses or delays related to the merger and the integration of Rofin, including as a result of the requirement for holding separate Rofin’s business located in Hull, England.

In addition, we have operated independently prior to the merger and it is possible that the integration process following the merger could result in:

• diversion of the attention of our management; and

• the disruption of, or the loss of momentum in, our business or inconsistencies in standards, controls, procedures or policies, any of which could adversely affect our ability to maintain relationships with customers, suppliers, employees and other constituencies or our ability to achieve the anticipated benefits of the merger, or could reduce our earnings or otherwise adversely affect our business and financial results.

In addition, prior to the merger, Rofin’s business faced risks and uncertainties, including those faced by our business and identified below. Rofin’s business may not meet future expectations due to these factors despite our integration efforts.

Our future results will suffer if we do not effectively manage our expanded operations following the merger.

Following the merger, the size of the business of the combined company has increased significantly. Our future success depends, in part, upon our ability to manage this expanded business, which will pose substantial challenges for management, including challenges related to the management and monitoring of new operations and associated increased costs and complexity. There can be no assurances that we will be successful or that we will realize the expected synergies and benefits anticipated from the merger.

We have incurred and will continue to incur substantial expenses related to the merger with and the integration of Rofin.

We have and expect to continue to incur substantial expenses in connection with the merger and the integration of Rofin. There are a large number of processes, policies, procedures, operations, technologies and systems that will need to be integrated, including purchasing, accounting and finance, sales, payroll, pricing, marketing and employee benefits. While we have assumed that a certain level of expenses will be incurred, there are many factors beyond our control that could affect the total amount or the timing of the integration expenses. Moreover, many of the expenses that will be incurred are, by their nature, difficult to estimate accurately. These expenses could, particularly in the near term, exceed the savings we expect to achieve from the elimination of duplicative expenses and the realization of economies of scale and cost savings. These integration expenses could result in significant charges to earnings which

we cannot currently quantify.

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Charges to earnings resulting from the application of the purchase method of accounting to the Rofin acquisition may adversely affect our results of operations.

In accordance with generally accepted accounting principles, we will account for the Rofin acquisition using the purchase method of accounting, which will result in charges to earnings that could have a material adverse effect on the market value of our common stock following completion of the acquisition. Under the purchase method of accounting, we will allocate the total purchase price of Rofin's net tangible and identifiable intangible assets based upon their estimated fair values at the acquisition date. The excess of the purchase price over net tangible and identifiable intangible assets will be recorded as goodwill. We will incur additional depreciation and amortization expense over the useful lives of certain of the net tangible and intangible assets acquired in connection with the acquisition. In addition, to the extent the value of goodwill or intangible assets with indefinite lives becomes impaired, we may be required to incur material charges relating to the impairment of those assets. These depreciation, amortization and potential impairment charges could have a material impact on our results of operations. Our indebtedness following the merger is substantially greater than our indebtedness prior to the merger. This increased level of indebtedness could adversely affect us, including by decreasing our business flexibility, and will increase our borrowing costs.

In November 2016 we entered into the Credit Agreement which provides for a 670 million Euro term loan, all of which has been drawn, and a \$100 million revolving credit facility, under which a 10 million Euro letter of credit has been issued. We may incur additional indebtedness in the future by accessing the revolving credit facility under the Credit Agreement and/or entering into new financing arrangements. Our ability to pay interest and repay the principal of our current indebtedness is dependent upon our ability to manage our business operations and the ongoing interest rate environment. There can be no assurance that we will be able to manage any of these risks successfully.

The Credit Agreement contains customary affirmative covenants, including covenants regarding the payment of taxes and other obligations, maintenance of insurance, reporting requirements and compliance with applicable laws and regulations, and negative covenants, including covenants limiting the ability of us and our subsidiaries to, among other things, incur debt, grant liens, make investments, make certain restricted payments, transact with affiliates, and sell assets. The Credit Agreement also requires us and our subsidiaries to maintain a senior secured net leverage ratio as of the last day of each fiscal quarter of less than or equal to 3.50 to 1.00. The Credit Agreement contains customary events of default that include, among other things, payment defaults, cross defaults with certain other indebtedness, violation of covenants, inaccuracy of representations and warranties in any material respect, change in control of the Company and the Borrower, judgment defaults, and bankruptcy and insolvency events. If an event of default exists, the lenders may require the immediate payment of all Obligations, as defined in the Credit Agreement, and may exercise certain other rights and remedies provided for under the Credit Agreement, the other loan documents and applicable law. The acceleration of such obligations is automatic upon the occurrence of a bankruptcy and insolvency event of default. There can be no assurance that we will have sufficient financial resources or we will be able to arrange financing to repay our borrowings at such time.

Our substantially increased indebtedness and higher debt-to-equity ratio following completion of the merger in comparison to that prior to the merger will have the effect, among other things, of reducing our flexibility to respond to changing business and economic conditions and will increase our borrowing costs. In addition, the amount of cash required to service our increased indebtedness levels and thus the demands on our cash resources will be greater than the amount of cash flows required to service our indebtedness or that of Rofin individually prior to the merger. The increased levels of indebtedness could also reduce funds available for our investments in product development as well as capital expenditures, dividends, share repurchases and other activities and may create competitive disadvantages for us relative to other companies with lower debt levels.

We may not be able to divest the Rofin business located in Hull, England on favorable terms.

On October 26, 2016, the European Commission approved under the EU Merger Regulation our acquisition of Rofin, conditional on the divestment of Rofin's low power CQ<sub>2</sub> laser business based in Hull, United Kingdom (the "Hull Business") after the closing of the acquisition. We are required to hold the Hull Business separate until such time as it is divested. During fiscal years 2013 through 2015, the Hull Business had annual revenues of approximately 23-25 million British Pound Sterling and, accordingly, we will not have the revenue from the Hull Business once it is sold. If

we are unable to successfully timely divest the Hull Business or if the European Commission does not approve a proposed sale thereof, then a divestiture trustee may be appointed by the European Commission and the terms for any sale of the Hull Business will be at the discretion of such trustee. During the period of time in which we are holding the Hull Business separate, the conditions for such structure may be a distraction on certain members of our senior management team.

#### BUSINESS ENVIRONMENT AND INDUSTRY TRENDS

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Our operating results, including net sales, net income (loss) and adjusted EBITDA in dollars and as a percentage of net sales, as well as our stock price have varied in the past, and our future operating results, including those results from the newly acquired Rofin business, will continue to be subject to quarterly and annual fluctuations based upon numerous factors, including those discussed in this Item 1A and throughout this report. Our stock price will continue to be subject to daily variations as well. Our future operating results and stock price may not follow any past trends or meet our guidance and expectations.

Our net sales and operating results, such as adjusted EBITDA percentage, net income (loss) and operating expenses, and our stock price have varied in the past and may vary significantly from quarter to quarter and from year to year in the future. We believe a number of factors, many of which are outside of our control, could cause these variations and make them difficult to predict, including:

- general economic uncertainties in the macroeconomic and local economies facing us, our customers and the markets we serve;
- fluctuations in demand for our products or downturns in the industries that we serve;
- the ability of our suppliers, both internal and external, to produce and deliver components and parts, including sole or limited source components, in a timely manner, in the quantity, quality and prices desired;
- the timing of receipt and conversion of bookings to net sales;
- the concentration of a significant amount of our backlog, and resultant net sales, with a few customers;
- rescheduling of shipments or cancellation of orders by our customers;
- fluctuations in our product mix;
- the ability of our customers' other suppliers to provide sufficient material to support our customers' products;
- currency fluctuations and stability, in particular the Euro, the Japanese Yen, the South Korean Won, the Chinese RMB and the US dollar as compared to other currencies;
- commodity pricing;
- introductions of new products and product enhancements by our competitors, entry of new competitors into our markets, pricing pressures and other competitive factors;
- our ability to develop, introduce, manufacture and ship new and enhanced products in a timely manner without defects;
- our ability to successfully expand our manufacturing capacity in Göttingen, Germany and add optics fabrication capacity at our site in Richmond, California;
- our ability to manage our manufacturing capacity and that of our suppliers;
- our reliance on contract manufacturing;
- the rate of market acceptance of our new products;
  - the ability of our customers to pay for our products;
- expenses associated with acquisition-related activities;
- seasonal sales trends;
- access to applicable credit markets by us, our customers and their end customers;
- delays or reductions in customer purchases of our products in anticipation of the introduction of new and enhanced products by us or our competitors;
- our ability to control expenses;
- the level of capital spending of our customers;
- potential excess and/or obsolescence of our inventory;

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- costs and timing of adhering to current and developing governmental regulations and reviews relating to our products and business;
- costs related to acquisitions of technology or businesses;
- impairment of goodwill, intangible assets and other long-lived assets;
- our ability to meet our expectations and forecasts and those of public market analysts and investors;
- the availability of research funding by governments with regard to our customers in the scientific business, such as universities;
- continued government spending on defense-related projects where we are a subcontractor;
- maintenance of supply relating to products sold to the government on terms which we would prefer not to accept;
- changes in policy, interpretations, or challenges to the allowability of costs incurred under government cost accounting standards;
- damage to our reputation as a result of coverage in social media, Internet blogs or other media outlets;
- managing our and other parties' compliance with contracts in multiple languages and jurisdictions;
- managing our internal and third party sales representatives and distributors, including compliance with all applicable laws;
- impact of government economic policies on macroeconomic conditions;
- costs and expenses from litigation;
- costs associated with designing around or payment of licensing fees associated with issued patents in our fields of business;
- government support of alternative energy industries, such as solar;
- negative impacts related to the recent “Brexit” vote by the United Kingdom, particularly with regard to sales from our Glasgow, Scotland facility to other jurisdictions and purchases of supplies from outside the United Kingdom by such facility;
- the future impact of legislation, rulemaking, and changes in accounting, tax, defense procurement, or export policies; and
- distraction of management related to acquisition or divestment activities.

In addition, we often recognize a substantial portion of our sales in the last month of our fiscal quarters. Our expenses for any given quarter are typically based on expected sales and if sales are below expectations in any given quarter, the adverse impact of the shortfall on our operating results may be magnified by our inability to adjust spending quickly enough to compensate for the shortfall. We also base our manufacturing on our forecasted product mix for the quarter. If the actual product mix varies significantly from our forecast, we may not be able to fill some orders during that quarter, which would result in delays in the shipment of our products. Accordingly, variations in timing of sales, particularly for our higher priced, higher margin products, can cause significant fluctuations in quarterly operating results.

Due to these and other factors, such as varying product mix, we believe that quarter-to-quarter and year-to-year comparisons of our historical operating results may not be meaningful. You should not rely on our results for any quarter or year as an indication of our future performance. Our operating results in future quarters and years may be below public market analysts' or investors' expectations, which would likely cause the price of our stock to fall. In addition, over the past several years, U.S. and global equity markets have experienced significant price and volume fluctuations that have affected the stock prices of many technology companies both in and outside our industry. There has not always been a direct correlation between this volatility and the performance of particular companies subject to these stock price fluctuations. These factors, as well as general economic and political conditions or investors' concerns regarding the credibility of corporate financial statements, may have a material adverse effect on the market price of our stock in the future.

We depend on sole source or limited source suppliers, both internal and external, for some of our key components and materials, including exotic materials, certain cutting-edge optics and crystals, in our products, which make us susceptible to



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supply shortages or price fluctuations that could adversely affect our business, particularly our ability to meet our customers' delivery requirements.

We currently purchase several key components and materials used in the manufacture of our products from sole source or limited source suppliers, both internal and external. In particular, from time-to-time our customers require us to ramp up production and/or accelerate delivery schedules of our products. Our key suppliers may not have the ability to increase their production in line with our customers' demands. This can become acute during times of high growth in our customers' businesses. Our failure to timely receive these key components and materials would likely cause delays in the shipment of our products, which would likely negatively impact both our customers and our business. Some of these suppliers are relatively small private companies that may discontinue their operations at any time and which may be particularly susceptible to prevailing economic conditions. Some of our suppliers are located in regions which may be susceptible to natural disasters, such as the flooding in Thailand and the earthquake, tsunami and resulting nuclear disaster in Japan and severe flooding and power loss in the Eastern part of the United States in recent years. Some may be vulnerable to man-made disasters, such as the recent worldwide shortage of neon gas as a result of the conflict in Ukraine. We typically purchase our components and materials through purchase orders or agreed upon terms and conditions and we do not have guaranteed supply arrangements with many of these suppliers. For certain long-lead time supplies or in order to lock-in pricing, we may be obligated to place purchase orders which are not cancelable or otherwise assume liability for a large amount of the ordered supplies, which limit our ability to adjust down our inventory liability in the event of market downturns or other customer cancellations or rescheduling of their purchase orders for our products. Some of our products, particularly in the flat panel display industry, require designs and specifications which are at the cutting-edge of available technologies. Our and our customers' designs and specifications frequently change to meet rapidly evolving market demands. Accordingly, certain of our products require components and supplies which may be technologically difficult and unpredictable to manufacture. By their very nature, these types of components may only be available by a single supplier. These characteristics further pressure the timely delivery of such components. We may fail to obtain these supplies in a timely manner in the future. We may experience difficulty identifying alternative sources of supply for certain components used in our products and may have to incur expenses and management distraction in assisting our current and future suppliers to meet our and our customers' technical requirements. We would experience further delays while identifying, evaluating and testing the products of these potential alternative suppliers. Furthermore, financial or other difficulties faced by these suppliers or significant changes in demand for these components or materials could limit their availability. We continue to consolidate our supply base and move supplier locations. When we transition locations we may increase our inventory of such products as a "safety stock" during the transition, which may cause the amount of inventory reflected on our balance sheet to increase. Additionally, many of our customers rely on sole source suppliers. In the event of a disruption of our customers' supply chain, orders from our customers could decrease or be delayed. 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, or our failure to properly manage these moves, would impair our ability to meet scheduled product deliveries to our customers and could cause customers to cancel orders. We have historically relied exclusively on our own production capability to manufacture certain strategic components, crystals, semiconductor lasers, lasers and laser-based systems and recently acquired the capability to manufacture certain large format optics. Because we manufacture, package and test these components, products and systems at our own facilities, and such components, products and systems are not readily available from other sources, any interruption in manufacturing would adversely affect our business. Since many of our products have lengthy qualification periods, our ability to introduce multiple suppliers for parts may be limited. In addition, our failure to achieve adequate manufacturing yields of these items at our manufacturing facilities may materially and adversely affect our operating results and financial condition.

We participate in the microelectronics market, which requires significant research and development expenses to develop and maintain products and a failure to achieve market acceptance for our products could have a significant negative impact on our business and results of operations.

The microelectronics market is characterized by rapid technological change, frequent product introductions, the volatility of product supply and demand, changing customer requirements and evolving industry standards. The nature

of this market requires significant research and development expenses to participate, with substantial resources invested in advance of material sales of our products to our customers in this market. Additionally, our product offerings may become obsolete given the frequent introduction of alternative technologies. In the event either our customers' or our products fail to gain market acceptance, or the microelectronics market fails to grow, it would likely have a significant negative effect on our business and results of operations.

We participate in the flat panel display market, which has a relatively limited number of end customer manufacturers. Our backlog, timing of net sales and results of operations could be negatively impacted in the event our customers reschedule or cancel orders.

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In the flat panel display market, there are a relatively limited number of manufacturers who are the end customers for our annealing products. In fiscal 2016, Advanced Process Systems Corporation, an integrator in the flat panel display market based in South Korea, and Japanese Steel Works, Ltd., an integrator in the flat panel display market based in Japan, contributed more than 10% of our revenue. Given macroeconomic conditions, varying consumer demand and technical process limitations at manufacturers, our customers may seek to reschedule or cancel orders. This was recently seen with a requested expedited shipment of a Linebeam 1500 product for our third fiscal quarter of 2015, which delivery date was then changed at the customer's request back to its originally scheduled date in the fourth fiscal quarter of 2015. These larger flat panel-related systems have large average selling prices. Any rescheduling or canceling of such orders by our customers will likely have a significant impact on our quarterly or annual net sales and results of operations and could negatively impact inventory values and backlog. Additionally, challenges in meeting evolving technological requirements for these complex products by us and our suppliers could also result in delays in shipments, rescheduled or canceled orders by our customers. This could negatively impact our backlog, timing of net sales and results of operations.

As of October 1, 2016, flat panel display systems represented 63% of our backlog, compared to 32% at October 3, 2015. Since our backlog includes higher average selling price flat panel display systems, any delays or cancellation of shipments could have a material adverse effect on our financial results.

Some of our laser systems are complex in design and may contain defects that are not detected until deployed by our customers, which could increase our costs and reduce our net sales.

Lasers and laser systems are inherently complex in design and require ongoing regular maintenance. The manufacture of our lasers, laser products and systems involves a highly complex and precise process. As a result of the technological complexity of our products, in particular the flat panel annealing systems, changes in our or our suppliers' manufacturing processes or the inadvertent use of defective materials by us or our suppliers could result in a material adverse effect on our ability to achieve acceptable manufacturing yields and product reliability. To the extent that we do not achieve and maintain our projected yields or product reliability, our business, operating results, financial condition and customer relationships would be adversely affected. We provide warranties on a majority of our product sales, and reserves for estimated warranty costs are recorded during the period of sale. The determination of such reserves requires us to make estimates of failure rates and expected costs to repair or replace the products under warranty. We typically establish warranty reserves based on historical warranty costs for each product line. If actual return rates and/or repair and replacement costs differ significantly from our estimates, adjustments to cost of sales may be required in future periods which could have an adverse effect on our results of operations.

Our customers may discover defects in our products after the products have been fully deployed and operated, including under the end user's peak stress conditions. In addition, some of our products are combined with products from other vendors, which may contain defects. As a result, should problems occur, it may be difficult to identify the source of the problem. If we are unable to identify and fix defects or other problems, we could experience, among other things:

- loss of customers or orders;
- increased costs of product returns and warranty expenses;
- damage to our brand reputation;
- failure to attract new customers or achieve market acceptance;
- diversion of development, engineering and manufacturing resources; and
- legal actions by our customers and/or their end users.

The occurrence of any one or more of the foregoing factors could seriously harm our business, financial condition and results of operations.

Continued volatility in the advanced packaging and semiconductor manufacturing markets could adversely affect our business, financial condition and results of operations.

A portion of our net sales in the microelectronics market depends on the demand for our products by advanced packaging applications and semiconductor equipment companies. These markets have historically been characterized by sudden and severe cyclical variations in product supply and demand, which have often severely affected the

demand for semiconductor manufacturing equipment, including laser-based tools and systems. The timing, severity and duration of these market cycles are difficult to predict, and we may not be able to respond effectively to these cycles. The continuing uncertainty in these markets severely limits our ability to predict our business prospects or financial results in these markets.

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During industry downturns, our net sales from these markets may decline suddenly and significantly. Our ability to rapidly and effectively reduce our cost structure in response to such downturns is limited by the fixed nature of many of our expenses in the near term and by our need to continue our investment in next-generation product technology and to support and service our products. In addition, due to the relatively long manufacturing lead times for some of the systems and subsystems we sell to these markets, we may incur expenditures or purchase raw materials or components for products we cannot sell. Accordingly, downturns in the semiconductor capital equipment market may materially harm our operating results. Conversely, when upturns in these markets occur, we must be able to rapidly and effectively increase our manufacturing capacity to meet increases in customer demand that may be extremely rapid, and if we fail to do so we may lose business to our competitors and our relationships with our customers may be harmed.

We are exposed to risks associated with worldwide economic conditions and related uncertainties which could negatively impact demand for our products and results of operations.

Volatility and disruption in the capital and credit markets, depressed consumer confidence, government economic policies, negative economic conditions, volatile corporate profits and reduced capital spending could negatively impact demand for our products. In particular, it is difficult to develop and implement strategy, sustainable business models and efficient operations, as well as effectively manage supply chain relationships in the face of such conditions including uncertainty regarding the ability of some of our suppliers to continue operations and provide us with uninterrupted supply flow. Our ability to maintain our research and development investments in our broad product offerings may be adversely impacted in the event that our sales decline and do not increase in the future. Spending and the timing thereof by consumers and businesses have a significant impact on our results and, where such spending is delayed or canceled, it could have a material negative impact on our operating results. Current global economic conditions remain uncertain and challenging. Weakness in our end markets could negatively impact our net sales, gross margin and operating expenses, and consequently have a material adverse effect on our business, financial condition and results of operations.

Uncertainty in global fiscal policy has likely had an adverse impact on global financial markets and overall economic activity in recent years. Should this uncertain financial policy recur, it would likely negatively impact global economic activity. Any weakness in global economies would also likely have negative repercussions on U.S. and global credit and financial markets, and further exacerbate sovereign debt concerns in the European Union. All of these factors would likely adversely impact the global demand for our products and the performance of our investments, and would likely have a material adverse effect on our business, results of operations and financial condition.

The financial turmoil that has affected the banking system and financial markets in recent years could result in tighter credit markets and lower levels of liquidity in some financial markets. There could be a number of follow-on effects from a tightened credit environment on our business, including the insolvency of key suppliers or their inability to obtain credit to finance development and/or manufacture products resulting in product delays; inability of customers to obtain credit to finance purchases of our products and/or customer insolvencies; and failure of financial institutions negatively impacting our treasury functions. In the event our customers are unable to obtain credit or otherwise pay for our shipped products it could significantly impact our ability to collect on our outstanding accounts receivable. Other income and expense also could vary materially from expectations depending on gains or losses realized on the sale or exchange of financial instruments; impairment charges resulting from revaluations of debt and equity securities and other investments; interest rates; cash balances; and changes in fair value of derivative instruments. Volatility in the financial markets and any overall economic uncertainty increase the risk that the actual amounts realized in the future on our financial instruments could differ significantly from the fair values currently assigned to them.

Uncertainty about current global economic conditions could also continue to increase the volatility of our stock price. In addition, political and social turmoil related to international conflicts, terrorist acts, civil unrest and mass migration may put further pressure on economic conditions in the United States and the rest of the world. Unstable economic, political and social conditions make it difficult for our customers, our suppliers and us to accurately forecast and plan future business activities. If such conditions persist, our business, financial condition and results of operations could suffer. Additionally, unstable economic conditions can provide significant pressures and burdens on individuals, which could cause them to engage in inappropriate business conduct. See “Part II, Item 9A. CONTROLS AND

PROCEDURES.”

Our cash and cash equivalents and short-term investments are managed through various banks around the world and volatility in the capital and credit market conditions could cause financial institutions to fail or materially harm service levels provided by such banks, both of which could have an adverse impact on our ability to timely access funds.

World capital and credit markets have been and may continue to experience volatility and disruption. In some cases, the markets have exerted downward pressure on stock prices and credit capacity for certain issuers, as well as pressured the solvency of some financial institutions. These financial institutions, including banks, have had difficulty timely performing regular services and in some cases have failed or otherwise been largely taken over by governments. We maintain our cash,

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cash equivalents and short-term investments with a number of financial institutions around the world. Should some or all of these financial institutions fail or otherwise be unable to timely perform requested services, we would likely have a limited ability to timely access our cash deposited with such institutions, or, in extreme circumstances the failure of such institutions could cause us to be unable to access cash for the foreseeable future. If we are unable to quickly access our funds when we need them, we may need to increase the use of our existing credit lines or access more expensive credit, if available. If we are unable to access our cash or if we access existing or additional credit or are unable to access additional credit, it could have a negative impact on our operations, including our reported net income. In addition, the willingness of financial institutions to continue to accept our cash deposits will impact our ability to diversify our investment risk among institutions.

We are exposed to credit risk and fluctuations in the market values of our investment portfolio.

Although we have not recognized any material losses on our cash, cash equivalents and short-term investments, future declines in their market values could have a material adverse effect on our financial condition and operating results. Given the global nature of our business, we have investments both domestically and internationally. There has recently been growing pressure on the creditworthiness of sovereign nations, particularly in Europe where a significant portion of our cash, cash equivalents and short-term investments are invested, which results in corresponding pressure on the valuation of the securities issued by such nations. Additionally, our overall investment portfolio is often concentrated in government-issued securities such as U.S. Treasury securities and government agencies, corporate notes, commercial paper and money market funds. Credit ratings and pricing of these investments can be negatively impacted by liquidity, credit deterioration or losses, financial results, or other factors. Additionally, liquidity issues or political actions by sovereign nations could result in decreased values for our investments in certain government securities. As a result, the value or liquidity of our cash, cash equivalents and short-term investments could decline or become materially impaired, which could have a material adverse effect on our financial condition and operating results. See “Item 7A. Quantitative and Qualitative Disclosures about Market Risk.”

Our future success depends on our ability to increase our sales volumes and decrease our costs to offset potential declines in the average selling prices (“ASPs”) of our products and, if we are unable to realize greater sales volumes and lower costs, our operating results may suffer.

Our ability to increase our sales volume and our future success depends on the continued growth of the markets for lasers, laser systems and related accessories, as well as our ability to identify, in advance, emerging markets for laser-based systems. We cannot assure you that we will be able to successfully identify, on a timely basis, new high-growth markets in the future. Moreover, we cannot assure you that new markets will develop for our products or our customers' products, or that our technology or pricing will enable such markets to develop. Future demand for our products is uncertain and will depend to a great degree on continued technological development and the introduction of new or enhanced products. If this does not continue, sales of our products may decline and our business will be harmed.

We have in the past experienced decreases in the ASPs of some of our products. As competing products become more widely available, the ASPs of our products may decrease. If we are unable to offset any decrease in our ASPs by increasing our sales volumes, our net sales will decline. In addition, to maintain our gross margins, we must continue to reduce the cost of manufacturing our products while maintaining their high quality. From time to time, our products, like many complex technological products, may fail in greater frequency than anticipated. This can lead to further charges, which can result in higher costs, lower gross margins and lower operating results. Furthermore, as ASPs of our current products decline, we must develop and introduce new products and product enhancements with higher margins. If we cannot maintain our gross margins, our operating results could be seriously harmed, particularly if the ASPs of our products decrease significantly.

Our future success depends on our ability to develop and successfully introduce new and enhanced products that meet the needs of our customers.

Our current products address a broad range of commercial and scientific research applications in the photonics markets. We cannot assure you that the market for these applications will continue to generate significant or consistent demand for our products. Demand for our products could be significantly diminished by disrupting technologies or products that replace them or render them obsolete. Furthermore, the new and enhanced products in certain markets

generally continue to be smaller in size and have lower ASPs, and therefore, we have to sell more units to maintain revenue levels. Accordingly, we must continue to invest in research and development in order to develop competitive products.

Our future success depends on our ability to anticipate our customers' needs and develop products that address those needs. Introduction of new products and product enhancements will require that we effectively transfer production processes from research and development to manufacturing and coordinate our efforts with those of our suppliers to achieve volume production rapidly. If we fail to transfer production processes effectively, develop product enhancements or introduce new products in sufficient quantities to meet the needs of our customers as scheduled, our net sales may be reduced and our business may be harmed.

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We face risks associated with our foreign operations and sales that could harm our financial condition and results of operations.

For fiscal 2016, fiscal 2015 and fiscal 2014, 76%, 73% and 74%, respectively, of our net sales were derived from customers outside of the United States. A majority of Rofin's sales have also been to customers outside of the United States in recent years. We anticipate that foreign sales, particularly in Asia, will continue to account for a significant portion of our net sales in the foreseeable future.

A global economic slowdown or a natural disaster could have a negative effect on various foreign markets in which we operate, such as the earthquake, tsunami and resulting nuclear disaster in Japan and the flooding in Thailand in recent years. Such a slowdown may cause us to reduce our presence in certain countries, which may negatively affect the overall level of business in such countries. Our foreign sales are primarily through our direct sales force.

Additionally, some foreign sales are made through foreign distributors and representatives. Our foreign operations and sales are subject to a number of risks, including:

- longer accounts receivable collection periods;
- the impact of recessions and other economic conditions in economies outside the United States;
- unexpected changes in regulatory requirements;
- certification requirements;
- environmental regulations;
- reduced protection for intellectual property rights in some countries;
- potentially adverse tax consequences;
- political and economic instability;
- import/export regulations, tariffs and trade barriers;
- compliance with applicable United States and foreign anti-corruption laws;
- cultural and management differences;
- reliance in some jurisdictions on third party sales channel partners;
- preference for locally produced products; and
- shipping and other logistics complications.

Our business could also be impacted by international conflicts, terrorist and military activity, civil unrest and pandemic illness which could cause a slowdown in customer orders, cause customer order cancellations or negatively impact availability of supplies or limit our ability to timely service our installed base of products.

We are also subject to the risks of fluctuating foreign currency exchange rates, which could materially adversely affect the sales price of our products in foreign markets, as well as the costs and expenses of our foreign subsidiaries. While we use forward exchange contracts and other risk management techniques to hedge our foreign currency exposure, we remain exposed to the economic risks of foreign currency fluctuations.

We may not be able to protect our proprietary technology which could adversely affect our competitive advantage. Maintenance of intellectual property rights and the protection thereof is important to our business. We rely on a combination of patent, copyright, trademark and trade secret laws and restrictions on disclosure to protect our intellectual property rights. Our patent applications may not be approved, any patents that may be issued may not sufficiently protect our intellectual property and any issued patents may be challenged by third parties. Other parties may independently develop similar or competing technology or design around any patents that may be issued to us. We cannot be certain that the steps we have taken will prevent the misappropriation of our intellectual property, particularly in foreign countries where the laws may not protect our proprietary rights as fully as in the United States. Further, we may be required to enforce our intellectual property or other proprietary rights through litigation, which, regardless of success, could result in substantial costs and diversion of management's attention. Additionally, there may be existing patents of which we are unaware that could be pertinent to our business and it is not possible for us to know whether there are patent applications pending that our products might infringe upon since these applications are often not publicly available until a patent is issued or published.

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We may, in the future, be subject to claims or litigation from third parties, for claims of infringement of their proprietary rights or to determine the scope and validity of our proprietary rights or the proprietary rights of competitors or other rights holders. These claims could result in costly litigation and the diversion of our technical and management personnel. Adverse resolution of litigation may harm our operating results or financial condition. In recent years, there has been significant litigation in the United States and around the world involving patents and other intellectual property rights. This has been seen in our industry, for example in the recently concluded patent-related litigation between IMRA America, Inc. ("Imra") and IPG Photonics Corporation and in Imra's recently brought litigation against two of our German subsidiaries. From time to time, like many other technology companies, we have received communications from other parties asserting the existence of patent rights, copyrights, trademark rights or other intellectual property rights which such third parties believe may cover certain of our products, processes, technologies or information. In the future, we may be a party to litigation to protect our intellectual property or as a result of an alleged infringement of others' intellectual property whether through direct claims or by way of indemnification claims of our customers, as, in some cases, we contractually agree to indemnify our customers against third-party infringement claims relating to our products. These claims and any resulting lawsuit, if successful, could subject us to significant liability for damages or invalidation of our proprietary rights. These lawsuits, regardless of their success, would likely be time-consuming and expensive to resolve and would divert management time and attention. Any potential intellectual property litigation could also force us to do one or more of the following:

- stop manufacturing, selling or using our products that use the infringed intellectual property;
- obtain from the owner of the infringed intellectual property right a license to sell or use the relevant technology, although such license may not be available on reasonable terms, or at all; or
- redesign the products that use the technology.

If we are forced to take any of these actions or are otherwise a party to lawsuits of this nature, we may incur significant losses and our business may be seriously harmed. We do not have insurance to cover potential claims of this type.

If our goodwill or intangible assets become impaired, we may be required to record a significant charge to earnings. Under accounting principles generally accepted in the United States, we review our intangible assets for impairment when events or changes in circumstances indicate the carrying value may not be recoverable. Goodwill is required to be tested for impairment at least annually. Factors that may be considered in determining whether a change in circumstances indicating that the carrying value of our goodwill or other intangible assets may not be recoverable include declines in our stock price and market capitalization or future cash flows projections. A decline in our stock price, or any other adverse change in market conditions, particularly if such change has the effect of changing one of the critical assumptions or estimates we used to calculate the estimated fair value of our reporting units, could result in a change to the estimation of fair value that could result in an impairment charge. Any such material charges, whether related to goodwill or purchased intangible assets, may have a material negative impact on our financial and operating results.

We depend on skilled personnel to operate our business effectively in a rapidly changing market, and if we are unable to retain existing or hire additional personnel when needed, our ability to develop and sell our products could be harmed.

Our ability to continue to attract and retain highly skilled personnel will be a critical factor in determining whether we will be successful in the future. Recruiting and retaining highly skilled personnel in certain functions continues to be difficult. At certain locations where we operate, the cost of living is extremely high and it may be difficult to retain key employees and management at a reasonable cost. We may not be successful in attracting, assimilating or retaining qualified personnel to fulfill our current or future needs. Our failure to attract additional employees and retain our existing employees could adversely affect our growth and our business.

Our future success depends upon the continued services of our executive officers and other key engineering, sales, marketing, manufacturing and support personnel, any of whom may leave and our ability to effectively transition to their successors. Our inability to retain or to effectively transition to their successors could harm our business and our results of operations.

The long sales cycles for our products may cause us to incur significant expenses without offsetting net sales.

Customers often view the purchase of our products as a significant and strategic decision. As a result, customers typically expend significant effort in evaluating, testing and qualifying our products before making a decision to purchase them, resulting in a lengthy initial sales cycle. While our customers are evaluating our products and before they place an order with us, we may incur substantial sales and marketing and research and development expenses to customize our products to the customers' needs. We may also expend significant management efforts, increase manufacturing capacity and order long lead-time components or materials prior to receiving an order. Even after this evaluation process, a potential customer may not purchase

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our products. As a result, these long sales cycles may cause us to incur significant expenses without ever receiving net sales to offset such expenses.

The markets in which we sell our products are intensely competitive and increased competition could cause reduced sales levels, reduced gross margins or the loss of market share.

Competition in the various photonics markets in which we provide products is very intense. We compete against a number of large public and private companies, including CVI Melles Griot, Novanta Inc., IPG Photonics Corporation, Lumentum Holdings Inc., MKS Instruments, Inc. and Trumpf GmbH, as well as other smaller companies. Some of our competitors are large companies that have significant financial, technical, marketing and other resources. These competitors may be able to devote greater resources than we can to the development, promotion, sale and support of their products. Some of our competitors are much better positioned than we are to acquire other companies in order to gain new technologies or products that may displace our product lines. Any of these acquisitions could give our competitors a strategic advantage. Any business combinations or mergers among our competitors, forming larger companies with greater resources, could result in increased competition, price reductions, reduced margins or loss of market share, any of which could materially and adversely affect our business, results of operations and financial condition.

Additional competitors may enter the markets in which we serve, both foreign and domestic, and we are likely to compete with new companies in the future. We may encounter potential customers that, due to existing relationships with our competitors, are committed to the products offered by these competitors. Further, our current or potential customers may determine to develop and produce products for their own use which are competitive to our products. As a result of the foregoing factors, we expect that competitive pressures may result in price reductions, reduced margins, loss of sales and loss of market share. In addition, in markets where there are a limited number of customers, competition is particularly intense.

If we fail to accurately forecast component and material requirements for our products, we could incur additional costs and incur significant delays in shipments, which could result in a loss of customers.

We use rolling forecasts based on anticipated product orders and material requirements planning systems to determine our product requirements. It is very important that we accurately predict both the demand for our products and the lead times required to obtain the necessary components and materials. We depend on our suppliers for most of our product components and materials. Lead times for components and materials that we order vary significantly and depend on factors including the specific supplier requirements, the size of the order, contract terms and current market demand for components. For substantial increases in our sales levels of certain products, some of our suppliers may need at least nine months lead-time. If we overestimate our component and material requirements, we may have excess inventory, which would increase our costs. If we underestimate our component and material requirements, we may have inadequate inventory, which could interrupt and delay delivery of our products to our customers. Any of these occurrences would negatively impact our net sales, business or operating results.

Our reliance on contract manufacturing and outsourcing may adversely impact our financial results and operations due to our decreased control over the performance and timing of certain aspects of our manufacturing.

Our manufacturing strategy includes partnering with contract manufacturers to outsource non-core subassemblies and less complex turnkey products, including some performed at international sites located in Asia and Eastern Europe. Our ability to resume internal manufacturing operations for certain products and components in a timely manner may be eliminated. The cost, quality, performance and availability of contract manufacturing operations are and will be essential to the successful production and sale of many of our products. Our financial condition or results of operation could be adversely impacted if any contract manufacturer or other supplier is unable for any reason, including as a result of the impact of worldwide economic conditions, to meet our cost, quality, performance, and availability standards. We may not be able to provide contract manufacturers with product volumes that are high enough to achieve sufficient cost savings. If shipments fall below forecasted levels, we may incur increased costs or be required to take ownership of the inventory. Also, our ability to control the quality of products produced by contract manufacturers may be limited and quality issues may not be resolved in a timely manner, which could adversely impact our financial condition or results of operations.

If we fail to effectively manage our growth or, alternatively, our spending during downturns, our business could be disrupted, which could harm our operating results.

Growth in sales, combined with the challenges of managing geographically dispersed operations, can place a significant strain on our management systems and resources, and our anticipated growth in future operations could continue to place such a strain. The failure to effectively manage our growth could disrupt our business and harm our operating results. Our ability to successfully offer our products and implement our business plan in evolving markets requires an effective planning and management process. In economic downturns, we must effectively manage our spending and operations to ensure our

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competitive position during the downturn, as well as our future opportunities when the economy improves, remain intact. The failure to effectively manage our spending and operations could disrupt our business and harm our operating results.

Historically, acquisitions have been an important element of our strategy. However, we may not find suitable acquisition candidates in the future and we may not be able to successfully integrate and manage acquired businesses. Any acquisitions we make could disrupt our business and harm our financial condition.

We have in the past made strategic acquisitions of other corporations and entities, including Rofin in November 2016, as well as asset purchases, and we continue to evaluate potential strategic acquisitions of complementary companies, products and technologies. In the event of any future acquisitions, we could:

• issue stock that would dilute our current stockholders' percentage ownership;

• pay cash that would decrease our working capital;

• incur debt;

• assume liabilities; or

• incur expenses related to impairment of goodwill and amortization.

Acquisitions also involve numerous risks, including:

• problems combining the acquired operations, systems, technologies or products;

• an inability to realize expected operating efficiencies or product integration benefits;

• difficulties in coordinating and integrating geographically separated personnel, organizations, systems and facilities;

• difficulties integrating business cultures;

• unanticipated costs or liabilities, including the costs associated with improving the internal controls of the acquired company;

• diversion of management's attention from our core businesses;

• adverse effects on existing business relationships with suppliers and customers;

• potential loss of key employees, particularly those of the purchased organizations;

• incurring unforeseen obligations or liabilities in connection with acquisitions; and

the failure to complete acquisitions even after signing definitive agreements which, among other things, would result in the expensing of potentially significant professional fees and other charges in the period in which the acquisition or negotiations are terminated.

We cannot assure you that we will be able to successfully identify appropriate acquisition candidates, to integrate any businesses, products, technologies or personnel that we might acquire in the future or achieve the anticipated benefits of such transactions, which may harm our business.

Our market is unpredictable and characterized by rapid technological changes and evolving standards demanding a significant investment in research and development, and, if we fail to address changing market conditions, our business and operating results will be harmed.

The photonics industry is characterized by extensive research and development, rapid technological change, frequent new product introductions, changes in customer requirements and evolving industry standards. Because this industry is subject to rapid change, it is difficult to predict its potential size or future growth rate. Our success in generating net sales in this industry will depend on, among other things:

• maintaining and enhancing our relationships with our customers;

• the education of potential end-user customers about the benefits of lasers and laser systems; and

• our ability to accurately predict and develop our products to meet industry standards.

For our fiscal years 2016, 2015 and 2014, our research and development costs were \$81.8 million (9.5% of net sales), \$81.5 million (10.2% of net sales) and \$79.1 million (10.0% of net sales), respectively. We cannot assure you that our

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expenditures for research and development will result in the introduction of new products or, if such products are introduced, that those products will achieve sufficient market acceptance or to generate sales to offset the costs of development. Our failure to address rapid technological changes in our markets could adversely affect our business and results of operations.

We are exposed to lawsuits in the normal course of business which could have a material adverse effect on our business, operating results, or financial condition.

We are exposed to lawsuits in the normal course of our business, including product liability claims, if personal injury, death or commercial losses occur from the use of our products. While we typically maintain business insurance, including directors' and officers' policies, litigation can be expensive, lengthy, and disruptive to normal business operations, including the potential impact of indemnification obligations for individuals named in any such lawsuits. We may not, however, be able to secure insurance coverage on terms acceptable to us in the future. Moreover, the results of complex legal proceedings are difficult to predict. An unfavorable resolution of a particular lawsuit, including a recall or redesign of products if ultimately determined to be defective, could have a material adverse effect on our business, operating results, or financial condition.

We use standard laboratory and manufacturing materials that could be considered hazardous and we could be liable for any damage or liability resulting from accidental environmental contamination or injury.

Although most of our products do not incorporate hazardous or toxic materials and chemicals, some of the gases used in our excimer lasers and some of the liquid dyes used in some of our scientific laser products are highly toxic. In addition, our operations involve the use of standard laboratory and manufacturing materials that could be considered hazardous. Also, if a facility fire were to occur at our Sunnyvale, California site and were to spread to a reactor used to grow semiconductor wafers, it could release highly toxic emissions. We believe that our safety procedures for handling and disposing of such materials comply with all federal, state and offshore regulations and standards. However, the risk of accidental environmental contamination or injury from such materials cannot be entirely eliminated. In the event of such an accident involving such materials, we could be liable for damages and such liability could exceed the amount of our liability insurance coverage and the resources of our business which could have an adverse effect on our financial results or our business as a whole.

Compliance or the failure to comply with current and future environmental regulations could cause us significant expense.

We are subject to a variety of federal, state, local and foreign environmental regulations relating to the use, storage, discharge and disposal of hazardous chemicals used during our manufacturing process or requiring design changes or recycling of products we manufacture. If we fail to comply with any present and future regulations, we could be subject to future liabilities, the suspension of production or a prohibition on the sale of products we manufacture. In addition, such regulations could restrict our ability to expand our facilities or could require us to acquire costly equipment, or to incur other significant expenses to comply with environmental regulations, including expenses associated with the recall of any non-compliant product and the management of historical waste.

From time to time new regulations are enacted, and it is difficult to anticipate how such regulations will be implemented and enforced. We continue to evaluate the necessary steps for compliance with regulations as they are enacted. These regulations include, for example, the Registration, Evaluation, Authorization and Restriction of Chemical substances ("REACH"), the Restriction on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Directive ("RoHS") and the Waste Electrical and Electronic Equipment Directive ("WEEE") enacted in the European Union which regulate the use of certain hazardous substances in, and require the collection, reuse and recycling of waste from, certain products we manufacture. This and similar legislation that has been or is in the process of being enacted in Japan, China, South Korea and various states of the United States may require us to re-design our products to ensure compliance with the applicable standards, for example by requiring the use of different types of materials. These redesigns or alternative materials may detrimentally impact the performance of our products, add greater testing lead-times for product introductions or have other similar effects. We believe we comply with all such legislation where our products are sold and we will continue to monitor these laws and the regulations being adopted under them to determine our responsibilities. In addition, we are monitoring legislation relating to the reduction of carbon emissions from industrial operations to determine whether we may be required to incur any

additional material costs or expenses associated with our operations. We are not currently aware of any such material costs or expenses. The SEC has promulgated rules requiring disclosure regarding the use of certain “conflict minerals” mined from the Democratic Republic of Congo and adjoining countries and procedures regarding a manufacturer's efforts to prevent the sourcing of such minerals. The implementation of such rules has required us to incur additional expense and internal resources and may continue to do so in the future, particularly in the event that only a limited pool of suppliers are available to certify that products are free from “conflict minerals.” Our failure to comply with any of the foregoing regulatory requirements or contractual obligations could result in our being directly or indirectly liable for costs, fines or penalties and third-party claims, and could jeopardize our ability to conduct business in the United States and foreign countries.

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Our and our customers' operations would be seriously harmed if our logistics or facilities or those of our suppliers, our customers' suppliers or our contract manufacturers were to experience catastrophic loss.

Our operations, logistics and facilities and those of our customers, suppliers and contract manufacturers could be subject to a catastrophic loss from fire, flood, earthquake, volcanic eruption, work stoppages, power outages, acts of war, pandemic illnesses, energy shortages, theft of assets, other natural disasters or terrorist activity. A substantial portion of our research and development activities, manufacturing, our corporate headquarters and other critical business operations are located near major earthquake faults in Santa Clara, California, an area with a history of seismic events. Any such loss or detrimental impact to any of our operations, logistics or facilities could disrupt our operations, delay production, shipments and net sales and result in large expenses to repair or replace the facility. While we have obtained insurance to cover most potential losses, after reviewing the costs and limitations associated with earthquake insurance, we have decided not to procure such insurance. We believe that this decision is consistent with decisions reached by numerous other companies located nearby. We cannot assure you that our existing insurance coverage will be adequate against all other possible losses.

Difficulties with our enterprise resource planning ("ERP") system and other parts of our global information technology system could harm our business and results of operation. If our network security measures are breached and unauthorized access is obtained to a customer's data or our data or our information technology systems, we may incur significant legal and financial exposure and liabilities.

Like many modern multinational corporations, we maintain a global information technology system, including software products licensed from third parties. Any system, network or Internet failures, misuse by system users, the hacking into or disruption caused by the unauthorized access by third parties or loss of license rights could disrupt our ability to timely and accurately manufacture and ship products or to report our financial information in compliance with the timelines mandated by the SEC. Any such failure, misuse, hacking, disruptions or loss would likely cause a diversion of management's attention from the underlying business and could harm our operations. In addition, a significant failure of our global information technology system could adversely affect our ability to complete an evaluation of our internal controls and attestation activities pursuant to Section 404 of the Sarbanes-Oxley Act of 2002.

Our information systems are subject to attacks, interruptions and failures.

As part of our day-to-day business, we store our data and certain data about our customers in our global information technology system. While our system is designed with access security, if a third party gains unauthorized access to our data, including any regarding our customers, such a security breach could expose us to a risk of loss of this information, loss of business, litigation and possible liability. Our security measures may be breached as a result of third-party action, including intentional misconduct by computer hackers, employee error, malfeasance or otherwise. Additionally, third parties may attempt to fraudulently induce employees or customers into disclosing sensitive information such as user names, passwords or other information in order to gain access to our customers' data or our data, including our intellectual property and other confidential business information, or our information technology systems. Because the techniques used to obtain unauthorized access, or to sabotage systems, change frequently and generally are not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures. Any unauthorized access could result in a loss of confidence by our customers, damage our reputation, disrupt our business, lead to legal liability and negatively impact our future sales. Additionally, such actions could result in significant costs associated with loss of our intellectual property, impairment of our ability to conduct our operations, rebuilding our network and systems, prosecuting and defending litigation, responding to regulatory inquiries or actions, paying damages or taking other remedial steps.

Changes in tax rates, tax liabilities or tax accounting rules could affect future results.

As a global company, we are subject to taxation in the United States and various other countries and jurisdictions. Significant judgment is required to determine our worldwide tax liabilities. A number of factors may affect our future effective tax rates including, but not limited to:

- changes in the composition of earnings in countries or states with differing tax rates;
- changes the assessment of the ability to recognize our deferred tax assets and change in the valuation of our deferred tax liabilities;

the resolution of issues arising from tax audits with various tax authorities, and in particular, the outcome of the German tax audits of our tax returns for fiscal years 2011 - 2014 and the U.S. tax audit of our tax return for fiscal year 2013;

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changes in our global structure that involve acquisitions including the Rofin acquisition, or an increased investment in technology outside of the United States to better align asset ownership and business functions with revenues and profits;

- adjustments to estimated taxes upon finalization of various tax returns;
- increases in expenses not deductible for tax purposes, including impairments of goodwill in connection with acquisitions;
- our ability to meet the eligibility requirements for tax holidays of limited time tax-advantage status;
- changes in available tax credits;
- changes in share-based compensation;
- changes in the tax laws or the interpretation of such tax laws, including the Base Erosion Profit Shifting (“BEPS”) project being conducted by the Organization for Economic Co-operation and Development (“OECD”);
- changes in generally accepted accounting principles; and
- the repatriation of non-U.S. earnings for which we have not previously provided for U.S. taxes.

We are also engaged in discussions with various tax authorities regarding the appropriate level of profitability for Coherent entities and this may result in changes to our worldwide tax liabilities. In addition, we are subject to regular examination of our income tax returns by the Internal Revenue Service (“IRS”) and other tax authorities. From time to time the United States, foreign and state governments make substantive changes to tax rules and the application of rules to companies, including various announcements from the United States government potentially impacting our ability to defer taxes on international earnings. We regularly assess the likelihood of favorable or unfavorable outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. Although we believe our tax estimates are reasonable, there can be no assurance that any final determination will not be materially different than the treatment reflected in our historical income tax provisions and accruals, which could materially and adversely affect our operating results and financial condition.

Changing laws, regulations and standards relating to corporate governance and public disclosure may create uncertainty regarding compliance matters.

Federal securities laws, rules and regulations, as well as the rules and regulations of self-regulatory organizations such as NASDAQ and the NYSE, require companies to maintain extensive corporate governance measures, impose comprehensive reporting and disclosure requirements, set strict independence and financial expertise standards for audit and other committee members and impose civil and criminal penalties for companies and their chief executive officers, chief financial officers and directors for securities law violations. These laws, rules and regulations have increased and will continue to increase the scope, complexity and cost of our corporate governance, reporting and disclosure practices, which could harm our results of operations and divert management’s attention from business operations. Changing laws, regulations and standards relating to corporate governance and public disclosure may create uncertainty regarding compliance matters. New or changed laws, regulations and standards are subject to varying interpretations in many cases. As a result, their application in practice may evolve over time. We are committed to maintaining high standards of ethics, corporate governance and public disclosure. Complying with evolving interpretations of new or changed legal requirements may cause us to incur higher costs as we revise current practices, policies and procedures, and may divert management time and attention from revenue generating to compliance activities. If our efforts to comply with new or changed laws, regulations and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to practice, our reputation may also be harmed.

Governmental regulations, including duties, affecting the import or export of products could negatively affect our net sales.

The United States and many foreign governments impose tariffs and duties on the import and export of products, including some of those which we sell. In particular, given our worldwide operations, we pay duties on certain products when they are imported into the United States for repair work as well as on certain of our products which are manufactured by our foreign subsidiaries. These products can be subject to a duty on the product value. Additionally, the United States and various foreign governments have imposed tariffs, controls, export license requirements and restrictions on the import or export of some technologies, especially encryption technology. From time to time,

government agencies have proposed additional regulation of encryption technology, such as requiring the escrow and governmental recovery of private encryption keys. Governmental regulation of encryption technology and regulation of imports or exports, or our failure to obtain required import or export approval for our products, could harm our international and domestic sales and adversely affect our net sales. From time to time our duty calculations and payments are audited by government agencies. For example, we were audited in South

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Korea for customs duties and value-added-tax for the period March 2009 to March 2014. We were liable for additional payments, duties, taxes and penalties of \$1.6 million, which we paid in the second quarter of fiscal 2016. Any future assessments could have a material adverse effect on our business or financial position, results of operations, or cash flows.

In addition, compliance with the directives of the Directorate of Defense Trade Controls (“DDTC”) may result in substantial expenses and diversion of management. Any failure to adequately address the directives of DDTC could result in civil fines or suspension or loss of our export privileges, any of which could have a material adverse effect on our business or financial position, results of operations, or cash flows.

Failure to maintain effective internal controls may cause a loss of investor confidence in the reliability of our financial statements or to cause us to delay filing our periodic reports with the SEC and adversely affect our stock price.

The SEC, as directed by Section 404 of the Sarbanes-Oxley Act of 2002, adopted rules requiring public companies to include a report of management on internal control over financial reporting in their annual reports on Form 10-K that contain an assessment by management of the effectiveness of our internal control over financial reporting. In addition, our independent registered public accounting firm must attest to and report on the effectiveness of our internal control over financial reporting. Although we test our internal control over financial reporting in order to ensure compliance with the Section 404 requirements, our failure to maintain adequate internal controls over financial reporting could result in an adverse reaction in the financial marketplace due to a loss of investor confidence in the reliability of our financial statements or a delay in our ability to timely file our periodic reports with the SEC, which ultimately could negatively impact our stock price.

Provisions of our charter documents and Delaware law, and our Change-of-Control Severance Plan may have anti-takeover effects that could prevent or delay a change in control.

Provisions of our certificate of incorporation and bylaws may discourage, delay or prevent a merger or acquisition or make removal of incumbent directors or officers more difficult. These provisions may discourage takeover attempts and bids for our common stock at a premium over the market price. These provisions include:

- the ability of our Board of Directors to alter our bylaws without stockholder approval;

- limiting the ability of stockholders to call special meetings; and

- establishing advance notice requirements for nominations for election to our Board of Directors or for proposing matters that can be acted on by stockholders at stockholder meetings.

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits a publicly-held Delaware corporation from engaging in a merger, asset or stock sale or other transaction with an interested stockholder for a period of three years following the date such person became an interested stockholder, unless prior approval of our board of directors is obtained or as otherwise provided. These provisions of Delaware law also may discourage, delay or prevent someone from acquiring or merging with us without obtaining the prior approval of our board of directors, which may cause the market price of our common stock to decline. In addition, we have adopted a change of control severance plan, which provides for the payment of a cash severance benefit to each eligible employee based on the employee's position. If a change of control occurs, our successor or acquirer will be required to assume and agree to perform all of our obligations under the change of control severance plan which may discourage potential acquirers or result in a lower stock price.

**ITEM 1B. UNRESOLVED STAFF COMMENTS**

Not Applicable.

**ITEM 2. PROPERTIES**

Our corporate headquarters is located in Santa Clara, California. At fiscal 2016 year-end, our locations with larger than 10,000 square feet were as follows (all square footage is approximate) (unless otherwise indicated, each property is utilized jointly by our two segments):

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	Description	Use	Term*
Santa Clara, CA	8.5 acres of land, 200,000 square feet	Corporate headquarters, manufacturing, R&D	Owned
Santa Clara, CA	90,120 square feet	Office	Leased through July 2020
Sunnyvale, CA (1)	24,159 square feet	Office, manufacturing, R&D	Leased through December 2023
Richmond, CA (2)	37,952 square feet	Office, manufacturing, R&D	Leased through November 2022
Richmond, CA (2)	30,683 square feet	Office, manufacturing, R&D	Leased through February 2019
Richmond, CA (2)	11,500 square feet	Warehouse	Leased through November 2017
Bloomfield, CT (1)	72,996 square feet	Office, manufacturing, R&D	Leased through December 2017
East Hanover, NJ (2)	29,932 square feet	Office, manufacturing, R&D	Leased through January 2025
Wilsonville, OR (1)	41,250 square feet	Office, manufacturing, R&D	Leased through December 2018
Salem, NH(1)	44,153 square feet	Office, manufacturing, R&D	Leased through October 2024
Dieburg, Germany	32,123 square feet	Office	Leased through December 2020
Göttingen, Germany (2)	14.2 acres of land, several buildings totaling 224,753 square feet	Office, manufacturing, R&D	Owned
Lübeck, Germany (2)	40,944 square feet	Office, manufacturing, R&D	Leased through December 2018
Lübeck, Germany (2)	22,583 square feet	Manufacturing, R&D	Leased through October 2018 with option to purchase building
Lübeck, Germany (2)	8,095 square feet	Office, manufacturing, R&D	Leased through April 2017
Lübeck, Germany (2)	7,578 square feet	Warehouse	Leased through April 2017
Kaiserslautern, Germany (2)	33,740 square feet	Office, manufacturing, R&D	Leased through September 2017
Glasgow, Scotland (2)	2 acres of land, 31,600 square feet	Office, manufacturing, R&D	Owned
Tokyo, Japan	17,602 square feet	Office	Leased through June 2018
Shanghai, China	11,127 square feet	Office	Leased through May 2017
Beijing, China	10,739 square feet	Office	Leased through July 2018
Seoul, South Korea	19,119 square feet	Office	Leased through June 2017
YongIn-Si, South Korea (2)	33,074 square feet	Office, manufacturing	Leased through November 2017
Kallang Sector, Singapore	39,332 square feet	Office, manufacturing	Leased through January 2022
Penang, Malaysia	12,519 square feet	Office, manufacturing	Leased through August 2017

(1) This facility is utilized primarily by our CLC operating segment.

(2) This facility is utilized primarily by our SLS operating segment.

\* We currently plan to renew leases on buildings as they expire.



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We maintain other sales and service offices under varying leases expiring from 2017 through 2020 in Japan, China, Taiwan, France, Italy, the United Kingdom and the Netherlands.

We consider our facilities to be both suitable and adequate to provide for current and near term requirements and that the productive capacity in our facilities is substantially being utilized or we have plans to utilize it.

**ITEM 3. LEGAL PROCEEDINGS**

We are subject to legal claims and litigation arising in the ordinary course of business, such as product liability, employment or intellectual property claims, including, but not limited to, the matters described below. On May 14, 2013, IMRA America (“Imra”) filed a complaint for patent infringement against two of our subsidiaries in the Regional Court of Düsseldorf, Germany, captioned *In re IMRA America Inc. versus Coherent Kaiserslautern GmbH et. al.* 4b O 38/13. The complaint alleges that the use of certain of the Company’s lasers infringes upon EP Patent No. 754,103, entitled “Method For Controlling Configuration of Laser Induced Breakdown and Ablation,” issued November 5, 1997. The patent, now expired in all jurisdictions, is owned by the University of Michigan and licensed to Imra. The complaint seeks unspecified compensatory damages, the cost of court proceedings and seeks to permanently enjoin the Company from infringing the patent in the future. Following the filing of the infringement suit, our subsidiaries filed a separate nullity action with the Federal Patent Court in Munich, Germany requesting that the court hold that the Patent was invalid based on prior art. On October 1, 2015, the Federal Patent Court ruled that the German portion of the Patent was invalid. Imra has appealed this decision to the Federal Court of Justice, the highest civil jurisdiction court in Germany. The infringement action is currently stayed pending the outcome of such appeal. Management has made an accrual with respect to this matter and has determined, based on its current knowledge, that the amount or range of reasonably possible losses in excess of the amounts already accrued is not reasonably estimable. Although we do not expect that such legal claims and litigation will ultimately have a material adverse effect on our consolidated financial position, results of operations or cash flows, an adverse result in one or more matters could negatively affect our results in the period in which they occur.

The United States and many foreign governments impose tariffs and duties on the import and export of certain products we sell. From time to time our duty calculations and payments are audited by government agencies. During the second quarter of fiscal 2016, we concluded an audit in South Korea for customs duties and value added tax for the period March 2009 to March 2014. We paid \$1.6 million related to this matter in the second quarter of fiscal 2016 and have no remaining accrual at October 1, 2016.

**Income Tax Audits**

We are subject to taxation and file income tax returns in the U.S. federal jurisdiction and in many state and foreign jurisdictions. For U.S. federal income tax purposes, all years prior to fiscal 2011 are closed. The Company agreed to extend the statutes of limitations for its fiscal 2011 and 2012 U.S. federal tax returns to June 17, 2017 due to an ongoing Advanced Pricing Agreement (“APA”) between the U.S. and Korea. In March 2016, the Internal Revenue Service (IRS) issued an audit notice and Information Documentation Requests (IDRs) for fiscal 2013. The audit is currently in progress and the statute of limitation was extended to December 31, 2017. In our major foreign jurisdictions and our major state jurisdictions, the years prior to fiscal 2011 and 2012, respectively, are closed to examination. Earlier years in our various jurisdictions may remain open for adjustment to the extent that we have tax attribute carryforwards from those years.

In December 2011 and January 2012, three of our German subsidiaries received notices of tax audits for the fiscal years 2006 through 2010. The audits were completed in the third quarter of fiscal 2016. As a result of the settlement, our gross uncertain tax positions decreased by approximately \$4.9 million. The net provision impact of the adjustments was immaterial to the consolidated statement of operations.

In July 2015 and March 2016, Coherent Kaiserslautern GmbH (formerly Lumera Laser GmbH) received tax audit notices for the fiscal years 2010 to 2014. The audit began in August 2015. We acquired the shares of Lumera Laser GmbH in December 2012 and, pursuant to the terms of the acquisition agreement, we should not have responsibility for any assessments related to the pre-acquisition period. In June, 2016, Coherent Holding GmbH and Coherent Deutschland GmbH each received a tax audit notice for the fiscal years 2011 to 2014. The audit began in the fourth quarter of fiscal 2016. Coherent GmbH, Coherent LaserSystems GmbH & Co. KG and Coherent Germany GmbH

received audit notices for the period that they were in existence during the fiscal years 2011 through 2014 and the audit work is scheduled to commence in January 2017.

We regularly engage in discussions and negotiations with tax authorities regarding tax matters in various jurisdictions and management believes that it has adequately provided reserves for any adjustments that may result from tax examinations.

ITEM 4. MINE SAFETY DISCLOSURES

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Not applicable.

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## PART II

## ITEM 5. MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common stock is quoted on the NASDAQ Stock Market under the symbol "COHR." The following table sets forth the high and low sales prices for each quarterly period during the past two fiscal years as reported on the Nasdaq Global Select Market.

	Fiscal		2015	
	2016			
	High	Low	High	Low
First quarter	\$68.33	\$52.46	\$65.15	\$54.53
Second quarter	\$92.58	\$57.96	\$67.97	\$54.30
Third quarter	\$98.26	\$84.11	\$68.14	\$60.00
Fourth quarter	\$111.63	\$89.43	\$63.66	\$53.09

The number of stockholders of record as of November 28, 2016 was 746. While we paid a cash dividend in fiscal 2013 and may elect to pay dividends in the future, we have no present intention to declare cash dividends. Our line of credit agreement, signed on November 7, 2016, includes certain restrictions on our ability to pay cash dividends.

There were no sales of unregistered securities in fiscal 2016.

There were no stock repurchases during the fourth quarter of fiscal 2016.

Refer to Note 11 "Stock Repurchases" of our Notes to Consolidated Financial Statements under Item 15 of this annual report for discussion on repurchases during fiscal 2015 and 2014.

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## COMPANY STOCK PRICE PERFORMANCE

The following graph shows a five-year comparison of cumulative total stockholder return, calculated on a dividend reinvestment basis and based on a \$100 investment, from October 1, 2011 through October 1, 2016 comparing the return on our common stock with the Russell 2000 Index, the Standard and Poors Technology Index and the Nasdaq Composite Index. The stock price performance shown on the following graph is not necessarily indicative of future price performance.

COMPARISON OF FIVE-YEAR CUMULATIVE TOTAL RETURN AMONG COHERENT, INC., THE RUSSELL 2000 INDEX, THE S&P TECHNOLOGY INDEX AND THE NASDAQ COMPOSITE INDEX.

Company Name / Index	Base Period	INDEXED RETURNS				
		Years Ending				
	10/1/2011	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
Coherent, Inc.	100	106.75	145.69	149.54	129.91	262.63
Russell 2000 Index	100	131.91	171.62	181.14	182.74	208.43
S&P Technology Index	100	132.41	142.36	182.68	189.68	229.51
Nasdaq Composite Index	100	130.53	160.67	194.05	204.85	234.02

The information contained above under the caption "Company Stock Price Performance" shall not be deemed to be "soliciting material" or to be "filed" with the SEC, nor will such information be incorporated by reference into any future SEC filing except to the extent that we specifically incorporate it by reference into such filing.

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## ITEM 6. SELECTED FINANCIAL DATA

The information set forth below is not necessarily indicative of results of future operations and should be read in conjunction with Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the Consolidated Financial Statements and Notes to Consolidated Financial Statements included elsewhere in this annual report.

We derived the consolidated statement of operations data for fiscal 2016, 2015 and 2014 and the consolidated balance sheet data as of fiscal 2016 and 2015 year-end from our audited consolidated financial statements, and accompanying notes, contained in this annual report. The consolidated statements of operations data for fiscal 2013 and 2012 and the consolidated balance sheet data as of fiscal 2014, 2013 and 2012 year-end are derived from our consolidated financial statements which are not included in this annual report.

Consolidated financial data	Fiscal 2016 (1)	Fiscal 2015 (2)	Fiscal 2014	Fiscal 2013 (3)	Fiscal 2012 (4)
	(in thousands, except per share data)				
Net sales	\$857,385	\$802,460	\$794,639	\$810,126	\$769,088
Gross profit	\$381,392	\$335,399	\$313,390	\$322,271	\$315,985
Net income	\$87,502	\$76,409	\$59,106	\$66,355	\$62,962
Net income per share(5):					
Basic	\$3.62	\$3.09	\$2.39	\$2.75	\$2.67
Diluted	\$3.58	\$3.06	\$2.36	\$2.70	\$2.62
Shares used in computation(5):					
Basic	24,142	24,754	24,760	24,138	23,561
Diluted	24,415	24,992	25,076	24,555	24,026
Total assets *	\$1,161,148	\$968,947	\$999,375	\$966,478	\$880,772
Other long-term liabilities *	\$48,826	\$49,939	\$62,407	\$62,132	\$55,328
Stockholders' equity	\$910,828	\$796,418	\$819,649	\$758,518	\$671,656
Other data:					
Cash dividends declared per share	\$—	\$—	\$—	\$1.00	\$—

\*In November 2015, the FASB issued amended guidance that clarifies that in a classified statement of financial position, an entity shall classify deferred tax liabilities and assets as noncurrent amounts. The new guidance supersedes ASC 740-10-45-5 which required the valuation allowance for a particular tax jurisdiction be allocated between current and noncurrent deferred tax assets for that tax jurisdiction on a pro rata basis. We elected to early adopt the standard retrospectively in fiscal 2016, which resulted in the reclassification of current deferred income tax assets to non-current deferred income tax assets and non-current deferred income tax liabilities on our consolidated balance sheets for fiscal 2016 and 2015. The impact of the reclassifications to deferred tax assets and liabilities for fiscal 2014, 2013 and 2012 was immaterial.

(1) Includes \$6.4 million of after tax costs related to the acquisition of Rofin, a \$1.4 million after-tax loss on our hedge of our foreign exchange risk related to the commitment of our term loan to finance the acquisition of Rofin, \$0.8 million after-tax interest expense on the commitment of our term loan to finance the acquisition of Rofin and a benefit of \$1.2 million from the renewal of the R&D tax credit for fiscal 2015.

(2) Includes a charge of \$1.3 million after tax for the impairment of our investment in SiOnyx, a \$1.3 million after-tax charge for an accrual related to an ongoing customs audit, a benefit of \$1.1 million from the renewal of the R&D tax credit for fiscal 2014 and \$1.3 million gain on our purchase of Tinsley in the fourth quarter of fiscal 2015.

(3) Includes a tax benefit of \$1.4 million from the renewal of the R&D tax credit for fiscal 2012.

(4) Includes a charge of \$4.3 million after tax related to the write-off of previously acquired intangible assets and inventories, a \$2.8 million tax benefit due to decreases in valuation allowances against deferred tax assets and a \$1.6 million tax benefit related to the release of tax reserves and related interest as a result of the closure of open tax years.

See Note 2, "Significant Accounting Policies" in our Notes to Consolidated Financial Statements under Item 15 of (5) this annual report for an explanation of the determination of the number of shares used in computing net income (loss) per share.

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## ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our Consolidated Financial Statements and related notes included in Item 8, "Financial Statements and Supplementary Data" in this annual report. This discussion contains forward-looking statements, which involve risks and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of certain factors, including but not limited to those discussed in Item 1A, "Risk Factors" and elsewhere in this annual report. Please see the discussion of forward-looking statements at the beginning of this annual report under "Special Note Regarding Forward-Looking Statements."

## KEY PERFORMANCE INDICATORS

Below is a summary of some of the quantitative performance indicators (as defined below) that are evaluated by management to assess our financial performance. Some of the indicators are non-GAAP measures and should not be considered as an alternative to any other measure for determining operating performance that is calculated in accordance with generally accepted accounting principles.

	Fiscal			
	2016	2015	2014	
	(Dollars in thousands)			
Bookings	\$1,412,096	\$765,174	\$890,531	
Book-to-bill ratio	1.65	0.95	1.12	
Net Sales—Specialty Lasers and Systems	\$631,313	\$559,593	\$565,552	
Net Sales—Commercial Lasers and Components	\$226,072	\$242,867	\$229,087	
Gross Profit as a Percentage of Net Sales—Specialty Lasers and Systems	48.3	% 45.3	% 42.1	%
Gross Profit as a Percentage of Net Sales—Commercial Lasers and Components	45.0	% 34.9	% 33.9	%
Research and Development Expenses as a Percentage of Net Sales	9.5	% 10.2	% 10.0	%
Income Before Income Taxes	\$122,896	\$99,568	\$79,219	
Net Cash Provided by Operating Activities	\$105,299	\$124,458	\$91,379	
Days Sales Outstanding in Receivables	69.6	63.8	62.2	
Annualized Fourth Quarter Inventory Turns	2.5	3.0	2.9	
Capital Spending as a Percentage of Net Sales	5.8	% 2.8	% 2.9	%
Net Income as a Percentage of Net Sales	10.2	% 9.5	% 7.4	%
Adjusted EBITDA as a Percentage of Net Sales	22.6	% 19.3	% 17.2	%

Definitions and analysis of these performance indicators are as follows:

## Bookings and Book-to-Bill Ratio

Bookings represent orders received during the current period for products and services. While we generally have not experienced a significant rate of cancellation, bookings are generally cancelable, depending on the notice period, by our customers without substantial penalty and, therefore, we cannot assure all bookings will be converted to net sales. The book-to-bill ratio is calculated as annual bookings divided by annual net sales. This is an indication of the strength of our business but can sometimes be impacted by a single large order or a single large shipment. A ratio greater than 1.0 indicates that demand for our products is greater than what we supply in the year whereas a ratio of less than 1.0 indicates that demand for our products is less than what we supply in the year.

Fiscal 2016 bookings increased 85% from bookings in fiscal 2015 and our book-to-bill ratio increased from 0.95 in fiscal 2015 to 1.65 in fiscal 2016. The bookings increase included increases in the microelectronics (170%), materials processing (13%) and OEM components and instrumentation (9%) markets partially offset by decreases in the scientific (3%) market. Although fiscal 2016 bookings increased, bookings in the fourth quarter of fiscal 2016 decreased 36% from the third quarter of fiscal 2016, with decreases in the microelectronics, materials processing and OEM components and instrumentation markets partially offset by increases in the scientific market.

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Fiscal 2015 bookings decreased 14% from bookings in fiscal 2014 and our book-to-bill ratio decreased from 1.12 in fiscal 2014 to 0.95 in fiscal 2015. The bookings decrease included decreases in the microelectronics (19%), OEM components and instrumentation (14%), materials processing (8%) and scientific (2%) markets. Although fiscal 2015 bookings decreased, bookings in the fourth quarter of fiscal 2015 increased 16% from the third quarter of fiscal 2015, with increases in all four markets.

Backlog represents orders which we expect to be shipped within 12 months and the current portion of service contracts. For a discussion of backlog, see "RESULTS OF OPERATIONS - BACKLOG".

**Microelectronics**

Although fiscal 2016 bookings increased 170% from bookings in fiscal 2015 and the book-to-bill ratio for the year was 2.17, bookings in the fourth quarter of fiscal 2016 decreased 48% from the third quarter of fiscal 2016 primarily due to decreased systems orders net of higher service orders for the flat panel display market.

Flat panel display orders for fiscal 2016 increased 310% from orders in fiscal 2015 primarily due to the timing and mix of order placement by customers with orders received from multiple customers for large format Linebeam systems to be used in flexible organic light-emitting diode (OLED) production. Fourth quarter fiscal 2016 orders were 56% lower than those in the third quarter of fiscal 2016 primarily due to lower orders for Linebeam 1500 and 1000 systems, net of higher service bookings. We expect continued fluctuations in order volumes on a quarterly basis. After building significant flat panel display backlog during the first three quarters of fiscal 2016, in the fourth quarter system orders temporarily returned to a more modest level while flat panel display service orders and revenue were very strong. Some customers are adding capacity to take a larger share of the first wave of OLED adoption while others believe OLED will replace LCDs everywhere from handsets to mobile computing to TVs and signage. These customers are securing capacity to capitalize on these potential trends and, as a result, we have already booked \$100 million of new orders in the first quarter of fiscal 2017, which together with our existing backlog fills out most of our existing fiscal 2018 capacity.

Advanced packaging ("API") orders decreased 29% for the full fiscal year and fourth quarter fiscal 2016 orders decreased 12% from orders in the third quarter of fiscal 2016. The API market continues to demonstrate variability based on project specific activity. There is an increased use of SiPs, or system in package, in the newest smartphones, which increases the number of interconnects and functionality in a smaller footprint. This will maintain pressure on the via drilling market in the next few quarters, but we believe the impact will be temporary since new applications like virtual reality need large amounts of processing power.

Orders from semiconductor capital equipment OEMs increased 5% for fiscal 2016 and were 26% higher in the fourth quarter of fiscal 2016 compared to the third quarter of fiscal 2016 due to increases in wafer inspection (investments for mobile logic chips) and ink jet nozzle printing applications. Service orders and shipments remain strong due to high utilization rates in most fabs. In addition, we saw favorable inventory corrections at certain customers that resulted in increased sales that we believe are sustainable. We do not anticipate any significant reduction in orders from the recent collapse of two proposed mergers in the semiconductor capital equipment market since they were largely complementary with respect to our ongoing business.

**OEM Components and Instrumentation**

Bookings in fiscal 2016 increased 9% from fiscal 2015 and the book-to-bill ratio for the year was 1.08. However, orders in the fourth quarter of fiscal 2016 decreased 3% from orders in the third quarter of fiscal 2016 due to lower orders for medical applications.

Instrumentation orders decreased 1% for the full fiscal year and fourth quarter fiscal 2016 orders increased 12% compared to the third quarter of fiscal 2016 due to timing of orders. Demand is strong for all submarkets in bioinstrumentation. In flow cytometry, market adoption of the test protocols and the proliferation of desktop instruments from existing and new market entrants are fueling growth. Bookings for confocal microscopy were solid. Our efforts in high-speed gene sequencing are resulting in increasing orders as we secure more design wins. Orders for medical OEM products increased 13% for the full fiscal year 2016, but fourth quarter fiscal 2016 orders decreased 32% compared to the third quarter of fiscal 2016. In spite of the decrease in orders, the medical OEM market remains strong. The medical OEM market is being affected by M&A activity and reorganizations within existing customers, which is causing changes in demand, inventory practices and R&D spending. From our historical

experience, we believe these are mostly temporary factors. By contrast, the consumables business is robust, suggesting the number of procedures being performed is stable to increasing.

Materials Processing

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Annual bookings increased 13% from fiscal 2015 and fiscal 2016's book-to-bill ratio was 1.05. However, bookings in the fourth quarter of fiscal 2016 decreased 26% from the prior quarter due to lower orders for metal cutting and engraving applications. Bookings volumes in our materials processing business can vary significantly from quarter to quarter. In spite of the decrease in the fourth quarter of fiscal 2016, it was a record year for orders and sales in our materials processing business. A number of applications contributed to our success including thin metal cutting in consumer electronics packaging and additive manufacturing as well as short pulse processing for the automotive, medical device and machine tool industries.

### Scientific and Government Programs

Although fiscal 2016 orders decreased 3% from bookings in fiscal 2015, the book-to-bill ratio for the year was 1.03. Orders in the fourth quarter of fiscal 2016 increased 37% from the third quarter of fiscal 2016 as the U.S., Asian and European markets delivered a typically strong fourth quarter performance. Our Astrella™ ultrafast amplifier is the leading solution in the research marketplace based upon performance and unit volumes; bookings were particularly strong in China, where funding for applied physics and physical chemistry is similar to that in the U.S. The Chameleon Discovery™, our most advanced light source for multiphoton imaging, had record unit and dollar bookings in the fourth quarter of fiscal 2016.

### Net Sales

Net sales include sales of lasers, laser tools, related accessories and service. Net sales for fiscal 2016 increased 7% from fiscal 2015. Net sales for fiscal 2015 increased 1% from fiscal 2014. For a description of the reasons for changes in net sales refer to the "Results of Operations" section below.

### Gross Profit as a Percentage of Net Sales

Gross profit as a percentage of net sales ("gross profit percentage") is calculated as gross profit for the period divided by net sales for the period. Gross profit percentage for SLS increased to 48.3% in fiscal 2016 from 45.3% in fiscal 2015 and from 42.1% in fiscal 2014. Gross profit percentage for CLC increased to 35.0% in fiscal 2016 from 34.9% in fiscal 2015 and from 33.9% in fiscal 2014. For a description of the reasons for changes in gross profit refer to the "Results of Operations" section below.

### Research and Development as a Percentage of Net Sales

Research and development as a percentage of net sales ("R&D percentage") is calculated as research and development expense for the period divided by net sales for the period. Management considers R&D percentage to be an important indicator in managing our business as investing in new technologies is a key to future growth. R&D percentage decreased to 9.5% in fiscal 2016 from 10.2% in fiscal 2015 and 10.0% in fiscal 2014. For a description of the reasons for changes in R&D spending refer to the "Results of Operations" section below.

### Net Cash Provided by Operating Activities

Net cash provided by operating activities shown on our Consolidated Statements of Cash Flows primarily represents the excess of cash collected from billings to our customers and other receipts over cash paid to our vendors for expenses and inventory purchases to run our business. We believe that cash flows from operations are an important performance indicator because cash generation over the long term is essential to maintaining a healthy business and providing funds to help fuel growth. For a description of the reasons for changes in Net Cash Provided by Operating Activities refer to the "Liquidity and Capital Resources" section below.

### Days Sales Outstanding in Receivables

We calculate days sales outstanding ("DSO") in receivables as net receivables at the end of the period divided by net sales during the period and then multiplied by the number of days in the period, using 360 days for years. DSO in receivables indicates how well we are managing our collection of receivables, with lower DSO in receivables resulting in higher working capital availability. The more money we have tied up in receivables, the less money we have available for research and development, acquisitions, expansion, marketing and other activities to grow our business. Our DSO in receivables for fiscal 2016 increased to 69.6 days from 63.8 days in fiscal 2015. The increase in DSO in receivables is primarily due to a higher concentration of receivables in Asia and Japan where DSOs are typically higher and the unfavorable impact of foreign exchange rates partially offset by a lower concentration of sales in the last month of the fiscal year in all regions.

### Annualized Fourth Quarter Inventory Turns

We calculate annualized fourth quarter inventory turns as cost of sales during the fourth quarter annualized and divided by net inventories at the end of the fourth quarter. This indicates how well we are managing our inventory levels, with higher inventory turns resulting in more working capital availability and a higher return on our investments in inventory. The more

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money we have tied up in inventory, the less money we have available for research and development, acquisitions, expansion, marketing and other activities to grow our business. Our annualized fourth quarter inventory turns for fiscal 2016 decreased to 2.5 turns from 3.0 turns in fiscal 2015 primarily due to the planned build-up of inventory levels in certain business units, primarily in microelectronics, to support increased demand for our large format Linebeam systems.

**Capital Spending as a Percentage of Net Sales**

Capital spending as a percentage of net sales ("capital spending percentage") is calculated as capital expenditures for the period divided by net sales for the period. Capital spending percentage indicates the extent to which we are expanding or improving our operations, including investments in technology and equipment. Management monitors capital spending levels as this assists us in measuring our cash flows, net of capital expenditures. Our capital spending percentage increased to 5.8% in fiscal 2016 from 2.8% in fiscal 2015 and 2.9% in fiscal 2014. The fiscal 2016 increase was primarily due to increased investments to expand our manufacturing capacity in Göttingen, Germany, upgrade certain of our production facilities in California and New Jersey and higher purchases of production-related assets, partially offset by the impact of higher revenues in fiscal 2016. The fiscal 2015 decrease was primarily due to lower purchases of production-related assets.

**Adjusted EBITDA as a Percentage of Net Sales**

We define adjusted EBITDA as operating income adjusted for depreciation, amortization, stock-based compensation, major restructuring costs and certain other non-operating income and expense items, such as costs related to the acquisition of Rofin. Key initiatives to reach our goals for EBITDA improvements include utilization of our Asian manufacturing locations, rationalizing our supply chain and continued leveraging of our infrastructure.

We utilize a number of different financial measures, both GAAP and non-GAAP, such as adjusted EBITDA as a percentage of net sales, in analyzing and assessing our overall business performance, for making operating decisions and for forecasting and planning future periods. We consider the use of non-GAAP financial measures helpful in assessing our current financial performance and ongoing operations. While we use non-GAAP financial measures as a tool to enhance our understanding of certain aspects of our financial performance, we do not consider these measures to be a substitute for, or superior to, the information provided by GAAP financial measures. We provide adjusted EBITDA in order to enhance investors' understanding of our ongoing operations. This measure is used by some investors when assessing our performance.

Below is the reconciliation of our net income as a percentage of net sales to our adjusted EBITDA as a percentage of net sales:

	Fiscal		
	2016	2015	2014
Net income as a percentage of net sales	10.2%	9.5 %	7.4 %
Income tax expense	4.1 %	2.9 %	2.5 %
Interest and other income (expense), net	0.8 %	0.1 %	0.3 %
Depreciation and amortization	4.0 %	4.1 %	4.6 %
Purchase accounting step up	— %	0.1 %	— %
Gain on business combination	— %	(0.2 )%	— %
Customs audit	— %	0.2 %	— %
Costs related to acquisition of Rofin	1.1 %	— %	— %
Impairment of investment	— %	0.3 %	— %
Stock-based compensation	2.4 %	2.3 %	2.4 %
Adjusted EBITDA as a percentage of net sales	22.6%	19.3 %	17.2%

**SIGNIFICANT EVENTS****Acquisitions and related financing**

On November 7, 2016, we completed our previously announced acquisition of Rofin pursuant to the Merger Agreement dated March 16, 2016. Rofin is one of the world's leading developers and manufacturers of high-performance industrial laser sources and laser-based solutions and components. As a condition of the acquisition, we are required to divest ourselves of Rofin's low power CO2 laser business based in Hull, United Kingdom, and will

report this business separately as a discontinued operation until it is divested. The acquisition was an all-cash transaction at a price of \$32.50 per share of Rofin common stock. The aggregate consideration paid by us to the former Rofin stockholders was approximately \$904.5 million,

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excluding related transaction fees and expenses. We also paid \$15.3 million due to the cancellation of options held by employees of Rofin. We funded the payment of the aggregate consideration with a combination of our available cash on hand and the proceeds from the Euro Term Loan described below. See Note 16, "Subsequent Events" in our Notes to Consolidated Financial Statements under Item 15 of this annual report for further discussion of the acquisition. On November 7, 2016, we entered into a Credit Agreement (the "Credit Agreement") with Barclays Bank PLC ("Barclays"), Bank of America, N.A. ("BAML") and The Bank of Tokyo-Mitsubishi UFJ, Ltd. ("MUFG"). The Credit Agreement provided for a 670.0 million Euro senior secured term loan facility (the "Euro Term Loan") and a \$100.0 million senior secured revolving credit facility. On November 7, 2016, the Euro Term Loan was drawn in full and its proceeds were used to finance the acquisition of Rofin and pay related fees and expenses. Also, on November 7, 2016, we used 10.0 million Euro of the capacity under the revolving credit facility for the issuance of a letter of credit. See Note 16, "Subsequent Events" in our Notes to Consolidated Financial Statements under Item 15 of this annual report for further discussion of the Credit Agreement.

In relation to the acquisition of Rofin, we paid Barclays, our financial advisor, a fee of approximately \$9.5 million, \$1.0 million of which was paid upon delivery of the fairness opinion in the second quarter of fiscal 2016, and was recorded in the selling, general and administrative line of the consolidated statements of operations, and the remaining portion of which was paid upon consummation of the acquisition in the first quarter of fiscal 2017. We also paid Barclays, BAML and MUFG together approximately \$17.0 million and \$5.6 million for underwriting and upfront fees, respectively, upon the close of the financing on November 7, 2016. See Note 16, "Subsequent Events" in our Notes to Consolidated Financial Statements under Item 15 of this annual report for further discussion of the completion of the acquisition and issuance of the financing.

On July 24, 2015, we acquired certain assets of Raydiance, Inc. ("Raydiance") for approximately \$5.0 million, excluding transaction costs. Raydiance manufactured complete tools and lasers for ultrafast processing systems and subsystems in the precision micromachining processing market. The Raydiance assets have been included in our Specialty Lasers and Systems segment.

On July 27, 2015, we acquired the assets and certain liabilities of the Tinsley Optics ("Tinsley") business from L-3 Communications Corporation for approximately \$4.3 million, excluding transaction costs. Tinsley is a specialized manufacturer of high precision optical components and subsystems sold primarily in the aerospace and defense industry. Tinsley manufactures the large form factor optics for our excimer laser annealing systems. The Tinsley assets have been included in our Specialty Lasers and Systems segment.

On June 8, 2010, we invested \$2.0 million in SiOnyx, Inc., a privately-held company. The investment was included in other assets and was being carried on a cost basis. During the third quarter of fiscal 2015 we determined that our investment became other-than temporarily impaired. As a result, we recorded a non-cash charge of \$2.0 million to operating expense in our results of operations in the third quarter of fiscal 2015.

**Stock Repurchases**

On August 25, 2015, our Board of Directors authorized a stock repurchase program to repurchase up to \$25.0 million of our outstanding common stock from time to time through August 31, 2016. During the fourth quarter of fiscal 2015, we repurchased and retired 437,534 shares of outstanding common stock under this plan at an average price of \$57.14 per share for a total of \$25.0 million.

On January 21, 2015, our Board of Directors authorized a stock repurchase program to repurchase up to \$25.0 million of our outstanding common stock from time to time through January 31, 2016. During the fourth quarter of fiscal 2015, we repurchased and retired 430,675 shares of outstanding common stock under this plan at an average price of \$58.05 per share for a total of \$25.0 million.

On July 25, 2014, the Board of Directors authorized a buyback program whereby we were authorized to repurchase up to \$25.0 million of our common stock from time to time through July 31, 2015. During the first and second quarters of fiscal 2015, we repurchased and retired 434,114 shares of outstanding common stock at an average price of \$57.59 per share for a total of \$25.0 million, excluding expenses.

**RESULTS OF OPERATIONS—FISCAL 2016, 2015 AND 2014**

Fiscal 2016 and 2014 consisted of 52 weeks. Fiscal 2015 consisted of 53 weeks.

Consolidated Summary

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The following table sets forth, for the years indicated, the percentage of total net sales represented by the line items reflected in our consolidated statement of operations:

	Fiscal		
	2016	2015	2014
	(As a percentage of net sales)		
Net sales	100.0 %	100.0 %	100.0 %
Cost of sales	55.5 %	58.2 %	60.6 %
Gross profit	44.5 %	41.8 %	39.4 %
Operating expenses:			
Research and development	9.5 %	10.2 %	10.0 %
Selling, general and administrative	19.7 %	18.7 %	19.4 %
Gain on business combination	— %	(0.2 )%	— %
Impairment of investment	— %	0.2 %	— %
Amortization of intangible assets	0.4 %	0.3 %	0.4 %
Total operating expenses	29.6 %	29.2 %	29.8 %
Income from operations	14.9 %	12.6 %	9.6 %
Other income (expense), net	(0.6 )%	(0.2 )%	0.4 %
Income before income taxes	14.3 %	12.4 %	10.0 %
Provision for income taxes	4.1 %	2.9 %	2.6 %
Net income	10.2 %	9.5 %	7.4 %

Refer to Item 6 "Selected Financial Data" for a description of significant events that impacted the results of operations for fiscal years 2016, 2015 and 2014.

**Backlog**

Backlog represents orders which we expect to be shipped within 12 months and the current portion of service contracts. Orders used to compute backlog are generally cancelable and, depending on the notice period, are subject to rescheduling by our customers without substantial penalties. Historically, we have not experienced a significant rate of cancellation or rescheduling, though we cannot guarantee that the rate of cancellations or rescheduling will not increase in the future. We had a backlog of orders shippable within 12 months of \$605.3 million at October 1, 2016, including a significant concentration in the flat panel display market (63%) for customers which are primarily located in Asia.

**Net Sales****Market Application**

The following table sets forth, for the periods indicated, the amount of net sales and their relative percentages of total net sales by market application (dollars in thousands):

	Fiscal 2016		Fiscal 2015		Fiscal 2014	
	Amount	Percentage of total net sales	Amount	Percentage of total net sales	Amount	Percentage of total net sales
Consolidated:						
Microelectronics	\$454,908	53.1 %	\$406,187	50.6 %	\$384,620	48.4 %
OEM components and instrumentation	161,573	18.8 %	168,741	21.0 %	169,978	21.4 %
Materials processing	124,011	14.5 %	110,986	13.8 %	118,569	14.9 %
Scientific and government programs	116,893	13.6 %	116,546	14.6 %	121,472	15.3 %
Total	\$857,385	100.0 %	\$802,460	100.0 %	\$794,639	100.0 %

During fiscal 2016, net sales increased by \$54.9 million, or 7%, compared to fiscal 2015, including decreases due to the unfavorable impact of foreign exchange rates, with sales increases in the microelectronics, materials processing and scientific and government programs markets partially offset by decreases in the OEM components and instrumentation market. Microelectronics sales increased \$48.7 million, or 12%, primarily due to higher shipments for

flat panel display annealing systems and higher shipments for semiconductor applications partially offset by lower shipments for advanced packaging applications. Materials processing sales increased \$13.0 million, or 12%, during fiscal 2016 primarily due to higher shipments

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for cutting, marking and other materials processing applications. The increase in scientific and government programs market sales of \$0.3 million, or 0%, during fiscal 2016 was primarily due to higher demand for advanced research applications used by university and government research groups. The decrease in the OEM components and instrumentation market of \$7.2 million, or 4%, during fiscal 2016 was primarily due to lower shipments for medical and machine vision applications partially offset by higher shipments for military and bio-instrumentation applications. During fiscal 2015, net sales increased by \$7.8 million, or 1%, compared to fiscal 2014, with sales increases in the microelectronics market partially offset by decreases in the materials processing, scientific and government programs and OEM components and instrumentation markets. Microelectronics sales increased \$21.6 million, or 6%, primarily due to higher shipments for flat panel display annealing systems partially offset by lower shipments for semiconductor and advanced packaging applications. Materials processing sales decreased \$7.6 million, or 6%, during fiscal 2015 primarily due to lower shipments for marking, non-metal drilling and non-metal cutting applications. The decrease in scientific and government programs market sales of \$4.9 million, or 4%, during fiscal 2015 was primarily due to lower demand for advanced research applications used by university and government research groups in Europe. The decrease in the OEM components and instrumentation market of \$1.2 million, or 1%, during fiscal 2015 was primarily due to lower shipments for medical and machine vision applications partially offset by higher shipments for bio-instrumentation and forensic applications, including the impact of the acquisitions of Tinsley and Raydiance assets (\$2.0 million).

The timing for shipments of our higher average selling price excimer products in the flat panel display market have historically fluctuated and are in the future expected to fluctuate from quarter-to-quarter due to customer scheduling, our ability to manufacture these products and/or availability of critical component parts and supplies. As a result, the timing to convert orders for these products to net sales will likely fluctuate from quarter-to-quarter.

Looking at our prior ten years of actual results, excluding a couple of recovery years, our first quarter revenues generally ranged 2% to 12% below the fourth quarter of the prior fiscal year.

In fiscal 2016, 2015 and 2014, one customer accounted for 13%, 17% and 13% of net sales, respectively. In fiscal 2016, another customer accounted for 16% of net sales.

**Segments**

We are organized into two reportable operating segments: Specialty Lasers and Systems ("SLS") and Commercial Lasers and Components ("CLC"). SLS develops and manufactures configurable, advanced-performance products largely serving the microelectronics, scientific research and government programs and OEM components and instrumentation markets. CLC focuses on higher volume products that are offered in set configurations. CLC's primary markets include materials processing, OEM components and instrumentation and microelectronics.

The following table sets forth, for the periods indicated, the amount of net sales and their relative percentages of total net sales by segment (dollars in thousands):

	Fiscal 2016		Fiscal 2015		Fiscal 2014	
	Amount	Percentage of total net sales	Amount	Percentage of total net sales	Amount	Percentage of total net sales
Consolidated:						
Specialty Lasers and Systems (SLS)	\$631,313	73.6 %	\$559,593	69.7 %	\$565,552	71.2 %
Commercial Lasers and Components (CLC)	226,072	26.4 %	242,867	30.3 %	229,087	28.8 %
Total	\$857,385	100.0 %	\$802,460	100.0 %	\$794,639	100.0 %

Net sales for fiscal 2016 increased \$54.9 million, or 7%, compared to fiscal 2015, with increases of \$71.7 million, or 13%, in our SLS segment and decreases of \$16.8 million, or 7%, in our CLC segment. Both the fiscal 2016 increase in SLS and decrease in CLC segment sales, respectively, included decreases due to the unfavorable impact of foreign exchange rates. Net sales for fiscal 2015 increased \$7.8 million, or 1%, compared to fiscal 2014, with increases of \$13.8 million, or 6%, in our CLC segment and decreases of \$6.0 million, or 1%, in our SLS segment. Both the fiscal 2015 increase and decrease in CLC and SLS segment sales, respectively, included decreases due to the unfavorable impact of foreign exchange rates.

The increase in our SLS segment sales in fiscal 2016 was primarily due to higher shipments of flat panel display annealing systems and higher service revenue as well as higher shipments for semiconductor and military applications partially offset by lower shipments for medical and advanced packaging applications. The fiscal 2016 increase includes an increase of

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\$11.3 million, primarily in military and scientific applications, resulting from our acquisitions of Tinsley and Raydiance assets in the fourth quarter of fiscal 2015. The decrease in our SLS segment sales in fiscal 2015 was primarily due to lower shipments for medical, semiconductor, bioinstrumentation and advanced packaging applications partially offset by higher shipments of flat panel display annealing systems. The fiscal 2015 decrease includes an increase of \$2.0 million, primarily in military applications, resulting from our acquisitions of Tinsley and Raydiance assets.

The decrease in our CLC segment sales from fiscal 2015 to fiscal 2016 was primarily due to lower medical and advanced packaging application sales. The increase in our CLC segment sales from fiscal 2014 to fiscal 2015 was primarily due to higher medical, bioinstrumentation and flat panel display application sales.

**Gross Profit****Consolidated**

Our gross profit rate increased by 2.7% to 44.5% in fiscal 2016 from 41.8% in fiscal 2015 primarily due to favorable product margins (2.2%) resulting from the impact of higher volumes in certain business units (primarily flat panel display applications) and the favorable impact from foreign currency fluctuations (primarily the Euro and Yen) as well as favorable mix in the microelectronics market, particularly for flat panel display applications, net of unfavorable mix in the OEM components and instrumentation market. In addition, the margin also benefited from lower other costs (0.3%) due primarily to an accrual in the third quarter of fiscal 2015 for a customs audit in South Korea and lower inventory charges for excess or obsolete inventory as well as lower warranty costs (0.2%) due to fewer warranty events.

Our gross profit rate increased by 2.4% to 41.8% in fiscal 2015 from 39.4% in fiscal 2014 primarily due to favorable product margins (1.2%) resulting from favorable mix in the microelectronics market and the favorable impact from foreign currency fluctuations net of the impact of lower volumes in certain business units. In addition, the margin also benefited from lower warranty costs (0.6%) due to fewer warranty events in both segments, lower other costs (0.5%) due primarily to lower inventory charges for excess or obsolete inventory and lower intangibles amortization (0.1%). Our gross profit rate has been and will continue to be affected by a variety of factors including market and product mix, pricing on volume orders, shipment volumes, our ability to manufacture advanced and more complex products, manufacturing efficiencies, excess and obsolete inventory write-downs, warranty costs, amortization of intangibles, pricing by competitors or suppliers, new product introductions, production volume, customization and reconfiguration of systems, commodity prices and foreign currency fluctuations, particularly the recent volatility of the Euro and a lesser extent, the Japanese Yen and South Korean Won.

**Specialty Lasers and Systems**

Our SLS gross profit rate increased by 3.0% to 48.3% in fiscal 2016 from 45.3% in fiscal 2015 primarily due to favorable product margins (2.7%), lower warranty costs (0.2%) due to fewer warranty events and lower intangibles amortization expense (0.1%). The 2.7% product margin improvement resulted from the impact of higher volumes in most business units and the favorable impact from foreign currency fluctuations (primarily the Euro and Yen) as well as favorable mix in the microelectronics market, particularly for flat panel display applications, including favorable service mix net of unfavorable mix in the OEM components and instrumentation market.

Our SLS gross profit rate increased by 3.2% to 45.3% in fiscal 2015 from 42.1% in fiscal 2014 primarily due to favorable product margins (1.7%), lower other costs (0.8%) primarily due to lower inventory charges for excess or obsolete inventory net of the amortization of the inventory step up from the Tinsley and Raydiance asset acquisitions, lower warranty costs (0.6%) due to fewer warranty events and lower intangibles amortization expense (0.1%). The 1.7% product margin improvement resulted from favorable product mix in the microelectronics and OEM components and instrumentation markets as well as favorable service mix and the favorable impact from foreign currency fluctuations.

**Commercial Lasers and Components**

Our CLC gross profit rate increased by 0.1% to 35.0% in fiscal 2016 from 34.9% in fiscal 2015 primarily due to lower other costs (0.8%) due to lower freight and packaging costs as well as lower inventory charges for excess or obsolete inventory partially offset by unfavorable product margin (0.5%) and higher warranty costs (0.2%) due to more warranty events. The 0.5% product margin deterioration resulted from unfavorable yields and lower volumes in

certain business units partially offset by favorable mix in the OEM components and instrumentation and materials processing markets.

Our CLC gross profit rate increased by 1.0% to 34.9% in fiscal 2015 from 33.9% in fiscal 2014 primarily due to a favorable product margin (0.5%) and lower warranty costs (0.5%) due to fewer warranty events. The 0.5% product margin improvement resulted from favorable mix in the OEM components and instrumentation and materials processing markets partially offset by unfavorable yields in certain business units.

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## Operating Expenses

The following table sets forth, for the periods indicated, the amount of operating expenses and their relative percentages of total net sales by the line items reflected in our consolidated statement of operations (dollars in thousands):

	Fiscal 2016			2015			2014		
	Amount	Percentage of total net sales		Amount	Percentage of total net sales		Amount	Percentage of total net sales	
	(Dollars in thousands)								
Research and development	\$81,801	9.5 %		\$81,455	10.2 %		\$79,070	10.0 %	
Selling, general and administrative	169,138	19.7 %		149,829	18.7 %		154,030	19.4 %	
Gain on business combination	—	— %		(1,316 )	(0.2 )%		—	— %	
Impairment of investment	—	— %		2,017	0.2 %		—	— %	
Amortization of intangible assets	2,839	0.4 %		2,667	0.3 %		3,424	0.4 %	
Total operating expenses	\$253,778	29.6 %		\$234,652	29.2 %		\$236,524	29.8 %	

## Research and development

Fiscal 2016 research and development ("R&D") expenses increased \$0.3 million, or less than 1%, from fiscal 2015, but decreased to 9.5% of sales, compared to 10.2% in fiscal 2015. The \$0.3 million increase was primarily due to \$2.0 million incremental spending from the asset acquisitions from Tinsley and Raydiance, both of which were acquired in the fourth quarter of fiscal 2015, \$0.3 million higher stock-based compensation expense and \$0.3 million higher charges for increases in deferred compensation plan liabilities. The increases were partially offset by \$2.3 million lower project spending including the favorable impact of foreign exchange rates, lower spending on labor and materials and higher customer reimbursements. On a segment basis, SLS spending increased \$0.7 million primarily due to the asset acquisitions from Tinsley and Raydiance partially offset by lower project spending including the favorable impact of foreign exchange rates. CLC spending decreased \$1.4 million primarily due to lower spending on projects and higher customer reimbursements. Corporate and other spending increased \$1.0 million primarily due to higher charges for increases in deferred compensation plan liabilities and higher stock-based compensation expense. Fiscal 2015 research and development ("R&D") expenses increased \$2.4 million, or 3%, from fiscal 2014, and increased to 10.2% from 10.0% of net sales. The \$2.4 million increase was primarily due to \$2.5 million higher project spending as a result of lower customer reimbursements for development projects and higher spending on various projects net of the favorable impact of foreign exchange rates as well as an increase of \$0.6 million from the impact of the acquisitions of Tinsley and Raydiance assets in the fourth quarter of fiscal 2015. The increases were partially offset by \$0.7 million lower other spending including lower charges for increases in deferred compensation plan liabilities with the related income for increases in deferred compensation assets recorded in other income (expense) and lower stock-based compensation expense. On a segment basis, SLS spending increased \$0.8 million primarily due to higher net spending on projects due to lower customer reimbursements and the impact of the acquisitions of Tinsley and Raydiance assets, in the fourth quarter of fiscal 2015, partially offset by the favorable impact of foreign exchange rates. CLC spending increased \$2.1 million primarily due to higher spending on projects and lower customer reimbursements. Corporate and other spending decreased \$0.5 million due to lower charges for increases in deferred compensation plan liabilities and lower stock-based compensation expense.

## Selling, general and administrative

Fiscal 2016 selling, general and administrative ("SG&A") expenses increased \$19.3 million, or 13%, from fiscal 2015. The increase was primarily due to a net \$8.5 million higher consulting and legal costs related to acquisitions in fiscal 2016 compared to fiscal 2015 (of which \$9.8 million was related to the acquisition of Rofin in fiscal 2016) and \$6.2 million higher payroll spending primarily due to higher variable compensation and higher sales commissions net of the favorable impact of foreign exchange rates. In addition, the increase includes \$1.8 million higher charges for increases in deferred compensation plan liabilities, \$1.6 million higher stock-based compensation expense due to (1) a higher average stock price during fiscal 2016, (2) a higher number of restricted stock shares outstanding and (3) the

expense related to accounting for the transition agreement of our former CFO, and \$1.2 million higher other net variable spending including incremental spending from the asset acquisitions of Tinsley and Raydiance. On a segment basis as compared to the prior year period, SLS segment expenses increased \$4.0 million primarily due to higher payroll spending and the impact due to the asset acquisitions from Tinsley and Raydiance net of the favorable impact of foreign exchange rates. CLC spending increased \$1.9 million primarily due to higher payroll spending net of the favorable impact of foreign exchange rates. Spending for Corporate and other increased \$13.4

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million primarily due to higher consulting and legal costs related to acquisitions, higher charges for increases in deferred compensation plan liabilities, higher stock-based compensation expense and higher payroll spending. Fiscal 2015 SG&A expenses decreased \$4.2 million, or 3%, from fiscal 2014. The decrease was primarily due to \$3.7 million lower charges for increases in deferred compensation plan liabilities with the related income for increases in deferred compensation assets recorded in other income (expense) and \$0.7 million lower stock-based compensation expense. The decreases were partially offset by \$0.2 million higher other net variable spending due to higher payroll related spending from higher variable compensation, salaries and benefits, higher legal and consulting costs including costs related to acquisitions and higher bad debt expenses partially offset by the favorable impact of foreign exchange rates and lower demo amortization. On a segment basis, SLS segment expenses decreased \$1.7 million primarily due to lower variable spending. CLC spending decreased \$1.2 million primarily due to lower variable spending. Spending for Corporate and other decreased \$1.3 million primarily due to lower charges for increases in deferred compensation plan liabilities and lower stock-based compensation expense partially offset by higher variable spending including \$1.3 million of legal and consulting costs related to acquisitions and higher payroll spending.

## Gain on business combination

On July 27, 2015, we acquired the assets and certain liabilities of the Tinsley business from L-3 Communications Corporation for approximately \$4.3 million, excluding transaction costs (See Note 3). The purchase price was lower than the fair value of net assets purchased, resulting in a gain of \$1.3 million recorded in our consolidated statements of operations for our fiscal year 2015.

## Impairment of investment

On June 8, 2010, we invested \$2.0 million in SiOnyx, Inc., a privately-held company. The investment was included in other assets and was being carried on a cost basis. During the third quarter of fiscal 2015 we determined that our investment became other-than temporarily impaired. As a result, we recorded a non-cash impairment charge of \$2.0 million to operating expense in our results of operations in the third quarter of fiscal 2015.

## Amortization of intangible assets

Amortization of intangible assets increased \$0.2 million, or 6%, from fiscal 2015 to fiscal 2016 primarily due to increases due to the write-off of IPR&D of \$0.4 million related to our acquisition of Innolight and due to the asset acquisition from Raydiance in the fourth quarter of fiscal 2015 partially offset by the completion of amortization of certain intangibles from prior acquisitions.

Amortization of intangible assets decreased \$0.8 million, or 22%, from fiscal 2014 to fiscal 2015 primarily due to the completion of amortization of certain intangibles from prior acquisitions partially offset by amortization due to the asset acquisition from Raydiance in the fourth quarter of fiscal 2015.

## Other income (expense), net

Other income (expense), net, changed by \$3.5 million from other expense of \$1.2 million in fiscal 2015 to other expense of \$4.7 million fiscal 2016. The higher expenses were primarily due to higher net foreign exchange losses (\$4.9 million) and \$1.3 million higher interest expense primarily for the commitment of our term loan to finance the acquisition of Rofin partially offset by \$2.1 million higher gains, net of expenses, on our deferred compensation plan assets and \$0.5 million higher interest income due to higher balances of cash and short-term investments. The higher foreign exchange losses were primarily due to (1) higher unhedged exposure in fiscal 2016, (2) a loss of \$2.2 million on our hedge of our foreign exchange risk related to the commitment of our term loan to finance the acquisition of Rofin, (3) the significant movement of rates in June 2016 due to the Brexit vote and (4) higher forward points on our hedging contracts.

Other income (expense), net, changed by \$3.5 million from other income of \$2.4 million in fiscal 2014 to other expense of \$1.2 million in fiscal 2015. The decrease was primarily due to \$4.6 million lower gains, net of expenses, on our deferred compensation plan assets partially offset by lower net foreign currency exchange losses (\$0.9 million) and \$0.2 million higher interest income due to higher balances of cash and short-term investments. Net foreign currency exchange losses decreased due to higher unhedged exposure in fiscal 2014 and the significant movement of the Japanese Yen versus the Euro in the last month of the first quarter of fiscal 2014. In addition, favorable changes in foreign exchange rates in the second quarter of fiscal 2015 compared to the timing of hedge contracts were partially offset by an unfavorable impact in fiscal 2015 due to the weakening of certain Asian currencies against the U.S.

Dollar.  
Income taxes

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The effective tax rate on income before income taxes for fiscal 2016 of 28.8% was lower than the statutory rate of 35.0%. This was primarily due to differences related to the benefit of income subject to foreign tax rates that are lower than U.S. tax rates including the Singapore tax exemption, the benefit of foreign tax credits and the benefit of federal research and development tax credits including renewal of the federal research and development tax credits for fiscal 2015. These amounts are partially offset by deemed dividend inclusions under the Subpart F tax rules, stock-based compensation not deductible for tax purposes and limitations on the deductibility of compensation under IRC Section 162(m).

The effective tax rate on income before income taxes for fiscal 2015 of 23.3% was lower than the statutory rate of 35.0%. This was primarily due to differences related to the benefit of income subject to foreign tax rates that are lower than U.S. tax rates including South Korea and Singapore tax exemptions, the benefit of foreign tax credits and the benefit of federal research and development tax credits including renewal of the federal research and development tax credits for fiscal 2014. These amounts are partially offset by deemed dividend inclusions under the Subpart F tax rules, stock-based compensation not deductible for tax purposes and limitations on the deductibility of compensation under IRC Section 162(m).

The effective tax rate on income before income taxes for fiscal 2014 of 25.4% was lower than the statutory rate of 35.0%. This was primarily due to differences related to the benefit of income subject to foreign tax rates that are lower than U.S. tax rates including South Korea and Singapore tax exemptions and the benefit of foreign tax credits. These amounts are partially offset by deemed dividend inclusions under the Subpart F tax rules, stock-based compensation not deductible for tax purposes and limitations on the deductibility of compensation under IRC Section 162(m).

During fiscal 2016, we increased our valuation allowance on deferred tax assets by \$2.1 million to \$17.6 million primarily due to the increase in California and other states research and development tax credits which are not expected to be recognized. During fiscal 2015, we increased our valuation allowance on deferred tax assets by \$1.2 million to \$15.6 million primarily due to the reduced ability to utilize California and other states research and development tax credits. In making the determination to record the valuation allowance, management considered the likelihood of future taxable income and feasible and prudent tax planning strategies to realize deferred tax assets. In the future, if we determine that we expect to realize deferred tax assets, an adjustment to the valuation allowance will affect income in the period such determination is made.

In October 2016, Coherent Singapore received an amended Pioneer Status tax exemption from the Singapore authorities effective from fiscal 2012 through fiscal 2021. The tax holiday continues to be conditional upon our meeting certain revenue, business spending and employment thresholds. The impact of this tax exemption decreased Singapore income taxes by approximately \$0.7 million in fiscal 2016. There are no tax benefits for fiscal 2015 and fiscal 2014 due to the utilization of net operating loss.

**FINANCIAL CONDITION****Liquidity and capital resources**

At October 1, 2016, we had assets classified as cash and cash equivalents and short-term investments, in an aggregate amount of \$400.0 million, compared to \$325.5 million at October 3, 2015. At October 1, 2016, approximately \$331.0 million of this cash and securities was held in certain of our foreign subsidiaries, \$93.1 million of which was denominated in currencies other than the U.S. dollar. At October 1, 2016, we had approximately \$313.8 million of cash held by foreign subsidiaries where we intend to permanently reinvest our accumulated earnings in these entities and our current plans do not demonstrate a need for these funds to support our domestic operations. If, however, a portion of these funds are needed for and distributed to our operations in the United States, we may be subject to additional U.S. income taxes and foreign withholding taxes. An exception to U.S. taxation may be the repatriation of foreign funds that had been previously taxed in the U.S. as Subpart F income. The amount of the U.S. and foreign taxes due would depend on the amount and manner of repatriation, as well as the location from where the funds are repatriated. We actively monitor the third-party depository institutions that hold these assets, primarily focusing on the safety of principal and secondarily maximizing yield on these assets. We diversify our cash and cash equivalents and investments among various financial institutions, money market funds, sovereign debt and other securities in order to reduce our exposure should any one of these financial institutions or financial instruments fail or encounter

difficulties. To date, we have not experienced any material loss or lack of access to our invested cash, cash equivalents or short-term investments. However, we can provide no assurances that access to our invested cash, cash equivalents or short-term investments will not be impacted by adverse conditions in the financial markets. In the first quarter of fiscal 2017, we spent a significant portion of our foreign funds on the Rofin acquisition. We did not repatriate foreign funds to our domestic operations to fund this acquisition. We expect to have adequate foreign funds in the future to service the acquisition debt and do not anticipate any repatriation of foreign funds to operate our domestic business. In the second quarter of fiscal 2016, the first quarter of fiscal 2016, the second quarter of fiscal 2015 and the fourth quarter of fiscal 2014, we converted \$22.6 million, \$33.0 million, \$42.3 million and \$62.7 million, respectively, of cash and securities held in certain of our foreign subsidiaries to U.S. dollars and invested those funds within a European subsidiary

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whose functional currency is the U.S. dollar. At October 1, 2016, this subsidiary had \$226.8 million of U.S. dollar denominated investments primarily in money market funds and commercial paper. Accordingly, there is no translation expense arising from this entity holding U.S. dollar denominated investments. The converted funds are not intended to be repatriated to the U.S. and no U.S. tax was triggered on the transfer of these funds to the European subsidiary. See ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK below for more information about risks and trends related to foreign currencies.

**Sources and Uses of Cash**

Historically, our primary source of cash has been provided by operations. Other sources of cash in the past three fiscal years include proceeds received from the sale of our stock through our employee stock purchase plan as well as borrowings under our domestic line of credit. Our historical uses of cash have primarily been for the repurchase of our common stock, capital expenditures and acquisitions of businesses and technologies. Supplemental information pertaining to our historical sources and uses of cash is presented as follows and should be read in conjunction with our Consolidated Statements of Cash Flows and notes thereto (in thousands):

	Fiscal		
	2016	2015	2014
Net cash provided by operating activities	\$105,299	\$124,458	\$91,379
Sales of shares under employee stock plans	7,849	7,308	10,685
Repurchase of common stock	—	(75,027 )	—
Capital expenditures	(49,327 )	(22,163 )	(23,390 )
Acquisition of businesses, net of cash acquired	—	(9,300 )	—
Short-term borrowings, net of repayments	20,000	—	22
Debt issuance costs	(5,202 )	—	—

Net cash provided by operating activities decreased by \$19.2 million in fiscal 2016 compared to fiscal 2015 and increased by \$33.1 million in fiscal 2015 compared to fiscal 2014. The decrease in cash provided by operating activities in fiscal 2016 was primarily due to lower cash flows from the timing of shipments of large systems from inventory and lower cash flows from accounts receivable partially offset by higher net income and higher accrued payroll and accounts payable balances. The increase in cash provided by operating activities in fiscal 2015 was primarily due to higher net income and higher cash flows from the timing of shipments of large systems from inventory partially offset by lower cash flows from prepaid income taxes and accounts receivable. We believe that our existing cash, cash equivalents and short term investments combined with cash to be provided by operating activities, amounts available under our revolving credit facility will be adequate to cover our working capital needs and planned capital expenditures for at least the next 12 months to the extent such items are known or are reasonably determinable based on current business and market conditions. However, we may elect to finance certain of our capital expenditure requirements through other sources of capital. We continue to follow our strategy to further strengthen our financial position by using available cash flow to fund operations.

We intend to continue pursuing acquisition opportunities at valuations we believe are reasonable based upon market conditions. However, we cannot accurately predict the timing, size and success of our acquisition efforts or our associated potential capital commitments. Furthermore, we cannot assure you that we will be able to acquire businesses on terms acceptable to us. We expect to fund future acquisitions through additional borrowings (as in our acquisition of Rofin), existing cash balances and cash flows from operations. If required, we will consider the issuance of securities. The extent to which we will be willing or able to use our common stock to make acquisitions will depend on its market value at the time and the willingness of potential sellers to accept it as full or partial payment. On November 7, 2016, we entered into a Credit Agreement by and among us, Coherent Holding GmbH, as borrower (the “Borrower”), and certain of our direct and indirect subsidiaries from time to time party thereto, as guarantors, the lenders from time to time party thereto, Barclays Bank PLC, as administrative agent and L/C Issuer, Bank of America, N.A., as L/C Issuer, and The Bank of Tokyo-Mitsubishi UFJ, Ltd., as L/C Issuer. The Credit Agreement provided for a 670.0 million Euro senior secured term loan facility (the “Euro Term Loan”) and a \$100.0 million senior secured revolving credit facility (“Revolving Credit Facility”) with a \$30.0 million letter of credit sublimit and \$10.0 million swing line sublimit. We may increase the aggregate revolving commitments or borrow incremental term loans in an

aggregate principal amount of up to \$150.0 million, subject to certain conditions, including obtaining additional commitments from the lenders then party to the Credit Agreement or new lenders. On November 7, 2016, we borrowed the full 670.0 million Euro under the Euro Term Loan and its proceeds were used to finance the acquisition of Rofin and pay related fees and expenses. Also, on November 7, 2016, we used 10.0 million Euro of the \$100.0 million capacity under the Revolving Credit Facility for the issuance of a letter of credit; the

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remainder of the Revolving Credit Facility is available. We expect to use future loans under the Revolving Credit Facility, if any, for general corporate purposes. The Credit Agreement replaces our existing \$50.0 million Credit Agreement with Union Bank of California.

Loans under the Credit Agreement bear interest, at the Borrower's option, at a rate equal to either (i) the London interbank offered rate (the "Eurocurrency Rate") or (ii) a base rate (the "Base Rate") equal to the highest of (x) the federal funds rate, plus 0.50%, (y) the prime rate then in effect and (z) the Eurocurrency Rate for loans denominated in U.S. dollars applicable to a one-month interest period, plus 1.0%, in each case, plus an applicable margin. The applicable margin for term loans borrowed as Eurocurrency Rate loans, is 3.50% initially, and following the first anniversary of the Closing Date ranges from 3.00% to 3.50% depending on the consolidated total gross leverage ratio at the time of determination. For term loans borrowed as Base Rate Loans, the applicable margin initially is 2.50%, and following the first anniversary of the Closing Date ranges from 2.00% to 2.50% depending upon the consolidated total gross leverage ratio at the time of determination. The applicable margin for revolving loans borrowed as Eurocurrency Rate Loans, ranges from 3.75% to 4.25%, and for revolving loans borrowed as Base Rate Loans, ranges from 2.75% to 3.25%, in each case, based on the consolidated total gross leverage ratio at the time of determination. Interest on Base Rate Loans is payable quarterly in arrears. Interest on Eurocurrency Rate Loans is payable at the end of the applicable interest period. Interest periods for Eurocurrency Rate loans may be, at the Borrower's option, one, two, three or six months.

The Credit Agreement requires the Borrower to make scheduled quarterly payments on the Euro Term Loan of 0.25% of the original principal amount of the Euro Term Loan, with any remaining principal payable at maturity. A commitment fee accrues on any unused portion of the revolving loan commitments under the Credit Agreement at a rate of 0.375% or 0.5% depending on the consolidated total gross leverage ratio at any time of determination. The Borrower is also obligated to pay other customary fees for a credit facility of this size and type.

The Credit Agreement contains customary affirmative covenants, including covenants regarding the payment of taxes and other obligations, maintenance of insurance, reporting requirements and compliance with applicable laws and regulations, and negative covenants, including covenants limiting the ability of us and our subsidiaries to, among other things, incur debt, grant liens, make investments, make certain restricted payments, transact with affiliates, and sell assets. The Credit Agreement also requires us and our subsidiaries to maintain a senior secured net leverage ratio as of the last day of each fiscal quarter of less of than or equal to 3.50 to 1.00. The Credit Agreement contains customary events of default that include, among other things, payment defaults, cross defaults with certain other indebtedness, violation of covenants, inaccuracy of representations and warranties in any material respect, change in control of us and the Borrower, judgment defaults, and bankruptcy and insolvency events. If an event of default exists, the lenders may require the immediate payment of all Obligations, as defined in the Credit Agreement, and may exercise certain other rights and remedies provided for under the Credit Agreement, the other loan documents and applicable law. The acceleration of such obligations is automatic upon the occurrence of a bankruptcy and insolvency event of default. The aggregate consideration paid by us to the former Rofin stockholders was approximately \$904.5 million, excluding related transaction fees and expenses. We also paid \$15.3 million due to the cancellation of options held by employees of Rofin.

We paid \$5.2 million of debt issuance costs in fiscal 2016 and expect to pay approximately \$25.0 million to \$30.0 million of debt issuance costs in the first quarter of fiscal 2017. In the fourth quarter of fiscal 2016, and the first quarter of fiscal 2017, we recorded an interest charge of \$1.1 million and \$2.7 million, respectively, in other income (expense) in our consolidated statement of operations related to the debt financing commitment.

In relation to the acquisition of Rofin, we paid Barclays, our financial advisor, a fee of approximately \$9.5 million, \$1.0 million of which was paid upon delivery of the fairness opinion in the second quarter of fiscal 2016, and was recorded as SG&A expense, and the remaining portion of which was paid upon consummation of the acquisition in the first quarter of fiscal 2017.

Additional sources of cash available to us were domestic and international currency lines of credit and bank credit facilities totaling \$63.2 million as of October 1, 2016, of which \$40.5 million was unused and available. These unsecured international credit facilities were used in Europe and Japan during fiscal 2016. As of October 1, 2016, we had utilized \$1.6 million of the international credit facilities as guarantees. Our domestic line of credit consisted of a

\$50.0 million unsecured revolving credit account, under which we had drawn \$20.0 million and used \$1.1 million for letters of credit as of October 1, 2016. On November 4, 2016, we repaid the outstanding balance, plus accrued interest, on our domestic line of credit and terminated the credit facility.

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In fiscal 2015, under plans authorized by the Board of Directors, we repurchased and retired 1,302,323 shares of outstanding common stock at an average price of \$57.59 per share for a total of \$75.0 million.

Our ratio of current assets to current liabilities was 4.0:1 at October 1, 2016, compared to 5.3:1 at October 3, 2015.

The decrease in our ratio is primarily due to increases in other current liabilities, short-term borrowings, taxes payable and accounts payable partially offset by increases in cash and short-term investments, inventories, accounts receivable and prepaid expenses and other assets. Our cash and cash equivalents, short-term investments and working capital are as follows (in thousands):

	Fiscal	
	2016	2015
Cash and cash equivalents	\$354,347	\$130,607
Short-term investments	45,606	194,908
Working capital	614,145	530,093

**Contractual Obligations and Off-Balance Sheet Arrangements**

We have no off-balance sheet arrangements as defined by Regulation S-K of the Securities Act of 1933. The following summarizes our contractual obligations at October 1, 2016 and the effect such obligations are expected to have on our liquidity and cash flow in future periods (in thousands):

	Total	Less than 1 year	1 to 3 years	3 to 5 years	More than 5 years
Operating lease payments	\$39,854	\$11,548	\$15,470	\$7,711	\$5,125
Asset retirement obligations	3,086	—	1,913	101	1,072
Purchase commitments for inventory	73,736	73,721	15	—	—
Purchase obligations-other	12,165	10,846	1,319	—	—
Total	\$128,841	\$96,115	\$18,717	\$7,812	\$6,197

Because of the uncertainty as to the timing of such payments, we have excluded cash payments related to our contractual obligations for our deferred compensation plans aggregating \$30.0 million at October 1, 2016.

As of October 1, 2016, we recorded gross unrecognized tax benefits of \$20.6 million including gross interest and penalties of \$0.2 million. As of October 3, 2015, we recorded gross unrecognized tax benefits of \$24.3 million including gross interest and penalties of \$1.8 million. Both gross unrecognized tax benefits and gross interest and penalties are classified as non-current liabilities in the consolidated balance sheet. At this time, we are unable to make a reasonably reliable estimate of the timing of payments in individual years due to uncertainties in the timing of tax audit outcomes. As a result, these amounts are not included in the table above.

**Changes in financial condition**

Cash provided by operating activities in fiscal 2016 was \$105.3 million, which included net income of \$87.5 million, depreciation and amortization of \$34.4 million, stock-based compensation expense of \$20.2 million and \$0.9 million other, partially offset by cash used by operating assets and liabilities of \$27.9 million (primarily increases in inventories net of increases in accrued payroll and deferred income) and increases in net deferred tax assets of \$9.8 million. Cash provided by operating activities in fiscal 2015 was \$124.5 million, which included net income of \$76.4 million, depreciation and amortization of \$33.1 million, stock-based compensation expense of \$18.2 million, the impairment of our investment in SiOnyx of \$2.0 million, decreases in net deferred tax assets of \$0.8 million and \$0.6 million other, partially offset by cash used by operating assets and liabilities of \$5.3 million and the net effect of the gain from acquisition of Tinsley asset of \$1.3 million.

Cash provided by investing activities in fiscal 2016 of \$103.4 million included \$152.2 million net sales and maturities of available-for-sale securities partially offset by \$48.8 million, net, used to acquire property and equipment, purchase and upgrade buildings, net of proceeds from dispositions. Cash provided by investing activities in fiscal 2015 of \$3.2 million included \$33.5 million net sales and maturities of available-for-sale securities partially offset by \$21.0 million, net, used to acquire property and equipment and improve buildings net of proceeds from dispositions and \$9.3 million used to acquire Tinsley and Raydiance assets.

Cash provided by financing activities in fiscal 2016 was \$17.2 million, which included \$20.0 million net borrowings, and \$7.8 million generated from our employee stock option and purchase plans partially offset by \$5.4 million outflows due to net settlement of restricted stock and \$5.2 million of debt issuance costs. Cash used in financing activities in fiscal 2015 was \$73.0

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million, which included \$75.0 million repurchases of common stock and \$5.3 million outflows due to net settlement of restricted stock partially offset by \$7.3 million generated from our employee stock option and purchase plans. Changes in exchange rates in fiscal 2016 resulted in a decrease in cash balances of \$2.2 million. Changes in exchange rates in fiscal 2015 resulted in a decrease in cash balances of \$15.2 million.

### RECENT ACCOUNTING PRONOUNCEMENTS

See Note 2. "Significant Accounting Policies" in the Notes to Consolidated Financial Statements for a full description of recent accounting pronouncements, including the respective dates of adoption or expected adoption and effects on our consolidated financial position, results of operations and cash flows.

### APPLICATION OF CRITICAL ACCOUNTING POLICIES

Our discussion and analysis of financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America and pursuant to the rules and regulations of the SEC. The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. We have identified the following as the items that require the most significant judgment and often involve complex estimation: revenue recognition, accounting for long-lived assets (including goodwill and intangible assets), inventory valuation, warranty reserves, stock-based compensation and accounting for income taxes.

#### Revenue Recognition

We recognize revenue when all four revenue recognition criteria have been met: persuasive evidence of an arrangement exists, the product has been delivered or the service has been rendered, the price is fixed or determinable and collection is probable. Revenue from product sales is recorded when all of the foregoing conditions are met and risk of loss and title passes to the customer. Our products typically include a warranty and the estimated cost of product warranty claims (based on historical experience) is recorded at the time the sale is recognized. Sales to customers are generally not subject to any price protection or return rights.

The majority of our sales are made to original equipment manufacturers ("OEMs"), distributors, representatives and end-users in the non-scientific market. Sales made to these customers do not require installation of the products by us and are not subject to other post-delivery obligations, except in occasional instances where we have agreed to perform installation or provide training. In those instances, we defer revenue related to installation services or training until these services have been rendered. We allocate revenue from multiple element arrangements to the various elements based upon fair values or a selling price hierarchy, as more fully described in Note 2, "Significant Accounting Policies - Revenue Recognition," in our consolidated financial statements.

Should changes in conditions cause management to determine these criteria are not met for certain future transactions, revenue recognized for any reporting period could be adversely affected. Failure to obtain anticipated orders due to delays or cancellations of orders could have a material adverse effect on our revenue. In addition, pressures from customers to reduce our prices or to modify our existing sales terms may have a material adverse effect on our revenue in future periods.

Our sales to distributors, representatives and end-user customers typically do not have customer acceptance provisions and only certain of our sales to OEM customers and integrators have customer acceptance provisions. Customer acceptance is generally limited to performance under our published product specifications. For the few product sales that have customer acceptance provisions because of higher than published specifications, (1) the products are tested and accepted by the customer at our site or the customer accepts the results of our testing program prior to shipment to the customer, or (2) the revenue is deferred until customer acceptance occurs.

Sales to end-users in the scientific market typically require installation and, thus, involve post-delivery obligations; however our post-delivery installation obligations are not essential to the functionality of our products. We defer revenue related to installation services until completion of these services.

For most products, training is not provided; therefore, no post-delivery training obligation exists. However, when training is provided to our customers, it is typically priced separately and recognized as revenue as these services are

provided.

For multiple element arrangements which include extended maintenance contracts, we allocate and defer the amount of consideration equal to the separately stated price and recognize revenue on a straight-line basis over the contract period.

Long-Lived Assets and Goodwill

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We evaluate long-lived assets and amortizable intangible assets whenever events or changes in business circumstances or our planned use of assets indicate that their carrying amounts may not be fully recoverable or that their useful lives are no longer appropriate. Reviews are performed to determine whether the carrying values of the assets are impaired based on comparison to the undiscounted expected future cash flows identifiable to such long-lived and amortizable intangible assets. If the comparison indicates that impairment exists, the impaired asset is written down to its fair value.

We have determined that our reporting units are the same as our operating segments as each constitutes a business for which discrete financial information is available and for which segment management regularly reviews the operating results. We make this determination in a manner consistent with how the operating segments are managed. Based on this analysis, we have identified two reporting units which are our reportable segments: SLS and CLC.

Goodwill is tested for impairment on an annual basis and between annual tests in certain circumstances, and written down when impaired (see Note 7 "Goodwill and Intangible Assets" in the Notes to Consolidated Financial Statements). We generally perform our annual impairment tests during the fourth quarter of each fiscal year using the opening balance sheet as of the first day of the fourth fiscal quarter, with any resulting impairment recorded in the fourth quarter of the fiscal year.

In fiscal 2014, 2015 and 2016, we conducted a qualitative assessment of the goodwill in the SLS reporting unit during the fourth quarter of each fiscal year using the opening balance sheet as of the first day of the fourth quarter and concluded that it was more likely than not that the fair value of the reporting unit exceeded its carrying amount. In assessing the qualitative factors, we considered the impact of these key factors: macroeconomic conditions, fluctuations in foreign currency, market and industry conditions, our operating and competitive environment, regulatory and political developments, the overall financial performance of our reporting units including cost factors and budgeted-to-actual revenue results. We also considered our market capitalization, stock price performance and the significant excess calculated in the prior year between estimated fair value and the carrying value of SLS. Based on our assessment, goodwill in the SLS reporting unit was not impaired as of the first day of the fourth quarter of fiscal 2014, 2015 or 2016. As such, it was not necessary to perform the two-step goodwill impairment test at that time in any of those fiscal years.

For our CLC reporting unit we elected to bypass the qualitative assessment in fiscal 2014, 2015 and 2016 and proceeded directly to performing the first step of goodwill impairment. Accordingly, we performed the Step 1 test during the fourth quarter of fiscal 2016, 2015 and 2014. We determined the fair value of the reporting unit for the Step 1 test using a 50-50% weighting of the Income (discounted cash flow) approach and Market (market comparable) approach. The Income approach utilizes the discounted cash flow model to provide an estimation of fair value based on the cash flows that a business expects to generate. These cash flows are based on forecasts developed internally by management which are then discounted at an after tax rate of return required by equity and debt market participants of a business enterprise. This rate of return or cost of capital is weighted based on the capitalization of comparable companies. The Market approach determines fair value by comparing the reporting units to comparable companies in similar lines of business that are publicly traded. Total Enterprise Value (TEV) multiples such as TEV to revenues and TEV to earnings (if applicable) before interest and taxes of the publicly traded companies are calculated. These multiples are then applied to the reporting unit's operating results to obtain an estimate of fair value. Each of these two approaches captures aspects of value in each reporting unit. The Income approach captures our expected future performance, and the Market approach captures how investors view the reporting units through other competitors. We believe these valuation approaches are proven valuation techniques and methodologies for our industry and are widely accepted by investors. As neither was perceived by us to deliver any greater indication of value than the other, and neither approach individually computed a fair value less than the carrying value of the segment, we weighted each of the approaches equally. Management completed and reviewed the results of the Step 1 analysis and concluded that a Step 2 analysis was not required as the estimated fair value of the CLC reporting unit was substantially in excess of its carrying value. Between the completion of that testing and the end of the fourth quarter of fiscal 2016, we noted no indications of impairment or triggering events for either reporting unit to cause us to review goodwill for potential impairment.

At October 1, 2016, we had \$101.5 million of goodwill (\$95.1 million SLS and \$6.4 million in CLC), \$13.9 million of purchased intangible assets and \$127.4 million of property and equipment on our consolidated balance sheet.

#### Inventory Valuation

We record our inventory at the lower of cost (computed on a first-in, first-out basis) or market. We write-down our inventory to its estimated market value based on assumptions about future demand and market conditions. Inventory write-downs are generally recorded within guidelines set by management when the inventory for a device exceeds 12 months of its demand or when management has deemed parts are no longer active or useful. If actual market conditions are less favorable than those projected by management, additional inventory write-downs may be required which could materially affect our future results of operations. Due to rapidly changing forecasts and orders, additional write-downs for excess or obsolete inventory, while not currently expected, could be required in the future. In the event that alternative future uses of fully written down inventories are identified, we may experience better than normal profit margins when such inventory is sold. Differences

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between actual results and previous estimates of excess and obsolete inventory could materially affect our future results of operations. We write-down our demo inventory by amortizing the cost of demo inventory over a twenty month period starting from the fourth month after such inventory is placed in service.

### Warranty Reserves

We provide warranties on the majority of our product sales and allowances for estimated warranty costs are recorded during the period of sale. The determination of such allowances requires us to make estimates of product return rates and expected costs to repair or replace the products under warranty. We currently establish warranty reserves based on historical warranty costs for each product line. The weighted average warranty period covered is approximately 15 months. If actual return rates and/or repair and replacement costs differ significantly from our estimates, adjustments to cost of sales may be required in future periods.

### Stock-Based Compensation

We account for stock-based compensation using fair value. We estimate the fair value of performance restricted stock units granted using a Monte Carlo simulation model. We use historical data to estimate pre-vesting option forfeitures and record stock-based compensation expense only for those awards that are expected to vest. We value service-based restricted stock units using the intrinsic value method and amortize the value on a straight-line basis over the restriction period. We value performance restricted stock units using a Monte Carlo simulation model and amortize the value over the performance period, with no adjustment in future periods, based upon the actual shareholder return over the performance period.

U.S. Generally Accepted Accounting Principles ("GAAP") requires the use of option pricing models that were not developed for use in valuing employee stock options. The Black-Scholes option-pricing model was developed for use in estimating the fair value of short-lived exchange traded options that have no vesting restrictions and are fully transferable. In addition, option-pricing models require the input of highly subjective assumptions, including the options expected life, the expected price volatility of the underlying stock and an estimate of expected forfeitures. Our computation of expected volatility considers historical volatility and market-based implied volatility. Our estimate of expected forfeitures is based on historical employee data and could differ from actual forfeitures.

See Note 12 "Employee Stock Award and Benefit Plans" in the notes to the Consolidated Financial Statements for a description of our stock-based employee compensation plans and the assumptions we use to calculate the fair value of stock-based employee compensation.

### Income Taxes

As part of the process of preparing our consolidated financial statements, we are required to estimate our income tax provision (benefit) in each of the jurisdictions in which we operate. This process involves us estimating our current income tax provision (benefit) together with assessing temporary differences resulting from differing treatment of items for tax and accounting purposes. These differences result in deferred tax assets and liabilities, which are included within our consolidated balance sheets.

We record a valuation allowance to reduce our deferred tax assets to an amount that more likely than not will be realized. While we have considered future taxable income and ongoing prudent and feasible tax planning strategies in assessing the need for the valuation allowance, in the event we were to determine that we would be able to realize our deferred tax assets in the future in excess of our net recorded amount, an adjustment to the allowance for the deferred tax asset would increase income in the period such determination was made. Likewise, should we determine that we would not be able to realize all or part of our net deferred tax asset in the future, an adjustment to the valuation allowance for the deferred tax asset would be charged to income in the period such determination was made.

During fiscal 2016, we increased our valuation allowance on deferred tax assets by \$2.1 million to \$17.6 million, primarily due to the increase in California and certain state research and development tax credits, which are not expected to be recognized. The Company had U.S. federal deferred tax assets related to research and development credits, foreign tax credits and other tax attributes that can be used to offset federal taxable income in future periods. These credit carryforwards will expire if they are not used within certain time periods. As of October 1, 2016, management determined that there is sufficient positive evidence to conclude that it is more likely than not sufficient taxable income will exist in the future allowing us to recognize these deferred tax assets. It is possible that some or all these attributes could ultimately expire unused. If facts and circumstances change in the future, management may

determine at that time a valuation allowance is necessary. A valuation allowance would materially increase our tax expense in the period applied and would adversely affect our results of operations and statement of financial condition. Changes in the Company's underlying facts or circumstances, such as the impact of the Rofin-Sinar merger, will be assessed as they occur and the Company will re-evaluate its position accordingly.

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Federal and state income taxes have not been provided on a portion of the unremitted earnings of foreign subsidiaries because such earnings are intended to be permanently reinvested. The total amount of unremitted earnings (including accumulated translation adjustments) of foreign subsidiaries for which we have not yet recorded federal and state income taxes was approximately \$574.0 million at fiscal 2016 year-end. The amount of federal and state income taxes that would be payable upon repatriation of such earnings is not practicably determinable. We have not, nor do we anticipate the need to, repatriate funds to the United States to satisfy domestic liquidity needs arising in the ordinary course of business.

**ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

**Market risk disclosures**

We are exposed to market risk related to changes in interest rates and foreign currency exchange rates. We do not use derivative financial instruments for speculative or trading purposes.

**Interest rate sensitivity**

A portion of our investment portfolio is composed of fixed income securities. These securities are subject to interest rate risk and will fall in value if market interest rates increase. If interest rates were to increase immediately (whether due to changes in overall market rates or credit worthiness of the issuers of our individual securities) and uniformly by 10% from levels at fiscal 2016 year-end, the fair value of the portfolio, based on quoted market prices in active markets involving similar assets, would decline by an immaterial amount due to their short-term maturities. We have the ability to generally hold our fixed income investments until maturity and therefore we would not expect our operating results or cash flows to be affected to any significant degree by the effect of a sudden change in market interest rates on our securities portfolio. If necessary, we may sell short-term investments prior to maturity to meet our liquidity needs.

At fiscal 2016 year-end, the fair value of our available-for-sale debt securities was \$25.1 million, all of which was classified as short-term investments. There were no gross unrealized gains and losses on available-for-sale debt securities at fiscal 2016 year-end. At fiscal 2015 year-end, the fair value of our available-for-sale debt securities was \$178.4 million, all of which was classified as short-term investments. Gross unrealized gains and losses on available-for-sale debt securities were \$1.1 million and \$(2,000), respectively, at fiscal 2015 year-end.

**Foreign currency exchange risk**

We maintain operations in various countries outside of the United States and have foreign subsidiaries that manufacture and sell our products in various global markets. The majority of our sales are transacted in U.S. dollars. However, we do generate revenues in other currencies, primarily the Euro, the Japanese Yen, the South Korean Won and the Chinese RMB. Additionally, we have operations in different countries around the world with costs incurred in other local currencies, such as British Pound Sterling, Singapore Dollars and Malaysian Ringgit. As a result, our earnings, cash flows and cash balances are exposed to fluctuations in foreign currency exchange rates. For example, we have significant manufacturing operations in Europe so that a weakening Euro is advantageous to our financial results. We attempt to limit these exposures through financial market instruments. We utilize derivative instruments, primarily forward contracts with maturities of two months or less, to manage our exposure associated with anticipated cash flows and net asset and liability positions denominated in foreign currencies. Gains and losses on the forward contracts are mitigated by gains and losses on the underlying instruments. We do not use derivative financial instruments for trading purposes.

On occasion, we enter into currency forward exchange contracts to hedge specific anticipated foreign currency denominated transactions generally expected to occur within the next 12 months. These cash flow hedges are designated for hedge accounting treatment and gains and losses on these contracts are recorded in accumulated other comprehensive income in stockholder's equity and reclassified into earnings at the time that the related transactions being hedged are recognized in earnings. See Note 6 "Derivative Instruments and Hedging Activities".

On August 1, 2016, we purchased forward contracts totaling 670.0 million Euro, with a value date of November 30, 2016, to limit our foreign exchange risk related to the commitment of our term loan (denominated in Euros) in an amount of the Euro equivalent of \$750.0 million to finance the U.S. dollar payment for the acquisition of Rofin. In the fourth quarter of fiscal 2016, we recognized an unrealized loss of \$2.2 million on these hedges. Subsequent to October

1, 2016, we settled these hedges at a net gain of \$3.1 million, resulting in a realized gain of \$5.3 million in the first quarter of fiscal 2017. See Note 6 "Derivative Instruments and Hedging Activities" to our consolidated financial statements in Part IV of this report.

We do not anticipate any material adverse effect on our consolidated financial position, results of operations or cash flows resulting from the use of these instruments. There can be no assurance that these strategies will be effective or that transaction losses can be minimized or forecasted accurately. While we model currency valuations and fluctuations, these may

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not ultimately be accurate. If a financial counterparty to any of our hedging arrangements experiences financial difficulties or is otherwise unable to honor the terms of the foreign currency hedge, we may experience material financial losses. In the current economic environment, the risk of failure of a financial party remains high.

At October 1, 2016, approximately \$331.0 million of our cash, cash equivalents and short-term investments were held outside the U.S. in certain of our foreign operations, \$93.1 million of which was denominated in currencies other than the U.S. dollar. See Note 16, "Subsequent Events" in our Notes to Consolidated Financial Statements under Item 15 of this annual report for further discussion of the completion of our acquisition of Rofin and the use of cash to finance the acquisition.

A hypothetical 10% change in foreign currency rates on our forward contracts would not have a material impact on our results of operations, cash flows or financial position.

The following table provides information about our foreign exchange forward contracts at October 1, 2016. The table presents the weighted average contractual foreign currency exchange rates, the value of the contracts in U.S. dollars at the contract exchange rate as of the contract maturity date and fair value. The U.S. fair value represents the fair value of the contracts valued at October 1, 2016 rates.

Forward contracts to sell (buy) foreign currencies (in thousands, except contract rates):

	Average Contract Rate	U.S. Notional Contract Value	U.S. Fair Value
Non-Designated - For US Dollars:			
Euro	1.1202	\$659,346	\$2,072
Japanese Yen	102.1105	\$36,450	\$343
South Korean Won	1,057.7555	\$6,681	\$(261 )
Chinese RMB	6.7001	\$25,237	\$91
Singaporean Dollar	1.3615	\$(6,033 )	\$4
Malaysian Ringgit	4.0498	\$1,775	\$(38 )

#### ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

See Item 15-(a) for an index to the Consolidated Financial Statements and Supplementary Financial Information, which are attached hereto and incorporated by reference herein. The financial statements and notes thereto can be found beginning on page 67 of this annual report.

#### ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

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ITEM 9A. CONTROLS AND PROCEDURES

Management's Evaluation of Disclosure Controls and Procedures

We have evaluated the effectiveness of the design and operation of our disclosure controls and procedures, as such term is defined in Rule 13a-15(e) under the Securities Exchange Act of 1934, as of the end of the period covered by this annual report ("Evaluation Date"). The controls evaluation was conducted under the supervision and with the participation of management, including our Chief Executive Officer and Chief Financial Officer. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded as of the Evaluation Date that our disclosure controls and procedures were effective in providing reasonable assurance that information required to be disclosed by us in reports that we file or submit under the Securities Exchange Act of 1934, as amended, is (i) recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms and (ii) accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosures.

Management's Report on Internal Control Over Financial Reporting

Management, including our Chief Executive Officer and Chief Financial Officer, is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Company.

Management assessed the effectiveness of our internal control over financial reporting as of October 1, 2016, utilizing the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in Internal Control-Integrated Framework (2013). Based on the assessment by management, we determined that our internal control over financial reporting was effective as of October 1, 2016. The effectiveness of our internal control over financial reporting as of October 1, 2016 has been audited by Deloitte & Touche LLP, our independent registered public accounting firm, as stated in their report which appears below.

Inherent Limitations Over Internal Controls

Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles ("GAAP"). Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness for future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the financial statements for external purposes in accordance with GAAP. Our internal control over financial reporting includes those policies and procedures that:

- (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;
- (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and
- (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of our assets that could have a material effect on the financial statements.

Management, including our CEO and CFO, does not expect that our internal controls will prevent or detect all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of internal controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. Also, any evaluation of the effectiveness of controls in future periods are subject to the risk that those internal controls may become inadequate because of changes in business conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the quarter ended October 1, 2016 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of  
Coherent, Inc.  
Santa Clara, CA

We have audited the internal control over financial reporting of Coherent, Inc. and its subsidiaries (collectively, the "Company") as of October 1, 2016, based on the criteria established in Internal Control—Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed by, or under the supervision of, the company's principal executive and principal financial officers, or persons performing similar functions, and effected by the company's board of directors, management, and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of the inherent limitations of internal control over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may not be prevented or detected on a timely basis. Also, projections of any evaluation of the effectiveness of the internal control over financial reporting to future periods are subject to the risk that the controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of October 1, 2016, based on the criteria established in Internal Control—Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated financial statements as of and for the year ended October 1, 2016, of the Company and our report dated November 29, 2016, expressed an unqualified opinion on those consolidated financial statements.

/s/ DELOITTE & TOUCHE LLP  
San Jose, California  
November 29, 2016

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ITEM 9B. OTHER INFORMATION

Not applicable.

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PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information regarding: (i) our directors will be set forth under the caption "Proposal One —Election of Directors—Nominees"; (ii) compliance with Section 16(a) of the Securities Act of 1933 will be set forth under the caption "Section 16(a) Beneficial Ownership Reporting Compliance"; (iii) the process for stockholders to nominate directors will be set forth under the caption "Proposal One—Election of Directors—Process for Recommending Candidates for Election to the Board of Directors"; (iv) our audit committee and audit committee financial expert will be set forth under the caption "Proposal One—Election of Directors—Board Meetings and Committees—Audit Committee"; in our proxy statement for use in connection with an upcoming Annual Meeting of Stockholders to be held in 2017 (the "2017 Proxy Statement") and is incorporated herein by reference or included in a Form 10-K/A as an amendment to this Form 10-K. The 2017 Proxy Statement or Form 10-K/A will be filed with the SEC within 120 days after the end of our fiscal year.

Business Conduct Policy

We have adopted a worldwide Business Conduct Policy that applies to the members of our Board of Directors, executive officers and other employees. This policy is posted on our Website at [www.coherent.com](http://www.coherent.com) and may be found as follows:

1. From our main Web page, first click on "Company" and then on "corporate governance."
2. Next, click on "Business Conduct Policy."

We intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding an amendment to, or waiver from, a provision of this Business Conduct Policy by posting such information on our Website, at the address and location specified above.

Stockholders may request free printed copies of our worldwide Business Conduct Policy from:  
Coherent, Inc.

Attention: Investor Relations  
5100 Patrick Henry Drive  
Santa Clara, California 95054  
Executive Officers

The name, age, position and a brief account of the business experience of our executive officers as of October 1, 2016 are set forth below:

Name	Age	Office Held
John R. Ambroseo	55	President and Chief Executive Officer
Kevin Palatnik	58	Executive Vice President and Chief Financial Officer
Mark Sobey	56	Executive Vice President and General Manager, Specialty Laser Systems
Paul Sechrist	57	Executive Vice President, Worldwide Sales and Service
Luis Spinelli	68	Executive Vice President and Chief Technology Officer
Bret M. DiMarco	48	Executive Vice President, General Counsel and Corporate Secretary

**John R. Ambroseo.** Mr. Ambroseo has served as our President and Chief Executive Officer as well as a member of the Board of Directors since October 2002. Mr. Ambroseo served as our Chief Operating Officer from June 2001 through September 2002. Mr. Ambroseo served as our Executive Vice President and as President and General Manager of the Coherent Photonics Group from September 2000 to June 2001. From September 1997 to September 2000, Mr. Ambroseo served as our Executive Vice President and as President and General Manager of the Coherent Laser Group. From March 1997 to September 1997, Mr. Ambroseo served as our Scientific Business Unit Manager. From August 1988, when Mr. Ambroseo joined us, until March 1997, he served as a Sales Engineer, Product Marketing Manager, National Sales Manager and Director of European Operations. Mr. Ambroseo received a Bachelor degree from SUNY-College at Purchase and a PhD in Chemistry from the University of Pennsylvania.

**Kevin Palatnik.** Mr. Palatnik has served as our Executive Vice President and Chief Financial Officer since February 2016. Prior to his appointment, Mr. Palatnik was Chief Financial Officer at voice-technology provider, Audience, Inc. from August 2011 until it was acquired by the Knowles Corporation in July 2015. From April 2008 through

September 2010, Mr. Palatnik served as the Chief Financial Officer at Cadence Design Systems, Inc., where he also led the investor relations,

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information technology and workplace resources groups. From April 2006 through March 2008, Mr. Palatnik served as the company's Sr. Vice President and Corporate Controller. From July 2004 through March 2006, Mr. Palatnik served as the company's Corporate Vice President of Technical Field Operations. From June 2001 through June 2004, Mr. Palatnik served as the company's Corporate Vice President of Sales Finance & Operations. Prior to joining Cadence, Mr. Palatnik held a series of senior financial roles at IBM. Mr. Palatnik received a Bachelor of Science degree in industrial engineering and operations research, as well as a Master of Business Administration from Syracuse University.

Mark Sobey. Mr. Sobey was appointed Executive Vice President of Coherent and General Manager of Specialty Laser Systems (SLS) in April 2010. He has served as Senior Vice President and General Manager for the SLS Business Group, which primarily serves the Microelectronics and Research markets, since joining Coherent in July 2007. Prior to Coherent, Mr. Sobey has spent over 20 years in the Laser and Fiber Optics Telecommunications industries, including roles as Senior Vice President Product Management at Cymer from January 2006 through June 2007 and previously as Senior Vice President Global Sales at JDS Uniphase through October 2005. He received his PhD in Engineering and BSc in Physics, both from the University of Strathclyde in Scotland.

Paul Sechrist. Mr. Paul Sechrist was appointed Executive Vice President, Worldwide Sales and Service in March 2011. He has over 35 years of experience with Coherent, including roles as Senior Vice President and General Manager of Commercial Lasers and Components from October 2008 to March 2011, Vice President and General Manager of Specialty Laser Systems, Santa Clara from March 2008 to October 2008 and Vice President for Components from April 2005 to October 2008. Mr. Sechrist received an AA degree from San Jose City College, with Physics studies at California State University, Hayward.

Luis Spinelli. Mr. Spinelli has served as our Executive Vice President and Chief Technology Officer since February 2004. Mr. Spinelli joined the Company in May 1985 and has since held various engineering and managerial positions, including Vice President, Advanced Research from April 2000 to September 2002 and Vice President, Corporate Research from September 2002 to February 2004. Mr. Spinelli has led the Advanced Research Unit from its inception in 1998, whose charter is to identify and evaluate new and emerging technologies of interest for us across a range of disciplines in the laser field. Mr. Spinelli holds a degree in Electrical Engineering from the University of Buenos Aires, Argentina with post-graduate work at the Massachusetts Institute of Technology.

Bret M. DiMarco. Mr. DiMarco has served as our Executive Vice President and General Counsel since June 2006 and our Corporate Secretary since February 2007. From February 2003 until May 2006, Mr. DiMarco was a member and from October 1995 until January 2003 was an associate at Wilson Sonsini Goodrich & Rosati, P.C., a law firm. Mr. DiMarco received a Bachelor's degree from the University of California at Irvine and a Juris Doctorate degree from the Law Center at the University of Southern California. Mr. DiMarco also serves on the NASDAQ Listing and Hearing Review Council.

**ITEM 11. EXECUTIVE COMPENSATION**

Information regarding: (i) executive officer and director compensation will be set forth under the captions "Election of Directors—Director Compensation" and "Executive Officers and Executive Compensation" and (ii) compensation committee interlocks will be set forth under the caption "Executive Officers and Executive Compensation—Compensation Committee Interlocks and Insider Participation and Committee Independence" in the 2017 Proxy Statement or included in a Form 10-K/A as an amendment to our Form 10-K for the fiscal year ended October 1, 2016. The 2017 Proxy Statement or Form 10-K/A will be filed with the SEC within 120 days after the end of our fiscal year.

**ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS**

Information regarding: (i) equity compensation plan information will be set forth under the caption "Equity Compensation Plan Information"; and (ii) security ownership of certain beneficial owners and management will be set forth under the caption "Security Ownership of Certain Beneficial Owners and Management"; in our 2017 Proxy Statement and is incorporated herein by reference or included in a Form 10-K/A as an amendment to our Form 10-K

for the fiscal year ended October 1, 2016.

**ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE**

The information required under this item will be set forth under the caption "Certain Relationships and Related Party Transactions" in our 2017 Proxy Statement and is incorporated herein by reference or included in a Form 10-K/A as an amendment to our Form 10-K for the fiscal year ended October 1, 2016.

**ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES**

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## Principal Accounting Fees and Services

The following table sets forth fees for services provided by Deloitte & Touche LLP, the member firms of Deloitte Touche Tohmatsu, and their respective affiliates (collectively, "Deloitte") during fiscal years 2016 and 2015:

	2016	2015
Audit fees(1)	\$2,123,621	\$2,030,577
Tax fees(2)	218,115	176,323
All other fees(3)	2,600	2,600
Total	\$2,344,336	\$2,209,500

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Represents fees for professional services provided in connection with the integrated audit of our annual financial statements and internal control over financial reporting and review of our quarterly financial statements, advice on (1) accounting matters that arose during the audit and audit services provided in connection with other statutory or regulatory filings.

(2) Represents tax compliance and related services.

(3) Represents the annual subscription for access to the Deloitte Accounting Research Tool, which is a searchable on-line accounting database.

## Pre-Approval of Audit and Non-Audit Services

The Audit Committee has determined that the provision of non-audit services by Deloitte is compatible with maintaining Deloitte's independence. In accordance with its charter, the Audit Committee approves in advance all audit and non-audit services to be provided by Deloitte. In other cases, the Chairman of the Audit Committee has the delegated authority from the Committee to pre-approve certain additional services, and such pre-approvals are communicated to the full Committee at its next meeting. During fiscal year 2016, all such services were pre-approved by the Audit Committee in accordance with this policy.

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PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) 1. Index to Consolidated Financial Statements

The following Consolidated Financial Statements of Coherent, Inc. and its subsidiaries are filed as part of this annual report on Form 10-K:

<u>Report of Independent Registered Public Accounting Firm</u>	<u>70</u>
<u>Consolidated Balance Sheets—October 1, 2016 and October 3, 2015</u>	<u>71</u>
<u>Consolidated Statements of Operations—Years ended October 1, 2016, October 3, 2015 and September 27, 2014</u>	<u>72</u>
<u>Consolidated Statements of Comprehensive Income—Years ended October 1, 2016, October 3, 2015 and September 27, 2014</u>	<u>73</u>
<u>Consolidated Statements of Stockholders' Equity—Years ended October 1, 2016, October 3, 2015 and September 27, 2014</u>	<u>74</u>
<u>Consolidated Statements of Cash Flows—Years ended October 1, 2016, October 3, 2015 and September 27, 2014</u>	<u>75</u>
<u>Notes to Consolidated Financial Statements</u>	<u>77</u>
<u>Quarterly Financial Information (Unaudited)</u>	<u>109</u>

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2. Consolidated Financial Statement Schedules

Financial statement schedules have been omitted because they are either not required, not applicable or the information required to be set forth therein is included in the Consolidated Financial Statements hereto.

3. Exhibits

Exhibit

Numbers

- 2.1\* Merger Agreement, dated as of March 16, 2016, by and among the Company, Rembrandt Merger Sub Corp. and Rofin-Sinar Technologies Inc. (previously filed as Exhibit 2.1 to the Current Report on Form 8-K filed on March 16, 2016)
- 3.1\* Restated and Amended Certificate of Incorporation. (Previously filed as Exhibit 3.1 to Form 10-K for the fiscal year ended September 29, 1990)
- 3.2\* Certificate of Amendment of Restated and Amended Certificate of Incorporation of Coherent, Inc. (Previously filed as Exhibit 3.2 to Form 10-K for the fiscal year ended September 28, 2002)
- 3.3\* Bylaws. (Previously filed as Exhibit 3.1 to Form 8-K, filed on December 12, 2012)
- 10.1\*‡ Amended and Restated Employee Stock Purchase Plan. (Previously filed as Exhibit 10.1 to Form S-8 filed on June 12, 2012)
- 10.2\*‡ Coherent Employee Retirement and Investment Plan. (Previously filed as Exhibit 10.23 to Form 8, Amendment No. 1 to Annual Report on Form 10-K for the fiscal year ended September 25, 1982)
- 10.3\* 1998 Director Option Plan. (Previously filed as Appendix B to Schedule 14A filed February 28, 2006)
- 10.4\*‡ 2001 Stock Plan. (Previously filed as Exhibit 10.1 to Form 10-Q for the quarter ended March 29, 2008)
- 10.5\*‡ Change of Control Severance Plan, as amended and restated effective December 7, 2012. (Previously filed as Exhibit 10.1 to Form 8-K, filed on December 17, 2014)
- 10.6\*‡ Variable Compensation Plan, as amended. (Previously filed as Exhibit 10.7 to Form 10-K for the fiscal year ended October 1, 2011)
- 10.7\*‡ Fiscal 2015 Variable Compensation Plan Payout Scale (Previously filed as Exhibit 10.1 to Form 10-Q filed February 10, 2016)
- 10.8\*\*\*‡ Fiscal 2016 Variable Compensation Plan Payout Scale (Previously filed as Exhibit 10.2 to Form 10-Q filed February 10, 2016)
- 10.9\*‡ Supplementary Retirement Plan. (Previously filed as Exhibit 10.5 to Form 10-Q for the quarter ended April 1, 2006)
- 10.10\*‡ 2005 Deferred Compensation Plan. (Previously filed as Exhibit 10.1 to Form 10-Q for the fiscal quarter ended December 31, 2011)
- 10.11\*‡ Form of 2001 Stock Plan Terms and Conditions of Restricted Stock Units. (Previously filed as Exhibit 10.1 to Form 8-K filed on November 27, 2009)
- 10.12\*‡ Form of 2001 Stock Plan Amended Global Stock Option Agreement. (Previously filed as Exhibit 10.2 to Form 8-K filed on November 27, 2009)
- 10.13\* Amended and Restated Loan Agreement by and between Coherent, Inc. and Union Bank of California, N.A. dated as of May 30, 2012. (Previously filed as Exhibit 10.1 to Form 8-K filed on June 5, 2012)
- 10.14\* Amended and Restated Promissory Note (Base Rate) (Previously filed as Exhibit 10.2 to Form 8-K filed on June 5, 2012)
- 10.15\* Second Lease Amendment by and between Coherent, Inc. and 5200 Patrick Henry Associates LLC dated as of July 23, 2010. (Previously filed as Exhibit 10.1 to Form 10-Q for the quarter ended July 3, 2010)
- 10.16\* Form of Indemnification Agreement (Previously filed as Exhibit 10.18 to Form 10-K for the year ended October 2, 2010)
- 10.17\*‡ 2011 Equity Incentive Plan. (incorporated by reference to Exhibit 10.1 to the Company's Registration Statement on Form S-8 (File No. 333-174019) filed on May 6, 2011)
- 10.18\*‡

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- Form of RSU Agreement for members of the Board of Directors under the Company's 2011 Equity Incentive Plan. (Previously filed as Exhibit 10.1 to Form 10-Q for the fiscal quarter ended July 2, 2011)
- 10.19\*‡ Form of Option Agreement for members of the Board of Directors under the Company's 2011 Equity Incentive Plan. (Previously filed as Exhibit 10.1 to Form 10-Q for the fiscal quarter ended July 2, 2011)
- 10.20\*‡ Form of Time-Based RSU Agreement under the 2011 Equity Incentive Plan. (Previously filed as Exhibit 10.23 to Form 10-K for the fiscal year ended October 1, 2011)
- 10.21\*‡ Form of Performance RSU Agreement under the 2011 Equity Incentive Plan, as amended November 8, 2013. (Previously filed as Exhibit 10.1 to Form 8-K filed November 14, 2013)

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- 10.22\* First Modification Agreement to Loan and Security Agreement with Union Bank, N.A., dated May 30, 2014 (Previously filed as Exhibit 10.1 to Form 8-K filed June 3, 2014)  
 Form of Performance RSU Agreement under the 2011 Equity Plan (Previously filed as Exhibit 10.25 to Form 10-K filed December 1, 2015)
- 10.23‡ 10-K filed December 1, 2015)
- 10.24\*‡ Offer letter with Kevin Palatnik (Previously filed as Exhibit 10.1 to Form 10-Q filed February 10, 2016)  
 Credit Agreement, dated as of November 7, 2016, by and among Coherent, Inc., Coherent Holding GmbH, the guarantors from time to time party thereto, the lenders from time to time party thereto, Barclays Bank PLC, as
- 10.25\* Administrative Agent and L/C Issuer, Bank of America, N.A., as L/C Issuer, and The Bank of Tokyo-Mitsubishi UJF, Ltd., as L/C Issuer (Previously filed as Exhibit 10.1 to Form 8-K filed November 8, 2016)
- 10.26\* Form of Performance RSU Award Terms (Previously filed as Exhibit 10.23 to Form 10-K filed December 1, 2015)
- 10.27\*‡ Transition Service Agreement, dated February 22, 2016, between the Company and Helene Simonet (Previously filed as Exhibit 10.3 to Form 10-Q filed May 11, 2016)
- 21.1 Subsidiaries
- 23.1 Consent of Independent Registered Public Accounting Firm
- 24.1 Power of Attorney (see signature page)
- 31.1 Certification of Chief Executive Officer pursuant to Exchange Act Rule 13a-14(a)/15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 31.2 Certification of Chief Financial Officer pursuant to Exchange Act Rule 13a-14(a)/15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 32.1 Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
- 32.2 Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

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\* These exhibits were previously filed with the Commission as indicated and are incorporated herein by reference.

\*\* Portions of this exhibit are redacted and confidential treatment has been requested.

‡ Identifies management contract or compensatory plans or arrangements required to be filed as an exhibit.



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STATEMENT OF MANAGEMENT RESPONSIBILITY

Management is responsible for the preparation, integrity, and objectivity of the Consolidated Financial Statements and other financial information included in the Company's 2016 Annual Report on Form 10-K. The Consolidated Financial Statements have been prepared in conformity with U.S. generally accepted accounting principles and reflect the effects of certain estimates and judgments made by management. It is critical for investors and other readers of the Consolidated Financial Statements to have confidence that the financial information that we provide is timely, complete, relevant and accurate.

Management, with oversight by the Company's Board of Directors, has established and maintains a corporate culture that requires that the Company's affairs be conducted to the highest standards of business ethics and conduct.

Management also maintains a system of internal controls that is designed to provide reasonable assurance that assets are safeguarded and that transactions are properly recorded and executed in accordance with management's authorization. This system is regularly monitored through direct management review, as well as extensive audits conducted by internal auditors throughout the organization.

Our Consolidated Financial Statements as of and for the year ended October 1, 2016 have been audited by Deloitte & Touche LLP, an independent registered public accounting firm. Their audit was conducted in accordance with the standards of the Public Company Accounting Oversight Board (United States) and included an integrated audit under such standards.

The Audit Committee of the Board of Directors meets regularly with management, the internal auditors and the independent registered public accounting firm to review accounting, reporting, auditing and internal control matters.

The Audit Committee has direct and private access to both internal and external auditors.

See Item 9A for Management's Report on Internal Control Over Financial Reporting.

We are committed to enhancing shareholder value and fully understand and embrace our fiduciary oversight responsibilities. We are dedicated to ensuring that our high standards of financial accounting and reporting as well as our underlying system of internal controls are maintained. Our culture demands integrity and we have the highest confidence in our processes, internal controls, and people, who are objective in their responsibilities and operate under the highest level of ethical standards.

/s/ JOHN R. AMBROSEO

/s/ KEVIN PALATNIK

John R. Ambroseo

Kevin Palatnik

President and Chief Executive Officer

Executive Vice President and Chief Financial Officer

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of  
Coherent, Inc.  
Santa Clara, CA

We have audited the accompanying consolidated balance sheets of Coherent, Inc. and its subsidiaries (collectively, the "Company") as of October 1, 2016 and October 3, 2015, and the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows for each of the three years in the period ended October 1, 2016. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of the Company as of October 1, 2016 and October 3, 2015, and the results of its operations and its cash flows for each of the three years in the period ended October 1, 2016, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company's internal control over financial reporting as of October 1, 2016, based on the criteria established in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated November 29, 2016 expressed an unqualified opinion on the Company's internal control over financial reporting.

/s/ DELOITTE & TOUCHE LLP

San Jose, California  
November 29, 2016

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COHERENT, INC. AND SUBSIDIARIES  
 CONSOLIDATED BALANCE SHEETS  
 (In thousands, except par value)

	October 1, 2016	October 3, 2015
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	\$ 354,347	\$ 130,607
Short-term investments	45,606	194,908
Accounts receivable—net of allowances of \$2,420 in 2016 and \$3,015 in 2015	165,715	142,260
Inventories	212,898	156,614
Prepaid expenses and other assets	37,073	28,294
Total current assets	815,639	652,683
Property and equipment, net	127,443	102,445
Goodwill	101,458	101,817
Intangible assets, net	13,874	22,776
Other assets	102,734	89,226
Total assets	\$ 1,161,148	\$ 968,947
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current liabilities:		
Short term borrowings	\$ 20,000	\$ —
Accounts payable	45,182	33,379
Income taxes payable	19,870	4,279
Other current liabilities	116,442	84,932
Total current liabilities	201,494	122,590
Other long-term liabilities	48,826	49,939
Commitments and contingencies (Note 10)		
Stockholders' equity:		
Common stock, par value \$.01:		
Authorized—500,000 shares;		
Outstanding—24,324 shares in 2016 and 23,970 shares in 2015	242	238
Additional paid-in capital	151,298	128,607
Accumulated other comprehensive loss	(5,300 )	(9,513 )
Retained earnings	764,588	677,086
Total stockholders' equity	910,828	796,418
Total liabilities and stockholders' equity	\$ 1,161,148	\$ 968,947
See accompanying Notes to Consolidated Financial Statements.		

Table of ContentsCOHERENT, INC. AND SUBSIDIARIES  
CONSOLIDATED STATEMENTS OF OPERATIONS

(In thousands, except per share data)

	Year Ended		
	October 1, 2016	October 3, 2015	September 27, 2014
Net sales	\$857,385	\$802,460	\$ 794,639
Cost of sales	475,993	467,061	481,249
Gross profit	381,392	335,399	313,390
Operating expenses:			
Research and development	81,801	81,455	79,070
Selling, general and administrative	169,138	149,829	154,030
Gain on business combination	—	(1,316 )	—
Impairment of investment	—	2,017	—
Amortization of intangible assets	2,839	2,667	3,424
Total operating expenses	253,778	234,652	236,524
Income from operations	127,614	100,747	76,866
Other income (expense):			
Interest and dividend income	1,143	595	397
Interest expense	(1,346 )	(48 )	(72 )
Other—net	(4,515 )	(1,726 )	2,028
Total other income (expense), net	(4,718 )	(1,179 )	2,353
Income before income taxes	122,896	99,568	79,219
Provision for income taxes	35,394	23,159	20,113
Net income	\$87,502	\$76,409	\$ 59,106
Net income per share:			
Basic	\$3.62	\$3.09	\$ 2.39
Diluted	\$3.58	\$3.06	\$ 2.36
Shares used in computation:			
Basic	24,142	24,754	24,760
Diluted	24,415	24,992	25,076

See accompanying Notes to Consolidated Financial Statements.

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COHERENT, INC. AND SUBSIDIARIES  
 CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME  
 (In thousands)

	Year Ended		
	October 1, 2016	October 3, 2015	September 27, 2014
Net income	\$87,502	\$ 76,409	\$ 59,106
Other comprehensive income (loss): <sup>(1)</sup>			
Translation adjustment, net of taxes <sup>(2)</sup>	1,731	(45,624 )	(19,185 )
Net gain (loss) on derivative instruments, net of taxes <sup>(3)</sup>	(28 )	601	(573 )
Changes in unrealized gains (losses) on available-for-sale securities, net of taxes <sup>(4)</sup>	2,510	828	(10 )
Other comprehensive income (loss), net of tax	4,213	(44,195 )	(19,768 )
Comprehensive income	\$91,715	\$ 32,214	\$ 39,338

(1) Reclassification adjustments were not significant during fiscal years 2016, 2015 and 2014.

(2) Tax expenses (benefits) of \$279, \$(1,768) and \$250 were provided on translation adjustments during fiscal 2016, 2015 and 2014, respectively.

(3) Tax expenses (benefits) of \$(17), \$349 and \$(332) were provided on net gain (loss) on derivative instruments during fiscal 2016, 2015 and 2014, respectively.

(4) Tax expenses (benefits) of \$1,399, \$486 and \$(7) were provided on changes in unrealized gains (losses) on available-for-sale securities during fiscal 2016, 2015 and 2014, respectively.

Table of ContentsCOHERENT, INC. AND SUBSIDIARIES  
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

Three Years in the Period Ended October 1, 2016

(In thousands)

	Common Stock Shares	Common Stock Par Value	Add. Paid-in Capital	Accum. Other Comp. Income(Loss)	Retained Earnings	Total
Balances, September 28, 2013	24,464	\$ 244	\$ 162,253	\$ 54,450	\$ 541,571	\$ 758,518
Common stock issued under stock plans, net of shares withheld for employee taxes	486	4	2,870	—	—	2,874
Tax impact from employee stock options	—	—	(52 )	—	—	(52 )
Stock-based compensation	—	—	18,971	—	—	18,971
Net income	—	—	—	—	59,106	59,106
Other comprehensive income, net of tax	—	—	—	(19,768 )	—	(19,768 )
Balances, September 27, 2014	24,950	\$ 248	\$ 184,042	\$ 34,682	\$ 600,677	\$ 819,649
Common stock issued under stock plans, net of shares withheld for employee taxes	322	4	2,002	—	—	2,006
Tax impact from employee stock options	—	—	(667 )	—	—	(667 )
Repurchases of common stock	(1,302 )	(14 )	(75,013 )	—	—	(75,027 )
Stock-based compensation	—	—	18,243	—	—	18,243
Net income	—	—	—	—	76,409	76,409
Other comprehensive loss, net of tax	—	—	—	(44,195 )	—	(44,195 )
Balances, October 3, 2015	23,970	\$ 238	\$ 128,607	\$ (9,513 )	\$ 677,086	\$ 796,418
Common stock issued under stock plans, net of shares withheld for employee taxes	354	4	2,402	—	—	2,406
Stock-based compensation	—	—	20,289	—	—	20,289
Net income	—	—	—	—	87,502	87,502
Other comprehensive loss, net of tax	—	—	—	4,213	—	4,213
Balances, October 1, 2016	24,324	\$ 242	\$ 151,298	\$ (5,300 )	\$ 764,588	\$ 910,828

See accompanying Notes to Consolidated Financial Statements

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COHERENT, INC. AND SUBSIDIARIES  
 CONSOLIDATED STATEMENTS OF CASH FLOWS  
 (In thousands)

	Year Ended		
	October 1, 2016	October 3, 2015	September 27, 2014
Cash flows from operating activities:			
Net income	\$87,502	\$76,409	\$59,106
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	25,905	24,815	26,608
Amortization of intangible assets	8,450	8,244	9,593
Gain on business combination	—	(1,316)	—
Impairment of investment	—	2,017	—
Stock-based compensation	20,157	18,232	18,897
Deferred income taxes	(9,770)	838	(8,185)
Other non-cash expense (income)	963	526	(1,364)
Changes in assets and liabilities, net of effect of acquisitions:			
Accounts receivable	(17,525)	(10,099)	(5,191)
Inventories	(55,708)	6,054	(6,890)
Prepaid expenses and other assets	(4,855)	(2,048)	11,635
Other assets	(1,552)	802	(3,489)
Accounts payable	9,735	1,000	(2,295)
Income taxes payable/receivable	7,384	(6,759)	(11,373)
Other current liabilities	30,661	5,623	(580)
Other long-term liabilities	3,952	120	4,907
Net cash provided by operating activities	105,299	124,458	91,379
Cash flows from investing activities:			
Purchases of property and equipment	(49,327)	(22,163)	(23,390)
Proceeds from dispositions of property and equipment	555	1,163	585
Purchases of available-for-sale securities	(180,842)	(312,592)	(280,408)
Proceeds from sales and maturities of available-for-sale securities	333,058	346,059	193,430
Acquisition of businesses, net of cash acquired	—	(9,300)	—
Net cash provided by (used in) investing activities	103,444	3,167	(109,783)

(continued)

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COHERENT, INC. AND SUBSIDIARIES  
CONSOLIDATED STATEMENTS OF CASH FLOWS (Continued)  
(In thousands)

	Year Ended October 1, 2016	October 3, 2015	September 27, 2014
Cash flows from financing activities:			
Short-term borrowings	\$ 54,792	\$ 38,729	\$ 61,523
Repayments of short-term borrowings	(34,792 )	(38,729 )	(61,499 )
Net change in capital lease obligations	—	—	(2 )
Issuance of common stock under employee stock option and purchase plans	7,849	7,308	10,685
Repurchase of common stock	—	(75,027 )	—
Debt issuance costs	(5,202 )	—	—
Net settlement of restricted common stock	(5,443 )	(5,302 )	(7,811 )
Net cash provided by (used in) financing activities	17,204	(73,021 )	2,896
Effect of exchange rate changes on cash and cash equivalents	(2,207 )	(15,214 )	(3,719 )
Net increase (decrease) in cash and cash equivalents	223,740	39,390	(19,227 )
Cash and cash equivalents, beginning of year	130,607	91,217	110,444
Cash and cash equivalents, end of year	\$ 354,347	\$ 130,607	\$ 91,217

Supplemental  
disclosure of cash  
flow information:Cash paid during  
the year for:

Interest	\$ 149	\$ 48	\$ 32
Income taxes	\$ 43,884	\$ 29,816	\$ 44,055

Cash received  
during the year  
for:

Income taxes	\$ 6,126	\$ 3,297	\$ 7,022
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Noncash investing  
and financing  
activities:

Unpaid property and equipment purchases	\$ 3,492	\$ 1,425	\$ 721
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(concluded)

See accompanying Notes to Consolidated Financial Statements

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COHERENT, INC. AND SUBSIDIARIES  
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. DESCRIPTION OF BUSINESS

Founded in 1966, Coherent, Inc. provides lasers and laser-based technology in a broad range of commercial and scientific research applications. Coherent designs, manufactures, services and markets lasers and related accessories for a diverse group of customers. Headquartered in Santa Clara, California, the Company has worldwide operations including research and development, manufacturing, sales, service and support capabilities.

2. SIGNIFICANT ACCOUNTING POLICIES

Fiscal Year

Our fiscal year ends on the Saturday closest to September 30. Fiscal years 2016, 2015 and 2014 ended on October 1, 2016, October 3, 2015 and September 27, 2014, respectively, and are referred to in these financial statements as fiscal 2016, fiscal 2015, and fiscal 2014 for convenience. Fiscal years 2016 and 2014 include 52 weeks and fiscal year 2015 includes 53 weeks. The fiscal years of the majority of our international subsidiaries end on September 30.

Accordingly, the financial statements of these subsidiaries as of that date and for the years then ended have been used for our consolidated financial statements. Management believes that the impact of the use of different year-ends is immaterial to our consolidated financial statements taken as a whole.

Use of Estimates

The preparation of consolidated financial statements in conformity with Generally Accepted Accounting Principles ("GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Basis of Presentation

The consolidated financial statements include the accounts of Coherent, Inc. and its majority-owned subsidiaries (collectively, the "Company", "we", "our", or "Coherent"). Intercompany balances and transactions have been eliminated.

Fair Value of Financial Instruments

The carrying amounts of certain of our financial instruments including accounts receivable, accounts payable and accrued liabilities approximate fair value due to their short maturities. Short-term investments are comprised of available-for-sale securities, which are carried at fair value. Other non-current assets include trading securities and life insurance contracts related to our deferred compensation plans; trading securities are carried at fair value and life insurance contracts are carried at cash surrender values, which due to their ability to be converted to cash at that amount, approximate their fair values. Foreign exchange contracts are stated at fair value based on prevailing financial market information.

Cash Equivalents

All highly liquid investments with maturities of three months or less at the time of purchase are classified as cash equivalents. At fiscal 2016 year-end, cash and cash equivalents included cash and money market funds.

Concentration of Credit Risk

Financial instruments that may potentially subject us to concentrations of credit risk consist principally of cash equivalents, short-term investments and accounts receivable. At fiscal 2016 year-end, the majority of our short-term investments were in commercial paper and equity securities. Cash equivalents and short-term investments are maintained with several financial institutions and may exceed the amount of insurance provided on such balances. At October 1, 2016, we held cash and cash equivalents and short-term investments outside the U.S. in certain of our foreign operations totaling approximately \$331.0 million, \$93.1 million of which was denominated in currencies other than the U.S. dollar. The majority of our accounts receivable are derived from sales to customers for commercial applications. We perform ongoing credit evaluations of our customers' financial condition and limit the amount of credit extended when deemed necessary but generally require no collateral. In certain instances, we may require

customers to issue a letter of credit. We maintain reserves for potential credit losses. Our products are broadly distributed and there was one customer who accounted for 18.0% and 21.4% of accounts receivable at fiscal 2016 and fiscal 2015 year-end. We had another customer who accounted for 18.7% of accounts receivable at fiscal 2016 year-end.

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 2. SIGNIFICANT ACCOUNTING POLICIES (Continued)

## Derivative Financial Instruments

Our primary objective for holding derivative financial instruments is to manage currency exchange rate risk. Principal currencies hedged include the Euro, South Korean Won, Japanese Yen, British Pound, Chinese Renminbi, Malaysian Ringgit and Singapore dollar. Our derivative financial instruments are recorded at fair value, on a gross basis, and are included in other current assets and other current liabilities.

Our accounting policies for derivative financial instruments are based on whether they meet the criteria for designation as a cash flow hedge. Changes in the fair value of these cash flow hedges that are highly effective are recorded in accumulated other comprehensive income and reclassified into earnings in the same line item on the consolidated statements of operations as the impact of the hedged transaction during the period in which the hedged transaction affects earnings. The ineffective portion of cash flow hedges are recognized immediately in other income and expenses. Derivatives that we designate as cash flow hedges are classified in the consolidated statements of cash flows in the same section as the underlying item, primarily within cash flows from operating activities. The changes in fair value of derivative instruments that are not designated as hedges are recognized immediately in other income (expense).

We formally document all relationships between hedging instruments and hedged items, as well as the risk management objective and strategy for undertaking various hedge transactions. This process includes linking all derivatives that are designated as cash-flow hedges to specific forecasted transactions. We also assess, both at the hedge's inception and on an ongoing basis, whether the derivatives that are used in hedging transactions are highly effective in offsetting changes in cash flows of the hedged items.

## Accounts Receivable Allowances

Accounts receivable allowances reflect our best estimate of probable losses inherent in our accounts receivable balances. We regularly review allowances by considering factors such as historical experience, credit quality, the age of the accounts receivable balances and current economic conditions that may affect a customer's ability to pay.

Activity in accounts receivable allowance is as follows (in thousands):

	Fiscal		
	2016	2015	2014
Beginning balance	\$3,015	\$1,155	\$1,386
Additions charged to expenses	2,084	2,716	1,194
Deductions from reserves	(2,679 )	(856 )	(1,425 )
Ending balance	\$2,420	\$3,015	\$1,155

## Inventories

Inventories are stated at the lower of cost (first-in, first-out) or market. Inventories are as follows (in thousands):

	Fiscal year-end	
	2016	2015
Purchased parts and assemblies	\$56,824	\$50,182
Work-in-process	88,391	56,225
Finished goods	67,683	50,207
Total inventories	\$212,898	\$156,614

## Property and Equipment

Property and equipment are stated at cost and are depreciated or amortized using the straight-line method. Cost, accumulated depreciation and amortization, and estimated useful lives are as follows (dollars in thousands):

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 2. SIGNIFICANT ACCOUNTING POLICIES (Continued)

	Fiscal year-end		Useful Life
	2016	2015	
Land	\$7,523	\$6,132	
Buildings and improvements	85,908	69,970	5-40 years
Equipment, furniture and fixtures	248,741	230,208	3-10 years
Leasehold improvements	38,979	31,290	1-15 years
	381,151	337,600	
Accumulated depreciation and amortization	(253,708 )	(235,155 )	
Property and equipment, net	\$127,443	\$102,445	

## Asset Retirement Obligations

The fair value (the present value of estimated cash flows) of a liability for an asset retirement obligation is recognized in the period in which it is incurred if a reasonable estimate of fair value can be made. The fair value of the liability is added to the carrying amount of the associated asset and this additional carrying amount is depreciated over the life of the asset. All of our existing asset retirement obligations are associated with commitments to return the property to its original condition upon lease termination at various sites and costs to clean up and dispose of certain fixed assets at our Sunnyvale, California site. We estimated that as of fiscal 2016 year-end, gross expected future cash flows of \$3.1 million would be required to fulfill these obligations.

The following table reconciles changes in our asset retirement liability for fiscal 2016 and 2015 (in thousands):

Asset retirement liability as of September 27, 2014	\$2,222
Adjustment to asset retirement obligations recognized	542
Accretion recognized	55
Changes due to foreign currency exchange	(165 )
Asset retirement liability as of October 3, 2015	2,654
Adjustment to asset retirement obligations recognized	(14 )
Accretion recognized	71
Changes due to foreign currency exchange	85
Asset retirement liability as of October 1, 2016	\$2,796

At October 1, 2016 and October 3, 2015, the asset retirement liability is included in Other long-term liabilities on our consolidated balance sheets.

## Long-lived Assets

We evaluate the carrying value of long-lived assets, including intangible assets, whenever events or changes in business circumstances or our planned use of long-lived assets indicate that their carrying amounts may not be fully recoverable or that their useful lives are no longer appropriate. Reviews are performed to determine whether the carrying values of long-lived assets are impaired based on a comparison to the undiscounted expected future net cash flows. If the comparison indicates that impairment exists, long-lived assets that are classified as held and used are written down to their respective fair values. When long-lived assets are classified as held for sale, they are written down to their respective fair values less costs to sell. Significant management judgment is required in the forecast of future operating results that is used in the preparation of expected undiscounted cash flows. For fiscal years 2016, 2015 and 2014, there were no significant asset impairments recorded other than the \$2 million impairment of our investment in SiOnyx in fiscal 2015 (See Note 8. "Balance Sheet Details").

## Goodwill

Goodwill is tested for impairment on an annual basis and between annual tests in certain circumstances, and written down when impaired (see Note 7. "Goodwill and Intangible Assets"). In testing for impairment, we have the option to first assess qualitative factors to determine whether it is more likely than not (that is, a likelihood of more than 50%) that the fair value of a



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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 2. SIGNIFICANT ACCOUNTING POLICIES (Continued)

reporting unit is less than its carrying amount. Moreover, an entity can bypass the qualitative assessment for any reporting unit in any period and proceed directly to step one of the impairment test, and then resume performing the qualitative assessment in any subsequent period. In both our fiscal 2016 and 2015 annual testing, we performed a qualitative assessment of the goodwill for our SLS reporting unit using the opening balance sheet as of the first day of the fourth quarter and noted no impairment. For the CLC reporting unit, we elected to bypass the qualitative assessment and proceed directly to performing the first step of the goodwill impairment test. Accordingly, we performed our Step 1 test using the opening balance sheet as of the first day of the fourth quarter and noted no impairment in both fiscal 2016 and 2015. (See Note 7 for additional discussion of the fiscal 2016 analysis.)

**Intangible Assets**

Intangible assets, including acquired existing technology, customer lists and trade name are amortized on a straight-line basis over their estimated useful lives, currently 3 year to 15 years (See Note 7. "Goodwill and Intangible Assets").

**Warranty Reserves**

We provide warranties on the majority of our product sales and reserves for estimated warranty costs are recorded during the period of sale. The determination of such reserves requires us to make estimates of product return rates and expected costs to repair or replace the products under warranty. We currently establish warranty reserves based on historical warranty costs for each product line. The weighted average warranty period covered is approximately 15 months. If actual return rates and/or repair and replacement costs differ significantly from our estimates, adjustments to cost of sales may be required in future periods.

Components of the reserve for warranty costs during fiscal 2016, 2015 and 2014 were as follows (in thousands):

	Fiscal		
	2016	2015	2014
Beginning balance	\$15,308	\$16,961	\$18,508
Additions related to current period sales	21,859	20,959	24,149
Warranty costs incurred in the current period	(21,393 )	(21,922 )	(25,144 )
Accruals resulting from acquisitions	—	215	—
Adjustments to accruals related to foreign exchange and other	175	(905 )	(552 )
Ending balance	\$15,949	\$15,308	\$16,961

**Loss contingencies**

We are subject to the possibility of various loss contingencies arising in the ordinary course of business. We consider the likelihood of loss or impairment of an asset, or the incurrence of a liability, as well as our ability to reasonably estimate the amount of loss, in determining loss contingencies. An estimated loss contingency is accrued when it is probable that an asset has been impaired or a liability has been incurred and the amount of loss can be reasonably estimated. If we determine that a loss is possible and the range of the loss can be reasonably determined, then we disclose the range of the possible loss. We regularly evaluate current information available to us to determine whether an accrual is required, an accrual should be adjusted or a range of possible loss should be disclosed.

**Revenue Recognition**

When a sales arrangement contains multiple elements, such as products and/or services, we allocate revenue to each element based on a selling price hierarchy. Using the selling price hierarchy, we determine the selling price of each deliverable using vendor specific objective evidence ("VSOE"), if it exists, and otherwise third-party evidence ("TPE"). If neither VSOE nor TPE of selling price exists, we use estimated selling price ("ESP"). We generally expect that we will not be able to establish TPE due to the nature of the markets in which we compete, and, as such, we typically will determine selling price using VSOE or if not available, ESP.

Our basis for establishing VSOE of a deliverable's selling price consists of standalone sales transactions when the same or similar product or service is sold separately. However, when services are never sold separately, such as product installation services, VSOE is based on the product's estimated installation hours based on historical

experience multiplied by the standard

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COHERENT, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. SIGNIFICANT ACCOUNTING POLICIES (Continued)

service billing rate. In determining VSOE, we require that a substantial majority of the selling price for a product or service fall within a reasonably narrow price range, as defined by us. We also consider the geographies in which the products or services are sold, major product and service groups, and other environmental variables in determining VSOE. Absent the existence of VSOE and TPE, our determination of a deliverable's ESP involves evaluating several factors based on the specific facts and circumstances of these arrangements, which include pricing strategy and policies driven by geographies, market conditions, competitive landscape, correlation between proportionate selling price and list price established by management having the relevant authority, and other environmental variables in which the deliverable is sold.

For multiple element arrangements which include extended maintenance contracts, we allocate and defer the amount of consideration equal to the separately stated price and recognize revenue on a straight-line basis over the contract period.

We recognize revenue when all four revenue recognition criteria have been met: persuasive evidence of an arrangement exists, the product has been delivered or the service has been rendered, the price is fixed or determinable and collection is reasonably assured. Revenue from product sales is recorded when all of the foregoing conditions are met and risk of loss and title passes to the customer. Sales to customers are generally not subject to any price protection or return rights.

The majority of our sales are made to original equipment manufacturers ("OEMs"), distributors, representatives and end-users in the non-scientific market. Sales made to these customers do not require installation of the products by us and are not subject to other post-delivery obligations, except in occasional instances where we have agreed to perform installation or provide training. In those instances, we defer revenue related to installation services or training until these services have been rendered. We allocate revenue from multiple element arrangements to the various elements based upon relative fair values.

Our sales to distributors, representatives and end-user customers typically do not have customer acceptance provisions and only certain of our sales to OEM customers and integrators have customer acceptance provisions. Customer acceptance is generally limited to performance under our published product specifications. For the few product sales that have customer acceptance provisions because of higher than published specifications, (1) the products are tested and accepted by the customer at our site or the customer accepts the results of our testing program prior to shipment to the customer, or (2) the revenue is deferred until customer acceptance occurs.

Sales to end-users in the scientific market typically require installation and, thus, involve post-delivery obligations; however, our post-delivery installation obligations are not essential to the functionality of our products. We defer revenue related to installation services until completion of these services.

For most products, training is not provided; therefore, no post-delivery training obligation exists. However, when training is provided to our customers, it is typically priced separately and is recognized as revenue as these services are provided.

We record taxes collected on revenue-producing activities on a net basis.

Research and Development

Research and development expenses include salaries, contractor and consultant fees, supplies and materials, as well as costs related to other overhead such as depreciation, facilities, utilities and other departmental expenses. The costs we incur with respect to internally developed technology and engineering services are included in research and development expenses as incurred as they do not directly relate to any particular licensee, license agreement or license fee.

We treat third party and government funding of our research and development activity, where we are the primary beneficiary of such work conducted, as a reduction of research and development cost. Research and development reimbursements of \$2.7 million, \$2.5 million and \$7.2 million were offset against research and development costs in fiscal 2016, 2015 and 2014, respectively.

Foreign Currency Translation

The functional currencies of our foreign subsidiaries are generally their respective local currencies. Accordingly, gains and losses from the translation of the financial statements of the foreign subsidiaries are reported as a separate component of accumulated other comprehensive income ("OCI"). Foreign currency transaction gains and losses are included in earnings.

Comprehensive Income (Loss)

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 2. SIGNIFICANT ACCOUNTING POLICIES (Continued)

Comprehensive income (loss) is defined as the change in equity of a business enterprise during a period from transactions and other events and circumstances from non-owner sources. Accumulated other comprehensive income (loss) (net of tax) at fiscal 2016 year-end is substantially comprised of accumulated translation adjustments of \$(8.6) million and unrealized gain on marketable equity securities of \$3.3 million. Accumulated other comprehensive income (loss) (net of tax) at fiscal 2015 year-end is substantially comprised of accumulated translation adjustments of \$(10.4) million.

**Earnings Per Share**

Basic earnings per share is computed based on the weighted average number of shares outstanding during the period, excluding unvested restricted stock. Diluted earnings per share is computed based on the weighted average number of shares outstanding during the period increased by the effect of dilutive employee stock awards, including stock options, restricted stock awards and stock purchase contracts, using the treasury stock method.

The following table presents information necessary to calculate basic and diluted earnings per share (in thousands, except per share data):

	Fiscal		
	2016	2015	2014
Weighted average shares outstanding—basic	24,142	24,754	24,760
Dilutive effect of employee stock awards	273	238	316
Weighted average shares outstanding—diluted	24,415	24,992	25,076
Net income	\$87,502	\$76,409	\$59,106
Net income—basic	\$3.62	\$3.09	\$2.39
Net income—diluted	\$3.58	\$3.06	\$2.36

There were 323, 0 and 47,242 potentially dilutive securities excluded from the dilutive share calculation for fiscal 2016, 2015 and 2014, respectively, as its effect was anti-dilutive.

**Stock-Based Compensation**

We account for stock-based compensation using the fair value of the awards granted. We value restricted stock units using the intrinsic value method, which is based on the fair market value price on the grant date. We use a Monte Carlo simulation model to estimate the fair value of performance restricted stock units. We use historical data to estimate pre-vesting option and restricted stock unit forfeitures and record stock-based compensation expense only for those awards that are expected to vest. We amortize the fair value of stock awards on a straight-line basis over the requisite service periods of the awards, which are generally the vesting periods. See Note 12 "Employee Stock Award, Option and Benefit Plans" for a description of our stock-based employee compensation plans and the assumptions we use to calculate the fair value of stock-based employee compensation.

**Shipping and Handling Costs**

We record costs related to shipping and handling of net sales in cost of sales for all periods presented. Shipping and handling fees billed to customers are included in net sales. Custom duties billed to customers are recorded in cost of sales.

**Income Taxes**

As part of the process of preparing our consolidated financial statements, we are required to estimate our income tax provision (benefit) in each of the jurisdictions in which we operate. This process involves us estimating our current income tax provision (benefit) together with assessing temporary differences resulting from differing treatment of items for tax and accounting purposes. These differences result in deferred tax assets and liabilities, which are included within our consolidated balance sheets.

We account for uncertain tax issues pursuant to ASC 740-10 Income Taxes, which creates a single model to address accounting for uncertainty in tax positions by prescribing a minimum recognition threshold that a tax position is required to meet before being recognized in the financial statements. This standard provides a two-step approach for evaluating tax positions. The first step, recognition, occurs when a company concludes (based solely on the technical

aspects of the matter) that a tax position is more likely than not to be sustained upon examination by a taxing authority. The second step,

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 2. SIGNIFICANT ACCOUNTING POLICIES (Continued)

measurement, is only considered after step one has been satisfied and measures any tax benefit at the largest amount that is deemed more likely than not to be realized upon ultimate settlement of the uncertainty. These determinations involve significant judgment by management. Tax positions that fail to qualify for initial recognition are recognized in the first subsequent interim period that they meet the more likely than not standard or when they are resolved through negotiation or litigation with factual interpretation, judgment and certainty. Tax laws and regulations themselves are complex and are subject to change as a result of changes in fiscal policy, changes in legislation, evolution of regulations and court filings. Therefore, the actual liability for U.S. or foreign taxes may be materially different from our estimates, which could result in the need to record additional tax liabilities or potentially to reverse previously recorded tax liabilities.

We record a valuation allowance to reduce our deferred tax assets to an amount that more likely than not will be realized. While we have considered future taxable income and ongoing prudent and feasible tax planning strategies in assessing the need for the valuation allowance, in the event we were to determine that we would be able to realize our deferred tax assets in the future in excess of our net recorded amount, an adjustment to the allowance for the deferred tax asset would increase income in the period such determination was made. Likewise, should we determine that we would not be able to realize all or part of our net deferred tax asset in the future, an adjustment to the allowance for the deferred tax asset would be charged to income in the period such determination was made.

Federal and state income taxes have not been provided on a portion of the unremitted earnings of foreign subsidiaries because such earnings are intended to be permanently reinvested. The total amount of unremitted earnings (including accumulated translation adjustments) of foreign subsidiaries for which we have not yet recorded federal and state income taxes was approximately \$574.0 million and \$471.9 million at fiscal 2016 and 2015 year-end, respectively. The amount of federal and state income taxes that would be payable upon repatriation of such earnings is not practicably determinable. We have not, nor do we anticipate the need to, repatriate funds to the United States to satisfy domestic liquidity needs arising in the ordinary course of business.

Adoption of New Accounting Pronouncements

In November 2015, the FASB issued amended guidance that clarifies that in a classified statement of financial position, an entity shall classify deferred tax liabilities and assets as noncurrent amounts. The new guidance supersedes ASC 740-10-45-5 which required the valuation allowance for a particular tax jurisdiction be allocated between current and noncurrent deferred tax assets for that tax jurisdiction on a pro rata basis. We elected to early adopt the standard retrospectively in the first quarter of fiscal 2016, which resulted in the reclassification of \$28.1 million from current deferred income tax assets to non-current deferred income tax assets and non-current deferred income tax liabilities as of October 3, 2015.

In April 2015, the FASB issued amended guidance that simplifies the presentation of debt issuance costs by requiring that debt issuance costs related to a recognized debt liability be presented in the balance sheet as a direct deduction from the carrying amount of that debt liability, consistent with debt discounts. The recognition and measurement guidance for debt issuance costs are not affected by the amended guidance. The new standard will become effective for our fiscal year beginning October 2, 2016. We elected to early adopt the standard in the second quarter of fiscal 2016 and have recorded the debt issuance costs of \$5.2 million as of October 1, 2016 in other assets for the debt commitment we entered into in the second quarter of fiscal 2016. The debt issuance cost related to the term loan facility will be reclassified to debt in the first quarter of fiscal 2017.

Recently Issued Accounting Pronouncements

In October 2016, the FASB issued amended guidance that improves the accounting for the income tax consequences of intra-entity transfers of assets other than inventory. Under the new guidance, an entity should recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. The new standard will become effective for our fiscal year beginning October 1, 2018. We are currently assessing the impact of this amended guidance and the timing of adoption.

In May 2016, accounting guidance was issued to clarify the not yet effective revenue recognition guidance issued in May 2014. This additional guidance does not change the core principle of the revenue recognition guidance issued in May 2014, rather, it provides clarification of accounting for collections of sales taxes as well as recognition of revenue (i) associated with contract modifications, (ii) for noncash consideration, and (iii) based on the collectability of the consideration from the customer. The guidance also specifies when a contract should be considered “completed” for purposes of applying the transition guidance. The effective date and transition requirements for this guidance are the same as the effective date and transition requirements for the guidance previously issued in 2014, which is effective for our fiscal year beginning September 30, 2018.

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COHERENT, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. SIGNIFICANT ACCOUNTING POLICIES (Continued)

We are currently evaluating the new guidance and have not determined the impact this standard may have on our financial statements nor have we decided upon the method of adoption.

In March 2016, the FASB issued amended guidance that simplifies several aspects of the accounting for employee share-based payment transactions, including the accounting for income taxes, forfeitures, and statutory tax withholding requirements, as well as classification in the statement of cash flows. Under the new guidance, an entity recognizes all excess tax benefits and tax deficiencies as income tax expense or benefit in the income statement. This change eliminates the notion of the APIC pool and significantly reduces the complexity and cost of accounting for excess tax benefits and tax deficiencies. The new standard will become effective for our fiscal year beginning October 1, 2017. We are currently assessing the impact of this amended guidance and the timing of adoption.

In February 2016, the FASB issued amended guidance to increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet and disclosing key information about leasing arrangements. The new guidance clarifies the criteria for distinguishing between a finance lease and operating lease, as well as classification between the two types of leases, which is substantially unchanged from the previous lease guidance. Further, the new guidance requires a lessee to recognize in the statement of financial position a liability to make lease payments (the lease liability) and a right-of-use asset, initially measured at the present value of the lease payments. For finance leases, a lessee should recognize interest on the lease liability separately from amortization of the right-of-use asset. For operating leases, a lessee should recognize a single lease cost, calculated so that the cost of the lease is allocated over the lease term on a generally straight-line basis. For leases with a term of 12 months or less, a lessee is permitted to make an accounting policy election not to recognize lease assets and lease liabilities. The new standard will become effective for our fiscal year beginning September 29, 2019. We are currently assessing the impact of this amended guidance and the timing of adoption.

In January 2016, the FASB issued amended guidance that revises the recognition and measurement of financial instruments. The new guidance requires equity investments (except those accounted for under the equity method of accounting, or those that result in consolidation of the investee) to be measured at fair value with changes in fair value recognized in net income, requires public business entities to use the exit price notion when measuring the fair value of financial instruments for disclosure purposes, requires separate presentation of financial assets and financial liabilities by measurement category and form of financial asset, and eliminates the requirement for public business entities to disclose the method(s) and significant assumptions used to estimate the fair value that is required to be disclosed for financial instruments measured at amortized cost. The new standard will become effective for our fiscal year beginning September 30, 2018. We are currently assessing the impact of this amended guidance and the timing of adoption.

3. BUSINESS COMBINATIONS

Rofin-Sinar Technologies, Inc.

On November 7, 2016, we acquired Rofin-Sinar Technologies, Inc. ("Rofin"), one of the world's leading developers and manufacturers of high-performance industrial laser sources and laser-based solutions and components. See Note 16, "Subsequent Events" for further discussion of the acquisition.

Fiscal 2015 Acquisitions

Raydiance, Inc.

On July 24, 2015, we acquired certain assets of Raydiance, Inc. ("Raydiance") for approximately \$5.0 million, excluding transaction costs. Raydiance manufactured complete tools and lasers for ultrafast processing systems and subsystems in the precision micromachining processing market. The Raydiance assets have been included in our Specialty Lasers and Systems segment.



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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 3. BUSINESS COMBINATIONS (Continued)

Our allocation of the purchase price is as follows (in thousands):

Tangible assets	\$1,048
Goodwill	1,552
Intangible assets:	
Existing technology	800
Customer lists	1,600
Total	\$5,000

The purchase price allocated to goodwill was finalized in the first quarter of fiscal 2016, with an increase of \$0.4 million and a corresponding decrease of \$0.4 million to tangible assets, and has been updated from the preliminary allocation in the fourth quarter of fiscal 2015.

Results of operations for the business have been included in our consolidated financial statements subsequent to the date of acquisition and pro forma results of operations in accordance with authoritative guidance for prior periods have not been presented because the effect of the acquisition was not material to our prior period consolidated financial results.

The identifiable intangible assets are being amortized over their respective useful lives of three to five years.

None of the goodwill from this purchase is deductible for tax purposes.

We expensed \$0.1 million of acquisition-related costs as selling, general and administrative expenses in our consolidated statements of operations for our fiscal year 2015.

Tinsley Optics

On July 27, 2015, we acquired the assets and certain liabilities of the Tinsley Optics ("Tinsley") business from L-3 Communications Corporation for approximately \$4.3 million, excluding transaction costs. Tinsley is a specialized manufacturer of high precision optical components and subsystems sold primarily in the aerospace and defense industry. Tinsley manufactures the large form factor optics for our excimer laser annealing systems. Tinsley has been included in our Specialty Lasers and Systems segment.

Our allocation of the purchase price is as follows (in thousands):

Tangible assets:	
Inventories	\$2,263
Accounts receivable	2,240
Prepaid expenses and other assets	1,132
Property and equipment	2,451
Liabilities assumed	(1,702 )
Deferred tax liabilities	(768 )
Gain on business combination	(1,316 )
Total	\$4,300

The purchase price was lower than the fair value of net assets purchased, resulting in a gain of \$1.3 million recorded as a separate line item in our consolidated statements of operations for our fiscal year 2015. The Company reassessed the recognition and measurement of identifiable assets acquired and liabilities assumed and concluded that all acquired assets and assumed liabilities were recognized and that the valuation procedures and resulting measures were appropriate.

Results of operations for the business have been included in our consolidated financial statements subsequent to the date of acquisition and pro forma results of operations in accordance with authoritative guidance for prior periods have not been presented because the effect of the acquisition was not material to our prior period consolidated financial results.

The gain from the bargain purchase is not subject to income taxation.

We expensed \$0.4 million of acquisition-related costs as selling, general and administrative expenses in our consolidated statements of operations for our fiscal year 2015.

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 4. FAIR VALUES

We measure our cash equivalents and marketable securities at fair value. The fair values of our financial assets and liabilities are determined using quoted market prices of identical assets or quoted market prices of similar assets from active markets. We recognize transfers between levels within the fair value hierarchy, if any, at the end of each quarter. There were no transfers between levels during the periods presented. As of October 1, 2016 and October 3, 2015, we did not have any assets or liabilities valued based on Level 3 valuations.

Financial assets and liabilities measured at fair value as of October 1, 2016 and October 3, 2015 are summarized below (in thousands):

	Aggregate Fair Value	Quoted Prices in Active Markets for Identical Assets Fiscal year-end 2016 (Level 1)	Significant Other Observable Inputs (Level 2)	Aggregate Fair Value	Quoted Prices in Active Markets for Identical Assets Fiscal year-end 2015 (Level 1)	Significant Other Observable Inputs (Level 2)
<b>Assets:</b>						
<b>Cash equivalents:</b>						
Money market fund deposits	\$237,142	\$ 237,142	\$—	\$8,297	\$ 8,297	\$—
<b>Short-term investments:</b>						
U.S. Treasury and agency obligations <sup>(2)</sup>	125	—	125	150,748	—	150,748
Corporate notes and obligations <sup>(2)</sup>	—	—	—	17,942	—	17,942
Commercial paper <sup>(2)</sup>	24,999	—	24,999	9,740	—	9,740
Equity securities <sup>(1)</sup>	20,482	20,482	—	16,478	16,478	—
<b>Prepaid and other assets:</b>						
Foreign currency contracts <sup>(3)</sup>	889	—	889	258	—	258
Mutual funds — Deferred comp and supplemental plan <sup>(4)</sup>	14,399	14,399	—	13,891	13,891	—
<b>Total</b>	<b>\$298,036</b>	<b>\$ 272,023</b>	<b>\$ 26,013</b>	<b>\$217,354</b>	<b>\$ 38,666</b>	<b>\$ 178,688</b>
<b>Liabilities:</b>						
<b>Other current liabilities:</b>						
Foreign currency contracts <sup>(3)</sup>	(3,100 )	—	(3,100 )	(239 )	—	(239 )
<b>Total</b>	<b>\$294,936</b>	<b>\$ 272,023</b>	<b>\$ 22,913</b>	<b>\$217,115</b>	<b>\$ 38,666</b>	<b>\$ 178,449</b>

(1) Valuations are based upon quoted market prices.

Valuations are based upon quoted market prices in active markets involving similar assets. The market inputs used to value these instruments generally consist of market yields, reported trades, broker/dealer quotes or alternative pricing sources with reasonable levels of price transparency. Pricing sources include industry standard data providers, security master files from large financial institutions, and other third party sources which are input into a distribution-curve-based algorithm to determine a daily market value. This creates a “consensus price” or a weighted average price for each security.

The principal market in which we execute our foreign currency contracts is the institutional market in an over-the-counter environment with a relatively high level of price transparency. The market participants usually are large commercial

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 4. FAIR VALUES (Continued)

banks. Our foreign currency contracts' valuation inputs are based on quoted prices and quoted pricing intervals from public data sources and do not involve management judgment. At October 1, 2016, prepaid expenses and other assets include \$889 non-designated forward contracts; other current liabilities include \$3,100 non-designated forward contracts. At October 3, 2015, prepaid expenses and other assets include \$217 non-designated forward contracts and \$41 foreign currency contracts designated for cash flow hedges, respectively; other current liabilities include \$239 non-designated forward contracts and \$0 foreign currency contracts designated for cash flow hedges, respectively. See Note 6, "Derivative Instruments and Hedging Activities".

The fair value of mutual funds is determined based on quoted market prices. Securities traded on a national exchange are stated at the last reported sales price on the day of valuation; other securities traded in over-the-counter markets and listed securities for which no sale was reported on that date are stated as the last quoted bid price.

## 5. SHORT-TERM INVESTMENTS

We consider all highly liquid investments with maturities of three months or less at the time of purchase to be cash equivalents. Investments classified as available-for-sale are reported at fair value with unrealized gains and losses, net of related income taxes, recorded as a separate component of OCI in stockholders' equity until realized. Interest and amortization of premiums and discounts for debt securities are included in interest income. Gains and losses on securities sold are determined based on the specific identification method and are included in other income (expense). Cash, cash equivalents and short-term investments consist of the following (in thousands):

	Fiscal year-end 2016			
	Cost Basis	Unrealized Gains	Unrealized Losses	Fair Value
Cash and cash equivalents	\$354,347	\$ —	\$	—\$354,347
Short-term investments:				
Available-for-sale securities:				
Commercial paper	\$24,999	\$ —	\$	—\$24,999
U.S. Treasury and agency obligations	125	—	—	125
Equity securities	15,269	5,213	—	20,482
Total short-term investments	\$40,393	\$ 5,213	\$	—\$45,606

	Fiscal year-end 2015			
	Cost Basis	Unrealized Gains	Unrealized Losses	Fair Value
Cash and cash equivalents	\$130,607	\$ —	\$ —	\$130,607
Short-term investments:				
Available-for-sale securities:				
Commercial paper	\$9,740	\$ —	\$ —	\$9,740
U.S. Treasury and agency obligations	149,708	1,040	—	150,748
Corporate notes and obligations	17,892	52	(2 )	17,942
Equity securities	15,269	1,209	—	16,478
Total short-term investments	\$192,609	\$ 2,301	\$ (2 )	\$194,908

None of the unrealized losses as of October 1, 2016 or October 3, 2015 were considered to be other-than-temporary impairments.

The amortized cost and estimated fair value of available-for-sale investments in debt securities as of October 1, 2016 and October 3, 2015, classified as short-term investments on our consolidated balance sheets, were as follows (in thousands):

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 5. SHORT-TERM INVESTMENTS (Continued)

	Fiscal year-end		2015	
	2016	Estimated Fair Value	Amortized Cost	Estimated Fair Value
Investments in available-for-sale debt securities due in less than one year	\$25,124	\$25,124	\$148,088	\$149,100
Investments in available-for-sale debt securities due in one to five years <sup>(1)</sup>	\$—	\$—	\$29,252	\$29,330

(1) Classified as short-term investments because these securities are highly liquid and can be sold at any time. During fiscal 2016, we received proceeds totaling \$126.0 million from the sale of available-for-sale securities and realized gross gains of less than \$0.1 million. During fiscal 2015, we received proceeds totaling \$163.8 million from the sale of available-for-sale securities and realized gross gains of less than \$0.1 million.

## 6. DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES

We maintain operations in various countries outside of the United States and have foreign subsidiaries that manufacture and sell our products in various global markets. The majority of our sales are transacted in U.S. dollars. However, we do generate revenues in other currencies, primarily the Euro, Japanese Yen, South Korean Won and Chinese Renminbi (RMB). As a result, our earnings, cash flows and cash balances are exposed to fluctuations in foreign currency exchange rates. We attempt to limit these exposures through financial market instruments. We utilize derivative instruments, primarily forward contracts with maturities of seven months or less, to manage our exposure associated with anticipated cash flows and net asset and liability positions denominated in foreign currencies. Gains and losses on the forward contracts are mitigated by gains and losses on the underlying instruments. We do not use derivative financial instruments for speculative or trading purposes. The credit risk amounts represent the Company's gross exposure to potential accounting loss on derivative instruments that are outstanding or unsettled if all counterparties failed to perform according to the terms of the contract, based on then-current currency rates at each respective date.

For derivative instruments that are not designated as hedging instruments, gains and losses are recognized in other income (expense).

On August 1, 2016, we purchased forward contracts totaling 670.0 million Euros, with a value date of November 30, 2016, to limit our foreign exchange risk related to the commitment of our term loan (denominated in Euros) in an amount of the Euro equivalent of \$750.0 million to finance the U.S. dollar payment for the acquisition of Rofin. As of October 1, 2016, we had recognized an unrealized loss of \$2.2 million on these contracts in other income (expense) net. Subsequent to October 1, 2016, we settled these hedges at a net gain of \$3.1 million, resulting in a realized gain of \$5.3 million in the first quarter of fiscal 2017.

## Non-Designated Derivatives

The outstanding notional contract and fair value asset (liability) amounts of non-designated hedge contracts, with maximum maturity of seven months, are as follows (in thousands):

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 6. DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES (Continued)

	U.S. Notional Contract Value		U.S. Fair Value	
	October 1, 2016	October 3, 2015	October 1, 2016	October 3, 2015
Euro currency hedge contracts				
Purchase	\$91,108	\$52,699	\$162	\$ 33
Sell	\$(750,454)	\$—	\$(2,234)	\$—
South Korean WON currency hedge contracts				
Purchase	\$31,248	\$253	\$413	\$—
Sell	\$(37,929)	\$(17,747)	\$(152)	\$ 30
Chinese RMB currency hedge contracts				
Sell	\$(25,237)	\$(10,900)	\$(91)	\$(106)
Japanese Yen currency hedge contracts				
Purchase	\$—	\$558	\$—	\$ 8
Sell	\$(36,450)	\$(15,804)	\$(343)	\$(84)
Other foreign currency hedge contracts				
Purchase	\$6,033	\$3,283	\$(4)	\$(49)
Sell	\$(1,775)	\$(5,835)	\$38	\$ 146

## Designated Derivatives

Cash flow hedges related to anticipated transactions are designated and documented at the inception of the hedge when we enter into contracts for specific future transactions. Cash flow hedges are evaluated for effectiveness quarterly. The effective portion of the gain or loss on these hedges is reported as a component of OCI in stockholder's equity and is reclassified into earnings when the underlying transaction affects earnings. We had no cash flow hedges outstanding at October 1, 2016. Changes in the fair value of currency forward contracts due to changes in time value are excluded from the assessment of effectiveness and recognized in other income (expense) as incurred. We classify the cash flows from the foreign exchange forward contracts that are accounted for as cash flow hedges in the same section as the underlying item, primarily within cash flows from operating activities since we do not designate our cash flow hedges as investing or financing activities.

The outstanding notional contract and fair value asset (liability) amounts of designated cash flow hedge contracts, which have all been settled prior to October 1, 2016, are as follows (in thousands):

	U.S. Notional Contract Value		U.S. Fair Value	
	October 3, 2015	October 3, 2015	October 3, 2015	October 3, 2015
Japanese Yen currency hedge contracts				
Sell	\$(2,903)	\$—	\$ 41	

We had entered into certain derivative forward contracts to sell Japanese Yen and buy Euro to hedge revenue exposures related to our photonics-based solutions in Asia. In order to facilitate the hedge, we transacted with counterparties in the U.S. directly and then allocated the hedge contracts to our affiliates through a back-to-back relationship with our German subsidiary. The German subsidiary designated these hedge contracts as cash flow

hedges under ASC 815. The hedges were settled prior to October 1, 2016

The fair value of our derivative instruments is included in prepaid expenses and other assets and in other current liabilities in our Consolidated Balance Sheets (See Note 4); such amounts were not material as of October 1, 2016 and October 3, 2015.

The locations and amounts of designated and non-designated derivative instruments' gains and losses in the consolidated financial statements for the fiscal year ended October 1, 2016 and October 3, 2015 were as follows (in thousands):

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 6. DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES (Continued)

	Location in financial statements	Fiscal 2016	Fiscal 2015	Fiscal 2014
Derivatives designated as hedging instruments				
Gains(losses) in OCI on derivatives (effective portion), after tax	OCI	\$ (28 )	\$ 601	\$ (573 )
Losses reclassified from OCI into income (effective portion)	Cost of sales	\$ —	\$ (1,720 )	\$ —
Gains(losses) reclassified from OCI into income (effective portion)	Revenue	\$ (58 )	\$ 208	\$ (13 )
Gains(losses) recognized in income on derivatives (ineffective portion and amount excluded from effectiveness testing)	Other income (expense)	\$ (29 )	\$ (108 )	\$ 20
Derivatives not designated as hedging instruments				
Losses recognized in income	Other income (expense)	\$ (10,527 )	\$ (4,320 )	\$ (3,105 )

During the fiscal year ended October 1, 2016 and October 3, 2015, we recognized losses of \$31,000 and \$107,000, respectively, in other income (expense) as ineffectiveness related to a portion of an anticipated hedged transaction that failed to occur within the original hedge period plus two months. The remainder of the hedged transaction occurred as expected and effective amounts were recognized in revenue or cost of sales as disclosed in the above table.

The amounts that will be reclassified from OCI to earnings are generally offset by the recognition of the hedged transactions (e.g., anticipated cost of sales) in earnings, thereby achieving the realization of prices contemplated by the underlying risk management strategies and will vary from the expected amounts presented above as a result of changes in foreign exchange rates.

To mitigate credit risk in derivative transactions, we enter into master netting arrangements that allow each counterparty in the arrangements to net settle amounts of multiple and separate derivative transactions under certain conditions. We present the fair value of derivative assets and liabilities within the our consolidated balance sheet on a gross basis even when derivative transactions are subject to master netting arrangements and may otherwise qualify for net presentation. Our derivative contracts do not contain any credit risk related contingent features and do not require collateral or other security to be furnished by us or the counterparties.

Offsetting of Financial Assets/Liabilities under Master Netting Agreements with Derivative Counterparties as of October 1, 2016 and October 3, 2015 (in thousands):

Gross Amounts of Recognized Derivative Assets	Gross Amounts Offset in the Consolidated Balance Sheets	Net Amounts of Derivative Assets Presented in the Consolidated Balance Sheets	Gross Amounts Not Offset in the Consolidated Balance Sheets		Net Amounts
			Financial Instruments (1)	Cash Collateral Received	

As of October 1, 2016:

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Foreign exchange contracts \$ 889 \$ —\$ 889 \$ (860 ) \$ —\$ 29  
As of October 3, 2015:

Foreign exchange contracts \$ 258 \$ —\$ 258 \$ (116 ) \$ —\$ 142

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 6. DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES (Continued)

(1) The balances at October 1, 2016 and October 3, 2015 were related to derivative liabilities which are allowed to be net settled against derivative assets in accordance with the master netting agreements.

	Gross Amounts of Recognized Derivative Liabilities	Gross Amounts Offset in the Consolidated Balance Sheets	Net Amounts of Derivative Liabilities Presented in the Consolidated Balance Sheets	Financial Instrument (1)	Cash Collateral Paid	Net Amounts
As of October 1, 2016:						
Foreign exchange contracts	\$ (3,100 )	\$	—\$ (3,100 )	\$ 860	\$	—\$(2,240 )
As of October 3, 2015:						
Foreign exchange contracts	\$ (239 )	\$	—\$ (239 )	\$ 116	\$	—\$(123 )

(1) The balances at October 1, 2016 and October 3, 2015 were related to derivative assets which are allowed to be net settled against derivative liabilities in accordance with the master netting agreements.

## 7. GOODWILL AND INTANGIBLE ASSETS

Goodwill is tested for impairment on an annual basis and between annual tests if events or circumstances indicate that an impairment loss may have occurred, and we write down these assets when impaired. We perform our annual impairment tests during the fourth quarter of each fiscal year using the opening balance sheet as of the first day of the fourth quarter, with any resulting impairment recorded in the fourth quarter of the fiscal year.

During fiscal 2016, Coherent had two reporting units: Specialty Laser Systems ("SLS") and Commercial Lasers and Components ("CLC"). In our fiscal 2016 annual testing, we performed a qualitative assessment of the goodwill for our SLS reporting unit during the fourth quarter of fiscal 2016 using the opening balance sheet as of the first day of the fourth quarter and concluded that it was more likely than not that the fair value of the reporting unit exceeded its carrying amount. In assessing the qualitative factors, we considered the impact of these key factors: macroeconomic conditions, fluctuations in foreign currency, market and industry conditions, our operating and competitive environment, regulatory and political developments, the overall financial performance of the reporting unit including cost factors and budgeted-to-actual revenue results. We also considered our market capitalization, stock price performance and the significant excess between the estimated fair value and carrying value of the SLS reporting unit. Based on our assessment, goodwill in the SLS reporting unit was not impaired as of the first day of the fourth quarter of fiscal 2016. As such, it was not necessary to perform the two-step goodwill impairment test at that time. For the CLC reporting unit, we elected to bypass the qualitative assessment and proceed directly to performing the first step of the goodwill impairment test. We performed our Step 1 test using the opening balance sheet as of the first day of the fourth quarter and noted no impairment. We determined the fair value of the CLC reporting unit for the Step 1 test using a 50-50% weighting of the Income (discounted cash flow) approach and Market (market comparable) approach. Management completed and reviewed the results of the Step 1 analysis and concluded that a Step 2 analysis was not required as the estimated fair value of the CLC reporting unit was significantly in excess of its carrying value. Between the completion of that testing and the end of the fourth quarter of fiscal 2016, we noted no indications of impairment or triggering events with either reporting unit to cause us to review goodwill for potential impairment.

The changes in the carrying amount of goodwill by segment for fiscal 2016 and 2015 are as follows (in thousands):

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 7. GOODWILL AND INTANGIBLE ASSETS (continued)

	Commercial Specialty		Total
	Lasers and Components (1)	Laser Systems (2)	
Balance as of September 27, 2014	\$ 6,363	\$103,150	\$109,513
Additions (see Note 3)	—	1,119	1,119
Translation adjustments and other	—	(8,815 )	(8,815 )
Balance as of October 3, 2015	6,363	95,454	101,817
Additions (see Note 3)	—	434	434
Translation adjustments and other	—	(793 )	(793 )
Balance as of October 1, 2016	\$ 6,363	\$95,095	\$101,458

(1) Gross amount of goodwill for our CLC segment was \$25.7 million at both October 1, 2016 and October 3, 2015. At both October 1, 2016 and October 3, 2015, the accumulated impairment loss for the CLC reporting unit was \$19.3 million reflecting an impairment charge in fiscal 2009.

(2) Gross amount of goodwill for our SLS segment was \$97.4 million and \$97.8 million at October 1, 2016 and October 3, 2015. At both October 1, 2016 and October 3, 2015, the accumulated impairment loss for the SLS reporting unit was \$2.4 million reflecting an impairment charge in fiscal 2003.

We evaluate long-lived assets and amortizable intangible assets whenever events or changes in business circumstances or our planned use of assets indicate that their carrying amounts may not be fully recoverable or that their useful lives are no longer appropriate. Reviews are performed to determine whether the carrying values of assets are impaired based on comparison to the undiscounted expected future cash flows identifiable to such long-lived and amortizable intangible assets. If the comparison indicates that impairment exists, the impaired asset is written down to its fair value.

During fiscal 2016, we wrote down IPR&D of \$0.4 million related to our fiscal 2013 acquisition of Innolight Innovative Laser and Systemtechnik GmbH as management abandoned the in-process R&D projects in the fourth quarter of fiscal 2016. In fiscal 2015 and 2014, we did not have any impairment of intangible assets as a result of the impairment analysis.

The components of our amortizable intangible assets are as follows (in thousands):

	Fiscal year-end 2016			Fiscal year-end 2015		
	Gross Carrying Amount	Accumulated Amortization	Net	Gross Carrying Amount	Accumulated Amortization	Net
Existing technology	\$70,664	\$ (61,133 )	\$9,531	\$71,365	\$ (55,452 )	\$15,913
Customer lists	15,968	(11,658 )	4,310	16,099	(9,661 )	6,438
Trade name	384	(351 )	33	399	(349 )	50
In-process research and development	—	—	—	375	—	375
Total	\$87,016	\$ (73,142 )	\$13,874	\$88,238	\$ (65,462 )	\$22,776

For accounting purposes, when an intangible asset is fully amortized, it is removed from the disclosure schedule. Amortizable intangible assets include intangible assets acquired through business combinations as well as through direct purchases or licenses.

The weighted average remaining amortization period for existing technology is approximately 2.1 years, the weighted average remaining amortization period for customer lists is 2.8 years, and the weighted average remaining amortization period for trade name is 3.1 years. Amortization expense for intangible assets during fiscal years 2016, 2015, and 2014 was \$8.5 million, \$8.2 million and \$9.6 million, respectively, which includes \$6.0 million, \$6.3 million and \$7.5 million, respectively, for amortization of existing technology. The change in accumulated amortization also includes \$0.4 million and \$2.9 million of foreign exchange impact for fiscal 2016 and fiscal 2015,

respectively.

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 7. GOODWILL AND INTANGIBLE ASSETS (continued)

Estimated amortization expense for the next five fiscal years and all years thereafter are as follows (in thousands):

	Estimated Amortization Expense
2017	\$ 6,932
2018	4,197
2019	2,107
2020	634
2021	2
Thereafter <sup>2</sup>	
Total	\$ 13,874

## 8. BALANCE SHEET DETAILS

Prepaid expenses and other assets consist of the following (in thousands):

	Fiscal year-end	
	2016	2015
Prepaid and refundable income taxes	\$12,415	\$8,846
Other taxes receivable	10,538	6,574
Prepaid expenses and other assets	14,120	12,874
Total prepaid expenses and other assets	\$37,073	\$28,294

Other assets consist of the following (in thousands):

	Fiscal year-end	
	2016	2015
Assets related to deferred compensation arrangements (see Note 12)	\$26,356	\$25,131
Deferred tax assets	67,157	60,254
Other assets	9,221	3,841
Total other assets	\$102,734	\$89,226

In fiscal 2010, we invested \$2.0 million in SiOnyx, Inc., a privately-held company. The investment was included in other assets and was being carried on a cost basis. During the third quarter of fiscal 2015 we determined that our investment became other-than temporarily impaired. As a result, during the third quarter of fiscal 2015, we recorded a non-cash charge of \$2.0 million in our results of operations to impair this investment. In determining the fair value of the cost method investment, we considered many factors including but not limited to operating performance of the investee, the amount of cash that the investee has on-hand, the ability to obtain additional financing and the overall market conditions in which the investee operates. The fair value of the cost method investment represents a Level 3 valuation as the assumptions used in valuing the investment were not directly or indirectly observable.

For our \$750.0 million debt financing commitment with certain lenders (See Note 9 "Borrowings"), we paid \$5.2 million of debt issuance costs in fiscal 2016 and recorded it to other assets. The debt issuance cost related to the term loan facility will be reclassified to debt in the first quarter of fiscal 2017.

Other current liabilities consist of the following (in thousands):

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 8. BALANCE SHEET DETAILS (continued)

	Fiscal year-end	
	2016	2015
Accrued payroll and benefits	\$47,506	\$35,504
Accrued expenses and other	14,700	10,965
Warranty reserve (see Note 2)	15,949	15,308
Other taxes payable	3,656	4,888
Customer deposits	1,597	1,793
Deferred revenue	33,034	16,474
Total other current liabilities	\$116,442	\$84,932

Other long-term liabilities consist of the following (in thousands):

	Fiscal year-end	
	2016	2015
Long-term taxes payable	\$2,951	\$7,651
Deferred compensation (see Note 12)	28,313	26,691
Deferred tax liabilities	1,468	2,717
Deferred revenue	4,069	3,149
Asset retirement obligations liability (see Note 2)	2,796	2,654
Other long-term liabilities	9,229	7,077
Total other long-term liabilities	\$48,826	\$49,939

## 9. BORROWINGS

We have several lines of credit which allow us to borrow in the applicable local currency. We have a total of \$13.2 million of unsecured foreign lines of credit as of October 1, 2016. At October 1, 2016, we had used \$1.6 million of these available foreign lines of credit as guarantees. These credit facilities were used in Europe and Japan during fiscal 2016. In addition, our domestic line of credit consists of a \$50.0 million unsecured revolving credit account. The agreement will expire on May 31, 2017. The line of credit is subject to covenants related to financial ratios and tangible net worth with which we are currently in compliance. We have an outstanding balance of \$20.0 million and have used \$1.1 million for letters of credit against our domestic line of credit as of October 1, 2016. On November 4, 2016, we repaid the outstanding balance, plus accrued interest, on our domestic line of credit and terminated the credit facility.

On November 7, 2016, we entered into a Credit Agreement (the "Credit Agreement") with Barclays Bank PLC ("Barclays"), Bank of America, N.A. ("BAML") and The Bank of Tokyo-Mitsubishi UFJ, Ltd. ("MUFG"). The Credit Agreement provided for a 670.0 million Euro senior secured term loan facility (the "Euro Term Loan") and a \$100.0 million senior secured revolving credit facility. On November 7, 2016, the Euro Term Loan was drawn in full and its proceeds were used to finance the acquisition of Rofin and pay related fees and expenses. Also, on November 7, 2016, we used 10.0 million Euro of the capacity under the revolving credit facility for the issuance of a letter of credit. We paid \$5.2 million of debt issuance costs in fiscal 2016 and recorded it to other assets on our consolidated balance sheets as we had not drawn down the debt as of October 1, 2016. The debt issuance cost related to the term loan facility will be reclassified to debt in the first quarter of fiscal 2017. In the fourth quarter of fiscal 2016, we recorded an interest charge of \$1.1 million interest expense within other income (expense) in our consolidated statement of operations related to the debt financing commitment. See Note 16, "Subsequent Events" for further discussion of the issuance of the financing.

## 10. COMMITMENTS AND CONTINGENCIES

## Commitments

We lease several of our facilities under operating leases and recognize rent expense on a straight-line basis over the life of the leases.

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 10. COMMITMENTS AND CONTINGENCIES (continued)

Future minimum payments under our non-cancelable operating leases at October 1, 2016 are as follows (in thousands):

Fiscal	
2017	\$ 11,548
2018	9,091
2019	6,379
2020	4,859
2021	2,852
Thereafter through 2025	5,125
Total	\$ 39,854

Rent expense, exclusive of sublease income, was \$12.6 million, \$11.0 million and \$11.0 million in fiscal 2016, 2015 and 2014, respectively.

As of October 1, 2016, we had total purchase commitments for inventory of approximately \$73.7 million and purchase obligations for fixed assets and services of \$12.2 million compared to \$25.3 million of purchase commitments for inventory and \$9.0 million of purchase obligations for fixed assets and services at October 3, 2015.

**Contingencies**

We are subject to legal claims and litigation arising in the ordinary course of business, such as product liability, employment or intellectual property claims, including, but not limited to, the matters described below. On May 14, 2013, IMRA America (“Imra”) filed a complaint for patent infringement against two of our subsidiaries in the Regional Court of Düsseldorf, Germany, captioned *In re IMRA America Inc. versus Coherent Kaiserslautern GmbH et. al.* 4b O 38/13. The complaint alleges that the use of certain of the Company’s lasers infringes upon EP Patent No. 754,103, entitled “Method For Controlling Configuration of Laser Induced Breakdown and Ablation,” issued November 5, 1997. The patent, now expired in all jurisdictions, is owned by the University of Michigan and licensed to Imra. The complaint seeks unspecified compensatory damages, the cost of court proceedings and seeks to permanently enjoin the Company from infringing the patent in the future. Following the filing of the infringement suit, our subsidiaries filed a separate nullity action with the Federal Patent Court in Munich, Germany requesting that the court hold that the Patent was invalid based on prior art. On October 1, 2015, the Federal Patent Court ruled that the German portion of the Patent was invalid. Imra has appealed this decision to the Federal Court of Justice, the highest civil jurisdiction court in Germany. The infringement action is currently stayed pending the outcome of such appeal. Management has made an accrual with respect to this matter and has determined, based on its current knowledge, that the amount or range of reasonably possible losses in excess of the amounts already accrued is not reasonably estimable. Although we do not expect that such legal claims and litigation will ultimately have a material adverse effect on our consolidated financial position, results of operations or cash flows, an adverse result in one or more matters could negatively affect our results in the period in which they occur.

The United States and many foreign governments impose tariffs and duties on the import and export of certain products we sell. From time to time our duty calculations and payments are audited by government agencies. During the second quarter of fiscal 2016, we concluded an audit in South Korea for customs duties and value added tax for the period March 2009 to March 2014. We paid \$1.6 million related to this matter in the second quarter of fiscal 2016 and have no remaining accrual at October 1, 2016.

On November 7, 2016, we entered into a Credit Agreement with Barclays, BAML and MUFG. See Note 9 "Borrowings" and Note 16 "Subsequent Events" for further discussion of the issuance of the financing.

In relation to the acquisition of Rofin, we paid Barclays, our financial advisor, a fee of approximately \$9.5 million, \$1.0 million of which was paid upon delivery of the fairness opinion in the second quarter of fiscal 2016, and was recorded in the selling, general and administrative line of the consolidated statements of operations, and the remaining portion of which was paid upon consummation of the acquisition in the first quarter of fiscal 2017. We also paid Barclays, BAML and MUFG together approximately \$17.0 million and \$5.6 million for underwriting and upfront

fees, respectively, upon the close of the financing on November 7, 2016.

Table of Contents**11. STOCK REPURCHASES**

On July 25, 2014, our Board of Directors authorized a buyback program whereby we were authorized to repurchase up to \$25.0 million of our common stock from time to time through July 31, 2015. During the first and second quarters of fiscal 2015, we repurchased and retired 434,114 shares of outstanding common stock under this plan at an average price of \$57.59 per share for a total of \$25.0 million.

On January 21, 2015, our Board of Directors authorized an additional stock repurchase program to repurchase up to \$25.0 million of our outstanding common stock from time to time through January 31, 2016. During the fourth quarter of fiscal 2015, we repurchased and retired 430,675 shares of outstanding common stock under this plan at an average price of \$58.05 per share for a total of \$25.0 million.

On August 25, 2015, our Board of Directors authorized an additional stock repurchase program to repurchase up to \$25.0 million of our outstanding common stock from time to time through August 31, 2016. During the fourth quarter of fiscal 2015, we repurchased and retired 437,534 shares of outstanding common stock under this plan at an average price of \$57.14 per share for a total of \$25.0 million.

**12. EMPLOYEE STOCK AWARD AND BENEFIT PLANS****Deferred Compensation Plans**

Under our deferred compensation plans ("plans"), eligible employees are permitted to make compensation deferrals up to established limits set under the plans and accrue income on these deferrals based on reference to changes in available investment options. While not required by the plan, the Company chooses to invest in insurance contracts and mutual funds in order to approximate the changes in the liability to the employees. These investments and the liability to the employees were as follows (in thousands):

	Fiscal Year-end	
	2016	2015
Cash surrender value of life insurance contracts	\$13,636	\$12,780
Fair value of mutual funds	14,399	13,891
Total assets	\$28,035	\$26,671

**Total assets, included in:**

Prepaid expenses and other assets	\$1,679	\$1,540
Other assets	26,356	25,131
Total assets	\$28,035	\$26,671

	Fiscal year-end	
	2016	2015
Total deferred compensation liability, included in:		
Other current liabilities	\$1,679	\$1,540
Other long-term liabilities	28,313	26,691
Total deferred compensation liability	\$29,992	\$28,231

Life insurance premiums loads, policy fees and cost of insurance that are paid from the asset investments and gains and losses from the asset investments for these plans are recorded as components of other income or expense; such amounts were a net gain of \$1.7 million in fiscal year 2016, a net loss of \$0.4 million in fiscal year 2015 and a net gain of \$4.2 million in fiscal year 2014. Changes in the obligation to plan participants are recorded as a component of operating expenses and cost of sales; such amounts were a loss of \$2.1 million in fiscal year 2016, an income of \$0.2 million in fiscal year 2015 and a loss of \$4.3 million in fiscal year 2014. Liabilities associated with participant balances under our deferred compensation plans are affected

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COHERENT, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

12. EMPLOYEE STOCK AWARD AND BENEFIT PLANS (continued)

by individual contributions and distributions made, as well as gains and losses on the participant's investment allocation election.

Coherent Employee Retirement and Investment Plan

Under the Coherent Employee Retirement and Investment Plan, we match employee contributions to the plan up to a maximum of 4% of the employee's individual earnings subject to IRS limitations. Employees become eligible for participation on their first day of employment and for Company matching contributions after completing one year of service. Effective November 1, 2016, employees became eligible for participation and Company matching contributions on their first day of employment. The Company's contributions (net of forfeitures) during fiscal 2016, 2015, and 2014 were \$4.1 million, \$3.6 million and \$3.6 million, respectively.

Employee Stock Purchase Plan

We have an Employee Stock Purchase Plan ("ESPP") whereby eligible employees may authorize payroll deductions of up to 10% of their regular base salary to purchase shares at the lower of 85% of the fair market value of the common stock on the date of commencement of the offering or on the last day of the six-month offering period. During fiscal 2016, 2015 and 2014, a total of 141,340 shares, 132,004 shares and 134,321 shares, respectively, were purchased by and distributed to employees at an average price of \$46.81, \$51.34 and \$48.68 per share, respectively. At fiscal 2016 year-end, we had 520,560 shares of our common stock reserved for future issuance under the plan.

Stock Award Plans

We maintain a stock plan for which employees, service providers and non-employee directors are eligible participants. This plan, the 2011 Equity Incentive Plan (the "2011 Plan"), provides for grants of options, time-based restricted stock units and performance restricted stock units. In prior years, we had a stock plan for which employees and service providers were eligible participants and a non-employee Directors' Stock Option Plan for which only non-employee directors were eligible participants. Those prior plans have expired. Under the 2011 Plan, Coherent may grant options and awards (time-based restricted stock units and performance restricted stock units) to purchase up to 6,747,691 shares of common stock, of which 5,230,398 shares remained available for grant at fiscal 2016 year-end.

Historically option grants to employees generally expired four years from the original grant date. Since adoption of the 2011 Plan, no stock options have been granted to employees.

Director options were previously automatically granted to our non-employee directors. New directors now initially receive an award of restricted stock units of 3,500 shares which vest over a two year period. The annual grant for non-employee directors is 3,500 shares of restricted stock units that vest on February 15 of the calendar year following the grant.

Restricted stock awards and restricted stock units are typically subject to vesting restrictions—either time-based or market-based conditions for vesting. Until restricted stock vests, shares (including those issuable upon vesting of the applicable restricted stock unit) are subject to forfeiture if employment or service to the Company terminates prior to the release of restrictions and cannot be transferred.

• The service based restricted stock awards generally vest within three years from the date of grant.

• The service based restricted stock unit awards are generally subject to annual vesting over three years from the date of grant.

• The performance restricted stock unit award grants are generally either subject to annual vesting over three years from the date of grant or subject to a single vest measurement three years from the date of grant, depending upon achievement of performance measurements based on the performance of the Company's total shareholder returns (as defined in the plan) compared with the performance of the Russell 2000 Index.

Fair Value of Stock Compensation

We recognize compensation expense for all share-based payment awards based on the fair value of such awards. The expense is recognized on a straight-line basis per tranche over the respective requisite service period of the awards.

Determining Fair Value



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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 12. EMPLOYEE STOCK AWARD AND BENEFIT PLANS (continued)

Valuation and amortization method—We estimate the fair value of employee stock purchase shares using the Black-Scholes-Merton option-pricing formula. This fair value is then amortized on a straight-line basis over the purchase period.

Expected Term—The expected term represents the period of our employee stock purchase plan.

Expected Volatility—Our process for computing expected volatility considers both historical volatility and market-based implied volatility; however our estimate of expected forfeitures is based on historical employee data and could differ from actual forfeitures.

Risk-Free Interest Rate—The risk-free interest rate used in the Black-Scholes-Merton valuation method is based on the implied yield currently available on U.S. Treasury zero-coupon issues with an equivalent remaining term.

The fair values of shares purchased under the employee stock purchase plan for fiscal 2016, 2015 and 2014 were estimated using the following weighted-average assumptions:

	Employee Stock Purchase Plans					
	Fiscal					
	2016		2015		2014	
Expected life in years	0.5		0.5		0.5	
Expected volatility	35.0	%	28.6	%	24.1	%
Risk-free interest rate	0.3	%	0.1	%	0.1	%
Weighted average fair value per share	\$18.59		\$14.39		\$13.57	

## Time-Based Restricted Stock Units

Time-based restricted stock units are fair valued at the closing market price on the date of grant.

## Performance Restricted Stock Units

We grant performance restricted stock units to officers and certain employees. The performance stock unit agreements provide for the award of performance stock units with each unit representing the right to receive one share of our common stock to be issued after the applicable award vesting period. The final number of units awarded, if any, for these performance grants will be determined as of the vesting dates, based upon our total shareholder return over the performance period compared to the Russell 2000 Index and could range from no units to a maximum of twice the initial award units. The weighted average fair value for these performance units was determined using a Monte Carlo simulation model incorporating the following weighted average assumptions:

	Fiscal					
	2016		2015		2014	
Risk-free interest rate	1.2	%	1.0	%	0.6	%
Volatility	27.0	%	28.7	%	36.9	%
Weighted average fair value	\$74.48		\$70.57		\$77.10	

We recognize the estimated cost of these awards, as determined under the simulation model, over the related service period, with no adjustment in future periods based upon the actual shareholder return over the performance period.

## Stock Compensation Expense

The following table shows total stock-based compensation expense and related tax benefits included in the Consolidated Statements of Operations for fiscal 2016, 2015 and 2014 (in thousands):

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 12. EMPLOYEE STOCK AWARD AND BENEFIT PLANS (continued)

	Fiscal		
	2016	2015	2014
Cost of sales	\$2,558	\$2,530	\$2,393
Research and development	2,268	1,946	2,033
Selling, general and administrative	15,331	13,756	14,471
Income tax benefit	(4,896 )	(4,247 )	(5,243 )
	\$15,261	\$13,985	\$13,654

Total stock-based compensation cost capitalized as part of inventory during fiscal 2016 was \$2.7 million; \$2.6 million was amortized into income during fiscal 2016, which includes amounts capitalized in fiscal 2016 and amounts carried over from fiscal 2015. Total stock-based compensation cost capitalized as part of inventory during fiscal 2015 was \$2.5 million; \$2.5 million was amortized into income during fiscal 2015, which includes amounts capitalized in fiscal 2015 and amounts carried over from fiscal 2014. Management has made an estimate of expected forfeitures and is recognizing compensation costs only for those equity awards expected to vest.

At fiscal 2016 year-end, the total compensation cost related to unvested stock-based awards granted to employees under the Company's stock plans but not yet recognized was approximately \$21.2 million, net of estimated forfeitures of \$0.8 million. This cost will be amortized on a straight-line basis over a weighted-average period of approximately 1.4 years and will be adjusted for subsequent changes in estimated forfeitures.

At fiscal 2016 year-end, the total compensation cost related to options to purchase common shares under the ESPP but not yet recognized was approximately \$0.2 million. This cost will be amortized on a straight-line basis over a weighted-average period of approximately one month.

The stock option exercise tax benefits reported in the statement of cash flows results from the excess tax benefits arising from tax deductions in excess of the stock-based compensation cost recognized, determined on a grant-by-grant basis. During fiscal 2016, 2015 and 2014 we have not generated any excess tax benefits as cash flows from financing activities.

## Stock Awards Activity

At fiscal 2016, 2015 and 2014 year-end, we had 33,500, 86,000 and 107,000 shares subject to stock options outstanding.

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 12. EMPLOYEE STOCK AWARD AND BENEFIT PLANS (continued)

The following table summarizes our time-based and performance restricted stock unit activity for fiscal 2016, 2015 and 2014 (in thousands, except per share amounts):

	Time Based Restricted Stock Units		Performance Restricted Stock Units	
	Number of Shares	Weighted Average Grant Date Fair Value	Number of Shares	Weighted Average Grant Date Fair Value
Nonvested stock at September 28, 2013	453	\$ 48.22	213	\$ 54.63
Granted	226	65.80	52	77.10
Vested <sup>(1)</sup>	(275)	47.44	(33)	43.25
Forfeited	(14)	56.06	(3)	46.99
Nonvested stock at September 27, 2014	390	\$ 58.66	229	\$ 61.46
Granted	237	64.84	51	70.57
Vested <sup>(1)</sup>	(219)	53.62	(38)	53.46
Forfeited	(14)	59.06	(43)	53.46
Nonvested stock at October 3, 2015	394	\$ 65.17	199	\$ 67.09
Granted	270	64.42	65	74.48
Vested <sup>(1)</sup>	(192)	61.11	(57)	48.48
Forfeited	(13)	63.89	(38)	48.48
Nonvested stock at October 1, 2016	459	\$ 66.47	169	\$ 74.10

<sup>(1)</sup> Service-based restricted stock vested during each fiscal year. Performance awards and units included at 100% of target goal; under the terms of the awards, the recipient may earn between 0% and 200% of the award.

Restricted Stock Units are converted into the right to receive common stock upon vesting; prior to issuance, the Company permits the employee holders to satisfy their tax withholding requirements by net settlement, whereby the Company withholds a portion of the shares to cover the applicable taxes based on the fair market value of the Company's stock at the vesting date. The number of shares withheld to cover tax payments was 89,000 in fiscal 2016, 91,000 in fiscal 2015 and 118,000 in fiscal 2014; tax payments made were \$5.4 million, \$5.3 million and \$7.8 million, respectively.

At fiscal 2016 year-end, 5,230,398 options or restricted stock units were available for future grant under all plans. At fiscal 2016 year-end, all outstanding stock options and restricted stock units have been issued under plans approved by our shareholders.

## 13. OTHER INCOME (EXPENSE), NET

Other income (expense) includes other-net which is comprised of the following (in thousands):

	Fiscal		
	2016	2015	2014
Foreign exchange loss	\$(6,310)	\$(1,396)	\$(2,246)
Gain (loss) on deferred compensation investments, net (Note 12)	1,738	(351)	4,236
Other	57	21	38
Other - net	\$(4,515)	\$(1,726)	\$2,028



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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 14. INCOME TAXES (continued)

## 14. INCOME TAXES

The provision for (benefit from) income taxes on income (loss) before income taxes consists of the following (in thousands):

	Fiscal		
	2016	2015	2014
Currently payable:			
Federal	\$(3,069 )	\$(932 )	\$2,492
State	89	108	92
Foreign	48,039	32,189	26,885
	45,059	31,365	29,469
Deferred:			
Federal	(8,131 )	(4,327 )	(2,815 )
State	(439 )	(200 )	(111 )
Foreign	(1,095 )	(3,679 )	(6,430 )
	(9,665 )	(8,206 )	(9,356 )
Provision for income taxes	\$35,394	\$23,159	\$20,113

The components of income (loss) before income taxes consist of (in thousands):

	Fiscal		
	2016	2015	2014
United States	\$(44,029 )	\$(13,293 )	\$821
Foreign	166,925	112,861	78,398
Income before income taxes	\$122,896	\$99,568	\$79,219

The reconciliation of the income tax expense at the U.S. Federal statutory rate (35.0%) to actual income tax expense is as follows (in thousands):

	Fiscal		
	2016	2015	2014
Federal statutory tax expense	\$43,015	\$34,849	\$27,727
Valuation allowance	1,441	635	841
Foreign taxes at rates less than U.S. rates, net	(5,642 )	(10,558 )	(6,974 )
Stock-based compensation	2,161	2,150	1,326
State income taxes, net of federal income tax benefit	(198 )	(38 )	58
Research and development credit	(4,408 )	(2,979 )	(1,797 )
Deferred compensation	(428 )	(133 )	(778 )
Release of unrecognized tax benefits	(4,961 )	(39 )	(51 )
Release of interest accrued for unrecognized tax benefits	(1,508 )	(38 )	(289 )
Reversal of Competent Authority	4,328	—	—
Other	1,594	(690 )	50
Provision for income taxes	\$35,394	\$23,159	\$20,113
Effective tax rate	28.8 %	23.3 %	25.4 %

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 14. INCOME TAXES (continued)

The effective tax rate on income before income taxes for fiscal 2016 of 28.8% was lower than the statutory rate of 35.0%. This was primarily due to differences related to the benefit of income subject to foreign tax rates that are lower than U.S. tax rates including the Singapore tax exemption, the benefit of foreign tax credits and the benefit of federal research and development tax credits including renewal of the federal research and development tax credits for fiscal 2015. These amounts are partially offset by deemed dividend inclusions under the Subpart F tax rules, stock-based compensation not deductible for tax purposes and limitations on the deductibility of compensation under IRC Section 162(m).

In October 2016, Coherent Singapore received an amended Pioneer Status tax exemption from the Singapore authorities effective from fiscal 2012 through fiscal 2021. The tax holiday continues to be conditional upon our meeting certain revenue, business spending and employment thresholds. The impact of this tax exemption decreased Singapore income taxes by approximately \$0.7 million in fiscal 2016. There are no tax benefits for fiscal 2015 and fiscal 2014 due to the utilization of net operating loss.

The significant components of deferred tax assets and liabilities were (in thousands):

	Fiscal year-end	
	2016	2015
Deferred tax assets:		
Reserves and accruals not currently deductible	\$34,800	\$31,067
Operating loss carryforwards and tax credits	52,213	53,386
Deferred service revenue	2,186	2,144
Inventory capitalization	5,001	1,827
Stock-based compensation	6,428	6,128
Competent authority offset to transfer pricing tax reserves	1,437	4,328
Depreciation and amortization	1,043	—
Other	5,277	2,418
Total gross deferred tax assets	108,385	101,298
Valuation allowance	(17,642 )	(15,556 )
Total net deferred tax assets	90,743	85,742
Deferred tax liabilities:		
Gain on issuance of stock by subsidiary	20,781	20,859
Depreciation and amortization	—	5,117
Accumulated translation adjustment	4,273	2,229
Total gross deferred tax liabilities	25,054	28,205
Net deferred tax assets	\$65,689	\$57,537

In determining our fiscal 2016 and 2015 tax provisions under ASC Subtopic 740, we calculated the deferred tax assets and liabilities for each separate tax entity. We then considered a number of factors including the positive and negative evidence regarding the realization of our deferred tax assets to determine whether a valuation allowance should be recognized with respect to our deferred tax assets. We determined that a valuation allowance was appropriate for a portion of the deferred tax assets of our California and certain state research and development tax credits, foreign tax attributes and foreign net operating losses at fiscal 2016 and 2015 year-ends.

During fiscal 2016, we increased our valuation allowance on deferred tax assets by \$2.1 million to \$17.6 million, primarily due to the increase in California and certain state research and development tax credits which are not expected to be recognized. The Company had U.S. federal deferred tax assets related to research and development credits, foreign tax credits and other tax attributes that can be used to offset federal taxable income in future periods. These credit carryforwards will expire if they are not used within certain time periods. As of October 1, 2016, management determined that there is sufficient positive evidence to conclude that it is more likely than not sufficient taxable income will exist in the future allowing us to recognize these deferred tax assets. It is possible that some or all

these attributes could ultimately expire unused. If facts and

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 14. INCOME TAXES (continued)

circumstances change in the future, management may determine at that time a valuation allowance is necessary. A valuation allowance would materially increase our tax expense in the period applied and would adversely affect our results of operations and statement of financial condition. Changes in the Company's underlying facts or circumstances, such as the impact of the Rofin-Sinar merger, will be assessed as they occur and the Company will re-evaluate its position accordingly.

The net deferred tax asset is classified on the consolidated balance sheets as follows (in thousands):

	Fiscal year-end	
	2016	2015
Non-current deferred income tax assets	\$67,157	\$60,254
Non-current deferred income tax liabilities	(1,468 )	(2,717 )
Net deferred tax assets	\$65,689	\$57,537

We have various tax attribute carryforwards which include the following:

Foreign gross net operating loss carryforwards are \$13.7 million, of which \$12.8 million have no expiration date and of which \$0.9 million are scheduled to expire beginning in fiscal year 2030. A valuation allowance totaling \$5.0 million has been provided against the foreign gross net operating loss carryforwards in certain jurisdictions since the recovery of the carryforwards are uncertain. California gross net operating loss carryforwards are \$12.4 million and are scheduled to expire in fiscal year 2032. The tax benefit relating to approximately \$7.3 million of the state gross net operating loss carryforwards will be credited to additional paid-in-capital when recognized.

Federal gross capital loss carryforwards of \$0.8 million are scheduled to expire in fiscal year 2020. State gross capital loss carryforwards of \$1.3 million are scheduled to expire in fiscal year 2020. No valuation allowance is recorded against the federal gross capital loss and the state gross capital loss carryforwards since we anticipate that it is more likely than not we will be able to utilize the capital loss in the future.

Federal R&D credit carryforwards of \$29.1 million are scheduled to expire in fiscal years 2024 to 2036. The tax benefit relating to approximately \$0.9 million of the federal tax credit carryforwards will be credited to additional paid-in-capital when recognized. California R&D credit carryforwards of \$24.6 million have no expiration date. The tax benefit relating to approximately \$0.5 million of the state tax credit carryforwards will be credited to additional paid-in-capital when recognized. A valuation allowance totaling \$16.0 million, before federal benefit, has been recorded against California R&D credit carryforwards since the recovery of the carryforwards are uncertain. Other states R&D credit carryforwards of \$1.8 million are scheduled to expire in fiscal years 2017 to 2030. A valuation allowance totaling \$0.7 million, before federal benefit, has been recorded against certain state R&D credit carryforwards since the recovery of the carryforwards is uncertain.

Federal foreign tax credit carryforwards of \$14.0 million are scheduled to expire in fiscal years 2018 to 2023. The tax benefit relating to approximately \$13.0 million of the federal foreign tax credit carryforwards will be credited to additional paid-in-capital when recognized.

We are subject to taxation and file income tax returns in the U.S. federal jurisdiction and in many state and foreign jurisdictions. For U.S. federal income tax purposes, all years prior to fiscal 2011 are closed. The Company agreed to extend the statutes of limitations for its fiscal 2011 and 2012 U.S. federal tax returns to June 17, 2017 due to an ongoing Advanced Pricing Agreement ("APA") between the U.S. and Korea. In March 2016, the Internal Revenue Service (IRS) issued an audit notice and Information Documentation Requests (IDRs) for fiscal 2013. The audit is currently in progress and the statute of limitation was extended to December 31, 2017. In our major foreign jurisdictions and our major state jurisdictions, the years prior to fiscal 2011 and 2012, respectively, are closed to examination. Earlier years in our various jurisdictions may remain open for adjustment to the extent that we have tax attribute carryforwards from those years.

In December 2011 and January 2012, three of our German subsidiaries received notices of tax audits for the fiscal years 2006 through 2010. The audits were completed in the third quarter of fiscal 2016. As a result of the settlement, our gross uncertain tax positions decreased by approximately \$4.9 million. The net provision impact of the

adjustments was immaterial to the consolidated statement of operations.

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 14. INCOME TAXES (continued)

In July 2015 and March 2016, Coherent Kaiserslautern GmbH (formerly Lumera Laser GmbH) received tax audit notices for the fiscal years 2010 to 2014. The audit began in August 2015. We acquired the shares of Lumera Laser GmbH in December 2012 and, pursuant to the terms of the acquisition agreement, we should not have responsibility for any assessments related to the pre-acquisition period. In June, 2016, Coherent Holding GmbH and Coherent Deutschland GmbH each received a tax audit notice for the fiscal years 2011 to 2014. The audit began in the fourth quarter of fiscal 2016. Coherent GmbH, Coherent LaserSystems GmbH & Co. KG and Coherent Germany GmbH received audit notices for the period that they were in existence during the fiscal years 2011 through 2014 and the audit work is scheduled to commence in January 2017.

We regularly engage in discussions and negotiations with tax authorities regarding tax matters in various jurisdictions and management believes that it has adequately provided reserves for any adjustments that may result from tax examinations.

A reconciliation of the change in gross unrecognized tax benefits, excluding interest and penalties, is as follows (in thousands):

	Fiscal year-end		
	2016	2015	2014
Balance as of the beginning of the year	\$22,538	\$21,893	\$21,378
Tax positions related to current year:			
Additions	2,468	311	346
Reductions	—	—	—
Tax positions related to prior year:			
Additions	424	855	235
Reductions	(3,239 )	—	—
Settlements	(1,655 )	—	—
Lapses in statutes of limitations	(94 )	(521 )	(66 )
Balance as of end of year	\$20,442	\$22,538	\$21,893

As of October 1, 2016, the total amount of gross unrecognized tax benefits including gross interest and penalties was \$20.6 million, of which \$15.6 million, if recognized, would affect our effective tax rate. Our total gross unrecognized tax benefit was classified as a long-term taxes payable in the consolidated balance sheets after reduction by certain deferred tax assets. We include interest and penalties related to unrecognized tax benefits within the provision for income taxes. As of October 1, 2016, the total amount of gross interest and penalties accrued was \$0.2 million and it is classified as long-term taxes payable in the consolidated balance sheets. As of October 3, 2015, we had accrued \$1.8 million for the gross interest and penalties and it is classified as long-term taxes payable in the consolidated balance sheets.

Management believes that it has adequately provided for any adjustments that may result from tax examinations. We regularly engage in discussions and negotiations with tax authorities regarding tax matters in various jurisdictions. It is reasonably possible that certain federal, foreign and state tax matters may be concluded in the next 12 months.

A summary of the fiscal tax years that remain subject to examination, as of October 1, 2016, for our major tax jurisdictions is:

United States—Federal	2011—forward
United States—Various States	2012—forward
Netherlands	2011—forward
Germany	2011—forward
Japan	2010—forward
United Kingdom	2015—forward



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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 15. SEGMENT AND GEOGRAPHIC INFORMATION

At October 1, 2016, we were organized into two reportable operating segments: Specialty Lasers and Systems ("SLS") and Commercial Lasers and Components ("CLC"). This segmentation reflects the go-to-market strategies for various products and markets. While both segments work to deliver cost-effective solutions, SLS develops and manufactures configurable, advanced-performance products largely serving the microelectronics, scientific research and government programs and OEM components and instrumentation markets. The size and complexity of many of our SLS products require service to be performed at the customer site by factory-trained field service engineers. CLC focuses on higher volume products that are offered in set configurations. The product architectures are designed for easy exchange at the point of use such that product service and repairs are based upon advanced replacement and depot (i.e., factory) repair. CLC's primary markets include materials processing, OEM components and instrumentation and microelectronics. We have identified SLS and CLC as operating segments for which discrete financial information is available. Both units have dedicated engineering, manufacturing, product business management and product line management functions. A small portion of our outside revenue is attributable to projects and recently developed products for which a segment has not yet been determined. The associated direct and indirect costs are presented in the category of Corporate and other, along with other corporate costs as described below.

Our Chief Executive Officer has been identified as the chief operating decision maker (CODM) as he assesses the performance of the segments and decides how to allocate resources to the segments. Income from operations is the measure of profit and loss that our CODM uses to assess performance and make decisions. As assets are not a measure used to assess the performance of the company by the CODM, asset information is not tracked or compiled by segment and is not available to be reported in our disclosures. Income from operations represents the net sales less the cost of sales and direct operating expenses incurred within the operating segments as well as allocated expenses such as shared sales and manufacturing costs. We do not allocate to our operating segments certain operating expenses which we manage separately at the corporate level. These unallocated costs include stock-based compensation and corporate functions (certain research and development, management, finance, legal and human resources) and are included in the results below under Corporate and other in the reconciliation of operating results. Management does not consider unallocated Corporate and other costs in its measurement of segment performance.

The following table provides net sales and income from operations for our operating segments a reconciliation of our total income from operations to net income (in thousands):

	Fiscal		
	2016	2015	2014
Net sales:			
Specialty Laser Systems	\$631,313	\$559,593	\$565,552
Commercial Lasers and Components	226,072	242,867	229,087
Total net sales	\$857,385	\$802,460	\$794,639
Income (expense) from operations:			
Specialty Laser Systems	\$180,577	\$133,506	\$117,947
Commercial Lasers and Components	3,477	9,127	2,688
Corporate and other	(56,440 )	(41,886 )	(43,769 )
Total income from operations	\$127,614	\$100,747	\$76,866
Total other income (expense), net	(4,718 )	(1,179 )	2,353
Income before income taxes	122,896	99,568	79,219
Provision for income taxes	35,394	23,159	20,113
Net income	\$87,502	\$76,409	\$59,106

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 15. SEGMENT AND GEOGRAPHIC INFORMATION (continued)

## Geographic Information

Our foreign operations consist primarily of manufacturing facilities and sales offices in Europe and Asia-Pacific. Sales, marketing and customer service activities are conducted through sales subsidiaries throughout the world. Geographic sales information for fiscal 2016, 2015 and 2014 is based on the location of the end customer. Geographic long-lived asset information presented below is based on the physical location of the assets at the end of each year. Sales to unaffiliated customers are as follows (in thousands):

	Fiscal		
SALES	2016	2015	2014
United States	\$204,963	\$213,483	\$202,205
Foreign countries:			
South Korea	187,908	195,589	167,473
Japan	193,418	135,674	124,765
China	63,050	57,548	56,101
Germany	71,427	75,474	86,023
Europe, other	55,351	53,027	64,648
Asia-Pacific, other	36,364	28,036	42,659
Rest of World	44,904	43,629	50,765
Total foreign countries sales	652,422	588,977	592,434
Total sales	\$857,385	\$802,460	\$794,639

Long-lived assets, which include all non-current assets other than goodwill, intangibles and deferred taxes, by geographic region, are as follows (in thousands):

	Fiscal year-end	
LONG-LIVED ASSETS	2016	2015
United States	\$92,771	\$82,951
Foreign countries:		
Germany	55,786	33,964
Europe, other	2,478	2,993
Asia-Pacific	11,981	11,504
Total foreign countries long-lived assets	70,245	48,461
Total long-lived assets	\$163,016	\$131,412

## Major Customers

We had one major customer who accounted for 13%, 17% and 13% of consolidated revenue during fiscal 2016, 2015 and 2014, respectively. We had another major customer who accounted for 16% of consolidated revenue during fiscal 2016. Both customers purchased primarily from our SLS segment.

## 16. SUBSEQUENT EVENTS

## Acquisition of Rofin

On November 7, 2016, we completed our previously announced acquisition of Rofin pursuant to the Merger Agreement dated March 16, 2016. Rofin is one of the world's leading developers and manufacturers of high-performance industrial laser sources and laser-based solutions and components. As a condition of the acquisition, we are required to divest ourselves of Rofin's low power CO2 laser business based in Hull, United Kingdom, and will report this business separately as a

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## COHERENT, INC. AND SUBSIDIARIES

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 16. SUBSEQUENT EVENTS (continued)

discontinued operation until it is divested. The acquisition was an all-cash transaction at a price of \$32.50 per share of Rofin common stock. The aggregate consideration paid by us to the former Rofin stockholders was approximately \$904.5 million, excluding related transaction fees and expenses. We also paid \$15.3 million due to the cancellation of options held by employees of Rofin. We funded the payment of the aggregate consideration with a combination of our available cash on hand and the proceeds from the Euro Term Loan described below. We are in the process of evaluating the business combination accounting considerations, including the consideration transferred and the initial purchase price allocation.

Execution of the Credit Agreement

On November 7, 2016, we entered into the Credit Agreement by and among us, Coherent Holding GmbH, as borrower (the "Borrower"), and certain of our direct and indirect subsidiaries from time to time party thereto, as guarantors, the lenders from time to time party thereto, Barclays Bank PLC, as administrative agent and L/C Issuer, Bank of America, N.A., as L/C Issuer, and The Bank of Tokyo-Mitsubishi UFJ, Ltd., as L/C Issuer. The Credit Agreement provided for a 670.0 million Euro senior secured term loan facility and a \$100.0 million senior secured revolving credit facility with a \$30.0 million letter of credit sublimit and a \$10.0 million swing line sublimit. We may increase the aggregate revolving commitments or borrow incremental term loans in an aggregate principal amount of up to \$150.0 million, subject to certain conditions, including obtaining additional commitments from the lenders then party to the Credit Agreement or new lenders. On November 7, 2016, we borrowed the full 670.0 million Euros under the Euro Term Loan and its proceeds were used to finance the acquisition of Rofin and pay related fees and expenses. Also, on November 7, 2016, we used 10.0 million Euro of the capacity under the Revolving Credit Facility for the issuance of a letter of credit. We expect to use future loans under the Revolving Credit Facility, if any, for general corporate purposes. The Credit Agreement replaces our existing \$50.0 million Credit Agreement with Union Bank of California. The terms of the Credit Agreement require Borrower to prepay the term loans in certain circumstances, including from excess cash flow beyond a threshold amount, from the receipt of proceeds from certain dispositions or from the incurrence of certain indebtedness, and from extraordinary receipts resulting in net cash proceeds in excess of \$10 million in any fiscal year. Borrower has the right to prepay loans under the Credit Agreement in whole or in part at any time without premium or penalty. Revolving loans may be borrowed, repaid and reborrowed until the fifth anniversary of the Closing Date, at which time all outstanding revolving loans must be repaid. The Euro Term Loan matures on the seventh anniversary of the Closing Date, at which time all outstanding principal and accrued and unpaid interest on the Euro Term Loan must be repaid.

Loans under the Credit Agreement bear interest, at the Borrower's option, at a rate equal to either (i) the London interbank offered rate (the "Eurocurrency Rate") or (ii) a base rate (the "Base Rate") equal to the highest of (x) the federal funds rate, plus 0.50%, (y) the prime rate then in effect and (z) the Eurocurrency Rate for loans denominated in U.S. dollars applicable to a one-month interest period, plus 1.0%, in each case, plus an applicable margin. The applicable margin for term loans borrowed as Eurocurrency Rate loans, is 3.50% initially, and following the first anniversary of the Closing Date ranges from 3.00% to 3.50% depending on the consolidated total gross leverage ratio at the time of determination. For term loans borrowed as Base Rate Loans, the applicable margin initially is 2.50%, and following the first anniversary of the Closing Date ranges from 2.00% to 2.50% depending upon the consolidated total gross leverage ratio at the time of determination. The applicable margin for revolving loans borrowed as Eurocurrency Rate Loans, ranges from 3.75% to 4.25%, and for revolving loans borrowed as Base Rate Loans, ranges from 2.75% to 3.25%, in each case, based on the consolidated total gross leverage ratio at the time of determination. Interest on Base Rate Loans is payable quarterly in arrears. Interest on Eurocurrency Rate Loans is payable at the end of the applicable interest period. Interest periods for Eurocurrency Rate loans may be, at the Borrower's option, one, two, three or six months.

The Credit Agreement requires the Borrower to make scheduled quarterly payments on the Euro Term Loan of 0.25% of the original principal amount of the Euro Term Loan, with any remaining principal payable at maturity. A commitment fee accrues on any unused portion of the revolving loan commitments under the Credit Agreement at a rate of 0.375% or 0.5% depending on the consolidated total gross leverage ratio at any time of determination. The Borrower is also obligated to pay other customary fees for a credit facility of this size and type.

On the Closing Date, we and certain of our direct and indirect subsidiaries, as guarantors, provided an unconditional guaranty of all obligations of the Borrower and the other loan parties arising under the Credit Agreement, the other loan documents and under swap contracts and treasury management agreements with the lenders or their affiliates (with certain limited exceptions). The Borrower and the guarantors have also granted security interests in substantially all their assets to secure such obligations.

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COHERENT, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

16. SUBSEQUENT EVENTS (continued)

The Credit Agreement contains customary affirmative covenants, including covenants regarding the payment of taxes and other obligations, maintenance of insurance, reporting requirements and compliance with applicable laws and regulations, and negative covenants, including covenants limiting the ability of us and our subsidiaries to, among other things, incur debt, grant liens, make investments, make certain restricted payments, transact with affiliates, and sell assets. The Credit Agreement also requires us and our subsidiaries to maintain a senior secured net leverage ratio as of the last day of each fiscal quarter of less of than or equal to 3.50 to 1.00. The Credit Agreement contains customary events of default that include, among other things, payment defaults, cross defaults with certain other indebtedness, violation of covenants, inaccuracy of representations and warranties in any material respect, change in control of us and the Borrower, judgment defaults, and bankruptcy and insolvency events. If an event of default exists, the lenders may require the immediate payment of all Obligations, as defined in the Credit Agreement, and may exercise certain other rights and remedies provided for under the Credit Agreement, the other loan documents and applicable law. The acceleration of such obligations is automatic upon the occurrence of a bankruptcy and insolvency event of default.

Segment Restatement

As a result of the acquisition of Rofin, and subsequent to fiscal 2016 year-end, we announced that in the first quarter of fiscal 2017 we will reorganize our existing two segments into two new reporting segments for the combined company, OEM Laser Systems and Industrial Lasers and Systems. Accordingly, our segment information will be restated retroactively in the first quarter of fiscal 2017.

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## QUARTERLY FINANCIAL INFORMATION (UNAUDITED)

Summarized quarterly financial data for the years ended October 1, 2016 and October 3, 2015 are as follows (in thousands, except per share amounts):

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Fiscal 2016:				
Net sales	\$190,275	\$199,882	\$218,767	\$248,461
Gross profit	83,898	88,599	94,559	114,336
Net income	20,286	17,781	18,650	30,785
Net income per basic share	\$0.85	\$0.74	\$0.77	\$1.27
Net income per diluted share	\$0.84	\$0.73	\$0.76	\$1.25
Fiscal 2015:				
Net sales	\$200,615	\$203,721	\$188,502	\$209,622
Gross profit	82,319	83,304	78,782	90,994
Net income	17,430	18,413	13,264	27,302
Net income per basic share	\$0.70	\$0.75	\$0.54	\$1.11
Net income per diluted share	\$0.69	\$0.74	\$0.53	\$1.10

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INDEX TO EXHIBITS

Sequentially

Exhibit Number	Exhibit
21.1	Subsidiaries
23.1	Consent of Independent Registered Public Accounting Firm
24.1	Power of Attorney (see signature page)
31.1	Certification of Chief Executive Officer pursuant to Exchange Act Rule 13a-14(a)/15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Financial Officer pursuant to Exchange Act Rule 13a-14(a)/15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

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All other exhibits required to be filed as part of this report have been incorporated by reference. See item 15 for a complete index of such exhibits.