



2019 ANNUAL REPORT

Annual Report, Proxy Statement & Notice of Annual Meeting





Notice of Virtual Annual Meeting of Stockholders

April 27, 2020

8:30 a.m., Pacific Time

As part of our precautions regarding the coronavirus (COVID-19) and in compliance with current mandatory orders from applicable government entities, we are holding this year's annual meeting solely by means of remote communication. We have not previously held a virtual annual meeting and expect that we will again revert to an in-person meeting for future meetings if possible. If you plan to participate in the virtual meeting, please see the instructions in the accompanying proxy statement. Stockholders will be able to listen, vote and submit questions (subject to the question guidelines) from any remote location that has Internet connectivity. There will be no physical location for stockholders to attend the meeting. Stockholders may participate in the meeting only by logging in at www.virtualshareholdermeeting.com/COHR2020.

MATTERS TO BE VOTED ON:

1. **To elect the eight directors named in the accompanying proxy statement;**
2. **To approve the Coherent Equity Incentive Plan;**
3. **To ratify the appointment of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending October 3, 2020;**
4. **To approve on a non-binding, advisory basis, our named executive officer compensation; and**
5. **To transact such other business as may properly be brought before the meeting and any adjournment(s) thereof.**

The foregoing items of business are more fully described in the proxy statement accompanying this notice.

Stockholders of record at the close of business on March 3, 2020 are entitled to notice of and to vote at the meeting and at any adjournments or postponements thereof.

All stockholders are cordially invited to attend and participate in our virtual meeting. However, to ensure your representation at the meeting, you are urged to vote in advance. You may vote via the Internet or by telephone, or if you requested to receive printed proxy materials, by marking, signing, dating and returning the proxy card as promptly as possible in the postage-prepaid envelope provided for that purpose.

We have retained Georgeson LLC to assist us in the solicitation of proxies. If you have any questions or require any assistance with completing your proxy, please contact Georgeson LLC by telephone at (866) 647-8872.

Santa Clara, California
April 6, 2020

Sincerely,

Bret DiMarco
*Executive Vice President, General Counsel and
Corporate Secretary*

Important Notice Regarding the Availability of Proxy Materials for the Stockholder Meeting to Be Held on April 27, 2020

The proxy statement and annual report to stockholders are available at www.proxyvote.com.

YOUR VOTE IS IMPORTANT

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PROXY STATEMENT

General Information About the Meeting

General

The Board of Directors (the “Board”) of Coherent, Inc. (“Coherent” or the “Company”) is soliciting proxies for use at the virtual Annual Meeting of Stockholders (the “Annual Meeting” or “meeting”) to be held at 8:30 a.m., Pacific Time, on April 27, 2020 and at any adjournment(s) thereof, for the purposes set forth herein and in the accompanying Notice of Annual Meeting of Stockholders. There will be no physical location for stockholders to attend the meeting. You can participate in the Annual Meeting by logging in at www.virtualshareholdermeeting.com/COHR2020, where you will be able to listen to the meeting live, vote and submit questions. These proxy solicitation materials were first mailed on or about April 6, 2020 to all stockholders entitled to vote at the Annual Meeting.

Who May Vote at the Meeting?

You are entitled to vote at the Annual Meeting if you held your shares as of the close of business on our record date, March 3, 2020 (the “Record Date”). On the Record Date, 24,166,669 shares of our common stock, \$0.01 par value, were issued and outstanding.

What Does Each Share of Common Stock I Own Represent?

On all matters, each share has one vote, unless, with respect to Proposal One regarding the election of directors, cumulative voting is in effect. See “Proposal One—Election of Directors—Vote Required” for a description of cumulative voting rights with respect to the election of directors.

How Can I Participate in the Virtual Annual Meeting?

To participate in the meeting, visit www.virtualshareholdermeeting.com/COHR2020 and enter your 16-digit control number as indicated. You can find your 16-digit control number on your proxy card or on the instructions that accompanied your proxy materials. You will be able to log into the virtual meeting platform beginning at 8:00 a.m. PDT on April 27, 2020. The meeting will begin promptly at 8:30 a.m. PDT on April 27, 2020. We encourage you to log in prior to the meeting start time and allow ample time for the check-in procedures.

The virtual meeting platform is supported across browsers (Internet Explorer, Firefox, Chrome, and Safari) and devices (desktops, laptops, tablets, and cell phones) running the most updated version of applicable software and plugins. Participants should ensure that they have a strong WiFi connection wherever they intend to participate in the meeting.

Participants should also give themselves plenty of time to log in and ensure that they can hear streaming audio prior to the start of the meeting.

If you wish to submit a question during the meeting, log into the virtual meeting platform, type your question into the “Ask a Question” field, and click “Submit.” Questions pertinent to meeting matters will be answered during the meeting, subject to time constraints. Questions regarding personal matters, including those related to employment, product or service issues, or suggestions for product innovations, are not pertinent to meeting matters and, therefore, will not be answered. In the event we are not able to address any questions appropriately related to the business of the Company due to time constraints, we will address them at an upcoming financial results conference call.

If you encounter any difficulties accessing the virtual meeting during check-in please call the technical support number that will be posted on the virtual meeting platform’s log in page.

How Does a Stockholder Vote?

Whether or not you plan to attend the Annual Meeting, **we urge you to vote by proxy** to ensure your vote is counted. If you are entitled to vote, you may do so as follows:

- **Through the Internet—Before the Annual Meeting:** If you are a stockholder of record, go to www.proxyvote.com. Please have your proxy card in hand when you visit the website.
- **Through the Internet—During the Annual Meeting:** If you are a stockholder of record, you may vote live at the Annual Meeting through the virtual meeting platform by logging into www.virtualshareholdermeeting.com/COHR2020. If your shares are held in street name, you will need to obtain a legal proxy from your broker, bank or other nominee in order to vote live at the Annual Meeting.
- **Using the Telephone:** Dial toll-free 1-800-690-6903 using a touch-tone phone and follow the recorded instructions. You will be asked to provide the 16-digit control number, which you can find on your proxy card or on the instructions that accompanied your proxy materials.
- **Through Your Broker:** If your shares are held through a broker, bank or other nominee (commonly referred to as held in “street name”), you will receive instructions from them that you must follow to have your shares voted.
- **Returning a Proxy Card:** If you have requested printed proxy materials, simply complete, sign and date the proxy card and return it promptly in the envelope provided. If your signed proxy card is received before the Annual Meeting, the designated proxies will vote your shares as you direct.

For telephone or Internet use before the meeting, your vote must be received by 11:59 p.m., Eastern time, on April 26, 2020 to be counted.

If you return a signed and dated proxy card **without** marking any voting directions, your shares will be voted “for” the election of all eight nominees for director set forth in this proxy statement and “for” Proposals Two, Three and Four.

We have retained Georgeson LLC to assist us in the solicitation of proxies. If you have any questions or require any assistance with voting, please contact Georgeson LLC by telephone at (866) 647-8872.

Matters to be Presented at the Meeting

We are not aware of any matters to be presented at the meeting other than those described in this proxy statement. If any other matter is properly presented at the Annual Meeting, your proxy holders (one of the individuals named on your proxy card) will vote your shares in their discretion. The cost of this solicitation will be borne by us. We may reimburse brokerage firms and other persons representing beneficial owners of shares for their expenses in forwarding solicitation material to such beneficial owners. In addition, proxies may be solicited by certain of our directors, officers and regular employees, without additional compensation, personally or by telephone, e-mail or facsimile. We have also retained Georgeson LLC to assist us in the solicitation of proxies. We expect to pay Georgeson LLC approximately \$15,000 for these services, plus expenses.

Revoking Your Proxy

If you hold your shares in street name, you must follow the instructions of your broker, bank or other nominee to revoke your voting instructions. If you are a holder of record and wish to revoke your proxy instructions, you must (i) advise the Corporate Secretary in writing by sending an email to investor.relations@coherent.com before the proxies vote your shares at the meeting, (ii) timely deliver later-dated proxy instructions or (iii) participate in the meeting and vote your shares electronically during the meeting.

Quorum; Abstentions; Broker Non-Votes

Our bylaws provide that stockholders holding a majority of the shares of common stock issued and outstanding and entitled to vote on the Record Date constitute a quorum at meetings of stockholders. Votes will be counted by the inspector of election appointed for the Annual Meeting, who will separately count “For” and “Against” votes, abstentions and broker non-votes.

A “broker non-vote” occurs when a nominee holding shares for a beneficial owner does not vote because the nominee does not have discretionary voting power with respect to the proposal and has not received instructions with respect to the

proposal from the beneficial owner. Broker non-votes represented by submitted proxies will not be taken into account in determining the outcome of any proposal. Abstentions will not be taken into account in determining the outcome of the election of directors. However, abstentions are deemed to be votes cast with respect to Proposals Two, Three and Four and will have the same effect as a vote “Against” these proposals. We intend to separately report abstentions, and our Compensation and HR Committee will generally view abstentions as neutral when considering the results of Proposal Four.

Deadline for Receipt of Stockholder Proposals or Nominations; Proxy Access

In order to submit stockholder proposals for inclusion in our proxy statement pursuant to Rule 14a-8 of the Securities Exchange Act of 1934, as amended (“SEC Rule 14a-8”) for the annual meeting to be held in fiscal 2021, written materials must be received by the Corporate Secretary at our principal office in Santa Clara, California no later than December 7, 2020. Stockholder proposals must otherwise comply with the requirements of SEC Rule 14a-8.

Proposals must be addressed to: Bret DiMarco, Corporate Secretary, Coherent, Inc., 5100 Patrick Henry Dr., Santa Clara, California 95054. Simply submitting a proposal does not guarantee its inclusion.

Section 2.16 of the Company’s bylaws also establishes an advance notice procedure with respect to director nominations and stockholder proposals that are not submitted for inclusion in the proxy statement, but that a stockholder instead wishes to present directly from the floor at any annual meeting. To be properly brought before the annual meeting to be held in fiscal 2021, a notice of the nomination or the matter the stockholder wishes to present at the meeting must be delivered to the Corporate Secretary (see above), no later than the close of business on the 45th day (February 20, 2021), nor earlier than the 75th day (January 21, 2021), prior to the one year anniversary of the date these proxy materials were first mailed by us, unless the annual meeting of stockholders is held prior to March 28, 2021 or after June 26, 2021, in which case, the proposal must be received by us not earlier than the close of

business on the 120th day prior to the annual meeting and not later than the close of business on the later of (i) the 90th day prior to the annual meeting and (ii) the tenth day following the day on which public announcement of the date of such meeting is first made, and must otherwise be in compliance with applicable laws and regulations in order to be considered for inclusion in the proxy statement and form of proxy relating to that meeting. We have not received any notice regarding any such matters to be brought at the Annual Meeting.

If a stockholder who has notified us of his or her intention to present a proposal at an annual meeting does not appear to present his or her proposal at such meeting, we need not present the proposal for vote at such meeting. The chairperson of the Annual Meeting has the final discretion whether or not to allow any matter to be considered at the meeting which did not timely comply with all applicable notice requirements.

If a stockholder wishes only to recommend a candidate for consideration by the Governance and Nominating Committee as a potential nominee for the Company’s Board, see the procedures discussed in “Proposal One—Election of Directors—Process for Stockholders to Recommend Candidates for Election to the Board of Directors.”

The attached proxy card grants to the proxyholders discretionary authority to vote on any matter raised at the Annual Meeting, including proposals which are timely raised at

General Information

the meeting, but did not meet the deadline for inclusion in this proxy statement.

In addition, our bylaws provide that, under certain circumstances, a stockholder or group of stockholders may include director candidates that they have nominated in our proxy statement. These proxy access provisions permit a stockholder, or a group of up to 20 stockholders, who have owned 3% or more of our outstanding common stock continuously for at least three years to submit director nominees (for up to 20% of the number of directors then in office) for inclusion in our proxy materials, as long as the stockholder(s) provide timely written notice of such nomination and the stockholder(s) and nominee(s) satisfy the requirements specified in our bylaws. Notice of director nominees for our 2021 annual meeting of stockholders must

include the information required under our bylaws and must be received by our Corporate Secretary at our principal executive offices between the close of business on November 7, 2020 and the close of business on December 7, 2020, unless the date of the annual meeting to be held in fiscal 2021 is more than 30 days before or more than 60 days after the anniversary of this Annual Meeting. In that case, such notice must be delivered not earlier than the 90th day prior to the date of the annual meeting to be held in fiscal 2021 and not later than the close of business on the later of (i) the 60th day prior to the date of the annual meeting to be held in fiscal 2021 or (ii) the 10th day following the day on which public announcement of the date of such meeting is first made. For additional information regarding the Company's proxy access provisions, please refer to the Company's bylaws.

Eliminating Duplicative Proxy Materials

To reduce the expense of delivering duplicate voting materials to our stockholders who may hold shares of Coherent common stock in more than one stock account, we are delivering only one set of our proxy materials to certain stockholders who share an address, unless otherwise requested. A separate proxy card is included in the voting materials (either electronically or by mail, as applicable) for each of these stockholders.

We will promptly deliver, upon verbal request, a separate copy of the annual report or this proxy statement to a stockholder at a shared address to which a single copy of the documents was delivered. To obtain an additional copy, you may also write us at 5100 Patrick Henry Drive, Santa Clara, California 95054, Attn: Investor Relations, or contact our Investor Relations department by telephone at (408) 764-4110.

Similarly, if you share an address with another stockholder and have received multiple copies of our proxy materials, you may contact us at the address or telephone number specified above to request that only a single copy of these materials be delivered to your address in the future. Stockholders sharing a single address may revoke their consent to receive a single copy of our proxy materials in the future at any time by contacting our distribution agent, Broadridge, either by calling toll-free at 1-800-542-1061, or by writing to Broadridge, Householding Department, 51 Mercedes Way, Edgewood, NY 11717. It is our understanding that Broadridge will remove such stockholder from the householding program within 30 days of receipt of such written notice, after which each such stockholder will receive an individual copy of our proxy materials.

Incorporation by Reference

To the extent that this proxy statement has been or will be specifically incorporated by reference into any other filing of Coherent with the SEC, the sections of this proxy statement entitled "Report of the Audit Committee of the Board of

Directors" (to the extent permitted by the rules of the SEC) and "Compensation Discussion and Analysis" shall not be deemed to be so incorporated, unless specifically provided otherwise in such filing.

FURTHER INFORMATION

We will provide without charge to each stockholder solicited by these proxy solicitation materials a copy of our annual report on Form 10-K for the fiscal year ended September 28, 2019 without exhibits and any amendments thereto upon request of such stockholder made in writing to Coherent, Inc., 5100 Patrick Henry Drive, Santa Clara, California 95054, Attn: Investor Relations. We will also furnish any exhibit to the annual report on Form 10-K if specifically requested in writing. You can also access our SEC filings, including our annual reports on Form 10-K, and all amendments thereto on the SEC website at www.sec.gov.

Stockholder List

A list of stockholders entitled to vote at the Annual Meeting will be available for examination by stockholders of record at www.virtualshareholdermeeting.com/COHR2020 during the meeting.

Spotlight on Governance

Our historical business results have been complemented by an approach to corporate governance that has consistently been recognized for best practices, including:

- * Annual Board elections;
- * No classified Board;
- * Stockholders may act by written consent;
- * Independent Board Chair;
- * Majority voting for members of the Board in uncontested elections;
- * “Proxy access” bylaw provisions;
- * An updated clawback policy which applies to all executive officers of the Company;
- * No “blank check” or other classes of preferred stock;
- * Super majority of independent directors on the Board;
- * Executive compensation heavily weighted towards performance;
- * No super majority stockholder approval for mergers or other business combinations in our bylaws or charter;
- * A policy prohibiting executive officers and directors from hedging or pledging Company stock;
- * Age-based Board tenure/refreshment guidelines; and
- * Board, CEO and executive officer stock ownership requirements.

Importantly, the Board has implemented our governance approach with the full support and recommendation of senior management. These governance practices do not result from any stockholder proposals related to them. Rather, they reflect the commitment of the Board and management to maintain common sense and industry-leading governance practices and policies to go along with our strong historical financial performance. The independent director composition of our proposed slate of Board nominees consists of 29% female directors and over 40% diverse directors. The proposed slate is 88% independent, with only our CEO serving as an inside director. Notably, directors Pamela Fletcher and Beverly Kay Matthews and retiring director Susan James were all recently named to the 2019 Most Influential Corporate Directors list by WomenInc. Magazine.

In addition to a diverse background of experiences, the Board believes it is extremely important to have a **balance of independent service on the Board**, with a mix of new (0-5 years), mid-term (5-10 years) and long-term (more than 10 years) tenures participating. This blend of fresh perspectives and seasoned experience provides the right mix for effective Board oversight for today’s modern multinational public company. Our financial performance over the past decade is proof that our stockholders have benefited from having a Board with a strong history of refreshment coupled with tenured members in each of these categories. Given the recent impacts to the global economy related to COVID-19, we believe that it is imperative to have all three categories of tenure on the Board. In general the Board seeks to have the greatest weight towards the new and mid-term categories (which may vary from time to time), which is reflected in the composition of our proposed slate of independent directors:

New Members (five years or less):	42%
Mid-Term Members (five to ten years):	29%
Long-Term Members (more than ten years):	29%

Coherent has also undertaken several less publicized sustainability initiatives, such as the installation of over 1,200 solar panels on our corporate headquarter building in California. This array produces over 400kW of energy per hour and approximately 625,000kW hours annually, significantly improving our headquarter’s energy efficiency and reducing our greenhouse gas emissions by approximately 460 tons per year. This installation also allowed us to provide eight electric vehicle charging stations for our employees. Anecdotally, we have seen a significant increase in hybrid and electric powered vehicles in our Northern California employee base.

Our most important environmental-related initiative, however, has been our energy-efficient product designs, which over the years have significantly reduced the amount of power and consumable materials needed to operate our products.

While much has been debated about requiring public companies to disclose their “political spending,” as we have voluntarily disclosed for several years, we had no such corporate spending in 2019.

Our Board, management and employees take great pride in our financial performance, governance, stockholder relations and global corporate citizenship.

PROPOSAL ONE

ELECTION OF DIRECTORS

Nominees

Eight (8) members of the Board are to be elected at the Annual Meeting, six (6) of whom are standing for re-election. Ms. Matthews, who was recommended to the Governance and Nominating Committee by the search firm retained by the committee and joined the Board on May 9, 2019 (prior to the end of fiscal 2019), and Andy Mattes, who joined the Board on April 6, 2020 in connection with his appointment as the Company's new President and Chief Executive Officer, are standing for election for the first time at the Annual Meeting. For further discussion on Mr. Mattes' appointment as President, Chief Executive Officer and director, see "Compensation Discussion and Analysis—CEO Transition" below. Unless otherwise instructed, the proxy holders will vote the proxies received by them for the nominees named below. Each nominee has consented to be named a nominee in the proxy statement and to continue to serve as a director, if elected. If any nominee becomes unable or declines to serve as a director, if additional persons are nominated at the meeting or if stockholders are entitled to cumulate votes, the proxy holders intend to vote all proxies received by them in such a manner (in accordance with cumulative voting) as will ensure the election of as many of the nominees listed below as

possible, and the specific nominees to be voted for will be determined by the proxy holders.

We are not aware of any reason that any nominee will be unable or will decline to serve as a director. The term of office of each person elected as a director will continue until our next annual meeting of stockholders or until a successor has been elected and qualified or until his or her earlier resignation or removal. There are no arrangements or understandings between any director or executive officer and any other person pursuant to which he or she is or was to be selected as a director or officer.

The names of the nominees, all of whom are currently directors, and certain information about them is set forth below. All of the nominees have been unanimously recommended for nomination by the Board acting on the unanimous recommendation of the Governance and Nominating Committee of the Board. The committee consists solely of independent members of the Board. There are no family relationships among directors or executive officers of Coherent.

Name	Age	Director Since	Principal Occupation
Jay T. Flatley ⁽¹⁾⁽²⁾	67	2011	Chairman of the Board of Illumina, Inc.
Pamela Fletcher ⁽²⁾	53	2017	Vice President—eDelivery and Mobility Solutions and Global Innovation at General Motors Company
Andreas ("Andy") W. Mattes	58	2020	President and Chief Executive Officer
Beverly Kay Matthews ⁽³⁾	61	2019	Retired Partner, Ernst & Young
Michael R. McMullen ⁽²⁾	59	2018	President and Chief Executive Officer of Agilent Technologies, Inc.
Garry W. Rogerson ⁽¹⁾⁽³⁾	67	2004	Former Chief Executive Officer of Advanced Energy Industries, Inc.
Steve Skaggs ⁽¹⁾⁽³⁾	57	2013	Former Senior Vice President and Chief Financial Officer of Atmel Corporation
Sandeep Vijj ⁽²⁾	54	2004	Former President and Chief Executive Officer of MIPS Technologies, Inc.

(1) Member of the Governance and Nominating Committee.

(2) Member of the Compensation and HR Committee; Mr. McMullen joined the committee in December 2018, and Ms. Fletcher joined the committee in May 2019.

(3) Member of the Audit Committee; Ms. Fletcher served on the committee until May 2019, and Ms. Matthews joined the committee in July 2019.

Except as set forth below, each of our directors has been engaged in his or her principal occupation set forth above during the past five years.

Proposal One Election of Directors

Jay T. Flatley. Since 1999 Mr. Flatley has served as a member of the Board of Directors of Illumina, Inc., a leading developer, manufacturer and marketer of life science tools and integrated systems for the analysis of genetic variation and function and from July 2016 to December 2019, as Illumina's Executive Chairman of the Board of Directors. Since January 2020, he has served as Chairman of the Board of Directors of Illumina. From January 2016 to July 2016, he also served as Illumina's Chairman of the Board of Directors. From 1999 until July 2016, Mr. Flatley was Illumina's Chief Executive Officer. From 1999 to December 2013, Mr. Flatley also served as Illumina's President. Prior to joining Illumina, Mr. Flatley was President, Chief Executive Officer, and a member of the Board of Directors of Molecular Dynamics, Inc., a Nasdaq listed life sciences company focused on genetic discovery and analysis, from 1994 until its sale to Amersham Pharmacia Biotech Inc. in 1998. Additionally, he was a co-founder of Molecular Dynamics and served in various other positions there from 1987 to 1994. Mr. Flatley is also a member of the board of directors of Denali Therapeutics Inc., a biopharmaceutical company. Mr. Flatley previously served on the board of directors of Juno Therapeutics, Inc., a biopharmaceutical company. Mr. Flatley holds a B.A. in Economics from Claremont McKenna College and a B.S. and a M.S. in Industrial Engineering from Stanford University.

Mr. Flatley's years of executive and management experience in the high technology industry, including serving as the chief executive officer of several public companies, his service on the boards of other publicly held companies, and his years of service as a director of Coherent make him an invaluable member of the Board.

Pamela Fletcher. Ms. Fletcher has served as Vice President—eDelivery and Mobility Solutions and Global Innovation at General Motors Company ("GM"), a global automotive company, since February 2020 (for eDelivery and Mobility Solutions) and October 2018 (for Global Innovation) and was previously Vice President—Global Innovation and R&D Laboratories at GM from January 2019 to February 2020 (for R&D Laboratories). Over a fifteen-plus year career with GM, Ms. Fletcher has served in various roles, including Vice President—Global Electric Vehicle Programs from October 2017 to October 2018; Global Executive Chief Engineer, Autonomous and Electrified Vehicles and New Technology from July 2016 to October 2017; Executive Chief Engineer, Electrified Vehicles from August 2012 to July 2016; Chief Engineer, Chevrolet Volt Propulsion System from 2009 to August 2012; and Assistant Chief Engineer, Hybrid & Electric Propulsion Systems from 2007 to 2008. She holds a B.S. in Engineering from Kettering University and an M.S. in Engineering from Wayne State University.

Ms. Fletcher's years of executive and management experience in the automotive industry, her knowledge of advanced and emerging automotive technologies, and her years of service as a director of Coherent make her an invaluable member of the Board.

Andy Mattes. Mr. Mattes has served as our Chief Executive Officer and President as well as a member of the Board since his appointment on April 6, 2020. Prior to joining Coherent and beginning in June 2019, he was a Senior Advisor to McKinsey & Company, a leading global management consulting firm, providing corporate and strategic consulting services to various clients of the firm. From January 2018 to May 2019, he was an independent corporate advisor. From 2013 to December 2017, he was the Chief Executive Officer and a member of the board of directors of Diebold Nixdorf Incorporated, a retail and financial services technology systems company. He also served as its President from 2013 to August 2016. Mr. Mattes was the Senior Vice President, Global Strategic Partnerships at Violin Memory, a computer storage systems company, in 2013. He has also held various senior management positions with Hewlett-Packard Co., a computer technologies company. From 2008 to 2011 he was the Senior Vice President and General Manager of Hewlett Packard's Enterprise Services for the Americas. From 2006 to 2008 he was Hewlett Packard's Chief Sales Officer for the Enterprise Business. Mr. Mattes spent the first 20 years of his career (between 1985 and 2005) at Siemens, holding a variety of senior leadership positions. These culminated in his role as chief executive officer of Siemens Communications Inc., USA, in Boca Raton, Florida. He received his Diplom-Kaufmann in business administration from Ludwig Maximilian University.

Mr. Mattes' decades of experience developing and executing business strategies, his prior executive service in public companies, his extensive international experience, his recent appointment as our President and Chief Executive Officer, and his previous service on the board of another publicly held company make him an invaluable member of the Board.

Beverly Kay Matthews. Ms. Matthews is a certified public accountant and retired from Ernst & Young, LLP ("EY"), a global accounting firm, in June 2019, where she served as Vice Chair and Managing Partner of the West Region since 2008. She joined EY in 1983 and held a number of leadership positions, including Chief Operating Officer and Managing Partner of the Americas' Assurance and Advisory Business Services from 2005 to 2008; Managing Partner of the Assurance Practice of the Gulf Coast Region from 2001 to 2005; Managing Partner of the Austin Office from 1998 to 2001; and served as an audit partner for privately and publicly held companies in the technology, transportation and healthcare industries. She is also a member of the board of directors and audit committee of SVB Financial Group, the parent company of Silicon Valley Bank, and Main Street Capital Corporation. Ms. Matthews holds a Bachelors of Business Administration in Accounting from Texas Tech University.

Ms. Matthews' years in the public accounting industry working with public companies in the technology, transportation and healthcare industries, as well as her service on the boards of other publicly held companies, make her an invaluable member of the Board.

Michael R. McMullen. Mr. McMullen has served as Chief Executive Officer of Agilent Technologies, Inc. (“Agilent”), a global leader in Life Sciences and Diagnostics, since March 2015 and as President of Agilent since September 2014. From September 2014 to March 2015, he also served as Agilent’s Chief Operating Officer. From September 2009 to September 2014, he served as Senior Vice President, Agilent and President, Chemical Analysis Group at Agilent. From January 2002 to September 2009, he served as Agilent’s Vice President and General Manager of the Chemical Analysis Solutions Unit of the Life Sciences and Chemical Analysis Group. Prior to assuming this position, from March 1999 to December 2001, Mr. McMullen served as Country Manager for Agilent’s China, Japan and Korea Life Sciences and Chemical Analysis Group. Prior to this position, Mr. McMullen served as the Controller for the Hewlett-Packard Company and Yokogawa Electric Joint Venture from July 1996 to March 1999. Mr. McMullen is also a member of the board of directors of Agilent. Mr. McMullen holds a bachelor’s degree in economics and business administration from the University of Delaware and an MBA from the Wharton School of Business.

Mr. McMullen’s years of executive and management experience in the high technology industry, including serving as the chief executive officer and on the board of another publicly held company, make him an invaluable member of the Board.

Garry W. Rogerson. Mr. Rogerson has served as Coherent’s Chairman of the Board since June 2007. Since September 2015, Mr. Rogerson has been a private investor. From August 2011 to September 2015, Mr. Rogerson was Chief Executive Officer and a member of the Board of Directors of Advanced Energy Industries, Inc., a provider of power and control technologies for thin film manufacturing and solar-power generation, after which he agreed to serve as a special advisor for a period of time. He was Chairman and Chief Executive Officer of Varian, Inc., a major supplier of scientific instruments and consumable laboratory supplies, vacuum products and services, from February 2009 and 2004, respectively, until the purchase of Varian by Agilent Technologies, Inc. in May 2010. Mr. Rogerson served as Varian’s Chief Operating Officer from 2002 to 2004, as Senior Vice President, Scientific Instruments from 2001 to 2002, and as Vice President, Analytical Instruments from 1999 to 2001. Mr. Rogerson received an honours degree and Ph.D. in biochemistry as well as an honorary doctoral science degree from the University of Kent at Canterbury.

Mr. Rogerson’s years of executive and management experience in the high technology industry, including serving as the chief executive officer of several public companies, his service on the boards of other publicly held companies, and his years of service as a director of Coherent make him an invaluable member of the Board.

Steve Skaggs. Mr. Skaggs has been a private investor since April 2016. From May 2013 to April 2016, Mr. Skaggs was Senior Vice President and Chief Financial Officer of Atmel Corporation, a leading supplier of microcontrollers, until its acquisition by Microchip Technology Incorporated. Mr. Skaggs has more than 25 years of experience in the semiconductor industry, including serving as President, Chief Executive Officer and Chief Financial Officer of Lattice Semiconductor, a supplier of programmable logic devices and related software. He was also previously a member of the board of directors of Lattice. Prior to Lattice, Mr. Skaggs was employed by Bain & Company, a global management consulting firm, where he specialized in high technology product strategy, mergers and acquisitions and corporate restructurings. Mr. Skaggs is also a member of the board of directors of IDEX Biometrics, ASA. Mr. Skaggs holds an MBA degree from the Harvard Business School and a B.S. degree in Chemical Engineering from the University of California, Berkeley.

Mr. Skaggs’ years of executive and management experience in the high technology industry, including serving as the chief executive officer and chief financial officer of other public companies, his prior service on the board of another publicly held company and his years of service as a director of Coherent make him an invaluable member of the Board.

Sandeep Vij. Since February 2013, Mr. Vij has been a private investor. Previously, he held the position of President and Chief Executive Officer and was a member of the board of directors of MIPS Technologies, Inc., a leading provider of processor architectures and cores, from January 2010 until its sale in February 2013. In addition, Mr. Vij had been the Vice President and General Manager of the Broadband and Consumer Division of Cavium Networks, Inc., a provider of highly integrated semiconductor products from May 2008 to January 2010. Prior to that, he held the position of Vice President of Worldwide Marketing, Services and Support for Xilinx Inc., a digital programmable logic device provider, from 2007 to April 2008. From 2001 to 2006, he held the position of Vice President of Worldwide Marketing at Xilinx. From 1997 to 2001, he served as Vice President and General Manager of the General Products Division at Xilinx. Mr. Vij joined Xilinx in 1996 as Director of FPGA Marketing. He is a graduate of General Electric’s Edison Engineering Program and Advanced Courses in Engineering. He holds an MSEE from Stanford University and a BSEE from San Jose State University.

Mr. Vij’s years of executive and management experience in the high technology industry, including serving as the chief executive officer of another public company, his service on the board of another publicly held company, and his years of service as a director of Coherent make him an invaluable member of the Board.

Retiring Director

On May 5, 2019, Susan M. James informed the Board that, in accordance with the mandatory retirement age guideline in our Governance Guidelines, she intends to retire from our Board at the end of her current term and not stand for reelection at our Annual Meeting. We are grateful for Ms. James' distinguished service and leadership on the Board and its committees throughout her tenure, including chairing the Audit Committee for over nine years.

The Company's bylaws provide that the number of directors on the Board will be between five (5) and nine (9), and that the Board has the authority to set the number from time to time. In light of Ms. James' retirement, the Board has resolved that the number of directors on the Board will be decreased from nine (9) to eight (8) effective at our Annual Meeting.

CEO Retirement

On April 6, 2020, the Company announced that John Ambroseo retired from his role as President and CEO and a member of the Board, effective April 6, 2020. Upon his retirement, Mr. Ambroseo transitioned to the role of a Special Advisor to the Company. This transition was effected pursuant to a transition and retirement agreement that was entered into by Mr. Ambroseo and the Company in April 2019.

For further discussion of the transition and retirement agreement with Mr. Ambroseo, see "Compensation Discussion and Analysis—CEO Transition."

Message from Garry Rogerson, Chairman of the Coherent Board of Directors

This is a dynamic, challenging and opportunistic time for the Company. On behalf of the Board we want to thank John for his tireless and successful efforts working for, growing and leading Coherent. Following John's announcement last year that he would be retiring no later than Spring of 2021, the Governance and Nominating Committee ran a worldwide search for his successor to lead Coherent into its next phase. We are pleased to announce that Andy Mattes has joined the Company as our new President and Chief Executive Officer. We are also very appreciative of John's continued

commitment to Coherent and this transition, by agreeing to serve as Special Advisor to the Company until December 2021. We also extend our deep appreciation to our retiring colleague, Susan James, who has been a key and instrumental voice on the Board for over a decade of service to Coherent and its stockholders. Finally, the Board is pleased that Andy inherits a strong bench of seasoned and talented management colleagues to support the Company and him into the future.

Director Independence

The Board has determined that, with the exception of Mr. Mattes, all of its current members and all of the nominees for director are "independent directors" as that term is defined in the listing rules of the Nasdaq Stock Market.

Board Meetings and Committees

The Board held a total of six (6) formal meetings and acted two (2) times by unanimous written consent during fiscal 2019. Additionally, from time to time between formal meetings, members of the Board participate in update or status telephone calls and briefings, which are not included in these totals. During fiscal 2019, the Board had three standing committees: the Audit Committee; the Compensation and HR Committee; and the Governance and Nominating Committee. From time to time, the Board may create, and has in the past created, limited ad hoc committees, service on which does not provide additional compensation. Currently, as discussed below, the Board has one ad hoc committee, the Equity Committee, which is designated and overseen by the Compensation and HR Committee. Each of our directors attended at least 75% of the meetings of the Board and the committees on which he or she served during fiscal 2019.

Audit Committee

The Audit Committee consists of directors James (Chair during fiscal 2019), Matthews, Rogerson and Skaggs. The Audit Committee held thirteen (13) meetings during fiscal 2019. Ms. Fletcher served on the committee until May 9, 2019, and Ms. Matthews was appointed to the committee on July 8, 2019. As Ms. James will no longer serve on the committee upon her retirement from the Board, the Board, upon the recommendation of the Audit Committee, accordingly appointed Mr. Skaggs to serve as Chair effective in December 2019. The Board has determined that directors James, Matthews, Rogerson and Skaggs are “audit committee financial experts” as that term is defined in the rules of the SEC. Among other things, the Audit Committee has the sole authority for appointing and supervising our independent registered public accounting firm and is primarily responsible for approving the services performed by our independent registered public accounting firm and for reviewing and evaluating our accounting principles and our system of internal accounting controls.

Compensation and HR Committee

The Compensation and HR Committee consists of directors Vij (Chair), Flatley, Fletcher and McMullen. The Compensation and HR Committee held nine (9) meetings during fiscal 2019. Mr. L. William Krause served on the committee until his retirement from the Board on February 28, 2019. Mr. McMullen was appointed to the committee on December 6, 2018, and Ms. Fletcher was appointed to the committee on May 9, 2019. As noted above, all of the members of the Compensation and HR Committee are “independent” as defined under the listing rules of the Nasdaq

Stock Market. The Compensation and HR Committee, among other things, reviews and approves our executive compensation policies and programs and makes equity grants to employees, including officers, pursuant to our equity plan. In fiscal 2019, this committee had the sole authority delegated to it by the Board to make equity grants to employees of the company serving at a level of vice president and above. These equity grants were approved at meetings of the committee rather than by written consent. On September 27, 2018, the Board, at the recommendation of the Compensation and HR Committee, designated an Equity Committee with authority to make grants of restricted stock units, within guidelines recommended by the Compensation and HR Committee, to individuals who are employees serving at a level below that of vice president. The Equity Committee is composed of our CEO, in his capacity as a member of the Board. The Equity Committee reports to the Compensation and HR Committee periodically and upon request of the Compensation and HR Committee. The Equity Committee’s designated authority was first effective for fiscal 2019 and is concurrent with and does not supersede the authority of the Compensation and HR Committee. For additional information about the Compensation and HR Committee’s processes and procedures for the consideration and determination of executive compensation, see “Compensation Discussion and Analysis.”

Governance and Nominating Committee

The Governance and Nominating Committee consists of directors Rogerson (Chair), Flatley, James and Skaggs. Ms. James will no longer serve on the committee upon her retirement from the Board. The Governance and Nominating Committee held seven (7) meetings during fiscal 2019. The Governance and Nominating Committee, among other things, assists the Board by making recommendations to the Board on matters concerning director nominations and elections, board committees and corporate governance, allocation of risk oversight amongst the Board and its committees and compensation for directors. For fiscal 2019, the committee retained an independent compensation consultant to advise it on compensation for service on the Board. Additionally, the committee led the search process for our new chief executive officer and retained a search consultant to assist in such search.

Copies of the charters for each committee of the Board may be found on our website at www.coherent.com under “Company”/“Investor Relations”/“Corporate Governance”/“Governance Documents.”

Attendance at Annual Meeting of Stockholders by the Members of the Board of Directors

All directors are encouraged, but not required, to attend our annual meeting of stockholders. At our annual meeting held on February 28, 2019, all then-current members of the Board attended in person.

Process for Stockholders to Recommend Candidates for Election to the Board of Directors

The Governance and Nominating Committee will consider nominees properly recommended by stockholders. A stockholder that desires to recommend a candidate for election to the Board must direct the recommendation in writing to us at our principal executive offices (Attention: Corporate Secretary) and must include the candidate's name, age, home and business contact information, principal occupation or employment, the number of shares beneficially owned by the nominee and the stockholder making the recommendation, whether any hedging transactions have been entered into by the nominee or on his or her behalf, information regarding any arrangements or understandings between the nominee and the stockholder nominating the nominee or any other persons relating to the nomination, a written statement by the nominee acknowledging that the nominee will owe a fiduciary duty to Coherent if elected, a written statement of the nominee that such nominee, if elected, intends to tender, promptly following such nominee's election or re-election, an irrevocable resignation effective upon such nominee's failure to receive the required vote for re-election at the next meeting at which such nominee would face re-election and upon acceptance of such resignation by the Board in accordance with Coherent's guidelines or policies, and any other information required to be disclosed about the nominee if proxies were to be solicited to elect the nominee as a director.

For a stockholder recommendation to be considered by the Governance and Nominating Committee as a potential candidate at a meeting of stockholders, nominations must be received on or before the deadline for receipt of stockholder proposals for such meeting. In the event a stockholder decides to nominate a candidate for director and solicits proxies for such candidate, the stockholder will need to follow the rules set forth by the SEC and in our bylaws. See "General Information About the Meeting—Deadline for Receipt of Stockholder Proposals or Nominations; Proxy Access."

The Governance and Nominating Committee's criteria and process for evaluating and identifying the candidates that it approves as director nominees are as follows:

- the Governance and Nominating Committee regularly reviews the current composition and size of the Board;
- the Governance and Nominating Committee reviews the qualifications of any candidates who have been properly recommended by a stockholder, as well as those candidates who have been identified by management, individual members of the Board or, if the Governance and Nominating Committee determines, a search firm. Such review may, in the Governance and Nominating Committee's discretion, include a review solely of information provided to the Governance and Nominating Committee or may also include discussions with persons familiar with the candidate, an interview with the candidate or other actions that the committee deems proper;
- the Governance and Nominating Committee evaluates the performance of the Board as a whole and evaluates the qualifications of individual members of the Board eligible for re-election at the annual meeting of stockholders;
- the Governance and Nominating Committee considers the suitability of each candidate, including the current members of the Board, in light of the current size and composition of the Board. Except as may be required by rules promulgated by the Nasdaq Stock Market or the SEC, it is the current belief of the Governance and Nominating Committee that there are no specific, minimum qualifications that must be met by any candidate for the Board, nor are there specific qualities or skills that are necessary for one or more of the members of the Board to possess. In evaluating the qualifications of the candidates, the Governance and Nominating Committee considers many factors, including, issues of character, judgment, independence, age, expertise, diversity of experience, length of service, other commitments and the like. While Coherent does not have a formal policy with regard to the consideration of diversity in identifying director

nominees, as noted above, diversity of experience is one of many factors that the committee considers;

- the Governance and Nominating Committee considers each individual candidate in the context of the current perceived needs of the Board as a whole. While the Governance and Nominating Committee has not established specific minimum qualifications for director candidates, the committee believes that candidates and nominees must reflect a Board that is comprised of directors who (i) are predominantly independent, (ii) are of high integrity, (iii) have qualifications that will increase the overall effectiveness of the Board, and (iv) meet other requirements as may be required by applicable rules, such as financial literacy or financial expertise with respect to audit committee members;
- in evaluating and identifying candidates, the Governance and Nominating Committee has the authority to retain and terminate any third party search firm that is used to identify director candidates and has the authority to approve the fees and retention terms of any search firm; and

- after such review and consideration, the Governance and Nominating Committee recommends the slate of director nominees to the full Board for its approval.

The Governance and Nominating Committee will endeavor to notify, or cause to be notified, all director candidates, including those recommended by a stockholder, of its decision as to whether to nominate such individual for election to the Board.

Our corporate governance guidelines require that upon a member of the Board turning 72 years old, he or she shall submit a conditional resignation to the Governance and Nominating Committee effective upon the next annual meeting of stockholders. The committee then determines whether to recommend that the Board accept such resignation. As described in “—Retiring Director” above, on May 5, 2019, Ms. James informed the Board that, in accordance with the mandatory retirement age guideline, she intends to retire from the Board at the end of her current term and will not stand for reelection at the Annual Meeting.

Majority Voting and Conditional Resignations from the Board of Directors

Since 2013, we have had a majority vote standard for the election of directors in elections that are not Contested Elections (as defined below). This means that a nominee for director in an uncontested election such as this one shall be elected to the Board if the votes cast “for” such nominee exceed the votes cast “against” such nominee (with abstentions and broker non-votes not counted as a vote cast either “for” or “against” that director’s election). However, if the number of nominees exceeds the number of directors to be elected (a “Contested Election”), our bylaws provide that directors shall be elected by a plurality of the votes cast.

The Board has also adopted a policy on majority voting to (i) establish procedures under which any incumbent director

who fails to receive a majority of the votes cast in an election that is not a Contested Election shall tender his or her resignation to the Governance and Nominating Committee for consideration; and (ii) provide that the Governance and Nominating Committee will make recommendations to the Board regarding the actions to be taken with respect to all such offers to resign. The Board shall act on the resignation within 90 days following certification of the election results. In the event that the Board does not accept such resignation, then such director shall continue to serve until such time as his or her successor is elected.

Stockholder Communication with the Board of Directors

While the Board believes that management speaks for Coherent, the Board encourages direct communication from stockholders. Accordingly, any stockholder may contact any member of the Board individually or as a group by writing by mail to our principal executive offices (c/o Corporate Secretary) at 5100 Patrick Henry Dr., Santa Clara, CA 95054.

Any stockholder may report to us any complaints or comments regarding accounting, internal accounting controls, or auditing matters. Any stockholder who wishes to so contact us should send such complaints or comments to the Audit Committee, c/o Corporate Secretary, at our principal executive offices. Additionally, as noted below, our Compensation and HR Committee encourages stockholder communication on matters related to executive compensation.

Any stockholder communications that the Board receives will first go to our Corporate Secretary, who will log the date of

receipt of the communication as well as the identity and contact information of the correspondent in our stockholder communications log.

Our Corporate Secretary will review, summarize and, if appropriate, investigate the complaint under the direction of the Board or appropriate committee of the Board in a timely manner. In the case of accounting or auditing related matters, a member of the Audit Committee, or the Audit Committee as a whole, will then review the summary of the communication, the results of the investigation, if any, and, if appropriate, the draft response. The summary and response will be in the form of a memo, which will become part of the stockholder communications log that the Corporate Secretary maintains with respect to all stockholder communications.

Independent Chair and Board Leadership

The Board's leadership structure consists of an independent Board Chair, who is elected by the independent directors, and independent committee chairs. We separate the positions of Chief Executive Officer ("CEO") and Board Chair in recognition of the differences between the two roles. The Board believes this structure provides independent Board leadership and engagement.

Given that our Chair is an independent director, the Board does not feel the need for a separate "lead independent director," as our independent Chair performs that function. The Board takes its independence seriously and reinforces this standard with seven of the eight director nominees, or 88%, being independent.

The Role of the Board and Its Committees in Risk Oversight

The Board oversees Coherent's risk profile and management's processes for assessing and managing risk, both as a Board and through its committees, with the Governance and Nominating Committee delegated the responsibility for assigning oversight responsibilities to each committee and the Board as a whole. Our senior executive team provides regular updates to the Board and each committee regarding our strategies and objectives and the risks inherent with them.

Each regular meeting of the Board includes a discussion of risks related to the Company's financial results and operations

and each committee schedules risk-related presentations regularly throughout the year. In addition, our directors have access to our management to discuss any matters of interest, including those related to risk. Those members of management most knowledgeable of the issues attend Board and committee meetings to provide additional insight on the matters being discussed, including risk exposures. Our Chief Financial Officer and General Counsel both report directly to our CEO, providing him with further visibility to our risk profile. A Corporate Vice President of Finance is the designated officer overseeing our enterprise risk management program

and works closely with both our Chief Financial Officer and General Counsel on these matters.

These regular meetings also provide our Board members the opportunity to discuss issues of concern directly with management. In general, the Board and its committees oversee the following risk categories:

- the Board generally oversees the Company's overall enterprise risk management process and specifically with regard to the areas of strategy, mergers and acquisitions, communications and operations;
- the Audit Committee generally oversees risks primarily related to financial controls, IT, accounting, tax, treasury, capital, legal, regulatory and compliance;
- the Compensation and HR Committee generally oversees our compensation programs so that they do not incentivize

excessive risk taking as well as overseeing human resources related risks; and

- the Governance and Nominating Committee oversees the assignment of risk oversight categories by each particular committee and/or the Board as a whole, as well as those risks related to compensation of members of the Board and succession planning for the Board and our CEO.

Management presents an annual assessment of the risks associated with the Company's compensation plans. The Compensation and HR Committee agreed with the conclusion from the first quarter of fiscal 2020 presentation that the risks were within our ability to effectively monitor and manage and that these risks are not reasonably likely to have a material adverse effect on the Company.

Hedging Policy

The Board (acting on the recommendation of the Audit Committee) has approved the Company's Insider Trading Policy (the "Policy"), which applies to all directors, officers and employees of the Company. The Policy includes the following restrictions:

- A prohibition against "short sales" (i.e., the sale of a security that must be borrowed to make delivery) and "selling short against the box" (i.e., a sale with a delayed delivery) with respect to Company securities by any director, officer or employee of the Company;
- A prohibition against any director, officer or employee of the Company engaging in transactions in publicly traded options, such as puts and calls, and other derivative

securities with respect to the Company's securities. This prohibition extends to any hedging or similar transaction designed to decrease the risks associated with holding Company securities;

- A prohibition against pledging Company securities as collateral for loans by any director, officer or employee of the Company who is subject to (1) the reporting requirements of Section 16 of the Securities Exchange Act or (2) the Company's blackout periods or pre-clearance requirements under the Policy (a "designated insider"); and
- A prohibition against holding Company securities in margin accounts by any director, officer or employee of the Company who is a designated insider.

Additional Board Governance Matters

The Board (acting on the recommendation of the Governance and Nominating Committee) has approved the Company’s Corporate Governance Guidelines, which include, among other items (in addition to those items described elsewhere in this proxy statement), the following provisions:

- At each regular meeting of the Board, the independent directors also meet in executive session without the presence of management;
- To avoid “over-boarding” we maintain the following limits on service on other boards:
 - CEO—No more than one (1) other public company board of directors in addition to the Company (note, however, that Mr. Mattes does not currently serve on any public company boards other than ours);
 - Independent Directors—No more than four (4) other public company boards of directors in addition to the Company;
 - Audit Committee members—No more than three (3) other public company audit committees in addition to the Company, unless the other independent directors consent;
- Each independent member of the Board must, within five years of initial appointment, acquire and thereafter maintain a minimum value of Company stock equal to three times such director’s annual Board cash retainer (exclusive of any cash retainer for service as chair or committee service);
- The Board is responsible for reviewing the Company’s succession planning and senior management development on an annual basis; and
- The Board maintains an age-based term limit of 72 (provided, that the Governance and Nominating Committee maintains the flexibility to not apply such limit on a facts and circumstances basis).

Fiscal 2019 Director Compensation

During fiscal 2019, we paid our non-employee directors an annual cash retainer (depending upon position) for service on the Board as follows:

Position	Annual Retainer
Board Member	\$ 60,000
Board Chair	\$ 60,000 ⁽¹⁾
Audit Committee Chair	\$ 34,000
Compensation and HR Committee Chair	\$ 20,000
Governance and Nominating Committee Chair	\$ 13,500
Audit Committee member (non-Chair)	\$ 12,500
Compensation and HR Committee member (non-Chair)	\$ 10,000
Governance and Nominating Committee member (non-Chair)	\$ 6,500

(1) On December 6, 2018, after reviewing materials provided by its compensation consultant, the Governance and Nominating Committee approved an increase to the annual retainer of the Board Chair from \$50,000 to \$60,000 effective as of the beginning of the second quarter of fiscal 2019.

The Governance and Nominating Committee annually reviews Board and committee compensation with the assistance of an independent compensation consultant, which for fiscal 2019 was Compensia. Compensia is separately compensated for this work from the work it does as the Compensation and HR Committee’s independent consultant for executive compensation. The annual review includes a comparison to peer companies (which are the same as used

for executive compensation as noted on page 42) and market pay practices for service on boards of directors. Compensia advised the committee that the design and pay levels of the director compensation program were aligned with peer market practices, including the increase in the annual retainer of the Board Chair as described in note (1) to the Fiscal 2019 Director Compensation table above. As noted, the Board is compensated with a combination of cash retainers and a fixed

value of time-based RSUs. As noted elsewhere in this proxy statement, Compensia has not provided any other service for the Company other than as directed by a committee of the Board.

Following the recommendation of the Governance and Nominating Committee (based upon review by Compensia) in February 2017, the Board adopted resolutions automatically granting each year without any discretion to each non-employee director an award of RSUs under the 2011 Equity Incentive Plan (rounded down to the nearest whole share) valued at \$225,000 (based on the trailing thirty day closing price of the Company's common stock on the Nasdaq

Stock Market measured from the last trading day prior to the date of grant) upon the director's election to the Board at the Company's annual meeting. In addition, the Board determined that upon the initial appointment of a non-employee director, such director will receive an award of RSUs under the 2011 Equity Incentive Plan valued at \$225,000 (based on the trailing thirty day closing price of the Company's common stock on the Nasdaq Stock Market measured from the last trading day prior to the date of grant), which RSUs shall vest over two years (fifty percent on each anniversary of the date of grant). This was a change from the historical practice of granting a fixed number of 3,500 RSUs per year.

The chart below presents information concerning the total compensation of our non-employee directors for service (including the Board and, where applicable, committee service) during fiscal 2019:

Name	Fees Earned or Paid in Cash (\$) ⁽¹⁾	Stock Awards (\$) ⁽²⁾⁽³⁾	Option Awards (\$) ⁽⁴⁾	Total (\$)
Jay T. Flatley	76,500	240,209	—	316,709
Pamela Fletcher	74,375	240,209	—	314,584
Susan M. James	100,500	240,209	—	340,709
<i>L. William Krause*</i>	35,000	—	—	35,000
Beverly Kay Matthews*	33,125	204,405	—	237,530
Michael R. McMullen	67,500	240,209	—	307,709
Garry W. Rogerson	143,500	240,209	—	383,709
Steve Skaggs	79,000	240,209	—	319,209
Sandeep Vij	80,000	240,209	—	320,209

* Fees paid in cash to Mr. Krause and Ms. Matthews reflect the pro-rata amount for their respective service during the fiscal year. Mr. Krause retired from the Board effective as of February 28, 2019, and Ms. Matthews joined the Board effective as of May 9, 2019.

(1) The chart below summarizes the gross cash amounts earned by non-employee directors for service during fiscal 2019 on the Board and its committees:

Name	Annual Board Service (\$)	Audit Committee (\$)	Compensation and HR Committee (\$)	Governance and Nominating Committee (\$)	Total (\$)
Jay T. Flatley	60,000	—	10,000	6,500	76,500
Pamela Fletcher	60,000	9,375†	5,000†	—	74,375
Susan M. James	60,000	34,000	—	6,500	100,500
<i>L. William Krause*</i>	30,000	—	5,000†	—	35,000
Beverly Kay Matthews	30,000†	3,125†	—	—	33,125
Michael R. McMullen	60,000	—	7,500†	—	67,500
Garry W. Rogerson	117,500	12,500	—	13,500	143,500
Steve Skaggs	60,000	12,500	—	6,500	79,000
Sandeep Vij	60,000	—	20,000	—	80,000

* Retainer amounts for Mr. Krause are pro-rata for his service during the fiscal year. Mr. Krause retired from the Board effective as of February 28, 2019.

Proposal One Election of Directors

- † Reflects pro-rata amounts for service on the Board and the respective committee during the year; the applicable individual did not serve on the Board or applicable committee for the entire fiscal year. In the case of Ms. Matthews, she joined the Board effective as of May 9, 2019.
- (2) These amounts do not reflect compensation actually received. Rather, these amounts represent the aggregate grant date fair value computed in accordance with ASC 718, for restricted stock units (“RSUs”) which were granted in fiscal 2019. The assumptions used to calculate the value of these RSUs are set forth in Note 13 “Employee Stock Award and Benefit Plans” of the Notes to the Consolidated Financial Statements in our annual report on Form 10-K for fiscal 2019. Note that Ms. Matthews’ stock awards are at a different value due to the difference in the trailing thirty day closing price of the Company’s common stock measured from the last trading day prior to the grant date of her stock awards as compared to the other directors, who received their grants on a different date.
- (3) The aggregate number of shares underlying unvested RSUs held by each of our non-employee directors as of the end of fiscal 2019 (including the grants made to our non-employee directors during fiscal 2019) was as follows:

Name	Shares^(a)
Jay T. Flatley	1,805 ^(b)
Pamela Fletcher	1,805 ^(b)
Susan M. James	1,805 ^(b)
<i>L. William Krause</i>	—
Beverly Kay Matthews	1,500 ^(c)
Michael R. McMullen	2,422 ^(d)
Garry W. Rogerson	1,805 ^(b)
Steve Skaggs	1,805 ^(b)
Sandeep Vij	1,805 ^(b)

- (a) The shares underlying the RSUs will vest to the extent an individual is a member of the Board on the applicable vesting date.
- (b) These shares will vest on February 15, 2020.
- (c) 50% of the shares are scheduled to vest on each of May 9, 2020 and May 9, 2021.
- (d) 1,805 shares will vest on February 15, 2020 and 617 shares are scheduled to vest on September 28, 2020.
- (4) No stock options have been granted to our non-employee directors since 2011. As of the end of fiscal 2019, Mr. Flatley held outstanding stock options with respect to 24,000 shares, expiring in September 2021, and none of the other non-employee directors held any stock options.

Option Exercises and Stock Vested during Fiscal 2019

The table below sets forth certain information for each non-employee director regarding the exercise of options and the vesting of stock awards during fiscal 2019, including the aggregate value realized upon such exercise or vesting.

Name	Option Awards		Stock Awards	
	Number of Shares Acquired on Exercise (#)	Value Realized on Exercise (\$)	Number of Shares Acquired on Vesting (#)	Value Realized on Vesting (\$) ⁽¹⁾
Jay T. Flatley	—	—	916	117,303
Pamela Fletcher	—	—	1,375	179,897
Susan M. James	—	—	916	117,303
<i>L. William Krause</i>	—	—	916	117,303
Beverly Kay Matthews	—	—	—	—
Michael R. McMullen	—	—	617	93,500
Garry W. Rogerson	—	—	916	117,303
Steve Skaggs	—	—	916	117,303
Sandeep Vij	—	—	916	117,303

(1) Reflects the market price of our common stock on the vesting date or the last day on which our common stock traded prior to the vesting date if trading did not occur on the vesting date.

Vote Required

The affirmative vote of a majority of the votes cast is required for the election of directors. You may vote “FOR,” “AGAINST” or “ABSTAIN” with respect to each of the director nominees named in this proxy statement. Pursuant to our bylaws, abstentions and broker non-votes are not considered to be votes cast with respect to the election of directors and, therefore, will not have an effect in determining the outcome of the election of directors. If a quorum is present, each of the eight (8) nominees who receives more “FOR” votes than “AGAINST” votes will be elected.

Every stockholder voting for the election of directors may cumulate such stockholder’s votes and give one candidate a number of votes equal to the number of directors to be elected multiplied by the number of votes to which the stockholder’s shares are entitled. Alternatively, a stockholder may distribute his or her votes on the same principle among as many candidates as the stockholder thinks fit, provided that votes

cannot be cast for more than eight (8) candidates. However, no stockholder will be entitled to cumulate votes for a candidate unless (i) such candidate’s name has been properly placed in nomination for election at the Annual Meeting prior to the voting and (ii) the stockholder, or any other stockholder, has given notice at the meeting prior to the voting of the intention to cumulate the stockholder’s votes. If cumulative voting occurs at the meeting and you do not specify how to distribute your votes, your proxy holders (the individuals named on your proxy card) will cumulate votes in such a manner as will ensure the election of as many of the nominees listed above as possible, and the specific nominees to be voted for will be determined by the proxy holders.

Recommendation

The Board recommends that stockholders vote “FOR” each of the eight nominees presented herein.

PROPOSAL TWO

APPROVAL OF THE COHERENT EQUITY INCENTIVE PLAN

Our Board believes that we must offer a competitive equity incentive program if we are to continue to successfully attract and retain the best possible candidates for positions of substantial responsibility within Coherent. Our current company-wide equity plan, the 2011 Equity Incentive Plan, expires by its terms in January 2021. We believe it is appropriate to adopt a new company-wide equity plan, which includes limits on director awards as well as employee awards. Accordingly, our Board, at the recommendation of its Compensation and HR Committee, has adopted a new Equity Incentive Plan (the “Plan”) to replace the 2011 Equity Incentive Plan, subject to, and effective as of, approval from our stockholders at the Annual Meeting. The purposes of the Plan are to attract and retain the best available personnel for positions of substantial responsibility, to provide additional incentives and to promote the success of the Company.

Plan Share Reserve

As of March 27, 2020, 1,484,434 shares remained available for issuance under the 2011 Equity Incentive Plan. If stockholders approve the Plan, there will be no further grants of awards under the 2011 Equity Incentive Plan. However, the 2011 Equity Incentive Plan will continue to govern awards previously granted under it.

The maximum aggregate number of shares that may be issued under the Plan is 3,080,000 shares plus any forfeited or cancelled shares subject to outstanding awards under the 2011 Equity Incentive Plan. The share reserve for the Plan is reduced by one share for each share granted pursuant to stock options or stock appreciation rights and by two shares for each share granted pursuant to all other awards with a purchase price lower than the fair market value of a share on the date of grant. As of March 27, 2020, there were outstanding unvested awards under the 2011 Equity Incentive Plan with respect to 408,477 shares (calculated at 100% of target amount for performance awards). Therefore, the maximum number of shares that could be added to the maximum aggregate number of shares under the Plan if all such awards were forfeited or expired unexercised and no additional awards were granted before the adoption of the Plan would be 816,954, assuming all outstanding awards were forfeited or expired unexercised and were added back at the ratio described above.

If awards granted under the Plan expire or otherwise terminate without having been exercised or settled in full, or if shares subject to forfeiture or repurchase upon failure to vest are forfeited or repurchased, such shares will again become available for issuance under the Plan in proportion to the number of shares by which the Plan reserve was originally reduced at the time of grant or issuance. Shares will not be treated as having been issued under the Plan, and will therefore not reduce the number of shares available for grant, to the extent an award is settled in cash or substitute awards are granted in connection with a transaction. Shares will be treated as having been issued under the Plan to the extent such shares are withheld in satisfaction of tax withholding obligations for stock options or stock appreciation rights or the payment of an award’s exercise or purchase price. Upon exercise of stock appreciation rights or net exercise of options, the gross number of shares exercised will be treated as having been issued under the Plan.

Our Board believes that the Plan will be a vital component in helping the Company attract and retain the best available personnel for positions of substantial responsibility, to provide additional incentives and to promote the success of the Company. The Board believes that the Plan will continue the Company’s responsible approach with respect to share usage and dilution, as the potential maximum dilution from the shares to be authorized under the Plan will be 13%, based on the total shares outstanding as of September 28, 2019. Accordingly, the Board believes that the Company’s request for an additional 3,080,000 shares is reasonable and prudent and allows us to continue our current granting practices in the future and to be able to respond to growth (both organic and inorganic), market competition and potential stock price fluctuations.

On March 27, 2020, the closing price on NASDAQ of a share of Company stock was \$103.07.

Why Stockholders Should Approve the Plan

- **Equity awards are an important component of the Company’s compensation program.** The Plan, as described herein, will help the Company to continue to

attract and retain the services of qualified employees, officers and non-employee directors.

- **Equity incentives align the interests of our employees, officers and non-employee directors with those of other stockholders.** Equity incentives appropriately encourage recipients to focus on growth in stockholder value.
- **Our 2011 Equity Incentive Plan will be expiring.** If we do not adopt a new equity plan, then we will not have shares available to grant under a stockholder approved plan after the 2011 Equity Incentive Plan expires in January 2021.

Key Plan Features

Our Board believes that the Plan incorporates and promotes best practices by reinforcing the alignment between equity compensation arrangements for eligible participants and stockholders' interests. The Plan includes the following key features:

- **No dividend equivalents paid on unvested awards:** No dividend equivalents will be paid to any participant until the award vests.
- **Clawback/recoupment provision:** The Plan includes a "clawback", or recoupment provision, which provides that awards will be subject to cancellation or forfeiture pursuant to any clawback, recoupment, or similar policy required by law or otherwise adopted by our Board.
- **Annual limit on non-employee director awards:** The plan establishes an annual limitation of \$750,000 on the amount of cash compensation and value of shares awarded to non-employee directors.
- **Overall annual limit on awards:** The Plan establishes certain annual limits on awards as described below.
- **Explicit "no repricing" provisions:** The exercise price for an option or stock appreciation rights may not be reduced without stockholder approval.
- **No transferability:** All awards will be nontransferable except by will or by the laws of descent and distribution.

General Plan Summary

Eligible participants in the Plan are employees and consultants of the Company and its subsidiaries and members of the Board. As of March 27, 2020, approximately 4,948 employees, 44 consultants and eight non-employee directors would be eligible to participate in the Plan if it were approved.

If approved, our Board of Directors or a designated committee, most likely the Compensation and HR Committee (the

"administrator") will administer the Plan. The Plan permits the granting of:

- **Restricted stock units (RSUs).** Awards of RSUs result in a payment to a participant only if the vesting criteria the administrator establishes are satisfied. Upon satisfying the applicable vesting criteria, the participant will be entitled to the payout specified in the award agreement. The administrator, in its sole discretion, may pay earned RSUs in cash, shares, or a combination thereof;
- **Performance shares.** The administrator will be able to grant performance shares, which are awards that will result in a payment to a participant only if the performance goals or other vesting criteria the administrator may establish are achieved or the awards otherwise vest. The administrator will establish performance or other vesting criteria, which, depending on the extent to which they are met, will determine the number and/or the value of performance shares to be paid out to participants;
- **Restricted stock.** Awards of restricted stock are rights to acquire or purchase shares of our common stock, which vest in accordance with the terms and conditions established by the administrator;
- **Options.** Either incentive stock options, which must comply with Section 422 of the Code, or nonqualified stock options may be granted. The Administrator sets option exercise prices and terms, except that the exercise price of stock options granted under the Plan must be at least 100% of the fair market value of the common stock on the date of grant. No incentive stock option may be granted after 10 years from date of the Plan's initial adoption by the Board and ISOs may not be granted with respect to more than the maximum number of shares issuable under the Plan as described above. We note, however, that while no options have been granted to employees since fiscal 2010, it is important to include this element to provide the administrator with flexibility regarding types of equity;
- **Stock appreciation rights (SARs).** The administrator will be able to grant SARs, which are the rights to receive the appreciation in fair market value of common stock between the exercise date and the date of grant. The appreciation may be paid in cash, common stock of equivalent value, or a combination thereof. SARs will become exercisable at the times and on the terms established by the administrator, subject to the terms of the Plan. The administrator, subject to the terms of the Plan, will determine the terms and conditions of SARs granted under the Plan; provided, however, that the exercise price may not be less than 100% of the fair market value of a share on the date of grant;

Proposal Two Approval of the Coherent Equity Incentive Plan

- *Dividend equivalents.* Dividend equivalents represent the right of a participant to receive amounts based on the dividends declared on shares of common stock as of dividend payment dates during the term of the dividend equivalent right. Dividend equivalents will not be paid to any participant with respect to any unvested award until such award vests but this limitation does not prohibit the payment of dividend equivalent rights attributable to the period while an award was unvested to be paid upon or after the vesting of the award;
- *Cash-payments to non-employee directors.* Cash retainers and other cash payments for service as a non-employee director are made under the Plan; and
- *Deferred stock units.* Deferred stock units consist of a restricted stock, RSU, performance share or dividend equivalent right award that the administrator permits to be paid out in installments or on a deferred basis.

The number of awards under the Plan that a participant may receive is limited. Subject to certain capital and transaction adjustments, no participant shall be granted, in any fiscal year, (i) options and stock appreciation rights to purchase more than 500,000 shares; provided, however, that such limit shall be 1,000,000 shares in the participant's first fiscal year of Company service; and (ii) more than 400,000 shares in the aggregate of restricted stock, performance shares, or RSUs; provided, however, that such limit shall be 600,000 shares in the participant's first fiscal year of Company service. In addition, no non-employee director shall be granted in any fiscal year solely with respect to ordinary service as a director on the Board and any standing committee thereof awards that exceed \$750,000 in the aggregate value of cash-based and other awards.

The Plan provides that options and stock appreciation rights may not be repriced without stockholder approval. In the event that the successor corporation in the event of a merger or change in control refuses to assume or substitute for the award, the participant will fully vest in and have the right to exercise all of his or her outstanding options or SARs, including shares with respect to awards that would not otherwise be vested or exercisable, all restrictions on restricted stock will lapse, all RSUs will fully vest, and, with respect to awards with performance-based vesting, all performance goals or other vesting criteria will be deemed achieved at the greater of performance through closing and 100% of target levels and all other terms and conditions met unless otherwise expressly provided for in the award agreement.

If certain changes in our stock occur by reason of a stock split, reverse stock split, stock dividend, combination or reclassification, or certain other changes in our capital structure, the number of shares covered by outstanding awards, the number of shares that remain authorized for issuance under the Plan, the exercise or purchase price of outstanding awards and the annual share limits will be proportionately adjusted.

Awards under the Plan are subject to any applicable Company clawback policy and any additional clawback provisions of applicable law or applicable listing standards.

The Board may amend or terminate the Plan but no amendment or termination may materially impair the rights of any participant unless agreed to by the participant.

The description of the Plan in this Proposal Two is a summary and does not purport to be a complete description and is qualified in its entirety by reference to the text of the Plan set forth in Appendix A. See Appendix A for more detailed information regarding the Plan.

Certain Federal Income Tax Consequences

The following is a brief summary of current federal income tax consequences of awards that could be granted under the Plan. The applicable rules are complex and income tax consequences may vary depending upon the particular circumstances of each participant. The summary is very general in nature and does not purport to describe particular consequences to individual plan participants and does not discuss the tax laws of any state, municipality or foreign jurisdiction or gift, estate, excise, payroll or other tax laws, including the impact of Internal Revenue Code Section 280G governing parachute payments.

RSUs: A holder of an RSU does not recognize taxable income when the RSU is granted. When vested RSUs are settled and shares distributed, the participant will recognize ordinary income equal to the fair market value of shares received.

Performance awards: No income generally will be recognized upon the grant of a performance award. Upon payment in respect of a performance award, the recipient generally will be required to include as taxable ordinary income in the year of receipt an amount equal to the fair market value of any vested shares of common stock or cash received.

Restricted stock awards: For restricted stock awards, unless vested or the recipient elects under Internal Revenue Code Section 83(b) to be taxed at the time of grant or purchase, the recipient will not have taxable income upon the grant, but will recognize ordinary income upon vesting equal to the fair market value of the shares at the time of vesting less the amount paid for such shares (if any). Any gain or loss recognized upon any later disposition of the shares generally will be a capital gain or loss.

Stock options and stock appreciation rights: A recipient of a stock option or stock appreciation right will not recognize taxable income upon the grant of those awards. For nonqualified stock options and stock appreciation rights, the participant will recognize ordinary income upon exercise in an amount equal to the difference between the fair market value of the shares and the exercise price on the date of exercise. Any gain or loss recognized upon any later disposition of the shares generally will be a capital gain or loss. The acquisition of shares upon exercise of an incentive stock option will not result in any taxable income to the participant, except, possibly, for purposes of the alternative minimum tax. The gain or loss recognized by the participant on a later sale or other disposition of such shares will either be long-term capital gain or loss or ordinary income, depending upon whether the participant holds the shares for the legally required period (currently more than two years from the date of grant and more than one year from the date of exercise). If the shares are not held for the legally required period, the participant will recognize ordinary income equal to the lesser of (i) the difference between the fair market value of the shares on the date of exercise and the exercise price, or (ii) the difference between the sales price and the exercise price. Any additional gain recognized on the sale generally will be short-term or long-term capital gain. The Company will generally be eligible for an income tax deduction equal to the income recognized by the participant in the year of the exercise of a nonqualified stock option or stock appreciation right but will generally not be eligible for an income tax deduction with respect to incentive stock options unless the holding periods described above are not met.

Section 409A: Section 409A of the Code provides certain requirements for non-qualified deferred compensation arrangements with respect to a participant's deferral and distribution elections and permissible distribution events.

Awards granted under the Plan with a deferral feature will be subject to the requirements of Section 409A. If an award is subject to and fails to satisfy the requirements of Section 409A, the recipient of that award may recognize ordinary income on the amounts deferred under the award, to the extent vested, which may be prior to when the compensation actually or constructively is received. Also, if an award that is subject to Section 409A fails to comply with Section 409A's provisions, Section 409A imposes an additional 20% federal income tax on compensation recognized as ordinary income, as well as interest on such deferred compensation.

Section 162(m) limitations: As a public company, the Company is subject to the tax-deduction rule of Section 162(m) of the Code generally limiting the otherwise allowable deduction to the Company to \$1 million for certain executives except to the extent the compensation was pursuant to a written agreement in effect on November 2, 2017 and meets certain requirements.

Awards

Our Board believes that we must offer a competitive equity incentive program if we are to continue to successfully attract and retain the best possible candidates for positions of substantial responsibility within Coherent. Our Board expects that the Plan will be an important factor in attracting, retaining and rewarding the high caliber employees essential to our success and in providing incentive to these individuals to promote the success of the Company.

No awards have yet been made under the Plan. Awards under the Plan would be made at the discretion of the administrator. Therefore, the benefits and amounts that will be received or allocated under the Plan in the future are not determinable at this time. No awards have been granted that are contingent on the approval of the Plan. The Board has previously adopted resolutions automatically granting each year without any discretion to each non-employee director an award of RSUs valued at \$225,000 upon the director's election to the Board at the Company's annual meeting. In addition, the Board determined that upon the initial appointment of a non-employee director, such director will receive an award of RSUs valued at \$225,000. If the Plan is approved, these RSU grants to directors would be made under the Plan.

EQUITY COMPENSATION PLAN INFORMATION

The following table provides information as of September 28, 2019 about the Company’s equity compensation plans under which shares of our common stock may be issued to employees, consultants or members of the Board:

Plan category	(a) Number of securities to be issued upon exercise of outstanding options, warrants and rights	(b) Weighted-average exercise price of outstanding options, warrants and rights ⁽¹⁾	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by security holders	452,145 ⁽²⁾	\$ 44.74 ⁽³⁾	2,170,187 ⁽⁴⁾
Equity compensation plans not approved by security holders	—	—	—
TOTAL	452,145	\$ 44.74	2,170,187⁽⁵⁾

- (1) The weighted average exercise price does not reflect shares that will be issued upon the vesting of outstanding RSUs or upon the exercise of rights under the Employee Stock Purchase Plan.
- (2) This number does not include any options that may be assumed by us through mergers or acquisitions; however, we do have the authority, if necessary, to reserve additional shares of our common stock under these plans to the extent necessary for assuming such options.
- (3) Represents the exercise price for one outstanding option in the amount of 24,000 shares, which had a remaining contractual term of 1.98 years as of September 28, 2019.
- (4) This number of shares includes 250,749 shares of common stock reserved for future issuance under the Employee Stock Purchase Plan and 1,919,438 shares reserved for future issuance under the 2011 Equity Incentive Plan. This number reflects counting each share issued pursuant to vested RSUs (either service or performance-based) as 2.15 shares. If calculated at one share for each share issued, the number would be 4,739,935. Under either calculation, performance-based RSUs are included at 100% of target goal; under the terms of performance-based RSUs, the recipient may earn between 0% and 200% of the award.
- (5) As of March 27, 2020, 1,484,434 shares remained available for future issuance under the 2011 Equity Incentive Plan.

Vote Required

The affirmative vote of a majority of votes present in person or represented by proxy and entitled to vote at the Annual Meeting is required to approve the Plan.

Recommendation

The Board of Directors unanimously recommends that stockholders vote “FOR” the approval of the Equity Incentive Plan.

PROPOSAL THREE

RATIFICATION OF THE APPOINTMENT OF DELOITTE & TOUCHE LLP AS INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Audit Committee of the Board has selected Deloitte & Touche LLP, an independent registered public accounting firm, to audit our financial statements for the fiscal year ending October 3, 2020, and, along with the full Board, recommends that stockholders vote for ratification of such appointment. Deloitte & Touche LLP has audited our financial statements since the fiscal year ended September 25, 1976. Although ratification by stockholders is not required by law, the Audit Committee has determined that it is desirable to request ratification of this selection by the stockholders as a matter of good corporate practice. Notwithstanding its selection, the Audit Committee, in its discretion, may appoint a new independent registered public accounting firm at any time during the year if the Audit Committee believes that such a

change would be in the best interest of Coherent and its stockholders. If stockholders do not ratify the appointment of Deloitte & Touche LLP, the Audit Committee may reconsider its selection. The Audit Committee selected Deloitte & Touche LLP to audit our financial statements for the fiscal year ended September 28, 2019, which was ratified by our stockholders.

Representatives of Deloitte & Touche LLP are expected to be present at the meeting and will be afforded the opportunity to make a statement if they desire to do so. The representatives of Deloitte & Touche LLP are also expected to be available to respond to appropriate questions.

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 2019 and 2018:

	2019	2018
Audit fees ⁽¹⁾	\$ 3,454,348	\$ 3,589,147
Tax fees ⁽²⁾	546,618	931,017
All other fees ⁽³⁾	1,895	1,895
Total	\$ 4,002,861	\$ 4,522,059

- (1) 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 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.

Proposal Three Ratification of the Appointment of Deloitte & Touche LLP as Independent Registered Public Accounting Firm

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

to pre-approve certain additional services, and such pre-approvals are communicated to the full Audit Committee at its next meeting. During fiscal years 2019 and 2018, 100% of the services were pre-approved by the Audit Committee in accordance with this policy.

Vote Required

The affirmative vote of a majority of votes present in person or represented by proxy and entitled to vote at the Annual Meeting is required to ratify the selection of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending October 3, 2020.

Recommendation

The Audit Committee and the Board recommends that stockholders vote "FOR" the ratification of the appointment of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending October 3, 2020.

PROPOSAL FOUR

APPROVAL ON A NON-BINDING, ADVISORY BASIS, OF OUR NAMED EXECUTIVE OFFICER COMPENSATION

At our annual meeting in March 2017, our stockholders indicated they would like to have an annual advisory vote on executive compensation. Accordingly, the Board proposes that stockholders provide advisory (non-binding) approval of the compensation of our named executive officers, as disclosed pursuant to the compensation disclosure rules of the SEC, including the Compensation Discussion and Analysis, the Fiscal 2019 Summary Compensation Table and related tables and disclosure.

As described in our Compensation Discussion and Analysis, we have adopted an executive compensation philosophy designed to provide alignment between executive pay and performance and to focus executives on making decisions that enhance our stockholder value in both the short and long term. Executives are compensated in a manner consistent with Coherent's strategy, competitive practices, stockholder interest alignment, and evolving compensation governance standards.

Vote Required

The affirmative vote of a majority of votes present in person or represented by proxy and entitled to vote at the Annual Meeting is required to approve the compensation of our named executive officers disclosed in this proxy statement. The vote is an advisory vote and, therefore, not binding. The Board values the opinions of our stockholders and to the extent there is any significant vote against our named executive officer compensation as disclosed in this proxy statement, the Board will consider our stockholders' concerns and the Compensation and HR Committee will evaluate whether any actions are necessary to address those concerns.

Recommendation

The Board recommends that stockholders vote "FOR" the approval, on a non-binding, advisory basis of our named executive officer compensation disclosed in this proxy statement.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth, as of March 3, 2020, certain information with respect to the beneficial ownership of Coherent common stock by (i) any person (including any “group” as that term is used in Section 13(d)(3) of the Securities Exchange Act of 1934 (the “Exchange Act”)) known by us to be the beneficial owner of more than 5% of our voting securities, (ii) each director and each nominee for director, (iii) each of the executive officers named in the Summary

Compensation Table appearing herein, and (iv) all current executive officers and directors as a group. We do not know of any arrangements, including any pledge by any person of our securities, the operation of which may at a subsequent date result in a change of control. Unless otherwise indicated, the address of each stockholder in the table below is c/o Coherent, Inc., 5100 Patrick Henry Drive, Santa Clara, California 95054.

Name and Address	Number of Shares	Percent of Total ⁽¹⁾
Wellington Management Group LLP ⁽²⁾ c/o Wellington Management Company LLP 280 Congress Street Boston, MA 02210	2,490,193	10.30%
Vanguard Group Inc. ⁽³⁾ 100 Vanguard Blvd. Malvern, PA 19355	2,261,774	9.36%
Blackrock Inc. ⁽⁴⁾ 55 East 52nd Street New York, NY 10055	2,256,984	9.34%
Victory Capital Management Inc. ⁽⁵⁾ 4900 Tiedeman Rd. 4 th Floor Brooklyn, OH 44144	1,265,659	5.24%
John R. Ambroseo ⁽⁶⁾	187,195	*
Andreas W. Mattes	—	*
Kevin Palatnik	27,231	*
Mark Sobey	8,816	*
Bret DiMarco ⁽⁷⁾	19,743	*
Paul Sechrist ⁽⁸⁾	13,878	*
Jay T. Flatley ⁽⁹⁾	40,014	*
Pamela Fletcher	3,180	*
Susan M. James	8,014	*
Beverly Kay Matthews	—	*
Michael R. McMullen	2,422	*
Garry W. Rogerson ⁽¹⁰⁾	14,514	*
Steve Skaggs	12,514	*
Sandeep Vij ⁽¹¹⁾	7,514	*
All current directors and executive officers as a group (13 persons) ⁽¹²⁾	148,822	*

* Represents less than 1%.

(1) Based upon 24,166,669 shares of Coherent common stock outstanding as of March 3, 2020. Beneficial ownership is determined in accordance with the rules of the SEC and generally includes voting or investment power with respect to the securities. In computing the number of shares beneficially owned by a person and the percentage ownership of that person, each share of Coherent common stock subject to options held by that person that are currently exercisable or will be exercisable within 60 days of March 3, 2020 and all RSUs held by that person that will vest within 60 days of March 3, 2020,

Security Ownership of Certain Beneficial Owners and Management

are deemed outstanding. Such shares are not deemed outstanding for the purpose of computing the percentage ownership of any other person.

- (2) Based on a Schedule 13G/A filed on January 8, 2020.
- (3) Based on a Schedule 13G/A filed on February 12, 2020.
- (4) Based on a Schedule 13G/A filed on February 5, 2020.
- (5) Based on a Schedule 13G filed on January 31, 2020.
- (6) Includes 1,206 shares issuable upon vesting of RSUs within 60 days of March 3, 2020 and 185,989 shares owned by the Ambroseo-Lacorte Family Trust, of which Mr. Ambroseo is a trustee.
- (7) Includes 19,743 shares owned by the DiMarco Family Trust, of which Mr. DiMarco is a trustee.
- (8) Includes 13,878 shares owned by the Sechrist Family Trust, of which Mr. Sechrist is a trustee.
- (9) Includes 24,000 shares issuable upon exercise of vested options held by Mr. Flatley and 16,014 shares held by the Flatley Family Trust, of which Mr. Flatley is a trustee.
- (10) Includes 14,514 shares held by the 2000 Rogerson Family Revocable Living Trust, of which Mr. Rogerson is a trustee.
- (11) Includes 7,514 shares held by the Vij Family 2001 Trust, of which Mr. Vij is a trustee.
- (12) Includes an aggregate of 24,000 shares issuable upon exercise of vested options.

OUR EXECUTIVE OFFICERS

The name, age, position and a brief account of the business experience of our executive officers as of April 6, 2020 are set forth below:

Name	Age	Office Held
Andreas (“Andy”) W. Mattes ⁽¹⁾	58	President and Chief Executive Officer
Kevin Palatnik ⁽²⁾	62	Executive Vice President and Chief Financial Officer
Mark Sobey ⁽²⁾	60	Executive Vice President and Chief Operating Officer
Bret DiMarco ⁽²⁾	51	Executive Vice President, General Counsel and Corporate Secretary
Thomas Merk	57	Executive Vice President and General Manager, Industrial Lasers & Systems

- (1) Mr. Mattes joined Coherent on April 6, 2020. Accordingly, Mr. Mattes is not a “Named Executive Officer” for purposes of our Compensation Discussion and Analysis.
- (2) “Named Executive Officer” for purposes of our Compensation Discussion and Analysis.

Please see “Proposal One—Election of Directors—Nominees” above for Mr. Mattes’ biographical information.

Kevin Palatnik. Mr. Palatnik has served as our Executive Vice President and Chief Financial Officer since February 2016. Prior to that from August 2011 until its acquisition by Knowles Corporation in July 2015, Mr. Palatnik served as the Chief Financial Officer of Audience, Inc., a provider of intelligent voice and audio solutions for mobile devices. Prior to that from June 2001 to November 2010, Mr. Palatnik held various roles at Cadence Design Systems, Inc., an electronic design automation software company, including as its senior vice president and chief financial officer. Mr. Palatnik also serves as a member of the board of directors and chair of the audit committee of Adesto Technologies, Inc., a provider of innovative, application-specific semiconductors and embedded systems that comprise the essential building blocks of Internet of Things (IoT) edge devices. Mr. Palatnik received a B.S. in Industrial Engineering and Operations Research and a M.B.A. from Syracuse University.

Mark Sobey. Dr. Sobey has served as our Executive Vice President and Chief Operating Officer since his appointment on April 6, 2020. Dr. Sobey previously served as our Executive Vice President and General Manager of OEM Laser Sources (OLS) from November 2016 to April 2020, Executive Vice President and General Manager of Specialty Laser Systems (SLS) from April 2010 to November 2016, and Senior Vice President and General Manager of SLS from joining Coherent in July 2007 until April 2010. Prior to Coherent, Dr. Sobey spent over 20 years in the Laser and Fiber Optics Telecommunications industries, including Senior Vice President roles in Product Management at Cymer and Global

Sales at JDS Uniphase. He received his PhD in Engineering and BSc in Physics from the University of Strathclyde in Scotland.

Bret 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. Additionally, Mr. DiMarco is a member and chair of the Nasdaq Listing and Hearing Review Council and an adjunct professor at the University of California, Hastings College of the Law.

Thomas Merk. Mr. Merk was appointed Executive Vice President and General Manager, Industrial Lasers & Systems in December 2016. Prior to that, Mr. Merk was Chief Executive Officer and President of Rofin-Sinar Technologies Inc. and a member of its board of directors from July 2015 to November 2016, when the acquisition of Rofin by Coherent was completed. From December 2005 to July 2015 Mr. Merk was the Chief Operating Officer of the Rofin Micro and Marking Business and a Managing Director of Carl Baasel Lasertechnik GmbH & Co. KG. from May 2000 to November 2016. He started his career in 1989 at Boehringer Werkzeugmaschinen Vertriebs GmbH, a machine tool company, and remained there until 2000, most recently serving as managing director. Mr. Merk holds a Master’s Degree in mechanical engineering from the Technical University of Stuttgart, Germany.

COMPENSATION DISCUSSION AND ANALYSIS

Introduction

In this section, we describe the material components of our executive compensation program for our “Named Executive Officers” or “NEOs” for fiscal 2019: Messrs. Ambroseo, Palatnik, Sobey, DiMarco and Sechrist. Messrs. Ambroseo and Sechrist are no longer executive officers of the Company. Effective April 6, 2020, Mr. Ambroseo retired from his position as our President and Chief Executive Officer and as a member of our Board, transitioning to the role of Special Advisor, and Mr. Mattes was appointed by our Board to serve as President, Chief Executive Officer and a member of the Board (see “—CEO Transition” below). Effective as of the beginning of fiscal 2020, Mr. Sechrist transitioned from the role of Executive Vice President, Worldwide Sales and Services to the role of Special Advisor to the CEO. References in this Compensation and Discussion Analysis to our CEO refer to Mr. Ambroseo, our former CEO, who served as CEO for all of fiscal 2019.

We also provide an overview of our executive compensation philosophy, principal compensation policies and practices by which the Compensation and HR Committee, or the committee, arrives at its decisions regarding NEO compensation.

NEO Compensation Overview

The following chart sets forth our compensation philosophy and design principles:

Compensation Philosophy

Retain and hire talented executives

Pay for performance, with both short and long-term measurements

Tie compensation to performance of our core business

Align compensation with stockholder interests

Compensation Design Principles

Our executives should have market competitive compensation and the committee orients our target total compensation generally near the 50th percentile of the committee’s selected peer group, with actual compensation falling above or below depending upon our financial performance and the performance of our stock price against an index over a three-year vesting period. Compensation components may be above or below such percentile target and vary by individual executive.

A significant portion of the annual compensation of our executives is designed to vary with annual business performance and a significant portion of long-term equity compensation is based on the long-term relative performance of our stock price in comparison to the Russell Index (as defined below), by way of a single three-year vesting period.

Payouts under our fiscal 2019 annual cash incentive plan were dependent upon corporate achievement of **two performance targets**: revenue and Adjusted EBITDA dollars. The committee determined that these were the most effective metrics for tying management’s compensation directly to our core operating results for fiscal 2019. In fiscal 2019, the Company’s financial results did not meet the challenging targets established by the committee and, as a result, **no pay out** under our annual cash incentive plan was made to our NEOs.

Our stockholders benefit from strong operating performance by the Company, and we believe that having a significant portion of compensation tied to equity with both time and performance-based vesting requirements directly aligns management to stockholder returns. Performance-based RSUs make up the largest potential portion of the equity grants for our CEO, and make up half of the equity grants of our other NEOs at target. The grants are fully at risk and the executive may not receive any shares at the end of the vesting period. Grants of performance-based RSUs in fiscal 2019 have the same measurement period consistent with historical practice: a single vesting date three years from grant solely dependent upon the performance of our common stock price measured against the Russell Index. In fiscal 2019, target was increased from meeting the Russell Index performance to exceeding the Russell Index performance. Prior to fiscal 2018, we used the Russell 2000 Index to compare our stock price performance, but due to an increase in our market cap, the Company was moved up to the Russell 1000 Index, and, accordingly, for grants made since the first quarter of fiscal 2018, the committee compares our stock price performance against the performance of the Russell 1000 Index. We refer to the applicable Russell Index as the “Russell Index.”

The following chart sets forth our principal elements of NEO compensation:

Executive Compensation Program Overview—Elements of Compensation

<i>Element</i>	<i>Variability</i>	<i>Objective</i>	<i>How Established</i>	<i>Fiscal Year 2019 for NEOs</i>
Base Salary	Fixed	Provide a competitive fixed component of compensation that, as part of a total cash compensation package, enables us to attract and retain top talent.	Reviewed against executive officer's skill, experience and responsibilities, and for competitiveness against our compensation peer group.	Base salary increased for 2019 for NEOs to more closely align with peers and market data provided by the committee's compensation consultant.
Annual Cash Incentive	Performance Based	Offer a variable cash compensation opportunity once per fiscal year based upon the level of achievement of corporate performance targets.	Target payouts set by measuring total cash compensation opportunity against the peer group. Corporate performance targets based on meeting operational goals tied to the Company's operating budget for the applicable fiscal year.	Changed from a semi-annual bonus in fiscal 2018 to an annual bonus measurement period in fiscal 2019 tied to revenue and Adjusted EBITDA achievement. Revenue achievement weighted at 25% and Adjusted EBITDA achievement weighted at 75%. Total payout can range from 0% to 200% of target. For fiscal 2019, the Company did not meet the performance targets, and as a result, there was no cash bonus payout .
RSUs—Service Based	Value Tied to Stock Price	Align long-term management and stockholder interests and strengthen retention with three-year vesting. Service-based awards create long-term retention.	Target total value of annual awards using market data (reviewed against our compensation peer group for competitiveness) and the executive officer's responsibilities, contributions and criticality to ongoing success.	Fiscal 2019 service-based awards vest $\frac{1}{3}$ per year over three years, with the first vesting date occurring on the one year anniversary of the grant date.

Compensation Discussion and Analysis

Element	Variability	Objective	How Established	Fiscal Year 2019 for NEOs
RSUs— Performance Based	Performance Based—Value Tied to Stock Price and Based on Relative Performance to Russell Index	At-risk performance- based awards provide an incentive opportunity based upon the performance of our stock price against the performance of the Russell Index. This component directly aligns NEO pay to our stockholders’ interests.	Target total value of annual awards using market data (reviewed against our compensation peer group for competitiveness) and the executive officer’s responsibilities, contributions and criticality to ongoing success.	Performance award measured by comparing our stock price performance against that of the Russell Index. To achieve 100% vesting of the awards, our stock price must outperform the Russell Index by 2% during the defined performance period. If our stock outperforms that target, the award is increased 2% for each percentage point of outperformance (with a cap of a 200% vesting). If our stock underperforms the target, the award is decreased 2% for each of the first two percentage points of underperformance, and decreased 4% for each additional percentage point of underperformance (with a floor of a 0% vesting).
Other Benefits	Primarily Fixed	Provide competitive employee benefits. We do not view this as a significant component of our executive compensation program.	Reviewed for competitiveness.	No significant changes for fiscal 2019 program.

Stockholder Engagement

The committee considers feedback from our stockholders regarding our executive compensation program, including as expressed by the results of our annual advisory vote on executive compensation, which our stockholders have historically strongly supported. We have strong pay for performance alignment, and the say-on-pay proposal for fiscal 2018 compensation was approved by an overwhelming majority.

Beyond the results of our annual say-on-pay vote, our stockholder engagement program is designed to foster an on-going dialogue with our stockholders. The principal form of engagement in this program consists of our CEO and CFO regularly meeting with our stockholders throughout the year.

These meetings are primarily focused on financial and business matters related to the Company, and they allow our stockholders the opportunity to raise questions on a variety of topics, including our executive compensation design philosophy and principles. We believe this regular engagement has been productive and has allowed for a helpful exchange of ideas and perspectives for both management and our stockholders.

As a result of these efforts, our CEO and CFO met with over 45 unique stockholders (in many cases speaking to a particular investor multiple times throughout the year), representing approximately 60% of our outstanding shares as of the end of fiscal 2019.

The Board, the committee and the Company's management greatly value the feedback from those meetings, and each consider such feedback in deliberations on important topics, such as executive compensation design and principles, throughout the year.

Also as part of our stockholder engagement program, we encourage our stockholders to directly express their views to the committee as described in this proxy statement under the

heading "Stockholder Communication with the Board of Directors." The committee welcomes direct stockholder feedback and considers such feedback as well as our historical "say-on-pay" results in its deliberations on executive compensation.

We strongly urge our stockholders to read this Compensation Discussion and Analysis in conjunction with Proposal Four.

CEO Transition

Retirement of CEO

On April 6, 2020, the Company announced that John Ambroseo retired from his role as President and CEO and a member of the Board, effective April 6, 2020. Upon his retirement, Mr. Ambroseo transitioned to the role of a Special Advisor to the Company. This transition was effected pursuant to a transition and retirement agreement that was entered into by Mr. Ambroseo and the Company in April 2019. The transition and retirement agreement provides for continuation of Mr. Ambroseo's employment through December 1, 2021, with a continuation of his then current compensation through April 13, 2021 and a base salary of \$10,000 per month thereafter through December 1, 2021, continued vesting in outstanding equity awards through December 1, 2021 and eligibility for change of control benefits if a change of control occurs by such date. The transition and retirement agreement also includes customary confidentiality, proprietary information and indemnification provisions and includes a release by Mr. Ambroseo. The terms of the agreement were extensively reviewed and discussed with Compensia, the committee's independent compensation consultant. Both Mr. Ambroseo and the committee strongly believed that entering this agreement was in the best interest of Coherent and our stockholders by further supporting the upcoming transition.

In addition, in the first quarter of fiscal 2020, the committee determined to make an automatic grant of time-based RSUs with a value of approximately \$200,000 to Mr. Ambroseo on the first day of each fiscal quarter in which he was still serving as CEO, with each such grant vesting on the last day of the fiscal quarter in which it was granted. Mr. Ambroseo received three such grants, which ceased once he was no longer CEO. The committee determined to make these quarterly grants in lieu of granting Mr. Ambroseo any additional time or performance-based RSUs in fiscal 2020.

Retention Grants

The committee, in consultation with Mr. Ambroseo and Compensia, further determined that it was in the best interests of our stockholders to grant one-time retention grants of time-based RSUs to Messrs. Sobey and DiMarco to provide additional support and certainty during the CEO transition. These retention grants have a single vest date three years from the date of grant.

Appointment of New CEO

On April 6, 2020, the Company announced that the Board appointed Mr. Andreas ("Andy") W. Mattes to serve as President and CEO of the Company, as well as a member of the Board. Mr. Mattes assumed these roles on April 6, 2020.

In connection with Mr. Mattes' appointment as President and CEO, the Company and Mr. Mattes entered into an employment agreement on March 31, 2020 providing for, among other things, a base salary of \$850,000 per year and a 2020 fiscal year target bonus of 120% of his base salary. Mr. Mattes will receive a signing bonus of \$500,000, subject to repayment to the Company if within the first 18 months of his employment, he terminates employment without good reason or the Company terminates his employment for cause.

The employment agreement also provides that within 30 days after his commencement of employment, Mr. Mattes will be granted equity awards based on an aggregate value of \$5,200,000, with such equity awards determined based on a 30-day average stock price for time-based RSUs and an estimated Monte-Carlo value for performance-based RSUs. One-third of such equity awards will be time-based RSUs with equal amounts vesting annually over three years and two-thirds of the equity awards will be performance-based RSUs. The performance-based RSUs will have a three-year performance period from his date of employment with the performance metric based on the relative performance of the Company's stock price in comparison to the Russell Index, consistent with the Company's general performance-based RSU structure.

Compensation Discussion and Analysis

Under his employment agreement, Mr. Mattes will be eligible for a severance payment equal to twice the sum of his annual salary and target bonus as well as a benefit allowance if his employment is terminated without cause or he terminates his employment for good reason. Mr. Mattes will be covered by

the Company's change of control plan and entitled to participate in employee benefit plans generally applicable to senior executives of the Company. Mr. Mattes also entered into the Company's standard form of indemnification and confidentiality agreements.

Key Design Changes to Executive Compensation in Fiscal Years 2019 and 2020

As disclosed in the Company's fiscal 2018 proxy statement, the compensation committee made the following changes to the design of executive compensation in fiscal 2019:

- Redesigned the measurement of the Company's performance-based RSUs to require performance **above** the Russell Index in order to achieve target vesting levels;
- Moved the annual cash Variable Compensation Plan to a single one year measurement period; and
- Considered internal pay equity between the CEO and other NEOs as a factor in determining compensation.

In addition, the committee closely reviewed the Company's executive compensation recoupment (or "clawback") policy in light of the state of applicable law, governance trends and practices of other public companies.

In fiscal 2020, the Board, at the recommendation of the committee and management, adopted a new clawback policy, expanding potential recoupment of cash and equity compensation to include all NEOs, as well as all employees of the Company holding the title of Senior Vice President or higher who report directly to our CEO. As described further below, the new clawback policy allows the committee to recoup excess incentive compensation from such covered individuals in the event of a restatement of the Company's financial results, regardless of whether the covered executive played a role in the need for the restatement.

Executive Summary

Our Business

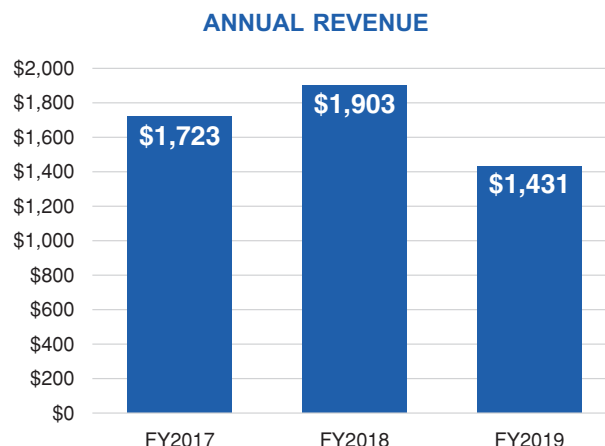
Founded in 1966, Coherent, Inc. is one of the leading providers of lasers and laser-based technology for scientific, commercial and industrial customers. Our common stock is listed on the Nasdaq Global Select Market and is part of several indexes, including the Russell 1000 and Standard & Poor's MidCap 400 Index. For more information about our business, please read the sections captioned "Business" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our annual report on Form 10-K filed with SEC on November 26, 2019.

Selected Business Highlights

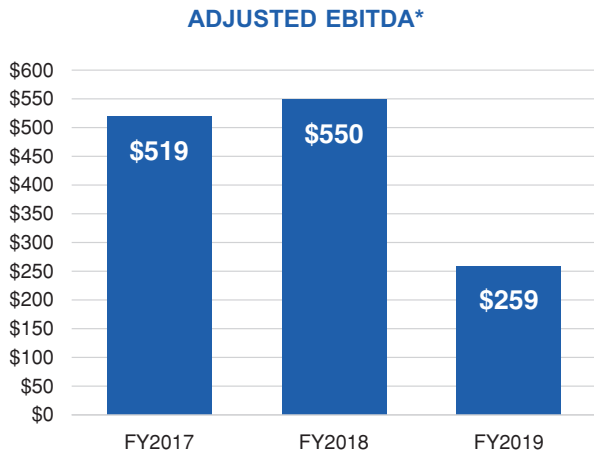
We experienced a significant decrease in year-over-year revenue, Adjusted EBITDA and non-GAAP earnings per share in fiscal 2019 and accordingly failed to meet our internal targets. As a result, you will see in the coming pages that our performance-related executive compensation in our annual cash program yielded no payout (zero %) in fiscal 2019.

Set forth below are tables reflecting several performance metrics from the last three fiscal years that impact the compensation for our NEOs.

Our revenue increased 10% from fiscal 2017 to fiscal 2018 and decreased 25% from fiscal 2018 to fiscal 2019 (dollars in millions):

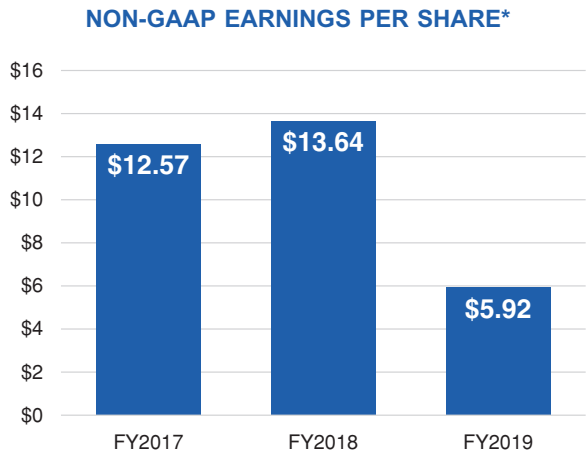


Our Adjusted EBITDA increased 6% from fiscal 2017 to fiscal 2018 and decreased 53% from fiscal 2018 to fiscal 2019 (dollars in millions):



*Adjusted EBITDA is defined 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 acquisitions.

Our non-GAAP earnings per share from continuing operations increased 9% from fiscal 2017 to fiscal 2018 and decreased 57% from fiscal 2018 to fiscal 2019:



*Non-GAAP earnings per share is defined as earnings per share excluding certain recurring and non-recurring items.

For a reconciliation table of earnings per share on a GAAP basis to non-GAAP basis and net income from continuing operations on a GAAP basis to Adjusted EBITDA, please refer to the “Reconciliation Table” at the end of this section.

Compensation Overview

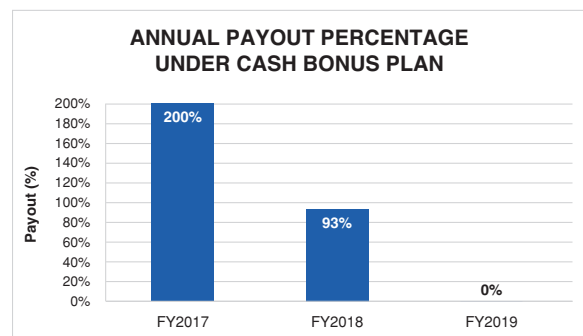
Compensation Philosophy. We tie executive total compensation to stockholder value with two measures: our

operational results and the comparative performance of our stock price. This approach provides strong alignment between executive pay and performance, and focuses executives on making decisions that enhance our stockholder value in both the short and long-term. We design our executive compensation program to achieve the following goals:

- **Retain and hire talented executives**—Our executives should have market competitive compensation, and the committee orients our target total compensation generally near the 50th percentile of the committee’s selected peer group (as noted below), with actual compensation falling above or below depending upon Coherent’s financial performance. Additionally, certain compensation components may be above or below such percentile target and vary by individual executive.
- **Pay for performance, with both short and long-term measurements**—A significant portion of the annual compensation of our executives is designed to vary with annual business performance and the long-term relative performance of Coherent’s stock price in comparison to the Russell Index (by way of a single three-year vesting period). The committee and management set demanding performance targets. For example, there was no bonus paid out for fiscal 2019 as explained below. The performance of the Company’s stock as measured against the Russell Index, however, resulted in shares issued under the performance-based RSUs above target levels in fiscal 2019, due to the growth in the price of the Company’s stock.

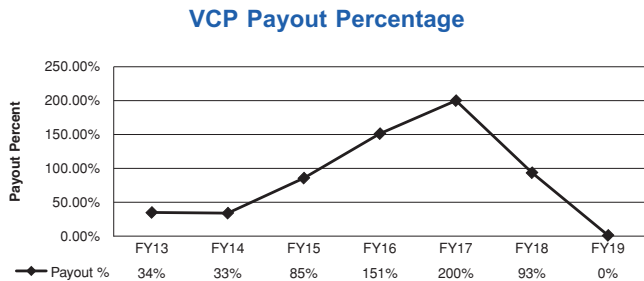
The following chart shows the payout percentages as compared to the committee’s selected target for each of the last three fiscal years under our annual cash bonus plan:

ANNUAL PAYOUT PERCENTAGE UNDER CASH INCENTIVE PLAN



Compensation Discussion and Analysis

Payouts under our annual cash bonus plan over the last seven years have ranged from 0% to 200% as shown in the following chart:

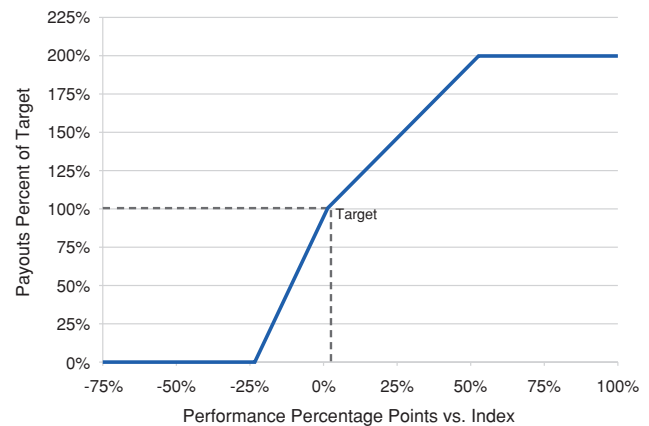


- Tie compensation to performance of our core business**—Our fiscal 2019 annual cash incentive plan was dependent upon Coherent’s achievement against two criteria: Adjusted EBITDA dollars and revenue. The committee determined that these were the most effective metrics for tying management’s compensation directly to Coherent’s core operating results for fiscal 2019.
- Align compensation with stockholder interests**—Our stockholders benefit from continued strong operating performance by the Company, and we believe that having a significant portion of compensation tied to equity, with both time and performance-based vesting requirements, directly aligns management to stockholder interests. The performance-based RSUs make up the largest potential portion of the equity grants for our CEO. Grants of performance-based RSUs historically have the same measurement period: a single vesting date three years from grant solely dependent upon the performance of Coherent’s common stock price measured against the Russell Index. Prior to fiscal 2019, the performance target was equal to meeting the index’s performance. As mentioned above, the committee modified the design of the performance-based RSU grants made in the first quarter of fiscal 2019 and going forward to require performance two percentage points **above** the Russell Index to achieve the targeted vesting. If our stock outperforms that target during the defined performance period, the award is increased 2% for each percentage point of outperformance (up to a maximum cap of 200% of target). If our stock underperforms the target, the award is decreased 2% for each of the first two percentage points of underperformance, and decreased 4% for each additional percentage point of underperformance (with a floor of a 0% vesting). As a result, compensation decreases faster for failing to outperform the Russell Index than it

increases for exceeding the target. If Coherent’s stock underperforms the Russell Index by more than 24%, then there is no payout, but in order to hit the maximum possible payout, Coherent’s stock has to outperform the Russell Index by at least 52%. The table and chart below illustrate this structure:

FISCAL 2019 PERFORMANCE RSU VESTING

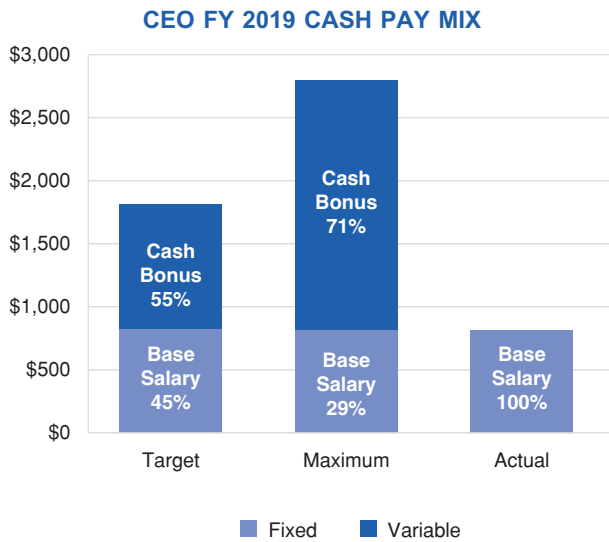
Relative Performance Percentage against the Russell Index	Vesting Percentage of Target Amount
152% or more	200% (maximum vesting)
102%	100%
100%	96%
85%	36%
77%	4%
76% or less	0% (no PRSUs vest)



Elements of Executive Compensation. During fiscal 2019, the compensation of our NEOs primarily consisted of (A) base salary, (B) participation in our annual variable compensation plan (referred to herein as our “annual cash incentive plan” or “VCP”), and (C) long-term equity incentive awards divided between time-based RSUs and performance-based RSUs. For fiscal 2019, on average, approximately 83% of our NEO’s target compensation and approximately 86% of our CEO’s target compensation was delivered through our cash incentive plan and long-term equity incentives (both time and performance RSUs).

As a demonstration of how executive cash compensation is tied to company performance, the cash compensation for our

CEO during fiscal 2019 **at target, maximum and actual** can be illustrated as follows (dollars in thousands):



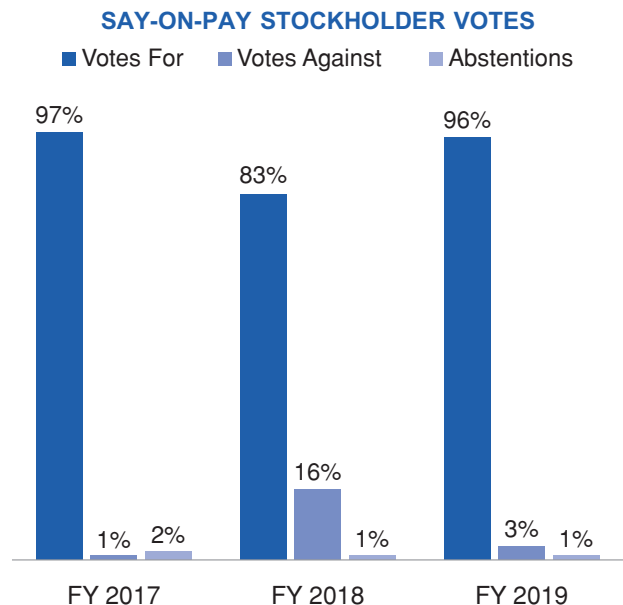
Compensation Governance. “Pay for performance” has been and remains at the core of Coherent’s executive compensation coupled with appropriately managing risk and aligning our compensation programs with long-term stockholder interests. We accomplish this primarily by having a majority of our NEOs’ potential compensation being “at risk” through a combination of (i) a fiscal year variable cash incentive program tied to achievement of financial metrics and (ii) equity grant vesting tied to achievement of a performance metric. The committee monitors and considers evolving governance approaches and standards in executive compensation, as well as communications it receives directly from stockholders.

As more fully discussed below, recent examples of how this philosophy is applied and changes made pursuant to compensation practices as well as governance practices in effect during fiscal 2019, include:

- We have minimum share ownership requirements for our CEO and members of the Board as well as Executive Vice Presidents and Senior Vice Presidents who report to the CEO;
- Our performance-based RSU program is measured by the Company’s stock price achievement against the Russell Index over a three-year period, which the committee believes is a direct connection to long-term total stockholder interests. Fiscal 2019 grants require achievement in excess of the Russell Index to achieve target payout;
- The committee is composed entirely of directors who satisfy the standards of independence in Coherent’s Corporate Governance Guidelines and Nasdaq listing standards;
- The committee made decisions regarding CEO compensation without the CEO present;

- Executive incentive compensation programs include limits on maximum payouts to contain the risk of excessive payouts;
- The committee utilizes an independent compensation consultant;
- We have eliminated material historical perquisites as an element of compensation for our NEOs;
- We had a recoupment or “claw-back” policy for our CEO and CFO, and, in fiscal 2020, our Board, at the recommendation of the committee, adopted an updated policy extending coverage to all individuals with the title Senior Vice President and above, as described below;
- We have in place a policy prohibiting executive officers and directors from hedging or pledging Company stock, as described above;
- Change-of-control payments occur solely in “double-trigger” circumstances, that is a change of control coupled with a termination of employment within a defined time period;
- None of our NEOs are entitled to any “gross-up” to offset the impact of IRS Code Sections 280G or 4999 in connection with a change of control; and
- Other than the transition agreements for Messrs. Ambroseo and Sechrist, none of our NEOs have employment agreements.

Our stockholders have historically strongly supported our executive compensation philosophy and design as seen in the significant majorities approving our “say-on-pay” proposal (does not include broker non-votes; rounded).



Role of Management

The committee regularly met with Mr. Ambroseo to obtain recommendations with respect to the compensation programs, practices and packages for our NEOs other than Mr. Ambroseo. Additionally, Mr. Palatnik, our Executive Vice President and CFO, Mr. DiMarco, our Executive Vice President, General Counsel and Corporate Secretary, and members of our human resources department are regularly invited to meetings of the committee or otherwise asked to assist the committee.

The assistance of these individuals includes providing financial information and analysis for the committee and its compensation consultant, taking minutes of the meeting or providing legal advice, developing compensation proposals for consideration, and providing insights regarding our employees (executive and otherwise) and the business context for the committee's decisions. NEOs attend portions of committee meetings when invited by the committee, but leave the meetings when matters potentially affecting them are discussed.

Role of the Committee's Compensation Consultant

The committee utilizes the services of an independent compensation consultant and in fiscal 2019, engaged Compensia as its independent compensation consultant. Compensia assisted the committee by:

- Reviewing and analyzing our executive compensation program, including providing NEO tally sheets to the committee;

- Providing market data for fiscal 2019 compensation; and
- Providing further insight on compensation governance trends.

The independent compensation consultant serves at the discretion of the committee and is not permitted to do other work for Coherent unless expressly authorized by the committee. Since retention, Compensia has not performed any work for Coherent other than its work with the committee, the Board or other committees of the Board, such as work with the Governance and Nominating Committee with respect to compensation for service on the Board and its committees. The committee is focused on maintaining the independence of its compensation consultant and, accordingly, does not anticipate having its consultant perform any other work for the Company in addition to its direct work for the committee, the Board, or another committee of the Board. The committee has assessed the independence of Compensia and concluded that no conflict of interest exists.

The Company also participates in and maintains a subscription to the Radford Global Technology and Sales surveys. This survey provides benchmark data and compensation practices reports of a broad cross-section of technology companies similar in size to Coherent to assist us with employee compensation generally.

Pay Positioning Strategy and Benchmarking of Compensation

Philosophically the committee initially orients target total compensation for our NEOs generally near the 50th percentile of our peers (as measured by our designated peer group and compiled by the committee's independent compensation consultant and, when applicable, including, for example, when there are few comparable positions reported in the proxy data of our peer group companies, data from the Radford Global Technology Survey), resulting in targeted total compensation that is competitive for performance that meets the objectives established by the committee. Each NEO's actual salary, cash incentive compensation opportunity and equity compensation grant value may fall below or above the target position based on the individual's performance, contributions, scope of role, experience, skills and knowledge, as well as the historical pay

structure for each executive, Company performance and the proportion of compensation at risk. These factors are weighed by the committee in its judgment, and no single factor takes precedence over others nor is any formula used in making these decisions nor was the impact of any factor on the determination of compensation quantifiable. In general the committee will balance between cash and equity compensation elements to have more compensation in equity for each NEO in order to more closely align NEO compensation directly with that of the performance of the Company and with stockholders. In fiscal 2019, the committee also asked its independent compensation consultant to review and report on internal pay equity between the CEO and the other NEOs as a factor when approving compensation.

The CEO's review of the performance of the other NEOs is considered by the committee in making individual pay decisions. With respect to the CEO, the committee additionally considered the performance of Coherent as a whole and the views of other members of the Board regarding the CEO's performance. Actual realized pay is higher or lower than the targeted amounts for each individual based primarily on the Company's performance.

In analyzing our executive compensation program relative to target market positioning, the committee reviews information provided by its independent compensation consultant, which includes an analysis of data from peer companies' proxy filings with respect to similarly situated individuals at the peer companies (when available) and the Radford Global Technology Survey (as a supplement when peer group company data is unavailable). It is important to note that these are the peers selected by the committee. The committee uses criteria as described below in determining the appropriate peer group. There are proxy advisory services that use their own criteria to select peers for the Company and, accordingly, stockholders should be aware that these advisory services do not, in fact, follow the same methodology of the committee and there may be wide variances between the different peer groups used by these services. Any comparison of company performance or market data for executive compensation using a completely different peer group will, therefore, naturally result in a different analysis. We encourage our stockholders to consider the peer group used in any comparisons and direct any questions to the committee regarding such comparisons or any other matters when considering how to vote on Proposal Four.

For pay decisions made for fiscal 2019, after consulting with our independent compensation consultant, the committee

determined that the following companies comprise the peer group for fiscal 2019:

Ciena Corporation (CIEN)	Microsemi Corporation (MSCC)
Cypress Semiconductor Corporation (CY)	MKS Instruments (MKSI)
Dolby Laboratories (DLB)	National Instruments (NATI)
Entegris (ENTG)	Nuance Communications (NUAN)
F5 Networks (FFIV)	OSI Systems (OSIS)
Finisar (FNSR)	Synaptics (SNYA)
FLIR Systems (FLIR)	Teradyne (TER)
Itron, Inc. (ITRI)	Trimble Inc. (TRMB)
Keysight Technologies (KEYS)	ViaSat (VSAT)
Lumentum Holdings, Inc. (LITE)	

Several factors are considered in selecting the peer group, the most important of which are:

Primary Criteria

- Industry (primarily companies in the Electronic equipment, Semiconductor and communications equipment sub-industry classifications defined by the Global Industry Classification Standard (GICS) system); and
- Revenue level (primarily companies with annual revenues between 0.5x-2.0x that of Coherent).

Secondary Criteria

- Market capitalization between 0.25x and 3.0x of Coherent;
- Market capitalization as a multiple of revenues of greater than 1.5x; and
- A disclosed peer of a peer company.

The committee reviews the composition of the peer group annually to ensure it is the most relevant set of companies in light of the foregoing criteria to use for comparison purposes. Ciena Corporation, Cypress Semiconductor Corporation, Itron, Inc. and Trimble Inc. were added to the companies comprising the Company's peer group for fiscal 2019 replacing three companies (Infinera, Maxim Integrated Products and Plantronics) from the fiscal 2018 peer group.

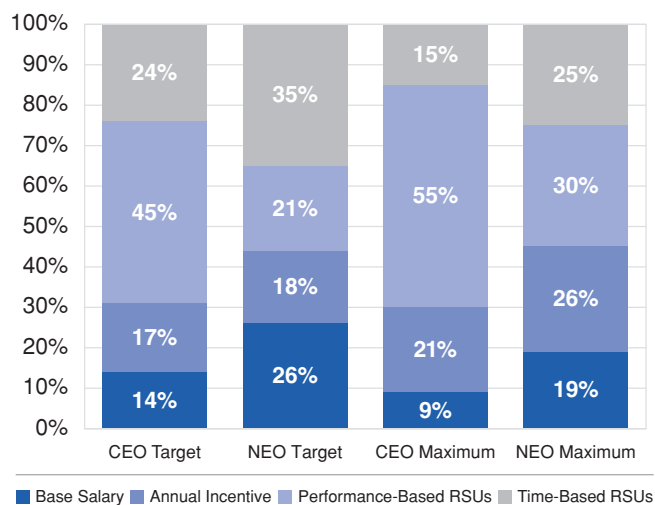
Components of Our Executive Compensation Program

The principal components of our executive officer compensation and employment arrangements during fiscal 2019 included:

- Base salary;
- Annual cash incentive plan;
- Equity awards; and
- Other benefits.

These components were selected because the committee believes that a combination of salary, incentive pay and benefits is necessary to help us attract and retain the executive talent on which Coherent’s success depends. The following table shows the components of total direct compensation **at target and maximum** for our NEOs as a group for fiscal 2019. In maintaining the design for fiscal 2019, the committee recognized the significant support received from the Company’s stockholders for the compensation program design, as reflected in the continued strong vote totals in favor of our executive compensation through our annual “say-on-pay” proposal.

CEO AND NEO (OTHER THAN CEO) FY2019 DIRECT COMPENSATION MIX*



*This table does not include the special one-time grants made to Messrs. Sobey and DiMarco.

Base Salary

Base salary is the foundation to providing an appropriate total cash compensation package. We use base salary to fairly and competitively compensate our executives for the jobs we ask them to perform. This is the most stable component of our executive compensation program, as this amount is not at risk.

The committee reviewed market data information provided by Compensia with respect to similarly situated individuals to assist it in determining the base salary for each NEO, depending upon the particular executive’s experience, skills, knowledge, performance and contribution. The committee increased the base salaries of our NEOs in fiscal 2019, as supported by compensation analysis provided by Compensia, from 2.6% to 12.5% to more closely align their base salary with the base salary of peers. According to information provided by the committee’s compensation consultant, none of the increases brought base salary above the 50th percentile of our peer group companies. For several of our NEOs, base salary remained below the 50th percentile of our peer group. Our CEO received a base salary increase in fiscal 2019 of 3% and has not received a base salary increase in seven of the last ten years.

Variable Cash Incentive Compensation

A substantial portion of each individual’s potential short-term compensation is in the form of variable incentive cash compensation tied to committee-established goals. In fiscal 2019, Coherent maintained one incentive cash program under which executive officers were eligible to receive annual cash incentives, the 2019 Variable Compensation Plan (“2019 VCP”).

2019 VCP

The 2019 VCP was designed as an “at risk” bonus compensation program to promote a focus on Coherent’s growth and profitability. It provided an incentive compensation opportunity in line with targeted market rates to our NEOs. Under the 2019 VCP, participants were eligible to receive one bonus based on annual fiscal year performance, which is a change from bi-annual bonuses in prior years. In setting the performance goals at the beginning of the fiscal year, the committee assessed the anticipated difficulty and importance to Coherent’s success of achieving the performance goals.

The actual awards (if any) payable for the annual period depend on the extent to which actual performance met, exceeded or fell short of the goals approved by the committee. The 2019 VCP goals were tied to Coherent achieving targeted levels of revenue and Adjusted EBITDA dollars, with revenue weighted at 25% and Adjusted EBITDA weighted at 75%. Each performance metric is measured and paid out independently, but the revenue payout is capped at 100% achievement until Adjusted EBITDA reaches a minimum dollar target. Adjusted EBITDA is defined as operating income adjusted for VCP payouts, depreciation, amortization, stock compensation expenses, major restructuring charges and certain non-operating income or expense items, such as costs related to acquisitions. The committee also reviews the financial

impact of mergers and acquisitions to determine if any adjustments in VCP are required.

The measurement period had a potential payout range of between zero and 200%, with a target at 100% of the executive's participation rate.

In addition, the committee reserved a one-time discretionary bonus for our CEO for fiscal 2019, which did not result in any payout.

Fiscal 2019 Variable Compensation Plan Scale for NEOs

Revenue achievement for fiscal 2019 was \$1,430.6 million, which fell short of the threshold for a cash bonus payout and resulted in no cash bonus. Adjusted EBITDA achievement for fiscal 2019 was \$259.1 million, which fell short of the threshold for a cash bonus payout and resulted in no cash bonus.

Fiscal 2019 VCP Scale

Revenue \$ (in millions)	Payout
\$1,430.6 (actual)	0% (actual)
\$1,680.0 (threshold)	0%
\$1,740.0 (target)	100%
\$1,800.0	200%

Adjusted EBITDA \$ (in millions)	Payout
\$259.1 (actual)	0% (actual)
\$450.0 (threshold)	0%
\$495.0 (target)	100%
\$540.0	200%

The tables below describe for each NEO under the 2019 VCP (i) the target percentage of base salary and (ii) the actual award earned for fiscal 2019. The potential award range for each NEO is 0% to 200% of the target award percentage of base salary.

Fiscal 2019

Named Executive Officer	Target Percentage of Salary	Actual Award (\$)	Actual Award as a Percentage of Target Award
John Ambroseo	120% ⁽¹⁾	0	0%
Kevin Palatnik	75%	0	0%
Mark Sobey	70%	0	0%
Bret DiMarco	65%	0	0%
Paul Sechrist	70%	0	0%

(1) Consists of VCP at 100% and a one-time discretionary bonus of 20%.

Equity Awards

We believe that equity awards provide a strong alignment between the interests of our executives and our stockholders. We seek to provide equity award opportunities that are consistent with our compensation philosophy, with the potential for increase for exceptional financial performance, consistent with the reasonable management of overall equity compensation expense and stockholder dilution. Finally, we believe that long-term equity awards are an essential tool in promoting executive retention. For fiscal 2019, our long-term incentive program included the grant of time-based RSUs and performance-based RSUs. These components provide a reward for past corporate and individual performance and an incentive for future performance.

Our performance-based RSU grants are tied to the Company's performance and, as a result, may fluctuate from no vesting to vesting up to a maximum of 200% of target. When making its compensation decisions, the committee reviews a compensation overview prepared by its independent compensation consultant which reflects potential realizable value under current short and long-term compensation arrangements for the CEO. In addition, the committee reviews a compensation overview prepared by its compensation consultant reflecting the intrinsic value of unvested equity awards and performance-based RSUs at target and projected values for all of the NEOs.

Fiscal 2019 Equity Grants

For fiscal 2019, the committee based the annual equity program on a combination of time-based and performance-based RSUs over a three-year period. In particular, the committee determined to measure achievement for the performance RSUs by the relative performance of Coherent's stock price in comparison to the Russell Index. The committee believed that using the Russell Index (in which Coherent was

Compensation Discussion and Analysis

a member at the time of grant) as a proxy of total stockholder return directly aligns executive compensation with stockholder interests. The committee determined that both the performance-based and time-based RSU grants provide a further retention tool in that the time-based grants vest over three years with pro rata annual vesting and the performance-based RSU grants vest, assuming the performance thresholds are met, in a single cliff vesting after a three-year period.

Performance-based RSU grants in fiscal 2019 vest solely dependent upon the performance of Coherent's common stock price measured against the Russell Index. To achieve

100% vesting of the awards, our stock price must outperform the Russell Index by 2% during the defined performance period. If our stock outperforms that target, the award is increased 2% for each percentage point of outperformance (with a cap of a 200% vesting). If our stock underperforms the target, the award is decreased 2% for each of the first two percentage points of underperformance, and decreased 4% for each additional percentage point of underperformance (with a floor of a 0% vesting). As a result, vesting decreases faster for failing to outperform the Russell Index than it increases for exceeding the target. The performance-based RSUs make up the largest potential portion of the equity grants for our CEO.

The following table summarizes some of the key features of our annual fiscal 2019 equity grants:

Fiscal 2019 Equity Grants

Type	RSUs and performance-based RSUs (PRSUs)
Vesting for RSUs	One-third each grant anniversary
Vesting for PRSUs	Single vesting date three years from grant
PRSU Metrics	100% tied to Russell Index
	Minimum vest: zero
	Target vest: 2% above Russell Index
	Maximum vest: 200% of target

For our CEO, **more than half** of his total equity awards are **performance-based**. Approximately 66% of his equity awards are performance-based and at maximum achievement that percentage increases to approximately 80%.

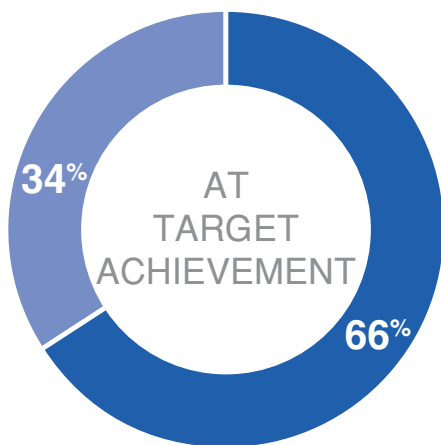
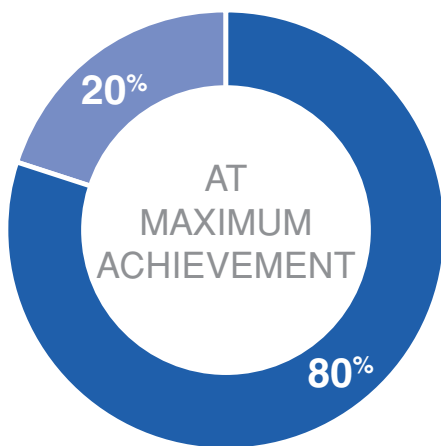
As an example, our performance-based design was seen in the vesting of the PRSU grants made in November 2015, which vested in the first quarter of fiscal 2019. Our common stock gained 283% as compared to the Russell Index, which gained 140% over the defined measurement periods at the beginning and end of the three-year vesting period. This out-performance resulted in 200% PRSU vesting.

In the event of a change of control of the Company, the performance-based grants will be measured, with respect to performance periods not yet completed, by the relative stock performance of Coherent in comparison to the Russell Index through the date of the change of control and such performance-based shares would, subject to the terms of the Change of Control Severance Plan, then convert to time-based vesting with a single vesting date at the three year anniversary of the grant.

The following charts show the **aggregate composition of equity grants** for fiscal 2019 to our CEO, at target and at

maximum achievement under the terms of the performance-based grants:

FY 2019 CEO EQUITY GRANT COMPONENTS



■ Performance-Based RSUs ■ Time-Based RSUs

The following table reflects the number of shares subject to equity grants made to the NEOs during fiscal 2019. The table includes special one-time retention RSU grants made to Messrs. Sobey and DiMarco. These grants have a single three-year vest and were made by the committee, in consultation with its independent compensation consultant, to further support a successful transition period in connection

with the Company’s announcement of Mr. Ambrose’s intention to retire as our President and CEO.

Named Executive Officer	Time-Based RSU Grants	Performance-Based RSU Grants at Target	Performance-Based RSU Grants Range (vesting dependent upon achievement)
<i>John Ambroseo</i>	11,472	22,499	0 - 44,998
Kevin Palatnik	5,271	5,092	0 - 10,184
Mark Sobey*	15,180	3,978	0 - 7,956
Bret DiMarco*	14,356	3,182	0 - 6,364
<i>Paul Sechrist</i>	6,588	0	0 - 0

* Includes the special one-time retention grant.

Equity Award Practices

Equity grants to our employees are driven by our annual review process. Grant guidelines are based on competitive market practices. Typically, an eligible employee is granted equity at the first committee meeting after beginning employment and may be eligible for periodic grants thereafter. Eligibility for and the size of grants are influenced by the then-current guidelines for non-executive officer grants and the individual’s performance or particular requirements at the time of hire. No option grants have been made to an employee since fiscal 2010.

In fiscal 2019 the committee and the Equity Committee granted an aggregate of 274,433 shares subject to time-based and performance-based restricted stock units (at maximum), representing approximately 1.14% of Coherent’s outstanding common stock as of September 28, 2019 (excluding automatic and initial grants to directors). With the assistance of Compensia, the committee has reviewed this burn rate relative to peer practices and proxy advisory firm guidance and found that the total dilution was consistent with the median of peer practices and such guidance.

During fiscal 2019 all equity grants to individuals at the Vice President level and above were made at meetings of the committee.

CEO and Executive Minimum Stock Ownership Guidelines

The committee adopted mandatory stock ownership guidelines for our CEO during fiscal 2012. During the first quarter of fiscal 2018, the committee adopted enhanced stock ownership guidelines increasing the value of shares our CEO must hold to at least five times base salary and making our Executive Vice Presidents and Senior Vice Presidents reporting to the CEO subject to stock ownership guidelines of one times such individual’s base salary. In the event that our CEO or other officer does not satisfy the minimum

Compensation Discussion and Analysis

requirements, then 50% of the net after-tax shares (e.g., exercised options/shares received on the vesting of RSUs) are required to be held until the guidelines are met. As of December 31, 2019, Mr. Ambroseo held outstanding stock worth more than 35 times his base salary and, accordingly, significantly exceeded the minimum stock ownership guidelines. Our other NEOs also exceeded the minimum stock ownership guidelines as of December 31, 2019.

Other Benefits

Retirement Plans

U.S. based executive officers are eligible to participate in our 401(k) Retirement Plan on the same terms as all other U.S. employees, including a 4% Company matching contribution. Our 401(k) Retirement Plan is intended to be a tax-qualified plan and therefore is subject to certain Internal Revenue Code limitations on the dollar amounts of deferrals and Company contributions that can be made to plan accounts. These limitations apply to our more highly-compensated employees (including the NEOs).

We maintain a Deferred Compensation Plan for certain employees and members of the Board. The Deferred Compensation Plan permits eligible participants to defer receipt of compensation pursuant to the terms of the plan. The Deferred Compensation Plan permits participants to contribute, on a pre-tax basis, up to 75% of their base salary earnings, up to 100% of their bonus pay and commissions and up to 100% of directors' annual retainer earned in the upcoming plan year. We provide no matching or other additional contributions to such Deferred Compensation Plan. Plan participants may designate investments for deferrals in a variety of different deemed investment options. To preserve the tax-deferred status of deferred compensation plans, the IRS requires that the available investment alternatives be "deemed investments." Participants do not have an ownership interest in the funds they select; the funds are only used to measure the gains or losses that are attributed to the participant's deferral account over time.

The committee considers the Deferred Compensation Plan to be a reasonable and appropriate program because it promotes executive officer retention by offering a deferred compensation plan that is comparable to and competitive with what is offered by our peer group of companies.

Employee Stock Purchase Plan

Our stockholders have approved an employee stock purchase plan whereby employees can purchase shares for a discount, subject to various participation limitations. As employees, our NEOs are eligible to participate in this plan.

Severance and Change of Control Arrangements

Our Change of Control and Leadership Change Severance Plan (the "Change of Control Plan") provides certain benefits

in the event of a change of control of Coherent for certain executives, including each of our NEOs. Benefits are provided if there is a change in ownership of Coherent, a change in effective control of Coherent, or a change in ownership of a substantial portion of Coherent's assets (in each case as construed under Section 409A of the Internal Revenue Code and the regulations thereunder) (a "change of control") **and** within two years thereafter (or within two months prior thereto) the participant's employment is terminated without cause or voluntarily terminates following a constructive termination event. The plan's provisions are, therefore, of the variety commonly referred to as "double-trigger." Importantly, the plan does not include any "gross up" provisions for the participants for the tax effects caused by any such benefits. The committee believes the Change of Control Plan serves as an important retention tool in the event of a pending change of control transaction.

The committee completed its review of the provisions of the Change of Control Plan during fiscal 2015 and determined to review the plan again in four years. In the first quarter of fiscal 2019, the committee reviewed and adopted substantially the same Change of Control Plan and determined to review the plan again in four years. Compensia assisted the committee in its review and analysis of the Change of Control Plan. The committee believes that reviewing the Change of Control Plan every four years allows for the right balance in providing certainty for the participants while providing the committee with the opportunity to revise the plan consistent with corporate governance best practices, evolving peer group practices and regulatory changes.

In addition, in connection with the succession planning process related to the Company's announcement of Mr. Ambroseo's intention to retire as our President and CEO, the Company's Change of Control Plan was amended in fiscal 2019 to include a time-limited severance benefit for those executive officers and Senior Vice Presidents reporting directly to Mr. Ambroseo at the time of his announcement if their employment is terminated without cause or they terminate for good reason within the two-year period after the new CEO was appointed. The severance benefit includes 18 months of base and bonus pay, an 18-month benefit stipend, 24 months of additional vesting credit for equity awards and a pro rata annual incentive for the year of termination. The Board believed that it was in the best interests of stockholders and the Company to adopt this change to reinforce continuity during a time of transition.

The committee does not consider the potential payments and benefits under these arrangements when making compensation decisions for our NEOs. These arrangements serve specific purposes unrelated to the determination of the NEOs' total direct compensation for a specific year.

Tax and Accounting Considerations

Accounting for Stock-Based Compensation—We account for stock-based compensation in accordance with the requirements of ASC 718. We also take into consideration ASC 718 and other generally accepted accounting principles in determining changes to policies and practices for our stock-based compensation programs.

Section 162(m) of the Internal Revenue Code—Section 162(m) generally limits our income tax deduction for compensation we pay to certain executive officers up to \$1 million during any fiscal year for any such officer. The officers covered by Section 162(m) include, but are not necessarily limited to, our chief executive officer, chief financial officer, our next three most highly compensated named executive officers other than our chief executive officer and chief financial officer, and certain individuals to whom the Section 162(m) deductibility limit applied for our fiscal year 2018 or later. Certain grandfathered payments pursuant to written binding contracts in effect on November 2, 2017 may

still be fully deductible to the Company even if total compensation to a covered officer exceeds \$1 million in a fiscal year. Although the committee may consider the impact of Section 162(m) as well as other tax and accounting consequences when developing and implementing executive compensation programs, the committee intends to design and administer compensation programs in the way the committee believes is appropriate and in the best interests of the stockholders after taking various factors into consideration, including business conditions and the performance of the Company and the executive officer.

Section 409A of the Internal Revenue Code—Section 409A imposes additional significant taxes in the event that an executive officer, director or service provider received “deferred compensation” that does not satisfy the requirements of Section 409A. We consider Section 409A in the design and operation of any plans.

Other Compensation Policies

To further align our executive compensation program with the interests of our stockholders, at the end of fiscal 2009, a committee of the Board approved a clawback policy for our CEO and CFO. This clawback policy provided that, in the event that there is an accounting restatement and there is a finding by the Board that such restatement was due to the gross recklessness or intentional misconduct of the CEO or CFO and it caused material noncompliance with any financial reporting requirement, then Coherent shall seek disgorgement of any portion of the bonus or other incentive or equity-based compensation related to such accounting restatement received by such individual during the 12-month period following the originally filed financial document.

As disclosed in the Company’s fiscal 2018 proxy statement, the committee reviewed the Company’s existing clawback policy during fiscal 2019 and, as a result of that review,

recommended a new policy to the Board, which the Board adopted in fiscal 2020. The new clawback policy expands potential recoupment of cash and equity incentive compensation to include all NEOs, as well as all employees of the Company holding the title of Senior Vice President or higher who report directly to our CEO. The new policy allows for the committee to recoup excess incentive compensation from such covered individuals in the event of a restatement of the Company’s financial results if the committee determines that during the three-years prior to such restatement the covered individuals would have received less incentive compensation if it had been calculated based on the restated financials.

In addition, under our Insider Trading Policy, we have established a policy with respect to hedging or pledging Coherent securities (see “Hedging Policy” above).

Compensation and HR Committee Report

The Compensation and HR Committee of the Board has reviewed and discussed the Compensation Discussion and Analysis required by Item 402(b) of Regulation S-K with management and, based on such review and discussions, the Compensation and HR Committee recommended to the Board that the Compensation Discussion and Analysis be included in this proxy statement.

Respectfully submitted by the Compensation and HR Committee

Sandeep Vij, *Chair*

Jay Flatley

Pamela Fletcher

Michael McMullen

RECONCILIATION TABLE—NON-GAAP EARNINGS PER SHARE FROM CONTINUING OPERATIONS

	Fiscal Year		
	2019	2018	2017
GAAP NET INCOME PER DILUTED SHARE FROM CONTINUING OPERATIONS	\$ 2.22	\$ 9.95	\$ 8.42
Stock-based compensation	1.30	1.11	0.94
Amortization of intangible assets	1.81	1.72	1.72
Restructuring charges	0.66	0.12	0.34
Non-recurring tax expense (benefit)	(0.04)	0.66	(0.05)
Costs related to acquisitions	—	0.03	0.70
Interest expense on Barclays debt commitment	—	—	0.07
Gain on hedge of Barclays debt commitment	—	—	(0.29)
Gain on business combination	—	—	(0.14)
Impairment (asset recoveries) and other charges	(0.04)	0.03	0.08
Purchase accounting step up	0.01	0.02	0.77
NON-GAAP NET INCOME FROM CONTINUING OPERATIONS PER DILUTED SHARE	\$ 5.92	\$ 13.64	\$ 12.57

RECONCILIATION TABLE—ADJUSTED EBITDA

(in millions)	Fiscal Year		
	2019	2018	2017
GAAP NET INCOME FROM CONTINUING OPERATIONS	\$ 53.8	\$ 247.4	\$ 208.6
Income tax expense	6.2	114.2	93.4
Interest and other income (expense), net	24.4	36.5	27.4
Depreciation and amortization	116.4	113.4	104.5
Costs related to acquisitions	—	0.7	17.6
Gain on business combination	—	—	(5.4)
Restructuring charges	22.7	3.9	12.3
Impairment (asset recoveries) and other charges	(1.3)	0.8	2.9
Stock-based compensation	36.5	32.7	30.4
Purchase accounting step up	0.4	0.8	26.8
ADJUSTED EBITDA	\$ 259.1	\$ 550.4	\$ 518.5

Compensation Committee Interlocks and Insider Participation

During fiscal 2019, the Compensation and HR Committee of the Board consisted of directors Vij (Chair), Flatley, Krause (until February 2019), Fletcher (beginning June 2019) and McMullen (beginning December 2018). None of the members of the committee has been or is an officer or employee of Coherent. None of our executive officers serve on the board of directors or compensation committee of a company that has an executive officer that serves on our Board or Compensation and HR Committee. No member of our Board is an executive officer of a company in which one of our executive officers serves as a member of the board of directors or compensation committee of that company.

Committee Independence

Each of the members of the committee qualifies as (i) an “independent director” under the requirements of The Nasdaq Stock Market, (ii) a “non-employee director” under Rule 16b-3 of the Securities Exchange Act of 1934 (the “1934 Act”), (iii) an “outside director” under Section 162(m) of the Code and (iv) an “independent outside director” as that term is defined by ISS.

SUMMARY COMPENSATION AND EQUITY TABLES

Fiscal 2019 Summary Compensation Table

The table below presents information concerning the total compensation of our NEOs for the fiscal years ended September 28, 2019, September 29, 2018 and September 30, 2017.

Name and Principal Position	Fiscal Year	Salary (\$) ⁽¹⁾	Stock Awards (\$) ⁽²⁾	Non-Equity Incentive Plan Compensation (\$) ⁽³⁾	All Other Compensation (\$) ⁽⁴⁾	Total (\$)
John Ambroseo,	2019	820,203	4,056,096	0	11,146	4,887,445
Former President and	2018	800,010	7,867,051	853,885	10,946	9,531,892
Chief Executive Officer ⁽⁵⁾	2017	766,358	7,488,106	1,760,021	10,754	10,025,239
Kevin Palatnik,	2019	484,439	1,247,657	0	11,146	1,743,242
Executive Vice President	2018	438,083	1,568,031	306,283	10,946	2,323,343
and Chief Financial Officer	2017	426,747	1,613,899	645,029	10,754	2,696,429
Mark Sobey,	2019	445,200	2,702,495⁽⁶⁾	0	11,146	3,158,841
Executive Vice President and	2018	420,390	1,463,443	276,121	10,946	2,170,900
General Manager of OEM Laser Sources	2017	396,467	1,413,369	521,304	10,754	2,341,894
Bret DiMarco,	2019	398,081	2,507,454⁽⁶⁾	0	11,146	2,916,681
Executive Vice President,	2018	387,116	1,149,941	235,280	10,946	1,783,283
General Counsel and Corporate Secretary	2017	368,947	1,351,551	450,004	10,754	2,181,256
Paul Sechrist,	2019	417,130	812,037	0	11,146	1,240,313
Former Executive Vice President	2018	399,246	1,306,720	263,135	10,946	1,980,047
Worldwide Sales and Services ⁽⁷⁾	2017	371,543	1,464,189	450,004	10,754	2,296,490

(1) Reflects the dollar amount of salary earned in the applicable fiscal year.

(2) Amounts shown reflect the grant date fair value of awards granted in accordance with Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) Topic 718. Reflects unvested time-based and performance-based restricted stock units; there is no guaranty that the recipients will ultimately receive this amount, or any amount. See footnote 2 to the Grants of Plan-Based Awards table for additional information. Amounts in this column may not equal the sum of the awards included in the Grants of Plan-Based Awards table due to rounding. No stock options were granted to the NEOs in fiscal years 2019, 2018 and 2017.

(3) Reflects the dollar amounts earned under the Variable Compensation Plan (VCP) during the applicable fiscal years.

(4) Reflects a 401(k) company match earned during the applicable fiscal year.

(5) Effective April 6, 2020, Mr. Ambroseo retired from the role of the Company's President and Chief Executive Officer.

(6) These amounts include a one-time retention grant of time-based restricted stock units with a grant date value of approximately \$1.7 million to each of Messrs. Sobey and DiMarco, each with a single three-year vesting date, related to the announced CEO transition.

(7) Effective September 29, 2019, Mr. Sechrist transitioned from the role of the Company's Executive Vice President, Worldwide Sales and Services to the role of Special Advisor to the CEO.

Grants of Plan-Based Awards in Fiscal 2019

Except as set forth in the footnotes, the following table shows all plan-based equity and non-equity incentive awards granted to our NEOs during fiscal 2019. Our NEOs did not receive any option awards during fiscal 2019.

Name	Type	Grant Date	Estimated Future Payouts Under Non-Equity Incentive Plan Awards			Actual Payouts Under Non-Equity Incentive Plan Awards (\$) ⁽¹⁾	Estimated Future Payouts Under Equity Incentive Plan Awards			All Other Stock Awards: # of Shares of Stock or Units (#)	Grant Date Fair Value (\$) ⁽²⁾
			Thresh-hold(\$)	Target(\$)	Maximum(\$)		Thresh-hold(#)	Target(#)	Maximum(#)		
John Ambroseo	PRSU	11/13/2018					0	22,499	44,998		2,642,058
	RSU	11/13/2018								11,472	1,414,039
	Annual bonus		0	990,013	1,980,026	0					
Kevin Palatnik	PRSU	11/13/2018					0	5,092	10,184		597,954
	RSU	11/13/2018								5,271	649,704
	1st semi-annual bonus		0	371,264	742,528	0					
Mark Sobey	PRSU	11/13/2018					0	3,978	7,956		467,137
	RSU	11/13/2018								4,118	507,585
	RSU	04/12/2019								11,062	1,727,774
	Annual bonus		0	315,006	630,012	0					
Bret DiMarco	PRSU	11/13/2018					0	3,182	6,364		373,662
	RSU	11/13/2018								3,294	406,018
	RSU	04/12/2019								11,062	1,727,774
	Annual bonus		0	260,003	520,006	0					
Paul Sechrist	RSU	11/13/2018								6,588	812,037
	Annual bonus		0	294,010	588,020	0					

- (1) Failure to meet a minimum level of performance resulted in no bonus paid out under the 2019 Variable Compensation Plan.
- (2) Reflects the dollar amount recognized for financial statement reporting purposes (disregarding an estimate of forfeitures related to service-based vesting conditions) for fiscal 2019 in accordance with ASC 718, and includes grants made in fiscal 2019. The assumptions used in the valuation of these awards are set forth in Note 13 "Employee Stock Award and Benefit Plans" of the Notes to the Consolidated Financial Statements in our annual report on Form 10-K for fiscal 2019. For informational purposes, if the maximum level of performance for the PRSU awards was achieved, the value, calculated by multiplying the closing price of the Company's common stock on the date of grant by the number of shares issuable upon achievement of the maximum level of performance under the applicable PRSU is \$5,546,454, \$1,255,280, \$980,657 and \$784,427, for Messrs. Ambroseo, Palatnik, Sobey and DiMarco, respectively. These amounts do not correspond to the actual value, if any, that will be recognized by the NEOs. See "Compensation Discussion and Analysis—Equity Awards" for a description of the PRSUs.

Option Exercises and Stock Vested in Fiscal 2019

The table below sets forth certain information for each NEO regarding the exercise of options and the vesting of stock awards during fiscal 2019, including the aggregate value realized upon such exercise or vesting.

	Option Awards		Stock Awards	
	Number of Shares Acquired on Exercise (#)	Value Realized on Exercise (\$)	Number of Shares Acquired on Vesting (#)	Value Realized on Vesting (\$) ⁽¹⁾
John Ambroseo	—	—	82,387	10,256,133
Kevin Palatnik	—	—	23,690	3,022,494
Mark Sobey	—	—	14,029	1,759,981
Bret DiMarco	—	—	12,156	1,524,309
Paul Sechrist	—	—	12,159	1,527,368

- (1) Reflects the market price of our common stock on the vesting date.

Outstanding Equity Awards at Fiscal 2019 Year-End

The following table presents information concerning outstanding equity awards held by each NEO as of September 28, 2019.

Name	Grant Date	Option Awards				Stock Awards		Equity incentive plan awards: Number of unearned shares, units or other rights that have not vested (#)	Equity incentive plan awards: Market or payout value of unearned shares, units or other rights that have not vested (\$)
		Number of Securities Underlying Unexercised Options (#) exercisable	Number of Securities Underlying Unexercised Options (#) unexercisable	Option Exercise Price (\$)	Option Expiration Date	Number of Shares or Units of Stock That Have Not Vested (#) ⁽¹⁾	Market Value of Shares or Units of Stock That Have Not Vested (\$) ⁽²⁾		
John Ambroseo	11/13/2018	—	—	—	—	—	—	44,998 ⁽³⁾	6,818,997
	11/13/2018	—	—	—	—	11,472	1,738,467	—	—
	11/03/2017	—	—	—	—	—	—	37,582 ⁽⁴⁾	5,695,176
	11/03/2017	—	—	—	—	4,994	756,791	—	—
	11/15/2016	—	—	—	—	—	—	64,282 ⁽⁵⁾	9,741,294
	11/15/2016	—	—	—	—	5,889	892,419	—	—
Kevin Palatnik	11/13/2018	—	—	—	—	—	—	10,184 ⁽³⁾	1,543,283
	11/13/2018	—	—	—	—	5,271	798,767	—	—
	11/03/2017	—	—	—	—	—	—	5,010 ⁽⁴⁾	759,215
	11/03/2017	—	—	—	—	1,998	302,777	—	—
	11/15/2016	—	—	—	—	—	—	10,206 ⁽⁵⁾	1,546,617
	11/15/2016	—	—	—	—	1,701	257,770	—	—
Mark Sobey	04/12/2019	—	—	—	—	11,062	1,676,335	—	—
	11/13/2018	—	—	—	—	—	—	7,956 ⁽³⁾	1,205,652
	11/13/2018	—	—	—	—	4,118	624,042	—	—
	11/03/2017	—	—	—	—	—	—	4,676 ⁽⁴⁾	708,601
	11/03/2017	—	—	—	—	1,864	282,471	—	—
	11/15/2016	—	—	—	—	—	—	9,742 ⁽⁵⁾	1,476,303
	11/15/2016	—	—	—	—	1,623	245,949	—	—
Bret DiMarco	04/12/2019	—	—	—	—	11,062	1,676,335	—	—
	11/13/2018	—	—	—	—	—	—	6,364 ⁽³⁾	964,401
	11/13/2018	—	—	—	—	3,294	499,173	—	—
	11/03/2017	—	—	—	—	—	—	3,674 ⁽⁴⁾	556,758
	11/03/2017	—	—	—	—	1,465	222,006	—	—
	11/15/2016	—	—	—	—	—	—	8,536 ⁽⁵⁾	1,293,545
	11/15/2016	—	—	—	—	1,422	215,490	—	—
Paul Sechrist	11/13/2018	—	—	—	—	6,588	998,346	—	—
	11/03/2017	—	—	—	—	—	—	4,176 ⁽⁴⁾	632,831
	11/03/2017	—	—	—	—	1,664	252,163	—	—
	11/15/2016	—	—	—	—	—	—	9,280 ⁽⁵⁾	1,406,291
	11/15/2016	—	—	—	—	1,546	234,281	—	—

- (1) Generally, time-based RSU grants vest $\frac{1}{3}$ per year on each anniversary of the grant date. The one-time retention grant of 11,062 time-based restricted stock units on April 12, 2019 related to the announcement of the CEO transition to each of Messrs. Sobey and DiMarco has a single three-year vesting date.
- (2) Market value is determined by multiplying the number of shares by \$151.54, the closing price of our common stock on September 27, 2019, the last trading date of fiscal 2019.
- (3) The performance-based RSU vesting determination date is November 13, 2021. The performance-based RSUs will vest in an amount which is 0-200% subject to the achievement of certain performance metrics. The amount reflected in the table is the maximum amount or 200%.
- (4) The performance-based RSU vesting determination date is November 3, 2020. The performance-based RSUs will vest in an amount which is 0-200% subject to the achievement of certain performance metrics. The amount reflected in the table is the maximum amount or 200%.
- (5) The performance-based RSU vesting determination date was November 15, 2019. The performance-based RSUs vested at 200% based on the achievement of certain performance metrics.

Fiscal 2019 Non-Qualified Deferred Compensation

For a description of our Deferred Compensation Plan, see “Compensation Discussion and Analysis-Retirement Plans.” The following table presents information regarding the non-qualified deferred compensation activity for each NEO during fiscal 2019:

Name	Executive Contributions in last FY (\$)	Registrant Contributions in Last FY (\$) ⁽¹⁾	Aggregate Earnings in Last FY (\$)	Aggregate Withdrawals/ Distributions (\$)	Aggregate Balance at Last FYE (\$) ⁽²⁾
<i>John Ambroseo</i>	—	—	652,559	—	12,908,629
SRP ⁽³⁾	—	—	113,233	—	2,246,950
Kevin Palatnik	—	—	34,544	—	788,367
Mark Sobey	—	—	98,130	—	1,945,915
Bret DiMarco	—	—	9,608	—	169,688
<i>Paul Sechrist</i>	—	—	73,799	(21,848)	1,862,034
SRP ⁽³⁾	—	—	22,075	—	367,339

- (1) Company contributions to our Deferred Compensation Plan were terminated on December 31, 2010.
- (2) The deferred compensation in a participant’s account is fully vested and is credited with positive or negative investment results based upon plan investment options selected by the participant. The balance reflects contributions previously reported in the Summary Compensation Table to the extent the executive was a Named Executive Officer at the time of such contributions.
- (3) Amounts include account balances (including earnings) from the Supplementary Retirement Plan (SRP), which was suspended on December 31, 2004. The Deferred Compensation Plan is the only current non-qualified deferred compensation plan available for executive management.

Potential Payments upon Termination or Change of Control

The following table shows the potential payments and benefits that we (or our successor) would be obligated to make or provide upon termination of employment of each our NEOs pursuant to the terms of the Change of Control and Change in Leadership Severance Plan. Other than this plan, there are no other executive employment agreements or other contractual obligations triggered upon a change of control. For purposes of this table, it is assumed that each NEO's employment terminated at the close of business on September 27, 2019 (the last trading date of fiscal 2019). These payments are conditioned upon the execution of a form release of claims by the NEO in favor of us. The amounts reported below do not include the nonqualified deferred compensation distributions

that would be made to the NEOs following a termination of employment (for those amounts and descriptions, see the prior table). There can be no assurance that a triggering event would produce the same or similar results as those estimated below if such event occurs on any other date or at any other price, or if any other assumption used to estimate potential payments and benefits is not correct. Due to the number of factors that affect the nature and amount of any potential payments or benefits, any actual payments and benefits may be different. These are aggregate payments and do not reflect such individual's net after tax benefit. No officer is entitled to any "gross up" to offset the impact of IRS Code Section 280G.

NEO	Multiplier for Base Salary and Bonus	Nature of Benefit	Termination Other than for Change of Control	Change of Control Termination (\$)
John Ambroseo	2.99X	Salary Severance ⁽¹⁾	—	\$ 2,466,783
		Bonus Severance ⁽¹⁾	—	\$ 2,960,140
		Equity Compensation Acceleration ⁽²⁾	—	\$ 14,515,410
		Aggregate Healthcare Related Monthly Payment ⁽³⁾	—	\$ 99,000
		TOTAL BENEFIT		
Kevin Palatnik	2X	Salary Severance ⁽¹⁾	—	\$ 990,038
		Bonus Severance ⁽¹⁾	—	\$ 742,529
		Equity Compensation Acceleration ⁽²⁾	—	\$ 3,283,872
		Aggregate Healthcare Related Monthly Payment ⁽³⁾	—	\$ 66,000
		TOTAL BENEFIT		
Mark Sobey	2X	Salary Severance ⁽¹⁾	—	\$ 900,016
		Bonus Severance ⁽¹⁾	—	\$ 630,011
		Equity Compensation Acceleration ⁽²⁾	—	\$ 4,524,075
		Aggregate Healthcare Related Monthly Payment ⁽³⁾	—	\$ 66,000
		TOTAL BENEFIT		
Bret DiMarco	2X	Salary Severance ⁽¹⁾	—	\$ 800,010
		Bonus Severance ⁽¹⁾	—	\$ 520,006
		Equity Compensation Acceleration ⁽²⁾	—	\$ 4,020,356
		Aggregate Healthcare Related Monthly Payment ⁽³⁾	—	\$ 66,000
		TOTAL BENEFIT		
Paul Sechrist	2X	Salary Severance ⁽¹⁾	—	\$ 840,029
		Bonus Severance ⁽¹⁾	—	\$ 588,020
		Equity Compensation Acceleration ⁽²⁾	—	\$ 2,504,350
		Aggregate Healthcare Related Monthly Payment ⁽³⁾	—	\$ 66,000
		TOTAL BENEFIT		

(1) Reflects salary as in effect as of September 28, 2019. Bonus severance is based on target bonus as a percentage of salary as in effect as of September 28, 2019.

- (2) Equity Compensation Acceleration represents the value of time-based restricted stock units and performance-based restricted stock units, in each case as of September 27, 2019 (the last trading date before the end of our fiscal year) at the closing stock price on that date (\$151.54). The value of accelerated restricted stock units is calculated by multiplying the number of unvested shares subject to acceleration by the closing stock price on September 27, 2019. This assumes immediate release and vesting of the performance-based restricted stock units at the maximum, or 200% of target, achievement. The amounts reflected for Equity Compensation Acceleration do not reflect any applicable taxes, just gross proceeds. Since the table assumes a triggering event on September 27, 2019, only those restricted stock units outstanding as of that date are included in the table.
- (3) Aggregate Healthcare Related Monthly Payment is a monthly payment of \$2,750 in lieu of receiving Company-subsidized COBRA benefits, life insurance premiums and/or other welfare benefits, multiplied by 36 months for our CEO and 24 months for our other NEOs.

On April 6, 2020, the Company announced that John Ambroseo retired from his role as President and CEO and a member of the Board, effective April 6, 2020. Upon his retirement, Mr. Ambroseo transitioned to the role of a Special Advisor to the Company. This transition was effected pursuant to a transition and retirement agreement that was entered into by Mr. Ambroseo and the Company in April 2019. For further discussion of this transition and retirement agreement, see “Compensation Discussion and Analysis—CEO Transition.”

To assist with the transition following his retirement as the Company’s Executive Vice President, Worldwide Sales and Services, Mr. Sechrist agreed to remain as a Special Advisor to the CEO, and will serve in such capacity through September 30, 2021. During that time, Mr. Sechrist will provide strategic and other services reasonably requested by our CEO and has agreed to not compete with the Company. As a special advisor to the Company’s CEO, Mr. Sechrist will receive a salary no less than his current base salary and will continue to vest in his current equity grants pursuant to the terms of the Company’s 2011 Equity Incentive Plan.

PAY RATIO

As provided for by the Dodd-Frank Wall Street Reform and Consumer Protection Act, the SEC adopted a rule requiring companies to disclose the ratio of the median employee’s total annual compensation relative to total annual compensation of the CEO. As disclosed in the “Fiscal 2019 Summary Compensation Table” above, the fiscal 2019 total annual compensation for our CEO was \$4,887,445. We estimate that the fiscal 2019 total annual compensation for the median of all employees, excluding our CEO, was \$69,018. The resulting ratio of our CEO’s total annual compensation to that of the median of all employees, excluding our CEO, for fiscal 2019 is approximately 71 to 1.

For purposes of reporting annual total compensation and the ratio of annual total compensation of the CEO to the median employee, both the CEO and median employee’s annual total compensation were calculated consistent with the disclosure requirements of executive compensation under the Summary Compensation Table.

For fiscal 2019, we used the same median employee as used for fiscal 2018, as there have been no significant changes in our employee population or employee compensation arrangements that we believe would result in a significant change to the pay ratio. There also were no material changes to this employee’s compensation that would significantly impact the pay ratio.

We identified the median employee by (i) aggregating for each employee employed on September 29, 2018 (our fiscal year end) (A) annual base salary for salaried employees (or hourly rate multiplied by estimated work schedule, for hourly and seasonal employees) and (B) target incentive compensation, (ii) converting amounts from local currency to U.S. dollars and (iii) ranking this compensation measure for our employees other than our CEO from lowest to highest. Because we had an even number of employees (excluding our CEO) on the determination date, two employees were identified as the median compensated employees. We reviewed the compensation of these two employees as well as the compensation of five employees immediately above and below, to further analyze employee median compensation for consistency with that of other employees near the

Summary Compensation and Equity Tables

median. For these twelve employees, we calculated total annual compensation for such employees using the same methodology used to calculate the “Total” column of the “Fiscal 2019 Summary Compensation Table.” We then selected from among the two median compensated employees, a United States employee whose compensation was most consistent with that of the twelve employees reviewed.

The pay ratio reported above is a reasonable estimate calculated in a manner consistent with SEC rules based on our internal records and the methodology described above. The SEC rules for identifying the median compensated employee and calculating the pay ratio based on that employee’s total annual compensation allow companies to adopt a variety of methodologies, to apply certain exclusions, and to make reasonable estimates and assumptions that reflect their employee populations and compensation practices. Therefore, the pay ratio reported by other companies may not be comparable to the pay ratio reported above, as other companies have different employee populations and compensation practices and may utilize different methodologies, exclusions, estimates, and assumptions in calculating their own pay ratios.

CERTAIN RELATIONSHIPS AND RELATED PERSON TRANSACTIONS

Review, Approval or Ratification of Related Person Transactions

In accordance with the charter of the Audit Committee, the members of the Audit Committee, all of whom are independent directors, review and approve in advance any proposed related person transactions. Additionally, from time to time the Board may directly consider these transactions. For purposes of these procedures, the individuals and entities that are considered “related persons” include:

- Any of our directors, nominees for director and executive officers;
- Any person known to be the beneficial owner of five percent or more of our common stock (a “5% Stockholder”); and
- Any immediate family member, as defined in Item 404(a) of Regulation S-K, of a director, nominee for director, executive officer and 5% Stockholder. We will report all such material related person transactions under applicable accounting rules, federal securities laws and SEC rules and regulations.

Related Person Transactions

We have entered into indemnification agreements with each of our executive officers and directors. Such indemnification agreements require us to indemnify these individuals to the fullest extent permitted by law. We also intend to execute these agreements with our future directors and officers.

REPORT OF THE AUDIT COMMITTEE OF THE BOARD OF DIRECTORS

The Audit Committee is responsible for overseeing our accounting and financial reporting processes and audits of our financial statements, including reviewing and approving the fees for the performance of the audit by our independent auditors. As set forth in its charter, the Audit Committee acts only in an oversight capacity and relies on the work and assurances of both management, which has primary responsibilities for our financial statements and reports, as well as the independent registered public accounting firm that is responsible for expressing an opinion on the conformity of our audited financial statements to generally accepted accounting principles.

The Audit Committee met thirteen (13) times either in person or by telephone during fiscal 2019. In the course of these meetings, the Audit Committee met with management, the internal auditors and our independent registered public accounting firm and reviewed the results of the internal and external audit examinations, evaluations of our internal controls and the overall quality of our financial reporting.

The Audit Committee believes that a candid, substantive and focused dialogue with the internal auditors and the independent registered public accounting firm is fundamental to the Audit Committee's oversight responsibilities. To support this belief, the Audit Committee periodically meets separately with the internal auditors and the independent auditors, without management present. In the course of its discussions in these meetings, the Audit Committee asked a number of questions intended to bring to light any areas of potential concern related to our financial reporting and internal controls. These questions include:

- Are there any significant accounting judgments, estimates or adjustments made by management in preparing the financial statements that would have been made differently had the auditors themselves prepared and been responsible for the financial statements;
- Based on the auditors' experience, and their knowledge of our business, do our financial statements fairly present to investors, with clarity and completeness, our financial position and performance for the reporting period in accordance with generally accepted accounting principles and SEC disclosure requirements;
- Based on the auditors' experience, and their knowledge of our business, have we implemented internal controls and

internal audit procedures that are appropriate for our business.

The Audit Committee approved the engagement of Deloitte & Touche LLP as our independent registered public accounting firm for fiscal 2019, including the fees to be paid for their audit work, and reviewed with the internal auditors and independent registered public accounting firm their respective overall audit scope and plans. In approving Deloitte & Touche LLP, the Audit Committee considered the qualifications of Deloitte & Touche LLP and discussed with Deloitte & Touche LLP their independence, including a review of the audit and non-audit services provided by them to us. The Audit Committee also discussed with Deloitte & Touche LLP the matters required to be discussed by the applicable requirements of the Public Company Accounting Oversight Board (PCAOB) and the Commission, and it received the written disclosures and the letter from Deloitte & Touche LLP required by the applicable requirements of the Public Company Accounting Oversight Board regarding Deloitte & Touche LLP's communications with the Audit Committee concerning independence.

Management has reviewed and discussed the audited financial statements for fiscal 2019 with the Audit Committee, including a discussion of the quality and acceptability of the financial reporting, the reasonableness of significant accounting judgments and estimates and the clarity of disclosures in the financial statements. In connection with this review and discussion, the Audit Committee asked a number of follow-up questions of management and the independent registered public accounting firm to help give the Audit Committee comfort in connection with its review.

In reliance on the reviews and discussions referred to above, the Audit Committee recommended to the Board that the audited financial statements be included in the annual report on Form 10-K for the fiscal year ended September 28, 2019, for filing with the SEC.

Respectfully submitted by the Audit Committee.

Steve Skaggs, *Chair*
Susan James
Beverly Kay Matthews
Garry Rogerson

OTHER MATTERS

We know of no other matters to be submitted to the meeting. If any other matters properly come before the meeting, it is the intention of the persons named in the enclosed Proxy to vote the shares they represent as the Board may recommend.

Dated: April 6, 2020

By Order of the Board of Directors

A handwritten signature in black ink, appearing to read "Bret DiMarco", with a long horizontal line extending to the right.

Bret DiMarco

*Executive Vice President, General Counsel and
Corporate Secretary*

APPENDIX A

COHERENT EQUITY INCENTIVE PLAN

1. Purposes of the Plan. The purposes of this Equity Incentive Plan are to attract and retain the best available personnel for positions of substantial responsibility, to provide additional incentive to Service Providers and to promote the success of the Company.

Awards to Service Providers granted hereunder may be Incentive Stock Options, Nonstatutory Stock Options, Restricted Stock, Restricted Stock Units, Stock Appreciation Rights, Performance Shares, Deferred Stock Units or Dividend Equivalents, at the discretion of the Administrator and as reflected in the terms of the Award Agreement. In addition, the Plan provides for certain cash-based amounts for service as Director.

2. Definitions. As used herein, the definitions as set forth in Appendix A shall apply.

3. Stock Subject to the Plan. Subject to the provisions of Section 18 of the Plan, the maximum aggregate number of shares which shall be available for issuance under the Plan is 3,080,000 Shares plus any Shares subject to any equity compensation awards under the Company's 2011 Equity Incentive Plan that are outstanding on the date this Plan becomes effective and that subsequently expire unexercised or are forfeited, added at the rate set forth in the following paragraph. All of the Shares issuable under the Plan may be authorized, but unissued, or reacquired Common Stock.

Any Shares subject to Options or SARs shall be counted against the numerical limits of this Section 3 as one Share for every Share subject thereto. Any Awards covering Shares with a per Share or per unit purchase price lower than 100% of Fair Market Value on the date of grant shall be counted against the numerical limits of this Section 3 as two Shares for every one Share subject thereto. To the extent that a Share that was subject to an Award that counted as two Shares against the Plan reserve pursuant to the preceding sentence is recycled back into the Plan under the final paragraph of this Section 3 or to the extent that a Share that was subject to an award outstanding on the date this Plan becomes effective expires unexercised or is forfeited is added as part of the Plan reserve as set forth in the first paragraph of Section 3, the Plan shall be credited with two Shares.

Subject to adjustment as provided in Section 18, the maximum number of Shares that may be issued upon the exercise of Incentive Stock Options will equal the aggregate Share number stated in the first paragraph of this Section 3.

If an Award expires or becomes unexercisable without having been exercised in full, or, with respect to Restricted Stock, Performance Shares or Restricted Stock Units, is forfeited to or repurchased by the Company at its original purchase price due to such Award failing to vest, the unpurchased Shares (or for Awards other than Options and SARs, the forfeited or repurchased Shares) which were subject thereto shall become available for future grant or sale under the Plan (unless the Plan has terminated). With respect to SARs, when an SAR is exercised, the Shares subject to a SAR Award Agreement shall be counted against the numerical limits of Section 3 above, as one Share for every Share subject thereto, regardless of the number of Shares used to settle the SAR upon exercise (i.e., Shares withheld to satisfy the exercise price of an SAR shall not remain available for issuance under the Plan). Shares that have been issued under the Plan under any Award shall not be returned to the Plan and shall not become available for future distribution under the Plan; provided, however, that if Shares of Restricted Stock, Performance Shares or Restricted Stock Units are repurchased by the Company at their original purchase price or are forfeited to the Company due to such Awards failing to vest, such Shares shall become available for future grant under the Plan. Shares used to pay the exercise price of an Option shall not become available for future grant or sale under the Plan. Shares used to satisfy any withholding obligations for Tax-Related Items with respect to Options or SARs shall not become available for future grant or sale under the Plan. To the extent an Award under the Plan is paid out in cash rather than stock, such cash payment shall not reduce the number of Shares available for issuance under the Plan. Substitute Awards may be granted under the Plan and such Substitute Awards shall not reduce the aggregate number of Shares available for the Awards under the Plan.

4. Administration of the Plan.

(a) Procedure.

(i) Multiple Administrative Bodies. If permitted by Applicable Laws, the Plan may be administered by different bodies with respect to Directors, Officers who are not Directors, and Employees who are neither Directors nor Officers.

(ii) Administration With Respect to Officers and Outside Directors. Any discretionary Award grants to Officers or Outside Directors shall be made by the Board or a committee thereof. The Board or a committee thereof shall administer the Plan with respect to Officer and Outside Director Awards.

(iii) Administration With Respect to Other Persons. With respect to Award grants made to Employees or Consultants who are not Officers of the Company, the Plan shall be administered by (A) the Board, (B) the Compensation and HR Committee or another committee designated by the Board, or (C) a sub-committee designated by the designated committee, which committee or sub-committee shall be constituted to satisfy Applicable Laws. Once appointed, such Committee shall serve in its designated capacity until otherwise directed by the Board. The Board may increase the size of the Committee and appoint additional members, remove members (with or without cause) and substitute new members, fill vacancies (however caused), and remove all members of the Committee and thereafter directly administer the Plan, all to the extent permitted by Applicable Laws.

(b) Powers of the Administrator. Subject to the provisions of the Plan, and in the case of a Committee, subject to the specific duties delegated by the Board to such Committee, the Administrator shall have the authority, in its discretion:

(i) to determine the Fair Market Value;

(ii) to select the Service Providers to whom Awards may be granted hereunder;

(iii) to determine whether and to what extent Awards are granted hereunder;

(iv) to determine the number of Shares or the cash value to be covered by each Award granted hereunder;

(v) to approve forms of Award Agreement for use under the Plan;

(vi) to determine the terms and conditions, not inconsistent with the terms of the Plan, of any Award granted hereunder. Such terms and conditions include, but are not limited to, the exercise price, the time or times when Awards vest or may be exercised (which may be based on performance criteria), any vesting acceleration or waiver of forfeiture restrictions (subject to compliance with Applicable Laws), and any restriction or limitation regarding any Award or the Shares relating thereto, based in each case on such factors as the Administrator, in its sole discretion, shall determine;

(vii) to construe and interpret the terms of the Plan and Awards granted pursuant to the Plan;

(viii) to prescribe, amend and rescind rules and regulations relating to the Plan, including rules and regulations relating to sub-plans established for the purpose of qualifying for special tax treatment under non-U.S. tax laws or to comply with Applicable Laws;

(ix) to modify or amend each Award (subject to Section 7 and Section 21(c) of the Plan), including the discretionary authority to extend the post-termination exercisability period of Options or SARs longer than is otherwise provided for in the Award Agreement or the Plan;

(x) to allow the Company or any Parent or Subsidiary, as applicable, to satisfy any withholding obligations for Tax-Related Items by withholding from the Shares or cash to be issued upon exercise or vesting of an Award that number of Shares or cash having a Fair Market Value equal to the amount required to be withheld;

(xi) to authorize any person to execute on behalf of the Company any instrument required to effect the grant of an Award previously granted by the Administrator;

(xii) to determine the terms and restrictions applicable to Awards;

(xiii) to determine whether Awards will be adjusted for or accompanied by Dividend Equivalents; and

(xiv) to make all other determinations deemed necessary or advisable for administering the Plan.

(c) Delegation. The Board may delegate responsibility for administering the Plan, including with respect to designated classes of Employees and Consultants, to different committees consisting of one or more Directors subject to such limitations as the Board deems appropriate. To the extent consistent with Applicable Laws, the Board or the Compensation and HR

Committee may authorize one or more officers of the Company to grant Awards to designated classes of Employees and Consultants, within limits specifically prescribed by the Board or the Compensation and HR Committee; provided, however, that no such officer shall have or obtain authority to grant Awards to himself or herself.

(d) Effect of Administrator's Decision. All decisions, determinations and interpretations of the Administrator shall be final and binding on all Participants and any other holders of any Awards granted under the Plan.

5. Eligibility. Awards may be granted only to Service Providers. Incentive Stock Options may be granted only to Employees. A Service Provider who has been granted an Award may, if he or she is otherwise eligible, be granted an additional Award or Awards.

6. Award Limitations.

(a) Option and SAR Annual Share Limit. Subject to Section 7 below, no Participant shall be granted, in any Fiscal Year, Options and Stock Appreciation Rights to purchase more than 500,000 Shares; provided, however, that such limit shall be 1,000,000 Shares in the Participant's first Fiscal Year as a Service Provider.

(b) Restricted Stock, Performance Share and Restricted Stock Unit Annual Limit. No Participant shall be granted, in any Fiscal Year, more than 400,000 Shares in the aggregate of the following: (i) Restricted Stock, (ii) Performance Shares, or (iii) Restricted Stock Units; provided, however, that such limit shall be 600,000 Shares in the Participant's first Fiscal Year as a Service Provider.

(c) Director Award Annual Limit. No Director who is not an Employee shall be granted, in any Fiscal Year, solely with respect to ordinary service as a Director on the Board and any standing committee thereof, one or more Awards that in the aggregate exceed \$750,000 in aggregate value of cash-based and other Awards. For purposes of this calculation of value, the value of each Award shall be determined by the Administrator as of the grant date of such Award.

(d) Changes in Capitalization. The numerical limitations in Sections 6(a) and (b) shall be adjusted proportionately in connection with any change in the Company's capitalization as described in Section 18(a). For purposes of clarification regarding the limits in this Section 6, Awards granted in previous Fiscal Years will not count against the Award limits in subsequent Fiscal Years even if the Awards from previous Fiscal Years are earned or otherwise settled in Fiscal Years following the Fiscal Year in which they are granted, and the target Award granted in a Fiscal Year will count against the Award limit even if the Award earned or otherwise settled subsequently is more or less than the target Award.

7. No Repricing. The exercise price for an Option or SAR may not be reduced without the consent of the Company's stockholders. This shall include, without limitation, a repricing of the Option or SAR as well as an Option or SAR exchange program whereby the Participant agrees to cancel an existing Option in exchange for an Option, SAR, cash or another Award. If an Option or SAR is cancelled in the same Fiscal Year in which it was granted (other than in connection with a transaction described in Section 18), the cancelled Option or SAR as well as any replacement Option or SAR will be counted against the limits set forth in Section 6 above. Moreover, if the exercise price of an Option or SAR is reduced, the transaction will be treated as a cancellation of the Option or SAR and the grant of a new Option or SAR.

8. Stock Options.

(a) Type of Option. Each Option shall be designated in the Award Agreement as either an Incentive Stock Option or a Nonstatutory Stock Option. However, notwithstanding such designations, to the extent that the aggregate Fair Market Value of Shares subject to a Participant's Incentive Stock Options granted by the Company, any Parent or Subsidiary, that become exercisable for the first time during any calendar year (under all plans of the Company or any Parent or Subsidiary) exceeds \$100,000, such excess Options shall be treated as Nonstatutory Stock Options. For purposes of this Section 8(a), Incentive Stock Options shall be taken into account in the order in which they were granted, and the Fair Market Value of the Shares shall be determined as of the time of grant. No Incentive Stock Option may be granted under the Plan more than ten years from the date of the Plan's initial adoption by the Board.

(b) Term of Option. The term of each Option shall be stated in the Notice of Grant; provided, however, that the term shall be ten (10) years from the date of grant or such shorter term as may be provided in the Notice of Grant. Moreover, in the case of an Incentive Stock Option granted to a Participant who, at the time the Incentive Stock Option is granted, owns stock

representing more than ten percent (10%) of the voting power of all classes of stock of the Company or any Parent or Subsidiary, the term of the Incentive Stock Option shall be five (5) years from the date of grant or such shorter term as may be provided in the Notice of Grant.

(c) Exercise Price and Consideration.

(i) The per Share exercise price for the Shares to be issued pursuant to exercise of an Option shall be such price as is determined by the Administrator, but shall be subject to the following:

(A) In the case of an Incentive Stock Option granted to an Employee who, at the time the Incentive Stock Option is granted, owns stock representing more than ten percent (10%) of the voting power of all classes of stock of the Company or any Parent or Subsidiary, the per Share exercise price shall be no less than 110% of the Fair Market Value per Share on the date of grant.

(B) In the case of any other Incentive Stock Option and any Nonstatutory Stock Option, other than a Substitute Award, the per Share exercise price shall be no less than 100% of the Fair Market Value per Share on the date of grant.

(d) The consideration to be paid for the Shares to be issued upon exercise of an Option, including the method of payment, shall be determined by the Administrator. Such consideration, to the extent permitted by Applicable Laws, may consist entirely of:

(i) cash;

(ii) check;

(iii) other Shares which have a Fair Market Value equal to the aggregate exercise price of the Shares as to which said Option shall be exercised;

(iv) broker-assisted cashless exercise;

(v) net exercise;

(vi) any combination of the foregoing methods of payment; or

(vii) such other consideration and method of payment for the issuance of Shares to the extent permitted by Applicable Laws.

9. Stock Appreciation Rights.

(a) Grant of SARs. Subject to the terms and conditions of the Plan, SARs may be granted to Participants at any time and from time to time as shall be determined by the Administrator, in its sole discretion. Subject to Section 6 hereof, the Administrator shall have complete discretion to determine the number of SARs granted to any Participant.

(b) Exercise Price and other Terms. The per share exercise price for the Shares to be issued pursuant to exercise of an SAR shall be determined by the Administrator and, except with respect to a Substitute Award, shall be no less than 100% of the Fair Market Value per share on the date of grant. Otherwise, the Administrator, subject to the provisions of the Plan, shall have complete discretion to determine the terms and conditions of SARs granted under the Plan; provided, however, that no SAR may have a term of more than ten (10) years from the date of grant.

(c) Payment of SAR Amount. Upon exercise of an SAR, a Participant shall be entitled to receive payment from the Company in an amount determined by multiplying:

(i) The difference between the Fair Market Value of a Share over the exercise price; times

(ii) The number of Shares with respect to which the SAR is exercised.

(d) Payment upon Exercise of SAR. At the discretion of the Administrator, but only as specified in the Award Agreement, payment for an SAR may be in cash, Shares or a combination thereof. If the Award Agreement is silent as to the form of payment, payment of the SAR may only be in Shares.

(e) SAR Agreement. Each SAR grant shall be evidenced by an Award Agreement that shall specify the exercise price, the term of the SAR, the conditions of exercise, whether it may be settled in cash, Shares or a combination thereof, and such other terms and conditions as the Administrator, in its sole discretion, shall determine.

(f) Expiration of SARs. A SAR granted under the Plan shall expire upon the date determined by the Administrator, in its sole discretion, and set forth in the Award Agreement.

10. Exercise of Option or SAR. Any Option or SAR granted hereunder shall be exercisable at such times and under such conditions as determined by the Administrator, including performance criteria with respect to the Company and/or the Participant, and as shall be permissible under the terms of the Plan.

An Option or SAR may not be exercised for a fraction of a Share.

An Option or SAR shall be deemed to be exercised when written or electronic notice of such exercise has been given to the Company in accordance with the terms of the Option or SAR by the person entitled to exercise the Option or SAR and, with respect to Options only, full payment for the Shares with respect to which the Option is exercised has been received by the Company. With respect to Options only, full payment may, as authorized by the Administrator, consist of any consideration and method of payment allowable under Section 8(d) of the Plan. Until the issuance (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company) of the Shares, no right to vote or receive dividends or any other rights as a shareholder shall exist with respect to Optioned Stock or Shares underlying a SAR, notwithstanding the exercise of the Option or SAR. No adjustment will be made for a dividend or other right for which the record date is prior to the date the Shares are issued, except as provided in Section 18 of the Plan.

11. Automatic Grants to Outside Directors. The Board or a Committee thereof may institute, by resolution, automatic Award grants to new and to continuing members of the Board, with the number and type of such Awards, with such terms and conditions, and based upon such criteria, if any, as is determined by the Board or its Committee, in their sole discretion.

12. Restricted Stock.

(a) Grant of Restricted Stock. Subject to the terms and conditions of the Plan, Restricted Stock may be granted to Participants at any time as shall be determined by the Administrator, in its sole discretion. Subject to Section 6 hereof, the Administrator shall have complete discretion to determine (i) the number of Shares subject to a Restricted Stock award granted to any Participant, and (ii) the conditions that must be satisfied.

(b) Other Terms. The Administrator, subject to the provisions of the Plan, shall have complete discretion to determine the terms and conditions of Restricted Stock granted under the Plan; provided that Restricted Stock may only be issued in the form of Shares. Restricted Stock grants shall be subject to the terms, conditions, and restrictions determined by the Administrator. Any certificates representing the Shares of stock awarded shall bear such legends as shall be determined by the Administrator.

(c) Restricted Stock Award Agreement. Each Restricted Stock grant shall be evidenced by an Award Agreement that shall specify the purchase price (if any) and such other terms and conditions as the Administrator, in its sole discretion, shall determine.

13. Restricted Stock Units.

(a) Grant of Restricted Stock Units. Subject to the terms and conditions of the Plan, Restricted Stock Units may be granted to Participants at any time as shall be determined by the Administrator, in its sole discretion. Subject to Section 6 hereof, the Administrator shall have complete discretion to determine (i) the number of Shares subject to a Restricted Stock Unit award granted to any Participant, and (ii) the conditions that must be satisfied.

(b) Other Terms. The Administrator, subject to the provisions of the Plan, shall have complete discretion to determine the terms and conditions of Restricted Stock Units granted under the Plan. Restricted Stock Unit grants shall be subject to the

terms, conditions, and restrictions determined by the Administrator. The Administrator shall set vesting criteria in its discretion, which, depending on the extent to which the criteria are met, may determine the number of Restricted Stock Units that will be paid out to the Participant. The Administrator may set vesting criteria based upon the achievement of Performance Goals or any other basis determined by the Administrator in its discretion.

(c) Earning Restricted Stock Units. Upon meeting the applicable vesting criteria and any other terms and conditions, the Participant shall be entitled to receive a payout, in Shares, in cash or in a combination thereof, as specified in the Restricted Stock Unit Award Agreement.

(d) Form and Timing of Payment. Payment of vested Restricted Stock Units shall be made as soon as practicable after the date(s) set forth in the Restricted Stock Unit Award Agreement. The Administrator, in its sole discretion, but only as specified in the Award Agreement, may pay vested Restricted Stock Units in cash, Shares, or a combination thereof. If the Award Agreement is silent as to the form of payment, payment of the Restricted Stock Units may only be in Shares.

(e) Restricted Stock Unit Award Agreement. Each Restricted Stock Unit grant shall be evidenced by an Award Agreement that shall specify such terms and conditions as the Administrator, in its sole discretion, shall determine.

14. Performance Shares.

(a) Grant of Performance Shares. Subject to the terms and conditions of the Plan, Performance Shares may be granted to Participants at any time as shall be determined by the Administrator, in its sole discretion. Subject to Section 6 hereof, the Administrator shall have complete discretion to determine (i) the number of Shares subject to a Performance Share award granted to any Participant, and (ii) the conditions that must be satisfied. Performance Shares shall be granted in the form of units to acquire Shares.

(b) Other Terms. The Administrator, subject to the provisions of the Plan, shall have complete discretion to determine the terms and conditions of Performance Shares granted under the Plan. Performance Share grants shall be subject to the terms, conditions, and restrictions determined by the Administrator, which may include Performance Goals or such other performance-based milestones as are determined appropriate by the Administrator. Any certificates representing the Shares awarded shall bear such legends as shall be determined by the Administrator.

(c) Performance Share Award Agreement. Each Performance Share grant shall be evidenced by an Award Agreement that shall specify such terms and conditions as the Administrator, in its sole discretion, shall determine.

15. Dividend Equivalents.

(a) Grant of Dividend Equivalents. Subject to the terms and conditions of the Plan, Dividend Equivalents may be granted to Participants at any time as shall be determined by the Administrator, in its sole discretion. The Administrator may grant Dividend Equivalents to any Participant, and may do so either pursuant to an Award that is independent of any other Award, or through a provision in another Award that Dividend Equivalents attach to the Shares underlying the Award. The Administrator shall have complete discretion to determine (i) the number of Dividend Equivalents granted to any Participant, and (ii) the conditions that must be satisfied. Each Dividend Equivalent shall represent the right to receive amounts based on the dividends declared on Shares as of dividend payment dates during the term of the Dividend Equivalent as determined by the Administrator.

(b) Other Terms. The Administrator, subject to the provisions of the Plan, shall have complete discretion to determine the terms and conditions of Dividend Equivalents granted under the Plan. No Dividend Equivalents shall be paid to any Participant with respect to any unvested Award until such Award vests but this sentence shall not prohibit the payment of Dividend Equivalents attributable to the period while an Award was unvested to be paid upon or after the vesting of the Award. Dividend Equivalents shall generally be paid out on the (i) date dividends are paid to the Company's shareholders if the Award is vested and occurs on a stand-alone basis, and (ii) vesting or later settlement date for another Award if the Dividend Equivalent is granted as part of it. Payment of Dividend Equivalents may be in Shares, with cash paid in lieu of fractional Shares, provided that the Administrator may instead provide in an Award Agreement for cash settlement of all or part of the Dividend Equivalents. Only the Shares actually issued pursuant to Dividend Equivalents shall count against the limits set forth in Section 3 above.

(c) Dividend Equivalent Award Agreement. Each Dividend Equivalent grant shall be evidenced by an Award Agreement that shall specify such terms and conditions as the Administrator, in its sole discretion, shall determine.

16. Deferred Stock Units. Deferred Stock Units shall consist of a Restricted Stock, Restricted Stock Unit, Performance Share or Dividend Equivalent Awards that the Administrator, in its sole discretion permits to be paid out in installments or on a deferred basis, in accordance with rules and procedures established by the Administrator. Deferred Stock Units shall remain subject to the claims of the Company's general creditors until paid out to the Participant.

17. Non-Transferability of Awards. Except as determined otherwise by the Administrator in its sole discretion (but never a transfer in exchange for value), Awards may not be sold, pledged, assigned, hypothecated, transferred, or disposed of in any manner other than by will or by the laws of descent or distribution and may be exercised, during the lifetime of the Participant, only by the Participant, without the prior written consent of the Administrator. If the Administrator makes an Award transferable, such Award shall contain such additional terms and conditions as the Administrator deems appropriate.

18. Adjustments Upon Changes in Capitalization, Dissolution, Merger or Change in Control.

(a) Changes in Capitalization. Subject to any required action by the shareholders of the Company, the number of Shares covered by each outstanding Award, and the number of Shares which have been authorized for issuance under the Plan but as to which no Awards have yet been granted or which have been returned to the Plan upon cancellation or expiration of an Award, as well as the price per share of Common Stock covered by each such outstanding Award and the annual share limitations under Sections 6 hereof, shall be proportionately adjusted for any increase or decrease in the number of issued Shares resulting from a stock split, reverse stock split, stock dividend, combination or reclassification of the Common Stock, or any other increase or decrease in the number of issued Shares effected without receipt of consideration by the Company; provided, however, that conversion of any convertible securities of the Company shall not be deemed to have been "effected without receipt of consideration." Such adjustment shall be made by the Board, whose determination in that respect shall be final, binding and conclusive. Except as expressly provided herein, no issuance by the Company of shares of stock of any class, or securities convertible into shares of stock of any class, shall affect, and no adjustment by reason thereof shall be made with respect to, the number or price of Shares subject to an Award.

(b) Dissolution or Liquidation. In the event of the proposed dissolution or liquidation of the Company, the Administrator shall notify each Participant as soon as practicable prior to the effective date of such proposed transaction. The Administrator in its discretion may provide for a Participant to have the right to exercise his or her Option or SAR until such date prior to such transaction as determined by the Administrator as to all of the Awarded Stock covered thereby, including Shares as to which the Award would not otherwise be exercisable. In addition, the Administrator may provide that any Company repurchase option or forfeiture rights applicable to any Award shall lapse 100%, and that any Award vesting shall accelerate 100%, provided the proposed dissolution or liquidation takes place at the time and in the manner contemplated. To the extent it has not been previously exercised (with respect to Options and SARs) or vested (with respect to other Awards), an Award will terminate immediately prior to the consummation of such proposed action.

(c) Merger or Change in Control. In the event of the consummation of a merger or Change in Control, each outstanding Award will be assumed or an equivalent option or right substituted by the successor corporation or a Parent or Subsidiary of the successor corporation. In the event that the successor corporation does not assume or substitute for the Award, the Participant will fully vest in and have the right to exercise all of his or her outstanding Options and Stock Appreciation Rights, including Shares as to which such Awards would not otherwise be vested or exercisable, all restrictions on Restricted Stock and Restricted Stock Units will lapse, and, with respect to Awards with performance-based vesting, all performance goals or other vesting criteria will be deemed achieved at the greater of performance through the Change in Control or one hundred percent (100%) of target levels, and all other terms and conditions met (except, with respect to such performance-based vesting Awards, as is otherwise specified in the Award Agreement). In addition, if an Option or Stock Appreciation Right is not assumed or substituted in the event of a Change in Control, the Administrator will notify the Participant in writing or electronically that the Option or Stock Appreciation Right will be exercisable for a period of time determined by the Administrator in its sole discretion, and the Option or Stock Appreciation Right will terminate upon the expiration of such period.

For the purposes of this subsection (c), an Award will be considered assumed if, following the consummation of the Change in Control, the Award confers the right to purchase or receive, for each Share subject to the Award immediately prior to the

Change in Control, the consideration (whether stock, cash, or other securities or property) received in the Change in Control by holders of Common Stock for each Share held on the effective date of the transaction (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding Shares).

Notwithstanding anything in this Section 18(c) to the contrary, an Award that vests, is earned or paid out upon the satisfaction of one or more performance goals will not be considered assumed if the Company or its successor modifies any of such performance goals without the Participant's consent; provided, however, a modification to such performance goals only to appropriately and fairly reflect the successor corporation's post-Change in Control corporate structure will not be deemed to invalidate an otherwise valid Award assumption.

(d) Outside Director Awards. With respect to Awards granted to an Outside Director that are assumed or substituted for in a Change in Control or merger, if on the date of or following such assumption or substitution the Participant's status as a Director or a director of the successor corporation, as applicable, is terminated other than upon a voluntary resignation by the Participant (unless such voluntary resignation is at the request of the acquirer), then the Outside Director will immediately vest 100% in all such Awards.

19. Time of Granting Awards. The date of grant of an Award shall, for all purposes, be the date on which the Administrator makes the determination granting such Award or such later date as is specified by the Administrator.

20. Term of Plan. The Plan shall continue in effect until terminated by the Board; however, no Incentive Stock Option may be granted more than ten years from the date of the Plan's initial adoption by the Board.

21. Amendment and Termination of the Plan.

(a) Amendment and Termination. The Board may at any time amend, alter, suspend or terminate the Plan.

(b) Shareholder Approval. The Company shall obtain shareholder approval of any Plan amendment to the extent necessary and desirable to comply with Section 422 of the Code (or any successor rule or statute) or other Applicable Laws, including the requirements of any exchange or quotation system on which the Common Stock is listed or quoted. Such shareholder approval, if required, shall be obtained in such a manner and to such a degree as is required by Applicable Laws.

(c) Effect of Amendment or Termination. No amendment, alteration, suspension or termination of the Plan shall materially impair the rights of any Participant, unless mutually agreed otherwise between the Participant and the Administrator, which agreement must be accepted electronically or in writing and signed by the Participant and the Company, or unless required to comply with Applicable Laws.

22. Conditions Upon Issuance of Shares. Shares shall not be issued pursuant to the exercise of an Option or SAR or pursuant to any other Award unless the exercise of such Option or SAR and the issuance and delivery of such Shares pursuant thereto or the delivery of Shares pursuant to any other Award shall comply with all relevant provisions of Applicable Laws, including, without limitation, the Securities Act, the Exchange Act, the rules and regulations promulgated thereunder, state securities laws, and the requirements of any stock exchange upon which the Shares may then be listed, and shall be further subject to the approval of counsel for the Company with respect to such compliance.

As a condition to the exercise or payout, as applicable, of an Award, the Company may require the person exercising such Option or SAR, or in the case of another Award, the person receiving the Shares upon vesting, to render to the Company a written statement containing such representations and warranties as, in the opinion of counsel for the Company, may be required to ensure compliance with any of the aforementioned relevant provisions of law, including a representation that the Shares are being purchased only for investment and without any present intention to sell or distribute such Shares, if, in the opinion of counsel for the Company, such a representation is required.

23. Issuance of Shares. Inability of the Company to obtain authority from any regulatory body having jurisdiction, which authority is deemed by the Company's counsel to be necessary to the lawful issuance and sale of any Shares hereunder, shall relieve the Company of any liability in respect of the failure to issue or sell such Shares as to which such requisite authority shall not have been obtained.

24. Section 409A Compliance. Awards granted hereunder are intended to comply with the requirements of Section 409A of the Code to the extent Section 409A of the Code applies to such Awards, and any ambiguities in this Plan or Awards granted hereunder will be interpreted to so comply. The terms of the Plan and any Award granted under the Plan shall be interpreted, operated and administered in a manner consistent with the foregoing intention to the extent the Administrator deems necessary or advisable in its sole discretion. Notwithstanding any other provision in the Plan, the Administrator, to the extent it unilaterally deems necessary or advisable in its sole discretion, reserves the right, but shall not be required, to amend or modify the Plan and any Award granted under the Plan so that the Award qualifies for exemption from or complies with Section 409A of the Code; provided, however, that the Company makes no representation that the Awards granted under the Plan shall be exempt from or comply with Section 409A of the Code and makes no undertaking to preclude Section 409A of the Code from applying to Awards granted under the Plan.

25. Clawback. Awards granted under the Plan are subject to any applicable policy the Company may adopt from time to time regarding the recovery of incentive compensation and any additional clawback provisions as required by Applicable Laws including applicable listing standards. By accepting an Award, a Participant consents to the potential forfeiture or recovery of his or her Awards pursuant to Applicable Laws (including applicable listing standards) or Company clawback policy, and agrees to be bound by and comply with any such clawback policy, including returning the full amount required by the clawback policy, if applicable.

26. No Individual Rights. No individual or Participant shall have any claim to be granted any Award under the Plan, and the Company has no obligation for uniformity of treatment of Participants under the Plan.

Furthermore, nothing in the Plan or any Award granted under the Plan shall be deemed to constitute an employment contract or confer or be deemed to confer on any Participant any right to continue in the employ of, or to continue any other relationship with, the Company or any Parent or Subsidiary or limit in any way the right of the Company or any Parent or Subsidiary to terminate a Participant's employment or other relationship at any time, with or without cause.

27. No Rights as a Stockholder. Unless otherwise provided by the Administrator or in the Award Agreement, no Award shall entitle the Participant to any cash dividend, voting or other right of a stockholder unless and until the date of issuance under the Plan of the Shares that are the subject of such Award.

28. Participants in Other Countries or Jurisdictions. Without amending the Plan, the Administrator may grant Awards to Service Providers who are non-U.S. nationals on such terms and conditions different from those specified in the Plan as may, in the judgment of the Administrator, be necessary or desirable to foster and promote achievement of the purposes of the Plan and shall have the authority to adopt such modifications, procedures, subplans and the like as may be necessary or desirable to comply with provisions of the laws or regulations of other countries or jurisdictions in which the Company or any Parent or Subsidiary may operate or have employees to ensure the viability of the benefits from Awards granted to Participants employed in such countries or jurisdictions, meet the requirements that permit the Plan to operate in a qualified or tax-efficient manner, comply with Applicable Laws and meet the objectives of the Plan.

29. Successors. All obligations of the Company under the Plan with respect to Awards shall be binding on any successor to the Company, whether the existence of such successor is the result of a direct or indirect purchase, merger, consolidation, or otherwise, of all or substantially all the business or assets of the Company.

30. Choice of Law and Venue. The Plan, all Awards granted thereunder and all determinations made and actions taken pursuant hereto, to the extent not otherwise governed by the laws of the United States, shall be governed by the laws of the State of Delaware, without giving effect to principles of conflicts of law. Participants irrevocably consent to the nonexclusive jurisdiction and venue of the state and federal courts located in the State of Delaware.

APPENDIX A

- (a) “Administrator” means the Board or any of its Committees as shall be administering the Plan, in accordance with Section 4 of the Plan.
- (b) “Applicable Laws” means the legal requirements relating to the administration of equity compensation plans, including under applicable U.S. state corporate laws, U.S. federal and applicable state securities laws, other U.S. federal and state laws, rules, regulations and requirements, the Code, any stock exchange rules and regulations, and the applicable laws, rules, regulations and requirements of any other country or jurisdiction where Awards are granted or to which Awards are subject, as such laws, rules, regulations and requirements may be in place from time to time.
- (c) “Award” means, individually or collectively, a grant under the Plan of Incentive Stock Options, Nonstatutory Stock Options, Restricted Stock, Restricted Stock Units, Stock Appreciation Rights, Performance Shares, Deferred Stock Units or Dividend Equivalents or for service as a Director, cash-based amounts (including, without limitation, retainers).
- (d) “Award Agreement” means the written or electronic agreement setting forth the terms and provisions applicable to each Award granted under the Plan. The Award Agreement is subject to the terms and conditions of the Plan.
- (e) “Awarded Stock” means the Common Stock subject to an Award.
- (f) “Board” means the Board of Directors of the Company.
- (g) “Change in Control” means the occurrence of any of the following events:
- (i) A change in the ownership of the Company which occurs on the date that any one person, or more than one person acting as a group (“Person”), acquires ownership of the stock of the Company that, together with the stock held by such Person, constitutes more than fifty percent (50%) of the total voting power of the stock of the Company; provided, however, that for purposes of this subsection (i), the acquisition of additional stock by any one Person, who is considered to own more than fifty percent (50%) of the total voting power of the stock of the Company will not be considered a Change in Control; or
 - (ii) A change in the effective control of the Company which occurs on the date that a majority of members of the Board is replaced during any twelve (12) month period by Directors whose appointment or election is not endorsed by a majority of the members of the Board prior to the date of the appointment or election including, for this purpose as not being endorsed, any such individual whose initial assumption of office occurs as a result of an actual or threatened election contest with respect to the election or removal of Directors or other actual or threatened solicitation of proxies or consents by or on behalf of a person other than the Board. For purposes of this clause (ii), if any Person is considered to be in effective control of the Company, the acquisition of additional control of the Company by the same Person will not be considered a Change in Control; or
 - (iii) A change in the ownership of a substantial portion of the Company’s assets which occurs on the date that any Person acquires (or has acquired during the twelve (12) month period ending on the date of the most recent acquisition by such person or persons) assets from the Company that have a total gross fair market value equal to or more than fifty percent (50%) of the total gross fair market value of all of the assets of the Company immediately prior to such acquisition or acquisitions; provided, however, that for purposes of this subsection (iii), the following will not constitute a change in the ownership of a substantial portion of the Company’s assets: (A) a transfer to an entity that is controlled by the Company’s stockholders immediately after the transfer, or (B) a transfer of assets by the Company to: (1) a stockholder of the Company (immediately before the asset transfer) in exchange for or with respect to the Company’s stock, (2) an entity, fifty percent (50%) or more of the total value or voting power of which is owned, directly or indirectly, by the Company, (3) a Person, that owns, directly or indirectly, fifty percent (50%) or more of the total value or voting power of all the outstanding stock of the Company, or (4) an entity, at least fifty percent (50%) of the total value or voting power of which is owned, directly or indirectly, by a Person described in this subsection (iii)(B)(3). For purposes of this subsection (iii), gross fair market value means the value of the assets of the Company, or the value of the assets being disposed of, determined without regard to any liabilities associated with such assets.
- For purposes of this Section (g), persons will be considered to be acting as a group if they are owners of a corporation that enters into a merger, consolidation, purchase or acquisition of stock, or similar business transaction with the Company.
- (h) “Code” means the U.S. Internal Revenue Code of 1986, as amended.

- (i) "Common Stock" means the Common Stock of the Company.
- (j) "Committee" means the committee appointed by the Board of Directors or a sub-committee appointed by the Board's designated committee in accordance with Section 4(a) of the Plan, if one is appointed.
- (k) "Company" means Coherent, Inc. and its successors in interest.
- (l) "Consultant" means any person, including an advisor, engaged by the Company or a Parent or Subsidiary to render services and who is compensated for such services; provided, however, that the term "Consultant" shall not include Outside Directors, unless such Outside Directors are compensated for services to the Company other than pursuant to their services as a Director.
- (m) "Director" means a member of the Board.
- (n) "Dividend Equivalent" means a dividend equivalent Award granted to a Participant pursuant to Section 15.
- (o) "Employee" means any person, including Officers and Directors, employed by the Company or a Parent or Subsidiary of the Company or the Parent. An Employee shall not cease to be an Employee in the case of (i) any leave of absence approved by the Company or (ii) transfers between locations of the Company or between the Company, its Parent, any Subsidiary, or any successor. For purposes of Incentive Stock Options, no such leave may exceed ninety days, unless reemployment upon expiration of such leave is guaranteed by statute or contract. If reemployment upon expiration of a leave of absence approved by the Company is not so guaranteed, then three (3) months following the 91st day of such leave any Incentive Stock Option held by the Participant shall cease to be treated as an Incentive Stock Option and shall be treated for tax purposes as a Nonstatutory Stock Option.
- (p) "Exchange Act" means the U.S. Securities Exchange Act of 1934, as amended.
- (q) "Fair Market Value" means as of any date, the value of Common Stock determined in good faith by the Administrator.
- (r) "Fiscal Year" means a fiscal year of the Company.
- (s) "Incentive Stock Option" means an Option intended to qualify as an incentive stock option within the meaning of Section 422 of the Code.
- (t) "Nonstatutory Stock Option" means an Option not intended to qualify as an Incentive Stock Option.
- (u) "Officer" means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act and the rules and regulations promulgated thereunder, as determined by the Board.
- (v) "Option" means a stock option granted pursuant to the Plan.
- (w) "Optioned Stock" means the Common Stock subject to an Option.
- (x) "Outside Director" means a Director who is not an Employee or Consultant.
- (y) "Parent" means a "parent corporation", whether now or hereafter existing, as defined in Section 424(e) of the Code.
- (z) "Participant" means an Employee, Consultant or Outside Director who receives an Award.
- (aa) "Performance Goals" means the goal(s) (or combined goal(s)) determined by the Administrator (in its discretion) to be applicable to a Participant with respect to an Award. The performance measures for any performance period will be determined by the Administrator and may include any one or more of the following objective performance criteria or any other performance criteria determined by the Administrator and may be applied to either the Company as a whole or to a region, business unit, affiliate or business segment or any other measure determined by the Administrator, and measured either on an absolute basis, relative to a pre-established target or as a percentage of another Performance Goal, to a previous period's results or to a designated comparison group or any other basis determined by the Administrator, and, with respect to financial metrics, which may be determined in accordance with United States Generally Accepted Accounting Principles ("GAAP"), in accordance with accounting principles established by the International Accounting Standards Board ("IASB Principles") or which may be adjusted when established to exclude any items otherwise includable under GAAP or under IASB Principles or to include any items

otherwise excludable under GAAP or under IASB Principles or on any other basis determined by the Administrator: (i) cash flow (including operating cash flow or free cash flow), (ii) revenue (on an absolute basis or adjusted for currency effects), (iii) gross margin, (iv) operating expenses or operating expenses as a percentage of revenue, (v) earnings (which may include, without limitation, earnings before interest and taxes, earnings before taxes and net earnings or earnings before interest, taxes depreciation and amortization), (vi) earnings per share, (vii) stock price, (viii) return on equity, (ix) total stockholder return, (x) growth in stockholder value relative to the moving average of the S&P 500 Index or another index, (xi) return on capital, (xii) return on assets or net assets, (xiii) return on investment, (xiv) economic value added, (xv) operating profit or net operating profit, (xvi) operating margin, (xvii) market share, (xviii) contract awards or backlog, (xix) overhead or other expense reduction, (xx) credit rating, (xxi) objective customer indicators, (xxii) new product invention or innovation, (xxiii) attainment of research and development milestones, (xxiv) improvements in productivity, (xxv) attainment of objective operating goals, and (xxvi) objective employee metrics.

(bb) "Performance Share" means a performance share Award granted to a Participant pursuant to Section 14.

(cc) "Plan" means this Equity Incentive Plan, as amended.

(dd) "Restricted Stock" means a restricted stock Award granted to a Participant pursuant to Section 12.

(ee) "Restricted Stock Unit" means a bookkeeping entry denominated in units with respect to Shares, granted pursuant to Section 13. Each Restricted Stock Unit represents an unfunded and unsecured obligation of the Company.

(ff) "Service Provider" means an Employee, Consultant or Outside Director.

(gg) "Share" means a share of the Common Stock, as adjusted in accordance with Section 18 of the Plan.

(hh) "Stock Appreciation Right" or "SAR" means a stock appreciation right granted pursuant to Section 9 of the Plan.

(ii) "Subsidiary" means a "subsidiary corporation", whether now or hereafter existing, as defined in Section 424(f) of the Code.

(jj) "Substitute Award" means an Award granted in connection with a transaction in substitution, exchange, conversion, adjustment, assumption or replacement of awards previously granted by an entity acquired by the Company or a Subsidiary or with which the Company or a Subsidiary merges or otherwise combines.

(kk) "Tax-Related Items" means any income tax, social insurance contributions, payment on account, fringe benefit tax, employment tax, stamp tax and other tax-related items related to any Participant's participation in the Plan and legally applicable to such Participant.

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

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 September 28, 2019

or

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

Commission File Number: 001-33962

COHERENT, INC.

Delaware

(State or other jurisdiction of
incorporation or organization)

5100 Patrick Henry Drive, Santa Clara, California

(Address of principal executive offices)

94-1622541

(I.R.S. Employer
Identification No.)

95054

(Zip Code)

Registrant's telephone number, including area code: **(408) 764-4000**

Securities registered pursuant to Section 12(b) of the Act:

<u>Title of each class</u>	<u>Trading Symbol</u>	<u>Name of each exchange on which registered</u>
Common Stock, \$0.01 par value	COHR	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 every Interactive Data File required to be submitted 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 such files.) Yes No

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

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company
Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

As of November 22, 2019, 24,151,819 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 March 30, 2019) of Coherent, Inc., held by nonaffiliates was approximately \$2,125,907,991. 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 a conclusive determination for other purposes.

DOCUMENT INCORPORATED BY REFERENCE

Portions of the registrant's Proxy Statement for the registrant's 2020 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 September 28, 2019.

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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 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, including the timing and impact on fiscal 2020 revenues of recoveries in investments;
- any potential increase in future demand in the microelectronics flat panel display market;
- the timing of any buildout of OLED manufacturing capacity;
- the execution of two recently announced planned site consolidations: (1) the co-location of the manufacturing and engineering of our High Power Fiber Lasers (“HPFL”) products and the exit from a portion of our HPFL business in fiscal 2020, and (2) vacating our leased facility in Santa Clara and combining the operations at our Santa Clara headquarters in calendar 2020;
- effect of global economic conditions, including in particular resulting from U.S. and Chinese trade policies;
- capital spending;
- order volumes;
- fluctuations in backlog, including potential for cancellation or rescheduling of orders;
- variations in stock price;
- growth in our operations;
- trends in our revenues, particularly as a result of seasonality;

- 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, and potential synergies and benefits, including completion of post-acquisition integration and restructuring processes, in particular with respect to our acquisition of Rofin Sinar Technologies, Inc.;
- sales by geography;
- effect of legal claims;
- expectations regarding the payment of future dividends;
- effect of competition on our financial results;
- plans with respect to leases;
- compliance with standards;
- 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”.

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.

PART I

ITEM 1. BUSINESS

GENERAL

Business Overview

Our fiscal year ends on the Saturday closest to September 30. Fiscal years 2019, 2018 and 2017 ended on September 28, September 29, and September 30, respectively, and are referred to in this annual report as fiscal 2019, fiscal 2018 and fiscal 2017 for convenience. Each of fiscal 2019, 2018 and 2017 included 52 weeks.

We are one of the world's leading providers of lasers, laser-based technologies and laser-based system solutions in a broad range of commercial, industrial and scientific 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 reporting segments: OEM Laser Sources ("OLS") and Industrial Lasers & Systems ("ILS"), based on the organizational structure of the company and how the chief operating decision maker ("CODM") receives and utilizes information provided to allocate resources and make decisions. This segmentation reflects the go-to-market strategies and synergies for our broad portfolio of laser technologies and products. While both segments deliver cost-effective, highly reliable photonics solutions, the OLS business segment is focused on high performance laser sources and complex optical sub-systems typically used in microelectronics manufacturing, medical diagnostics and therapeutic applications, as well as in scientific research. Our ILS business segment delivers high performance laser sources, sub-systems and tools primarily used for industrial laser materials processing, serving important end markets like automotive, machine tool, consumer goods and medical device manufacturing.

Income from continuing operations is the measure of profit and loss that our CODM uses to assess performance and make decisions. Income from continuing 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 certain operating expenses to our operating segments and we manage them 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 MidCap 400 Index and the Russell 1000 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. 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

In June 2019, we announced our plans to co-locate the manufacturing and engineering of our High Power Fiber Lasers (“HPFL”) products at our Hamburg, Germany, facility to our Tampere, Finland, location and exit a portion of our HPFL business, expected to be completed during fiscal 2020. In conjunction with this announcement, we recorded restructuring charges in fiscal 2019 of \$19.7 million. The charges primarily relate to estimated severance and write-offs of excess inventory, which is recorded in cost of sales. See Note 18, “Restructuring Charges” in the Notes to Consolidated Financial Statements under Item 15 of this annual report.

We have also announced our intent to vacate our leased facility in Santa Clara at the end of the current lease term in calendar 2020 and combine operations at our Santa Clara headquarters. We did not incur material expenses in fiscal 2019 related to this project.

In April 2019, we announced that John Ambroseo will transition from being our President and Chief Executive Officer, a position he has served in since 2002, to a special advisor to the Company no later than April 2021.

In November 2018, we borrowed an additional \$40.0 million under our revolving credit facility (the “Revolving Credit Facility”) and subsequently repaid \$30.0 million of these borrowings in July 2019.

On October 28, 2018, our board of directors authorized a stock repurchase program for up to \$250.0 million of our common stock through December 31, 2019, with a limit of no more than \$75.0 million per quarter. During fiscal 2019, we repurchased and retired 603,828 shares of outstanding common stock under this program at an average price of \$128.20 per share for a total of \$77.4 million.

On October 5, 2018, we acquired privately held Ondax, Inc. (“Ondax”) for approximately \$12.0 million, excluding transaction costs. Ondax develops and produces photonic components which are used on an OEM basis by the laser industry as well as incorporated into its own stabilized lasers and Raman Spectroscopy systems. See Note 4, “Business Combinations” in the Notes to Consolidated Financial Statements under Item 15 of this annual report.

On October 5, 2018, we acquired certain assets of Quantum Coating, Inc. (“Quantum”) for approximately \$7.0 million, excluding transaction costs. See Note 4, “Business Combinations” in the Notes to Consolidated Financial Statements under Item 15 of this annual report.

On March 8, 2018, we acquired privately held O.R. Lasertechnologie GmbH and certain assets of its U.S.-based affiliate (collectively “OR Laser”) for approximately \$47.4 million, excluding transaction costs. OR Laser produces laser-based material processing equipment for a variety of uses, including additive manufacturing, welding, cladding, marking, engraving and drilling. See Note 4, “Business Combinations” in the Notes to Consolidated Financial Statements under Item 15 of this annual report.

On February 6, 2018, our board of directors authorized a stock repurchase program authorizing the Company to repurchase up to \$100.0 million of our common stock from time to time through January 31, 2019. During fiscal 2018, we repurchased and retired 574,946 shares of outstanding common stock under this program at an average price of \$173.91 per share for a total of \$100.0 million, thereby repurchasing the full amount authorized under this program.

During fiscal 2018, we made payments on our senior secured term loan facility (“Euro Term Loan”) of 141.7 million Euros, including voluntary payments of a total of 135.0 million Euros.

On November 7, 2016, we completed our acquisition of Rofin Sinar Technologies, Inc. (“Rofin”) pursuant to the Merger Agreement dated March 16, 2016. Rofin was 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 were required to divest and hold separate Rofin’s low power CO₂ laser business based in Hull, United Kingdom (the “Hull Business”), and

reported this business separately as a discontinued operation until its divestiture. We completed the divestiture of the Hull Business on October 11, 2017, after receiving approval for the terms of the sale from the European Commission. On April 27, 2018, we completed the sale of several entities that we acquired in our acquisition of Rofin. See Note 19, “Discontinued Operations and Sale of Assets Held for Sale” in the Notes to Consolidated Financial Statements under Item 15 of this annual report.

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.

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 own 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 microelectronics, flat panel displays, machine tool, automotive, 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, as in the conversion of amorphous silicon into poly crystalline silicon at low temperatures, where lasers are used in the manufacturing of high resolution rigid and flexible OLED displays found in the latest smart phones, tablets and laptop computers.

Key laser applications include: semiconductor inspection; manufacturing of advanced printed circuit boards (“PCBs”); flat panel display manufacturing; solar cell production; medical and bio-instrumentation; materials processing; metal 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 continuous 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.

Coherent occupies a unique position in the industry thanks to the breadth and depth of our product and technology portfolio, which includes laser sources, critical or enabling photonics components and laser systems. Working closely with our customers we have developed specialized solutions that include lasers, delivery and process optics in complete assemblies (sub-systems), and for certain applications and markets we have also developed parts handling and automation to build complete laser systems.

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.
- **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, such as costs related to our acquisition of Rofin. Key initiatives for EBITDA improvements include utilization of our Asian manufacturing locations, optimizing our supply chain and continued leveraging of our infrastructure.
- **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 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.

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 and Government Programs.

The following table sets forth, for the periods indicated, the percentages of total net sales by market application:

	<u>Fiscal 2019</u>	<u>Fiscal 2018</u>	<u>Fiscal 2017</u>
	<u>Percentage of total net sales</u>	<u>Percentage of total net sales</u>	<u>Percentage of total net sales</u>
Consolidated:			
Microelectronics	44.2%	54.5%	51.9%
Materials processing	28.3%	27.4%	29.7%
OEM components and instrumentation	18.6%	11.6%	11.8%
Scientific and government programs	8.9%	6.5%	6.6%
Total	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>

Microelectronics

Nowhere is the trend towards miniaturization and higher performance 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 consumer 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 primarily support three markets in the microelectronics industry: (1) flat panel display (“FPD”) manufacturing, (2) semiconductor front-end and (3) advanced packaging and interconnects (“API”).

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 in their manufacturing process to enable improved yields, higher process speed, improved battery life, lower cost and/or superior display brightness, resolution and refresh rates.

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. 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 based 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 and Linebeam systems. These systems deliver power ranges of 1200W to 3600W, depending on the system, enabling a critical manufacturing process step on substrate sizes up to Generation 6. These systems are integral to the manufacturing process on all leading LTPS-based smart phone displays and hold the potential for deployment in a variety of screens, including tablet, laptop, automotive displays and OLED TV. Excimer-based LTPS is also enabling flexible OLED displays which have undergone rapid growth as they have been adopted into smart phones.

A modern flat panel display incorporates a number of different layers, some of which are thin films that need to be cut or structured. As film thicknesses decrease over time, lasers are becoming the

tool of choice to process these materials. Our DIAMOND CO₂ and Rapid series ultrafast lasers are used for cutting FPD films.

We have developed a proprietary technology for cutting brittle materials such as glass and sapphire without debris and with zero kerf called SMART Cleave™, which is used for cutting brittle materials used in displays. This technology uses ultrafast lasers coupled with proprietary optics.

Our AVIA, Rapid, Monaco and DIAMOND CO₂ and CO lasers are also used in other production processes for FPDs. These processes include drilling, cutting, patterning, marking and yield improvement.

While the timing and adoption rate of an emerging display technology such as ‘micro’ LED (μLED) is still hard to gauge, it is likely to make use of both similar technologies such as a LTPS backplane, as well as new ones, e.g. new versions of laser lift-off (LLO) and laser induced forward transfer (LIFT). We expect that this will represent an expanding market opportunity into new display form factors for laser-based processes.

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.

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, Excimer, Ion and OPSL lasers are used to detect and characterize defects in semiconductor chips.

Microelectronics—advanced packaging and interconnects

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. This search includes new types of materials, such as low-k and thinner silicon. Our AVIA, Rapid, 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 blind 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 CO₂ and AVIA diode pumped solid state (“DPSS”) lasers are the leading lasers 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.

We also offer market-leading solutions for laser marking of wafers and ICs, such as our PowerLine laser sub-systems.

Materials Processing

We primarily support four markets in the materials processing industry: (1) automotive, (2) machine tool, (3) medical device and (4) consumer goods, as well a number of smaller markets. It is the most diverse of all the segments we serve and a large cross section of our products are used in this segment. Our sales in this segment include components, laser sources, laser diagnostic equipment and complete laser systems. At a high level, the drivers for laser deployment within the materials processing segment are faster processing with higher yields, processing of new and novel materials, more environmentally friendly processes and higher precision. With the broadest product portfolio in the laser industry, we offer solutions for almost any application on any material to our customers. The most common applications include cutting, welding, joining, drilling, perforating, scribing, engraving and marking.

Lasers are used in a number of applications in the automotive industry, from fine processing of high precision parts to marking, as well as cutting of metals and welding large components such as gear boxes and car bodies, for customers including OEMs and their suppliers. We serve this industry with a number of our products including ultrafast, DPSS, CO₂, diode and fiber lasers as well as systems in the areas of marking, scribing, cutting and welding.

We serve the machine tool market with components, laser sources and systems in applications including cutting, welding, marking and additive manufacturing. We offer fiber lasers with different performance points in terms of power levels and beam profiles to address specific applications, including single mode lasers and advanced beam shaping options, e.g. the ARM advanced high power fiber laser where the beam parameters can be optimized to deliver higher quality welds which translate into higher customer yields. As a fully vertically integrated fiber and laser diode supplier, we are able to produce all key components in-house. Other products include our full line up of CO₂ lasers, DPSS and ultrafast lasers. Additive manufacturing or 3D printing is another growing market where lasers have seen rapid growth. We serve this market with our Laser Creator product that is a selective laser melting (SLM) system for 3D printing of metal parts as well as a portfolio of systems.

The medical device market is characterized by its need for high precision manufacturing with high levels of quality control which lends itself very well to laser manufacturing. Applications include fine cutting and welding in addition to high quality and specialized marking. We serve this market with a number of lasers as well as a portfolio of systems.

In the consumer goods market, we serve a large variety of applications in various industries, such as packaging, digital printing, jewelry, textiles, security and consumer electronics. We serve these industries with a broad offering of our products from lasers to laser tools. As a consequence, this market represents a stable and growing opportunity for us.

In summary, we serve the materials processing segment with a very broad product portfolio. Laser sources include the Diamond series mid-power CO and CO₂ lasers; the DC series of high power CO₂ lasers; Highlight FL high power fiber lasers; the DF series of high power diode laser systems; the Diamond mid-power and Q-Switched fiber; the COMPACT, MINI and EVOLUTION series of low and mid power diode lasers; the AViA, Matrix, Flare, and Helios DPSS lasers; and the Monaco and Rapid series of ultrafast lasers. Laser tools include the Performance, Select and Integral series of manual welding systems; the Exact, UW and MPS series of modular and highly configurable laser processing

systems; the EasyMark, EasyJewel, LabelMarker Advanced and Combiline laser marking systems; the META laser cutting tools; and Laser Creator 3D metal printing system. Laser sub-systems, i.e. laser sources combined with software, beam delivery, processing heads, process monitoring, pattern recognition and vision, include the PowerLine series for marking; the StarFiber for welding and cutting; the PWS welding system; the QFS laser scribing system; and the StarShape CO₂ laser-based systems.

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, machine vision and defense and aerospace applications. We also support the laser-based instrumentation market with a range of laser-related components, including diode lasers and optical fibers. 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

Laser applications for bio-instrumentation include 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 where lasers provide 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; flow cytometry for analyzing single cells or populations of cells in a heterogeneous mixture, including blood samples; and Raman spectroscopy which enables chemical analysis in a wide range of commercial applications. 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 for use in end-user applications such as ophthalmology, aesthetic, surgical, therapeutic and dentistry. Our DIAMOND series CO₂ 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 and optical fibers for surgical applications.

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. 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.

Defense and aerospace

We serve the defense and aerospace markets with components and laser sources in a number of applications. In particular, directed energy has seen rapid growth in the last couple of years, driven largely by the promise of being able to deter and repel asymmetrical threats such as drones in an effective and economical manner. We supply both components and laser sources for directed energy applications. In addition, we have seen recent growth in demand for optics used in space and ground-based telescopes.

Scientific 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 Acuity, Chameleon, Chameleon Discovery, COMPexPro, Astrella, Revolution, Fidelity, Legend, Libra, Monaco, Vitara, Mephisto, Mira, Genesis 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 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, Fidelity and Monaco in microscopy is now a common occurrence in bio-imaging labs, and they have become a crucial tool in modern neuroscience research.

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 reduce production costs. We anticipate this trend to continue, driven primarily by the increasing sophistication and miniaturization of consumer electronic goods, resulting in increasing demand for better displays, more bandwidth and memory, and all packaged into devices which are lighter, thinner and consume less power. We believe that we are well positioned to continue to capitalize on the current market trends.

Excimer-based LTPS is a key technology for producing high resolution rigid and flexible OLED displays as well as future display technologies like μ LEDs.

Demand for CO₂, Avia, Matrix, Rapid, Monaco, Helios and direct diode lasers correlate with the need for related FPD touch panel, film cutting, light guide technology, repair and frit welding 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. 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, CO₂, Monaco and Rapid lasers together with our proprietary SmartCleave technology are well positioned to take advantage of this trend.

Semiconductor devices look set to continue shrinking device geometries, 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 OPSL) will continue to find increasing adoption, since their unique optical properties align well with the process demands of a nanometer scale world.

These same lasers, plus Monaco, Rapid, CO and CO₂ 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 scribe widths and wafer thickness, driven by developments such as 5G, we believe that our portfolio of lasers aligns well with these demands as well as new processes that could be enabled by our lasers, to meet the increasing demands and decreasing tolerances of these markets.

While we experienced a softening of the demand in fiscal 2019, we anticipate a resumption of investment in OLED manufacturing capacity. It is difficult to precisely determine the timing and impact of OLED investment on our fiscal 2020 and longer term revenues even as additional vendors ramp their OLED production rates.

Materials processing

The materials processing segment is the most diverse of all the segments we serve and a large cross section of our products are used in this segment. We sell components, laser sources and complete laser systems. There are many drivers at play, but at a high level they involve faster processing with higher yields, processing of new materials, more environmentally friendly processes and higher precision.

The automotive industry is undergoing rapid changes that present opportunities for further use of lasers. Trends such as reduction in emissions from lighter cars and electric vehicles require new materials and new processes for welding, cutting and drilling. We believe this will lead to further adoption of lasers and tools based on high power fiber and diode lasers, as well as ultrafast and CO₂ lasers. In particular, we believe our ARM laser technology offers competitive advantages versus alternative solutions.

We expect to see select opportunities for our products in the machine tool industry in a variety of broad-based applications including newer applications such as laser cladding and heat treatment.

In the consumer goods market, we serve a large variety of applications in various industries, such as packaging, digital printing, jewelry, textiles, security and consumer electronics. We serve these industries with a broad offering of our products from lasers to laser tools. As a consequence, this market represents a stable and growing opportunity for us.

We supply the medical device market with a variety of lasers and laser systems in applications such as fine cutting and welding as well as marking. This market is set to continue to grow in the foreseeable future as the population becomes older and advanced medical procedures spread outside the traditional markets in US, Europe and Japan.

In 3D printing we expect continued growth as the technology matures, particularly in the area of metal additive manufacturing where we supply SLM tools.

OEM components and instrumentation

The bio instrumentation market's most important areas: microscopy, flow cytometry and DNA sequencing, are all enjoying solid growth 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 as well as integrated laser sub-systems has resulted in growth for us in this market and we expect that to continue.

In the therapeutic area, we see stable 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. We also have opportunities in dental procedures for both hard and soft tissue

applications, with greatly improved patient comfort and outcome. In the area of photocoagulation, our Genesis OPSL yellow lasers are being used since the wavelength is particularly suitable for the treatment of blood vessels. We are an OEM supplier of CO₂ and semiconductor lasers to the major manufacturers of equipment used in the latest aesthetic procedures.

Governments have made and continue to make investments in the development of directed energy systems. We have a number of product offerings which support these development efforts.

Scientific and government programs

Worldwide scientific funding is expected to remain relatively stable, with some regions growing and others 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.

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.*

<u>Market</u>	<u>Application</u>	<u>Technology</u>
Microelectronics	Flat panel display	CO, CO ₂
		DPSS
		Excimer
	Semiconductor front-end	Ultrafast
		Semiconductor
		Laser Sub-systems
		CO ₂
		DPSS
		OPSL
Advanced packaging and interconnects	Excimer	
	Ion	
	Laser Sub-systems	
	CO, CO ₂	
	DPSS	
	Excimer	
	Ultrafast	
	Laser Sub-systems	

<u>Market</u>	<u>Application</u>	<u>Technology</u>
Materials processing	Automotive	CO ₂ Fiber Laser Systems/ Laser Sub-systems Ultrafast
	Machine Tool	CO ₂ Fiber DPSS Ultrafast Laser Systems/ Laser Sub-systems
	Medical Device	CO ₂ DPSS Fiber Ultrafast Excimer Laser Systems/ Laser Sub-systems Components
	Consumer Goods	CO CO ₂ Fiber DPSS Ultrafast Laser Systems/ Laser Sub-systems
OEM components and instrumentation	Bio-Instrumentation	DPSS OPSL Ultrafast Semiconductor
	Graphic arts and display	OPSL Semiconductor
	Medical therapy (OEM)	CO, CO ₂ DPSS Ultrafast Excimer OPSL Semiconductor Components
	Defense and aerospace	Semiconductor Fiber Components
Scientific and government programs	All scientific applications	CO, CO ₂ DPSS Excimer OPSL Ultrafast

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

In addition to the 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.

TECHNOLOGIES

Diode-pumped solid-state lasers (DPSS)

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 DPSS laser types for different applications including semiconductor inspection; advanced packaging and interconnects; laser pumping; spectroscopy; bio-agent detection; DNA sequencing; drug discovery; flow cytometry; entertainment lighting (display); medical; rapid prototyping and marking, welding, engraving, cutting and drilling.

Fiber Lasers, Fiber Components and Fiber Assemblies

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 manufacture differentiated fiber lasers that provide advantages and/or are enabling in certain applications. For example, our ARM laser offers dynamically adjustable beam profiles that improve welding results compared to standard fiber lasers and is able to weld new composite materials.

We are the world's leading OEM supplier of Active Fiber for fiber lasers—selected for our combination of high performance and consistent quality. In addition, we are a volume supplier of Specialty Passive Fiber, High Power Fiber Cables, Fiber Switches, Fiber-to-Fiber Couplers, amplifiers for directed energy applications and OEM Medical Fiber Assemblies. We produce our Medical assemblies in high volume in one of our ISO 13485 certified plants. In addition, many of the fiber components offered in the broader market, such as Fiber Bragg Gratings and Fiber Combiners, have our fiber components in them.

Gas lasers (CO, CO₂, Excimer, Ion)

The breadth of our gas laser portfolio is industry leading, encompassing CO, CO₂, 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, 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, therapeutics and graphic arts and display markets.

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, defense and industrial applications, including aesthetic (hair removal, cosmetic dentistry), graphic arts, counter measures, rangefinders, target designators, cladding, hardening, brazing and 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^{-12} 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 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.

Integrated Laser Solutions: Systems and Sub-systems

In most cases, our lasers are integrated into machine tools or systems to perform a specific task, e.g. manufacturing of electronic components or performing a procedure on a patient. Inside the system the laser is typically combined with delivery optics and beam steering devices, such as galvos, to deliver the laser beam to the workpiece. In addition to offering laser sources, we also offer solutions comprising beam delivery optics, mechanics and control electronics including software. We believe that these ‘sub-systems’ allow us to leverage our expertise in laser processing and optical design into superior solutions for our customers, with applications that can offer higher value and/or faster time to

market. We have developed proprietary hardware, firmware and software in this area. Laser sub-systems often include vision systems, process monitoring and monitoring of the system itself. Our sub-system products include: PowerLine series for marking; the StarFiber for welding and cutting; the PWS welding system; the QFS laser scribing system; and the StarShape CO₂ laser-based systems.

In select cases we also offer complete laser systems which include the laser sub-system as well as a material handling system inside a class 1 laser safety enclosure, ready to be used in production or development environments. Our laser systems products include: the Laser Creator 3D metal printing system; the Performance, Select and Integral series of manual welding systems; the Exact, UW and MPS series of modular and highly configurable laser processing systems; the EasyMark, EasyJewel, LabelMarker Advanced and Combiline laser marking systems; the META laser cutting tools; and the PWS mini welding system.

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, Israel, Germany, Italy, Japan, the Netherlands, China, South Korea, Taiwan, Singapore, Spain 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, China, Germany, Japan and other European and Asia-Pacific countries. Foreign sales accounted for 76% of our net sales in fiscal 2019, 84% of our net sales in fiscal 2018 and 83% of our net sales in fiscal 2017. 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 2019, 2018 and 2017.

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. The length of warranties offered on our products and services varies, but primarily ranges from 12 to 24 months. 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 in our reserve is approximately 15 to 18 months.

MANUFACTURING

Since the acquisition of Rofin in November 2016, we have integrated Rofin into our organizational structure and both legacy organizations are operating as one company with common high level objectives, goals and processes. Strategies are being implemented to improve operating leverage, to execute synergies and to enhance our customers' experience. For example, in June 2019, we announced

our plans to co-locate the manufacturing and engineering of our HPFL products at our Hamburg, Germany, facility to our Tampere, Finland, location and exit a portion of our HPFL business, expected to be completed during fiscal 2020. Common policies and guidelines have been communicated, key management and operating processes have been implemented and ERP systems at all of Rofin's sites in Asia and North America, and certain sites in Europe, have been integrated onto the same Oracle ERP and Agile planning platforms, consistent with the rest of Coherent. This integration process will continue into fiscal 2020.

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 maintaining high quality products and enable rapid development and deployment of new products and technologies. We provide customers with products manufactured at the highest level of quality, leveraging Coherent's quality processes that are 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. With the acquisition of Rofin, we now have a manufacturing footprint in Nanjing, China. We are transferring additional products and volume to Nanjing and have consolidated our China repair activities in that facility. We have significantly increased our tube refurbishment capacity and footprint in our South Korea operations, which has allowed us to reduce service response time and inventories, providing benefits to us and to our customers. We have also increased our sourcing of materials from Asia through our International Procurement Office in Singapore, which has enabled us to reduce material costs on a global basis.

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, optically pumped semiconductor laser product family and fiber component and fiber 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, used in our products, which make us susceptible to supply shortages or price fluctuations that could adversely affect our business, particularly our ability to meet our customers' delivery requirements."

Operations

Our products are manufactured at our sites in California, Oregon, Arizona, Michigan, New Jersey, Connecticut and New Hampshire in the U.S.; Germany, Scotland, Finland, Sweden, Switzerland and Spain in Europe; and South Korea, China, Singapore and Malaysia in Asia. 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 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 low power CO₂ and CO gas lasers are manufactured in Bloomfield, Connecticut. 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 sites in An-Seong, 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 manufacture and test high-power CO₂, solid-state and fiber laser macro products in Hamburg, Germany; Plymouth, Michigan; East Granby, Connecticut; Tampere, Finland; and Nanjing, China. Our laser marking products are manufactured and tested in Gilching-Munich, Germany; and Singapore. Our micro application products are manufactured and tested in Gilching-Munich, Germany; Tampere, Finland; Plymouth, Michigan; and Belp, Switzerland. Our diode laser products are manufactured and tested in Mainz and Freiburg, Germany; Tucson, Arizona; and Nanjing, China. Anodization of our Slab laser electrodes is performed in Overath, Germany. Our fiber optics and beam delivery systems are manufactured and tested in Molndal, Sweden, and power supplies are manufactured and tested in Starnberg-Munich, Germany. The Company's active and passive fibers and amplifiers are manufactured and tested in East Granby, Connecticut. Optical engines for fiber lasers, fiber lasers modules and wafer material are designed and manufactured in Tampere, Finland. We manufacture and test the laser tools for the Metal Additive Manufacturing (3D Printing) market in Dieburg, Germany. As a result of our acquisition of Ondax in the first quarter of fiscal 2019, we manufacture critical components for diode lasers in Monrovia, California.

We have transferred several products and subassemblies for manufacture and repairs to our Singapore, Malaysia and Nanjing, China facilities and are continuing to transfer additional product manufacturing to these facilities as part of our worldwide manufacturing cost reduction strategy.

Coherent is committed to meeting internationally recognized manufacturing standards. All of our legacy Coherent facilities are ISO 9001 certified and several facilities are ISO 13485, ISO 14001, ISO 17025 and/or ISO 50001 certified depending on the products designed and manufactured at that facility. Substantially all of our legacy Rofin facilities are either ISO 9001 certified or are in the process of being certified.

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 September 28, 2019, we held approximately 785 U.S. and foreign patents, which expire in calendar years 2019 through 2038 (depending on the

payment of maintenance fees) and we have approximately 225 additional pending patent applications that have been filed. The issued patents cover various products in all of the major markets that we serve.

Some of our products are designed to include intellectual property licensed from third parties. It may be necessary in the future to seek or renew licenses relating to aspects of our products, processes and services. While we have generally been able to obtain such licenses on commercially reasonable terms in the past, there is no guarantee that such licenses could be obtained on reasonable terms in the future or at all.

For a discussion of the importance to our business of, and the risks attendant to intellectual property rights, see “Risk Factors” in Item 1A—“If we are unable to protect our proprietary technology, our competitive advantage could be harmed” 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 IPG Photonics Corporation, Lumentum Holdings Inc., MKS Instruments, Inc., Novanta Inc., nLIGHT, Inc., II-VI Incorporated, Wuhan Raycus Fiber Laser Technologies Co., Ltd, and TRUMPF GmbH, as well as other smaller companies. In addition, from time to time our customers may also decide to vertically integrate and build their own photonics products. 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 2019 year-end, our backlog of orders scheduled for shipment (within one year) was \$502.1 million compared to \$759.9 million at fiscal 2018 year-end. By segment, backlog for OLS was \$309.5 million and \$488.8 million at fiscal 2019 and 2018 year-ends, respectively. Backlog for ILS was \$192.6 million and \$271.1 million at fiscal 2019 and 2018 year-ends, respectively. The decrease in OLS backlog from fiscal 2018 to fiscal 2019 year-end was primarily due to lower orders for excimer laser annealing systems for the flat panel display market. The decrease in ILS backlog from fiscal 2018 to fiscal 2019 year-end was primarily due to lower orders in the materials processing and high power fiber laser markets. Orders used to compute backlog are generally cancellable and, depending on the notice period, are subject to rescheduling by our customers. We have not historically experienced a significant rate of cancellation or rescheduling, however the rate of cancellations or rescheduling may increase in the future. In the first quarter of fiscal 2019, one customer cancelled three purchase orders which included orders shippable within 12 months from fiscal 2018 year-end of \$38.2 million and were included in backlog as of fiscal 2018 year-end. We reached agreement with this customer for compensation for such cancellation in the first quarter of fiscal 2019.

SEASONALITY

We have historically generally 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,

excluding certain recovery years, our first fiscal quarter revenues have ranged 2%-17% 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 2019 year-end, we had 5,184 employees. Approximately 642 of our employees are involved in research and development; 3,366 of our employees are involved in operations, manufacturing, service and quality assurance; and 1,176 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 October 5, 2018, we acquired privately held Ondax for approximately \$12.0 million, excluding transaction costs. Ondax develops and produces photonic components which are used on an OEM basis by the laser industry as well as incorporated into its own stabilized lasers and Raman Spectroscopy systems.

On October 5, 2018, we acquired certain assets of Quantum for approximately \$7.0 million, excluding transaction costs.

On March 8, 2018, we acquired privately held OR Laser for approximately \$47.4 million, excluding transaction costs. OR Laser produces laser-based material processing equipment for a variety of uses, including additive manufacturing, welding, cladding, marking, engraving and drilling.

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, for approximately \$936.3 million. Rofin's operating results have been included primarily in our Industrial Lasers & Systems segment.

Please refer to Note 4, "Business Combinations" of Notes to Consolidated Financial Statements under Item 15 of this annual report for further discussion of recent acquisitions completed.

RESTRUCTURINGS AND CONSOLIDATION

In the first quarter of fiscal 2017, we began the implementation of planned restructuring activities in connection with the acquisition of Rofin. The activities to date under this plan primarily related to exiting our legacy high power fiber laser product line, change of control payments to Rofin officers, the exiting of two product lines acquired in the acquisition of Rofin, realignment of our supply chain due to segment reorganization and consolidation of sales and distribution offices as well as certain manufacturing sites. These activities resulted in charges primarily for employee termination, other exit related costs associated with the write-off of property and equipment and inventory and early lease termination costs.

The fiscal 2018 severance related costs are primarily comprised of severance pay for employees being terminated due to the consolidation of certain manufacturing sites. The fiscal 2018 asset write-offs are primarily comprised of inventory and equipment write-offs due to the consolidation of certain manufacturing sites.

In June 2019, we announced our plans to co-locate the manufacturing and engineering of our HPFL products at our Hamburg, Germany, facility to our Tampere, Finland, location and exit a portion

of our HPFL business, expected to be completed during fiscal 2020. In conjunction with this announcement, we recorded restructuring charges in fiscal 2019 of \$19.7 million. The charges primarily relate to estimated severance and write-offs of excess inventory, which is recorded in cost of sales.

We plan to continue additional restructuring activities in fiscal 2020 related to the relocation of our HPFL products and our acquisition of Rofin. We have also announced our intent to vacate our leased facility in Santa Clara at the end of the current lease term in calendar 2020 and combine operations at our Santa Clara headquarters. We did not incur material expenses in fiscal 2019 related to this project.

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 face increasing complexity in our product design and procurement operations due to the evolving nature of environmental compliance regulations and standards, as well as specific customer compliance requirements. These regulations and standards have an impact on the material composition of our products entering specific markets. Such legislation has gone into effect at various time across the worldwide markets. For example, in the European Union (“EU”), the Restriction of the use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) went into effect in 2006, and was subsequently revised in 2011 (as RoHS 2) and again in 2015 (as RoHS 2 amended or commonly known as RoHS3) and came into in effect in July 2019. The Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) went into effect in 2007, and is updated with additional substances of very high concern (SVHC) every six months as well as restricted and authorized substances periodically. China enacted the Management Methods for Controlling Pollution Caused by Electronic Information Products Regulation (China-RoHS) in 2007, which was revised and renamed in 2016 as the Administrative Measures for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products (known as China RoHS 2). The first catalog of products under China RoHS 2 was published in March 2018 and covers primarily consumer type products and does not presently include Coherent products. Another example is the US Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Conflict Minerals Act) which requires manufacturers to provide disclosures about the use of specified conflict minerals emanating from the Democratic Republic of Congo and nine adjoining countries (Covered Countries). In addition to these regulations and directives, we may face costs and liabilities in connection with product take-back legislation. For example, beginning in 2006 (with several subsequent revisions), the EU Waste Electrical and Electronic Equipment Directive (WEEE) 2012/19/EU made producers of electrical goods financially responsible for specified collection, recycling, recovery, 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.”

Regulatory Compliance

Lasers that are manufactured or sold in the United States are classified under the applicable rules and regulations of the Center for Devices and Radiological Health (“CDRH”) of the U.S. Food and Drug Administration (“FDA”). A similar classification system is applied in the European markets.

CDRH regulations require a self-certification procedure pursuant to which a manufacturer must submit a filing to the CDRH with respect to each product incorporating a laser, make periodic reports of sales and purchases, and comply with product labeling standards, product safety and design features and informational requirements. The CDRH is empowered to seek fines and other remedies for violations of their requirements. We believe that our products are in material compliance with the applicable rules and regulations of CDRH relating to lasers manufactured or sold in the United States.

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.

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 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, particularly in China and the Eurozone;
- impact of government economic policies on macroeconomic conditions, such as recently instituted, proposed or threatened changes in trade policies by the U.S. and any corresponding retaliatory actions by affected countries, in particular with respect to China, and trade restrictions the Japanese government has recently instituted affecting the export to South Korea of certain products and materials used in the manufacture of flat panel displays and in the semiconductor industry;
- fluctuations in demand for our products or downturns in the industries that we serve, particularly the continued build-out of “phase 2” of the capacity for the manufacture of OLED and the increased use of the installed base of our products in such manufacturing;
- 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 of bookings and the timing of and our ability to ultimately convert bookings to net sales;
- the concentration of a significant amount of our backlog, and resultant net sales, with a few customers in the Microelectronics market;
- 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 U.S. Dollar as compared to other currencies;

- commodity pricing;
- interpretation and impact of the U.S. Tax Cuts and Jobs Act;
- introductions of new products and product enhancements by our competitors, entry of new competitors into our markets, pricing pressures and other competitive factors;
- the increasing focus by companies in China to vertically integrate and consolidate their supply chains fully with products manufactured in China;
- our ability to develop, introduce, manufacture and ship new and enhanced products in a timely manner without defects;
- our ability to manage our manufacturing capacity across our diverse product lines and that of our suppliers, including our ability to successfully expand our manufacturing capacity in various locations around the world;
- our ability to successfully and fully integrate acquisitions, such as the historical Rofin businesses, into our operations and management;
- our ability to successfully internally transfer the manufacturing of products and related operations as part of our integration and internal reorganization efforts and to realize anticipated benefits (including savings) therefrom, such as with our recently announced plan to co-locate the manufacturing and engineering of our High Power Fiber Lasers (“HPFL”) products at our Hamburg, Germany, facility to our Tampere, Finland, location and exit a portion of our HPFL business, expected to be completed during fiscal 2020;
- our reliance on contract manufacturing;
- our reliance in part upon the ability of our OEM customers to develop and sell systems that incorporate our laser products;
- our customers’ ability to manage their susceptibility to adverse economic conditions;
- 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, including the costs of acquiring businesses or technologies;
- seasonal sales trends, including with respect to Rofin’s historical business, which has traditionally experienced a reduction in sales during the first half of its fiscal year as compared to the second half of its fiscal year;
- jurisdictional capital and currency controls negatively impacting our ability to move funds from or to an applicable jurisdiction;
- access to applicable credit markets by us, our customers and their end customers;
- the impact of rising Chinese consumer debt and eroding consumer confidence and spending in China;
- 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;

- costs and timing of adhering to current and developing governmental regulations and reviews relating to our products and business, including import and export regulations in multiple jurisdictions;
- 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 and scientific research projects where we are a vendor directly or as 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;
- our ability and the ability of our contractual counterparts to comply with the terms of our contracts;
- 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;
- costs, expenses and damages arising from litigation;
- costs associated with designing around or payment of licensing fees associated with issued patents in our fields of business;
- individual employees intentionally or negligently failing to comply with our internal controls;
- government support of alternative energy industries, such as solar;
- negative impacts related to the "Brexit" vote by the United Kingdom, including uncertainties regarding the effects of an increasingly prolonged Brexit process and the possibility of a "no-deal" exit by the United Kingdom from the European Union, particularly with regard to any potential negative effects on our sales from our Glasgow, Scotland facility to other jurisdictions and purchases of supplies from outside the United Kingdom by such facility;
- negative impacts related to the recent independence movement in Catalonia, Spain, particularly with regard to holding and operating some of our foreign entities in an efficient manner from a tax, business and legal perspective;
- negative impacts related to government instability in any jurisdiction in which we operate, such as the recent difficulties in forming a governing coalition in Germany;
- the future impact of legislation, rulemaking, and changes in accounting, tax, defense procurement and export policies; and
- distraction of management related to acquisition, integration 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, 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, as well as on our own production capabilities, for some of the key components and materials, including exotic materials, certain cutting-edge optics and crystals, used in our products, which make us susceptible to 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. 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 and man-made 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 and in California. 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 non-cancellable purchase orders or otherwise assume liability for a large amount of the ordered supplies, which limits 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 that are at the cutting-edge of available technologies and change frequently to meet rapidly evolving market demands. By their very nature, the types of components used in such products can be difficult and unpredictable to manufacture and may only be available from a single supplier, which increases the risk that we may not obtain such components in a timely manner. Identifying alternative sources of supply for certain components could be difficult and costly, result in management

distraction in assisting our current and future suppliers to meet our and our customers' technical requirements, and cause delays in shipments of our products while we identify, evaluate and test the products of alternative suppliers. Any such delay in shipment would result in a delay or cancellation of our ability to convert such order into revenues. 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. Furthermore, we have historically relied exclusively on our own production capability to manufacture certain strategic components, crystals, semiconductor lasers, fiber, lasers and laser-based systems. We also 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 we face any significant periods with few or no orders or our customers reschedule or cancel orders.

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 2019, Advanced Process Systems Corporation, an integrator in the flat panel display market based in South Korea, contributed more than 10% of our revenue. Given macroeconomic conditions, varying consumer demand and technical process limitations at manufacturers, we may see fluctuations in orders, including periods with no or few orders, and our customers may seek to reschedule or cancel orders. For example, in the fourth quarter of fiscal 2018, a customer requested a change of delivery date resulting in a significant order being rescheduled from the first to the second quarter of fiscal 2019. In addition, in the first quarter of fiscal 2019, one customer cancelled three purchase orders which included backlog shippable within 12 months of \$38.2 million as well as some additional orders which were unscheduled.

These larger flat panel-related systems have large average selling prices. Any significant periods with few or no orders or 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 and rescheduled or cancelled orders by our customers. This could negatively impact our backlog, timing of net sales and results of operations.

As of September 28, 2019, flat panel display systems represented 25% of our backlog. Since our flat panel display systems have higher average selling prices than other products in our backlog, any delays or cancellation of shipments could have a material adverse effect on our financial results.

We may not be able to integrate the business of Rofin successfully with our own, realize the anticipated benefits of the merger or manage our expanded operations, any of which would adversely affect our results of operations.

We have devoted, and expect to continue to devote, significant management attention and resources to integrating our business practices with those of Rofin. Such integration efforts are costly due to the large number of processes, policies, procedures, locations, operations, technologies and systems to be integrated, including purchasing, accounting and finance, sales, service, operations, payroll, pricing, marketing and employee benefits. Integration expenses could, particularly in the short term, exceed the savings we expect to achieve from the elimination of duplicative expenses and the realization of economies of scale, which could result in significant charges to earnings that we cannot currently quantify. 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 (including different Enterprise Management Systems), control and compliance processes, technology, networks and other assets of each of the companies in a cohesive manner;
- diversion of the attention of our management;
- the disruption of, or the loss of momentum in, our business; and
- inconsistencies in standards, controls, procedures or policies.

Any of the foregoing 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. For example, in the fourth quarter of fiscal 2018, difficulties in implementing our Enterprise Management Systems at one of our manufacturing sites located in Germany, which was historically part of Rofin, resulted in a shortage of manufacturing parts and shippable inventory to meet demands, resulting in a reduction of revenue for that quarter. If similar difficulties arise in the future and we are unable to resolve them in a timely manner, we may experience a shortage of parts and inventory or otherwise be unable to meet demand, which could have a material adverse impact on our results of operations.

Following the merger, the size and complexity 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 has and will pose substantial challenges for management, including challenges related to the management and monitoring of new operations and associated increased costs and complexity. For example, we recently announced two planned site consolidations: (1) the relocation of the manufacturing and engineering of our HPFL products from our Hamburg, Germany, facility to our Tampere, Finland, location and the exit from a portion of our HPFL business, expected to be completed during fiscal 2020, and (2) vacating our leased facility in Santa Clara at the end of the current lease term in calendar 2020 and combining the operations at our Santa Clara headquarters. The execution of these consolidation projects could result in temporary loss of productivity or operational efficiency, interruptions in manufacturing or other unforeseen challenges while the projects are ongoing. Moreover, there can be no assurances that we will be successful in realizing the anticipated savings in connection with these consolidations or with our broader efforts to manage our expanded business or that we will realize the expected synergies and benefits anticipated from the merger.

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 have accounted for the Rofin acquisition using the purchase method of accounting. Under the purchase method of accounting, we allocated 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 was recorded as goodwill. We have incurred and will continue to 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 Rofin 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 a credit agreement (the "Credit Agreement"), which provided for a 670.0 million Euro term loan, all of which was drawn, and a \$100.0 million revolving credit facility, under which a 10 million Euro letter of credit was issued. As of September 28, 2019, 364.9 million Euros were outstanding under the term loan. As of September 28, 2019, the revolving credit facility had been used for guarantees of 10.0 million Euros as well as borrowings of \$10.0 million. We may incur additional indebtedness in the future by accessing the revolving credit facility 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 us and Coherent Holding BV & Co. K.G. (formerly Coherent Holding GmbH), judgment defaults, and bankruptcy and insolvency events. If an event of default exists, the lenders may require the immediate payment of all obligations and 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 as a result of the Rofin 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.

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 our excimer laser annealing tools used in the flat panel display market, 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.

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.

Worldwide economic conditions and related uncertainties 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 future sales decline or remain flat. Spending and the timing thereof by consumers and businesses have a significant impact on our results and, where such spending is delayed or cancelled, 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 continue to occur or recur, it would likely continue to, and may in the future, 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.

Financial turmoil affecting the banking system and financial markets, as has occurred 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 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, 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 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 and to manage our manufacturing capacity to meet customer demands. 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 or lower-cost products come to market, 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.

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

For fiscal 2019, 2018 and 2017, 76%, 84%, and 83%, respectively, of our net sales were derived from customers outside of the United States. 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. 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:

- compliance with applicable import/export regulations, tariffs and trade barriers, including recently instituted or proposed changes in trade policies by the U.S. and any corresponding retaliatory actions by affected countries, in particular with respect to China;
- longer accounts receivable collection periods;
- the impact of recessions and other economic conditions in economies outside the United States, including, for example, recent dips in the manufacturing Purchasing Managers' Index ("PMI") as well as the Institute of Supply Management ("ISM") data in the Eurozone, in particular in Germany;
- 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, such as the current situation between the governments of Japan and South Korea, which has led to the imposition of trade restrictions by the Japanese government affecting the export to South Korea of certain products and materials used in the manufacture of flat panel displays and in the semiconductor industry;
- compliance with applicable United States and foreign anti-corruption laws;
- less than favorable contract terms;
- reduced ability to enforce contractual obligations;
- 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 including, in particular, any such conflicts on the Korean peninsula, civil unrest and pandemic illness, any of 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.

If we are unable to protect our proprietary technology, our competitive advantage could be harmed.

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.

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 concluded patent-related litigation between IMRA America, Inc. ("Imra") and IPG Photonics Corporation and in Imra's concluded patent-related 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. In addition to paying possibly significant monetary damages, 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, or manage transitions among members of our leadership team, in particular the recently announced upcoming transition of our President and Chief Executive Officer, 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, which 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. In April 2019, we announced that John Ambroseo will transition from being our President and Chief Executive Officer, a position he has served in since 2002, to a special advisor to the Company no later than April 2021. In addition, we also announced that Paul Sechrist transitioned from being our Executive Vice President, Worldwide Sales and Service, a position he has served in since 2011, to a special advisor to our Chief Executive Officer at the end of fiscal 2019. We can provide no assurance that we will be able to find suitable successors to key roles such as these as transitions occur, in particular for the role of Chief Executive Officer, or that any identified successor will be successfully integrated into our management team. Our inability to do so, or to retain other key employees or effectively transition to their successors, or any delay in filling any such positions, 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 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 IPG Photonics Corporation, Lumentum Holdings Inc., MKS Instruments, Inc., Novanta Inc., nlight, Inc., II-VI Incorporated, Wuhan Raycus Fiber Laser Technologies Co., Ltd, 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. For example, in recent years there have been a growing number of companies in China that, in some cases aided by government subsidies, are targeting our markets and are exerting significant price pressure in certain of our product markets, in particular the HPFL products used in the metal cutting market in China. These companies will likely in the future be able to expand into broader product markets, which may result in additional competitive pressures on us. We may also 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. Such vertical integration could reduce the market opportunity for 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 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 Ondax in October 2018, OR Laser in March 2018 and 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.

We cannot assure you that our 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. As a public company our stock price fluctuates for a variety of different reasons, some of which may be related to broader industry and/or market factors. As a result, from time-to-time we may be subject to the risk of litigation

due to the fluctuation in stock price or other governance or market-related factors. 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.

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:

- interpretation and impact of the recently enacted and aforementioned U.S. tax law, the Tax Cuts and Jobs Act (the "Tax Act");
- changes in our current and future global structure based on the Rofin acquisition and restructuring that involved significant movement of U.S. and foreign entities and our ability to maintain favorable tax treatment as a result of various Rofin restructuring efforts and business activities;
- the outcome of discussions with various tax authorities regarding intercompany transfer pricing arrangements;
- changes that involve other acquisitions, restructuring or an increased investment in technology outside of the United States to better align asset ownership and business functions with revenues and profits;
- changes in the composition of earnings in countries or states with differing tax rates;
- the resolution of issues arising from tax audits with various tax authorities, and in particular, the outcome of the German tax audits of Coherent and Rofin tax returns for fiscal 2010-2016 and the appeals of the South Korean fiscal 2014-2017 tax audits through the Competent Authority process between South Korea, Germany and the United States;
- 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 other tax laws or the interpretation of such tax laws, including the Base Erosion Profit Shifting action plan implemented by the Organization for Economic Co-operation and Development; and
- changes in generally accepted accounting principles.

As indicated above, we are 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. 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 from the treatment reflected in our historical income tax provisions and accruals, which could materially and adversely affect our operating results and financial condition.

From time to time the United States, foreign and state governments make substantive changes to tax rules and the application of rules to companies. For example, the Tax Act has a significant impact on the taxation of Coherent including the U.S. tax treatment of our foreign operations. The Tax Act is subject to further interpretation by the U.S. federal and state governments and regulatory organizations, legislative updates or new regulations, or changes in accounting standards for income taxes. These actions may have a material impact on our financial results.

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 tariffs and duties, affecting the import or export of products could negatively affect our business, financial condition and results of operations.

The United States, Germany, the European Union, the United Kingdom, China, South Korea, Japan and many other 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 licenses or other approvals for our products, could harm our international and domestic sales and adversely affect our net sales.

The U.S. has recently instituted or proposed changes in trade policies that include the negotiation or termination of trade agreements, the imposition of higher tariffs on imports into the United States including, in particular, on Chinese goods, economic sanctions on individuals, corporations or countries and other government regulations affecting trade between the United States and other countries where we conduct our business. In addition, the Japanese government has recently instituted trade restrictions affecting the export to South Korea of certain products and materials used in the manufacture of flat panel displays and in the semiconductor industry. These policy changes and proposals could require time-consuming and expensive alterations to our business operations and may result in greater restrictions and economic disincentives on international trade, which could negatively impact our competitiveness in jurisdictions around the world as well as lead to an increase in costs in our supply chain. Given that we are a multinational corporation, with manufacturing located both in the United States and internationally, we may face additional susceptibility to negative impacts from these tariffs or change in trade policies regarding our inter-company trade practices. For example, we have recently seen a drop in export demand for our Chinese customers particularly in the materials processing space. As a result, some of these customers are reevaluating expansion plans and delaying and, in limited cases, cancelling orders. In addition, new tariffs and other changes in U.S. trade policy could trigger retaliatory actions by affected countries, and certain foreign governments, including the Chinese government (which has imposed retaliatory tariffs on a range of U.S. goods including certain photonics products), have instituted or are considering imposing trade sanctions on certain U.S. manufactured goods. Such changes by the United States and other countries have the potential to adversely impact U.S. and worldwide economic conditions, our industry and the global demand for our products, and as a result, could negatively affect our business, financial condition and results of operations.

As a multinational corporation, we may be subject to audits by tax, export and customs authorities, as well as other government agencies. For example, we were audited in South Korea for customs duties and value added tax for the period from 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 audits could lead to assessments that 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 and other international jurisdictions' export control restrictions may result in substantial expenses and diversion of management's attention. Any failure to adequately address these directives 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 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 and Leadership Change Severance Plan, may have anti-takeover effects that could prevent or delay a change in control.

Provisions of our certificate of incorporation and bylaws, as well as the terms of our Change of Control and Leadership Change Severance Plan, may discourage, delay or prevent a merger or acquisition, make a merger or acquisition more costly for a potential acquirer, 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 2019 year-end, our manufacturing locations were as follows (all acreage and square footage is approximate) (unless otherwise indicated, each property is utilized jointly by our two segments):

	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**
Richmond, CA(2)	several buildings totaling 68,635 square feet	Office, manufacturing, R&D	Leased through November 2022
Sunnyvale, CA(1)	24,159 square feet	Office, manufacturing, R&D	Leased through December 2023
Tucson, AZ(1)	13,369 square feet	Office, manufacturing, R&D	Leased through November 2023
Bloomfield, CT(1)	72,996 square feet	Office, manufacturing, R&D	Leased through December 2022

	Description	Use	Term*
East Granby, CT(1)	68,135 square feet	Office, manufacturing, R&D	Leased through January 2027
Plymouth, MI(1)	52,128 square feet	Office, manufacturing, R&D	Leased through May 2022
Salem, NH(1)	44,153 square feet	Office, manufacturing, R&D	Leased through October 2024
East Hanover, NJ(2)	29,932 square feet	Office, manufacturing, R&D	Leased through January 2025 (early exit planned)
Mount Olive, NJ(2)	88,000 square feet	Office, manufacturing, R&D	Leased through June 2028
Wilsonville, OR(2)	41,250 square feet	Office, manufacturing, R&D	Leased through December 2023
Tampere, Finland(1)	4.9 acres of land, 50,074 square feet	Office, manufacturing, R&D	Owned
Dieburg, Germany(1)	37,947 square feet	Office, manufacturing, R&D	Leased through January 2032
Freiburg, Germany(1)	12,686 square feet	Office, manufacturing, R&D	Leased through September 2024
Gilching, Germany(1)	4.2 acres of land, 184,869 square feet	Office, manufacturing, R&D	Owned
Göttingen, Germany(2)	14.2 acres of land, several buildings totaling 238,744 square feet	Office, manufacturing, R&D	Owned
Hamburg, Germany(1)	4.6 acres of land, 119,724 square feet	Office, manufacturing, R&D	Owned
Kaiserslautern, Germany(2)	33,740 square feet	Office, manufacturing, R&D	Leased through September 2020
Lübeck, Germany(2)	several buildings totaling 89,150 square feet	Office, manufacturing, R&D	Leased through March 2022
Lübeck, Germany(2)	7.4 acres of land	Future office, manufacturing, R&D	Owned
Mainz, Germany(1)	1.2 acres of land, 46,984 square feet	Office, manufacturing, R&D	Owned
Mainz, Germany(1)	71,342 square feet	Office, manufacturing, R&D	Leased primarily through September 2022
Overath, Germany(1)	20,236 square feet	Office, manufacturing, R&D	Leased through October 2022
Starnberg, Germany(1)	19,375 square feet	Office, manufacturing, R&D	Leased through May 2021
Glasgow, Scotland(2)	2.0 acres of land, 68,220 square feet	Office, manufacturing, R&D	Owned
Pamplona, Spain(1)	0.3 acres of land, 24,654 square feet	Office, manufacturing	Owned
Gothenburg, Sweden(1)	49,514 square feet	Office, manufacturing, R&D	Leased through August 2020

	Description	Use	Term*
Belp, Switzerland(1)	15,403 square feet	Office, manufacturing, R&D	Leased through February 2021
Nanjing, China(1)	51,122 square feet	Office, manufacturing, R&D	Leased through November 2023
Penang, Malaysia	21,356 square feet	Office, manufacturing	Leased through August 2020
Kallang Sector, Singapore . . .	42,723 square feet	Office, manufacturing	Leased through January 2022
Ansung, South Korea(1)	60,257 square feet	Office, manufacturing	Leased through September 2027

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

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

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

** We currently plan to vacate building at end of lease term.

We maintain other sales and service offices under varying leases expiring from fiscal 2020 through 2029 in the United States, Canada, Japan, China, Taiwan, South Korea, Vietnam, France, Italy, Germany, Belgium, Spain, Israel, 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 alleging patent infringement against two of our subsidiaries in the Regional Court of Düsseldorf, Germany. Our subsidiaries subsequently filed a separate nullity action with the Federal Patent Court in Munich, Germany, requesting that the court hold that the patent in question was invalid based on prior art. The court found the patent to be invalid, and Imra appealed the decision to the Federal Court of Justice, the highest civil jurisdiction court in Germany. The Federal Court of Justice dismissed the appeal on March 27, 2018, effectively ending the case in favor of Coherent. In addition, as of April 3, 2019, all of the involved courts had finalized the granting of costs and statutory attorneys’ fees to Coherent of an aggregate amount of approximately \$0.1 million. Imra has since paid this amount.

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 customs compliance, product classifications, duty calculations and payments are reviewed or audited by government agencies. Any adverse result in such a review or audit could negatively affect our results in the period in which they occur. For example, we are currently in discussions with the German government regarding an export compliance matter involving one of our German subsidiaries. We believe that this matter involves less than approximately 1.5 million Euros in transactions over the past three years and do not believe that the

final resolution of this matter will be material to our consolidated financial position, results of operations or cash flows. However, the German government investigation is ongoing and it is possible that substantial payments, fines, penalties or damages could result. Even though we do not currently expect this matter to be material to our consolidated financial position, results of operations or cash flows, circumstances could change as the investigation progresses.

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. Our most significant tax jurisdictions are the U.S. and Germany. For U.S. federal and German income tax purposes, all years prior to fiscal 2016 and 2010, respectively, are closed to examination. In our other major foreign jurisdictions and our major state jurisdictions, the years prior to fiscal 2013 and 2015, respectively, are closed. Earlier years in our various jurisdictions may remain open for adjustment to the extent that we have tax attribute carryforwards from those years.

In Germany, various Coherent and legacy Rofin entities are under audit for the years 2010 through 2016. The South Korean tax authorities also performed an audit focused on intercompany transfer pricing arrangements for fiscal years 2014 through 2017. In May 2019, the South Korean tax authorities issued transfer pricing assessments for taxes, royalties and sales commissions, which we are in the process of appealing and contesting through the Competent Authority process between South Korea, Germany and the United States. Accordingly, there is no change to our tax position at the time of filing of this annual report. We are continuing to monitor and evaluate this situation.

The timing and the resolution of income tax examinations is highly uncertain, and the amounts ultimately paid, if any, upon resolution of the issues raised by the taxing authorities may differ materially from the amounts accrued for each year. 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. Although the timing of resolution, settlement and closure of audits is not certain, we do not believe it is reasonably possible that our unrecognized tax benefits will materially change in the next 12 months.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

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

Our common stock is listed on the NASDAQ Global Select Market exchange with the ticker symbol of COHR.

The number of stockholders of record as of November 22, 2019 was 512. 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 2019.

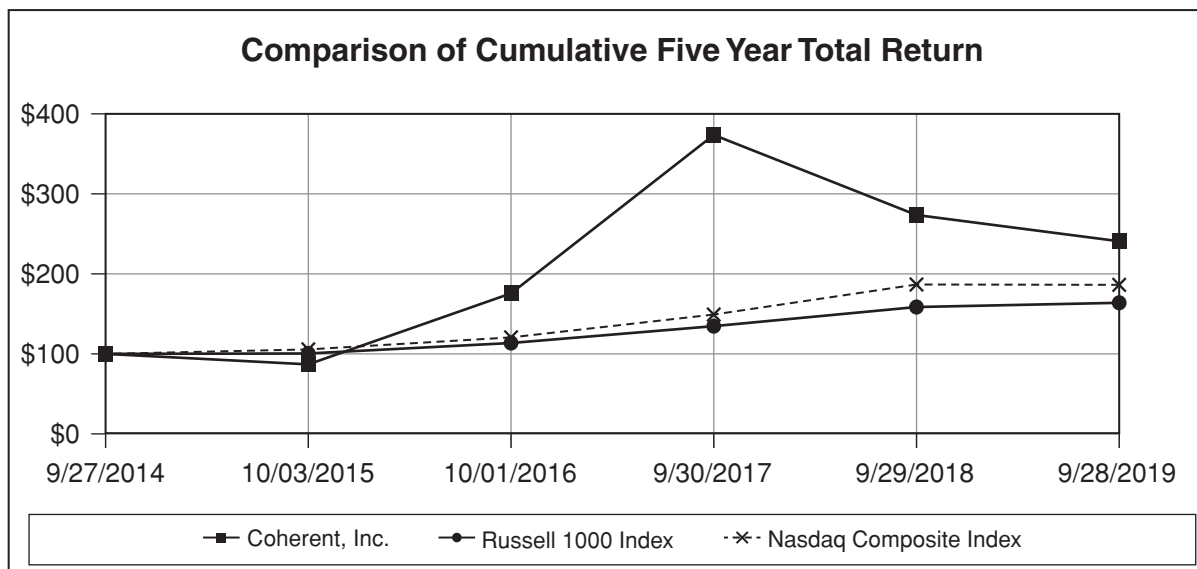
There were no stock repurchases during the fourth quarter of fiscal 2019.

Refer to Note 12 "Stock Repurchases" of our Notes to Consolidated Financial Statements under Item 15 of this annual report for discussion on repurchases during fiscal 2019 and 2018.

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 September 27, 2014 through September 28, 2019 comparing the return on our common stock with the Russell 1000 Index and the Nasdaq Composite Index. Prior to fiscal 2017, we were a member of the Russell 2000 Index and had historically included the Russell 2000 Index in this graph. During fiscal 2017, we moved to the Russell 1000 Index. Beginning with this annual report, we will only report our current Russell 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 1000 INDEX AND THE NASDAQ COMPOSITE INDEX.**



Company Name / Index	Base Period 9/27/2014	INDEXED RETURNS				
		Years Ending				
		10/3/2015	10/1/2016	9/30/2017	9/29/2018	9/28/2019
Coherent, Inc.	100	86.88	175.63	373.64	273.58	240.77
Russell 1000 Index	100	100.48	113.58	134.64	158.56	163.83
Nasdaq Composite Index	100	105.57	120.60	149.17	186.71	186.28

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.

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 2019, 2018 and 2017 and the consolidated balance sheet data as of fiscal 2019 and 2018 year-end from our audited consolidated financial statements, and accompanying notes, contained in this annual report. The consolidated statements of operations data for fiscal 2016 and 2015 and the consolidated balance sheet data as of

fiscal 2017, 2016 and 2015 year-end are derived from our audited consolidated financial statements which are not included in this annual report.

<u>Consolidated financial data</u>	<u>Fiscal 2019(1)</u>	<u>Fiscal 2018(2)</u>	<u>Fiscal 2017(3)</u>	<u>Fiscal 2016(4)</u>	<u>Fiscal 2015(5)</u>
	(in thousands, except per share data)				
Net sales	\$1,430,640	\$1,902,573	\$1,723,311	\$ 857,385	\$802,460
Gross profit	\$ 486,465	\$ 830,691	\$ 750,269	\$ 381,392	\$335,399
Net income from continuing operations .	\$ 53,825	\$ 247,360	\$ 208,644	\$ 87,502	\$ 76,409
Net income per share from continuing operations:					
Basic	\$ 2.23	\$ 10.07	\$ 8.52	\$ 3.62	\$ 3.09
Diluted	\$ 2.22	\$ 9.95	\$ 8.42	\$ 3.58	\$ 3.06
Shares used in computation:					
Basic	24,118	24,572	24,487	24,142	24,754
Diluted	24,279	24,851	24,777	24,415	24,992
Total assets*	\$2,083,169	\$2,259,969	\$2,337,800	\$1,161,148	\$968,947
Long-term obligations	\$ 392,238	\$ 420,711	\$ 589,001	\$ —	\$ —
Other long-term liabilities*	\$ 165,881	\$ 151,956	\$ 166,390	\$ 48,826	\$ 49,939
Stockholders' equity	\$1,284,736	\$1,314,464	\$1,163,264	\$ 910,828	\$796,418

* 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. This guidance superseded 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 2017, 2016 and 2015.

- (1) Includes \$16.0 million of after-tax restructuring charges, \$0.4 million of after-tax amortization of purchase accounting step-up, \$1.1 million of benefit from amounts received on a resolved asset recovery matter, \$1.7 million non-recurring income tax net expense and \$2.5 million of excess tax benefits for employee stock-based compensation.
- (2) Includes \$2.9 million of after-tax restructuring charges, \$0.8 million impairment and other charges, \$0.7 million of after-tax acquisition costs, \$0.6 million of after-tax amortization of purchase accounting step-up, \$26.7 million of tax charges due to the U.S. Tax Cuts and Jobs Act transition tax and deferred tax remeasurement, \$3.3 million tax charge due to an increase in valuation allowances against deferred tax assets and \$12.8 million of tax benefit from the adoption of new rules for accounting for excess tax benefits and tax deficiencies for employee stock-based compensation.
- (3) Includes \$19.0 million of after-tax amortization of purchase accounting step-up, \$17.4 million of after tax costs related to the acquisition of Rofin, \$8.4 million of after-tax restructuring charges, an after-tax charge of \$1.9 million for the impairment of net assets of several entities held for sale, \$1.8 million after-tax interest expense on the commitment of our term loan to finance the acquisition of Rofin, a \$7.1 million after-tax gain on our hedge of our foreign exchange risk related to the commitment of our term loan and the issuance of debt to finance the acquisition of Rofin, a \$3.4 million after-tax gain on our sale of previously owned Rofin shares and a benefit of \$1.4 million from the closure of R&D tax audits.

- (4) 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.
- (5) 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 a \$1.3 million gain on our purchase of Tinsley in the fourth quarter of fiscal 2015.

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 under Item 15 of 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."

We have applied the FAST Act Modernization and Simplification of Regulation S-K, which limits the discussion to the two most recent fiscal years. This discussion and analysis deals with comparisons of material changes in the consolidated financial statements for fiscal 2019 and fiscal 2018. For the comparison of fiscal 2018 and fiscal 2017, see the Management's Discussion and Analysis of Financial Condition and Results of Operations in Part II, Item 7 of our 2018 Annual Report on Form 10-K, filed with the Securities and Exchange Commission on November 27, 2018.

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 or liquidity that is calculated in accordance with generally accepted accounting principles.

	Fiscal	
	2019	2018
Net Sales—OEM Laser Sources	\$886,676	\$1,259,477
Net Sales—Industrial Lasers & Systems	\$543,964	\$ 643,096
Gross Profit as a Percentage of Net Sales—OEM Laser Sources	47.3%	52.7%
Gross Profit as a Percentage of Net Sales—Industrial Lasers & Systems	13.3%	26.7%
Research and Development Expenses as a Percentage of Net Sales	8.2%	7.0%
Income From Continuing Operations Before Income Taxes	\$ 60,048	\$ 361,555
Net Cash Provided by Operating Activities	\$181,401	\$ 236,111
Days Sales Outstanding in Receivables	67	67
Annualized Fourth Quarter Inventory Turns	2.1	2.2
Net Income From Continuing Operations as a Percentage of Net Sales	3.8%	13.0%
Adjusted EBITDA as a Percentage of Net Sales	18.1%	28.9%

Definitions and analysis of these performance indicators are as follows:

Net Sales

Net sales include sales of lasers, laser systems, related accessories and service. Net sales for fiscal 2019 decreased 29.6% in our OLS segment and decreased 15.4% in our ILS segment from fiscal 2018. 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 OLS decreased to 47.3% in

fiscal 2019 from 52.7% in fiscal 2018. Gross profit percentage for ILS decreased to 13.3% in fiscal 2019 from 26.7% in fiscal 2018. 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 increased to 8.2% in fiscal 2019 from 7.0% in fiscal 2018. 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 is 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 2019 remained unchanged at 67 days as compared to fiscal 2018.

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. Our annualized fourth quarter inventory turns for fiscal 2019 decreased to 2.1 turns from 2.2 turns in fiscal 2018 primarily as a result of a decrease in demand for sales of our large ELA tools, partially offset by the impact of lower inventories due to restructuring charges.

Adjusted EBITDA as a Percentage of Net Sales

We define adjusted EBITDA as operating income adjusted for depreciation, amortization, stock compensation expense, major restructuring costs and certain other non-operating income and expense items, such as costs related to our acquisitions. Key initiatives to reach our goals for EBITDA improvements include utilization of our Asian manufacturing locations, optimizing 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 from continuing operations as a percentage of net sales to our adjusted EBITDA as a percentage of net sales:

	Fiscal	
	<u>2019</u>	<u>2018</u>
Net income from continuing operations as a percentage of net sales . . .	3.8%	13.0%
Income tax expense	0.4%	6.0%
Interest and other income (expense), net	1.7%	1.9%
Depreciation and amortization	8.1%	6.0%
Purchase accounting step-up	—%	0.1%
Restructuring charges	1.6%	0.2%
Impairment (asset recoveries) and other charges	(0.1)%	—%
Stock-based compensation	2.6%	1.7%
Adjusted EBITDA as a percentage of net sales	<u>18.1%</u>	<u>28.9%</u>

SIGNIFICANT EVENTS

Restructuring

In June 2019, we announced our plans to co-locate the manufacturing and engineering of our High Power Fiber Lasers (“HPFL”) products at our Hamburg, Germany, facility to our Tampere, Finland, location and exit a portion of our HPFL business, expected to be completed during fiscal 2020. In conjunction with this announcement, we recorded restructuring charges in fiscal 2019 of \$19.7 million. The charges primarily relate to estimated severance and write-offs of excess inventory, which is recorded in cost of sales. See Note 18, “Restructuring Charges” in the Notes to Consolidated Financial Statements under Item 15 of this annual report for further discussion of the restructuring charges.

We have also announced our intent to vacate our leased facility in Santa Clara at the end of the current lease term in calendar 2020 and combine operations at our Santa Clara headquarters. We did not incur material expenses in fiscal 2019 related to this project.

Acquisitions, divestitures and related financing

On October 5, 2018, we acquired privately held Ondax, Inc. (“Ondax”) for approximately \$12.0 million, excluding transaction costs. Ondax develops and produces photonic components which are used on an OEM basis by the laser industry as well as incorporated into its own stabilized lasers and Raman Spectroscopy systems. See Note 4, “Business Combinations” in the Notes to Consolidated Financial Statements under Item 15 of this annual report for further discussion of the acquisition.

On October 5, 2018, we acquired certain assets of Quantum Coating, Inc. (“Quantum”) for approximately \$7.0 million, excluding transaction costs. See Note 4, “Business Combinations” in the Notes to Consolidated Financial Statements under Item 15 of this annual report for further discussion of the acquisition.

On April 27, 2018, we completed the sale of several entities that we acquired in the Rofin acquisition. See Note 19, “Discontinued Operations and Sale of Assets Held for Sale” in the Notes to

Consolidated Financial Statements under Item 15 of this annual report for further discussion of the divestiture.

On March 8, 2018, we acquired privately held O.R. Lasertechnologie GmbH and certain assets of its U.S.-based affiliate (collectively “OR Laser”) for approximately \$47.4 million, excluding transaction costs. OR Laser produces laser-based material processing equipment for a variety of uses, including additive manufacturing, welding, cladding, marking, engraving and drilling. See Note 4, “Business Combinations” in our Notes to Consolidated Financial Statements under Item 15 of this annual report for further discussion of the acquisition.

Stock Repurchases

On October 28, 2018, our board of directors authorized a stock repurchase program for up to \$250.0 million of our common stock through December 31, 2019, with a limit of no more than \$75.0 million per quarter. During fiscal 2019, we repurchased and retired 603,828 shares of outstanding common stock under this program at an average price of \$128.20 per share for a total of \$77.4 million.

On February 6, 2018, our board of directors authorized a stock repurchase program authorizing the Company to repurchase up to \$100.0 million of our common stock from time to time through January 31, 2019. During fiscal 2018, we repurchased and retired 574,946 shares of outstanding common stock under this program at an average price of \$173.91 per share for a total of \$100.0 million, thereby repurchasing the full amount authorized under this program.

RESULTS OF OPERATIONS—FISCAL 2019 AND 2018

Each of fiscal 2019 and fiscal 2018 consisted of 52 weeks.

Consolidated Summary

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

	Fiscal	
	2019	2018
	(As a percentage of net sales)	
Net sales	100.0%	100.0%
Cost of sales	66.0%	56.3%
Gross profit	34.0%	43.7%
Operating expenses:		
Research and development	8.2%	7.0%
Selling, general and administrative	19.0%	15.4%
Gain on business combination	—%	—%
Impairment and other charges	—%	—%
Amortization of intangible assets	1.0%	0.6%
Total operating expenses	28.2%	23.0%
Income from operations	5.8%	20.7%
Other income (expense), net	(1.6)%	(1.7)%
Income from continuing operations before income taxes	4.2%	19.0%
Provision for income taxes	0.4%	6.0%
Net income from continuing operations	3.8%	13.0%

Net income from continuing operations for fiscal 2019 was \$53.8 million (\$2.22 per diluted share). This included \$44.0 million of after-tax amortization of intangible assets, \$31.5 million of after-tax stock-based compensation expense, \$16.0 million of after-tax restructuring costs, \$0.4 million of after-tax amortization of purchase accounting step up, \$1.7 million non-recurring income tax net expense, \$2.5 million of excess tax benefits for employee stock-based compensation and \$1.1 million of benefit from amounts received on a resolved asset recovery matter.

Net income from continuing operations for fiscal 2018 was \$247.4 million (\$9.95 per diluted share). This included \$42.8 million of after-tax amortization of intangible assets, \$27.7 million of after-tax stock-based compensation expense, \$2.9 million of after-tax restructuring costs, \$0.7 million of after-tax acquisition costs, \$0.6 million of after-tax amortization of purchase accounting step up, \$0.8 million of impairment and other charges, \$25.5 million of a largely one time additional income tax expense due to the provisions of the U.S. Tax Cuts and Jobs Act, \$3.4 million of tax charges for valuation allowances and \$12.8 million of excess tax benefits for employee stock-based compensation.

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 cancellable and, depending on the notice period, are subject to rescheduling by our customers without substantial penalties. We have not historically experienced a significant rate of cancellation or rescheduling, however the rate of cancellations or rescheduling may increase in the future. In the first quarter of fiscal 2019, one customer cancelled three purchase orders which included \$38.2 million of orders shippable within 12 months of fiscal 2018 year-end and which was included in backlog as of fiscal 2018 year-end. We reached agreement with this customer for a cancellation fee of \$7.0 million in the first quarter of fiscal 2019.

We had a backlog of orders shippable within 12 months of \$502.1 million at September 28, 2019, including a significant concentration in the flat panel display market (25%) 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 2019		Fiscal 2018	
	Amount	Percentage of total net sales	Amount	Percentage of total net sales
Microelectronics	\$ 632,176	44.2%	\$1,036,354	54.5%
Materials processing	404,878	28.3%	520,904	27.4%
OEM components and instrumentation	266,788	18.6%	220,823	11.6%
Scientific and government programs	126,798	8.9%	124,492	6.5%
Total	<u>\$1,430,640</u>	<u>100.0%</u>	<u>\$1,902,573</u>	<u>100.0%</u>

During fiscal 2019, net sales decreased by \$471.9 million, or 25%, compared to fiscal 2018, with decreases in the microelectronics and materials processing markets, partially offset by increases in the OEM components and instrumentation market. Ondax, which we acquired on October 5, 2018, contributed \$6.4 million in incremental net sales to the materials processing market in the ILS segment in fiscal 2019. In fiscal 2019, we continued to experience weaker demand in the microelectronics and materials processing markets. Entering fiscal 2020, we have started seeing indications which could lead

to increased future demand in the microelectronics flat panel display market, but this is balanced by possible continuing headwinds in the global materials processing industry.

During fiscal 2019, microelectronics sales decreased \$404.2 million, or 39%, compared to fiscal 2018 primarily due to weaker demand resulting in lower shipments related to ELA tools used in the flat panel display market including lower revenues from consumable service parts, and was partially offset by a fee of \$7.0 million related to the cancellation of orders from one customer for our ELA tools. In microelectronics, we expect that ELA tools orders on hand and expected to be received in the first half of fiscal 2020 will be sufficient to cover our build plan for fiscal 2020. With recent public reports of new fab construction planned between now and 2023, we believe this may mark the beginning of “phase 2” in the next buildout of OLED manufacturing capacity, however the ultimate timing remains uncertain. Some of these new fabs are expected to produce flexible OLED, which also drives incremental investment in laser lift-off systems. In semiconductor applications within the microelectronics market, we expect semiconductor capital equipment spending to decline in fiscal 2020, but we believe we may outperform the market with increasing demand from internet connectivity (IoT) and automotive applications. In advanced packaging applications, we expect lower shipments in fiscal 2020 with the return to growth dependent on 5G mobile wireless network technology.

Materials processing sales decreased \$116.0 million, or 22%, during fiscal 2019 primarily due to decreased sales in marking, cutting and welding applications, primarily in China and Europe, and to a lesser extent in the United States. In fiscal 2019, our sales into the Chinese market were negatively impacted by tariffs on U.S. goods, macro trade discussions, increasing participation of Chinese laser manufacturers, and stronger price competition for fiber laser products in certain end markets. As a result of the fiber laser pricing pressures in China, we are now primarily focusing our production and selling efforts on markets and applications for our adjustable radial mode (“ARM”) based fiber laser products. Materials processing orders in fiscal 2019 decreased from the previous year, particularly in China where trade issues with the United States, including the desire to avoid tariff-inflated inventory, and weak domestic demand persist. In Europe, its largest economy, Germany, recently published their lowest PMI number in recent history and decreased its growth forecast to 1% for calendar year 2020. The global machine tool business has been particularly impacted due to lower spending in the automotive sector. We expect these issues to continue to negatively impact sales into the materials processing end market, but expect growth of medical device manufacturing in North America, Europe and China.

The increase in the OEM components and instrumentation market of \$46.0 million, or 21%, during fiscal 2019 was primarily due to higher sales for military, medical and bio-instrumentation applications. Within OEM components and instrumentation applications, we are seeing strong growth in directed-energy programs, with additional opportunities in target designation and countermeasures. We believe demand in the bio-instrumentation and medical markets remains strong with increased clinical adoption of cell-based therapies such as immuno-oncology and we have introduced a new subsystem that offers enhanced capabilities in a smaller footprint. We are also well-positioned in the cytometry and imaging markets and in the medical OEM business, we saw growth in dental, aesthetic and surgical consumables.

The increase in scientific and government programs market sales of \$2.3 million, or 2%, during fiscal 2019 was primarily due to higher demand for advanced research applications used by university and government research groups, particularly in the United States. We expect demand in the scientific and government programs market to continue to fluctuate from quarter to quarter.

The timing for shipments of our higher average selling price excimer products in the flat panel display market has historically fluctuated and is expected to continue to fluctuate from quarter-to-quarter due to customer scheduling, market conditions, 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.

We have historically generally 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, excluding certain recovery years, our first fiscal quarter revenues have ranged 2%-17% below the fourth quarter of the prior fiscal years.

In fiscal 2019 and 2018, one customer accounted for 17% and 26% of net sales, respectively.

Segments

We are organized into two reportable operating segments: OLS and ILS. While both segments deliver cost-effective, highly reliable photonics solutions, OLS is focused on high performance laser sources and complex optical sub-systems, typically used in microelectronics manufacturing, medical diagnostics and therapeutic applications, as well as in scientific research. ILS delivers high performance laser sources, sub-systems and tools primarily used for industrial laser materials processing, serving important end markets like automotive, machine tool, consumer goods and medical device manufacturing.

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 2019		Fiscal 2018	
	Amount	Percentage of total net sales	Amount	Percentage of total net sales
OEM Laser Sources (OLS)	\$ 886,676	62.0%	\$1,259,477	66.2%
Industrial Lasers & Systems (ILS) . .	543,964	38.0%	643,096	33.8%
Total	<u>\$1,430,640</u>	<u>100.0%</u>	<u>\$1,902,573</u>	<u>100.0%</u>

Net sales for fiscal 2019 decreased \$471.9 million, or 25%, compared to fiscal 2018, with decreases of \$372.8 million, or 30%, in our OLS segment and decreases of \$99.1 million, or 15%, in our ILS segment. The fiscal 2019 decreases in both OLS and ILS segment sales included decreases due to the unfavorable impact of foreign exchange rates.

The decrease in our OLS segment sales in fiscal 2019 was primarily due to weaker demand resulting in lower shipments of ELA tools used in the flat panel display market and lower revenues from consumable service parts.

The decrease in our ILS segment sales from fiscal 2018 to fiscal 2019 was primarily due to lower sales for materials processing and microelectronics applications, partially offset by higher sales for medical and military applications within the OEM components and instrumentation market.

Gross Profit

Consolidated

Our gross profit percentage decreased by 9.7% to 34.0% in fiscal 2019 from 43.7% in fiscal 2018. The decrease included a 1.1% unfavorable impact primarily related to the write-off of inventories and severance costs due to our exit from a portion of our HPFL business in Hamburg, Germany. The

decrease also included an 0.7% unfavorable impact of higher amortization of intangibles due to our acquisition of OR Laser in the second quarter of fiscal 2018 and Ondax in the first quarter of fiscal 2019, as well as the impact of lower sales partially offset by the favorable impact of foreign exchange rates. Excluding the 1.8% unfavorable impact of the restructuring charges and higher amortization of intangibles, gross profit percentage decreased 7.9% compared to fiscal 2018 primarily due to unfavorable product margins (4.6%), higher other costs (2.2%) and higher warranty and installation costs (1.0%) as a percentage of sales. The unfavorable product margins were in both segments and were primarily due to the impact from the unfavorable absorption of manufacturing costs on lower volumes and unfavorable mix from lower shipments of higher margin ELA tools and consumable service parts used in the flat panel display market, partially offset by the 0.3% favorable impact of a fee of \$7.0 million related to the cancellation of orders from one customer for our ELA tools. Product costs were also impacted by the unfavorable mix in shipments for several applications in our ILS segment, partially offset by the favorable impact on costs due to the weaker Euro. Other costs were higher primarily due to higher inventory provisions for excess and obsolete inventory and higher duty expenses in certain business units as a percentage of sales including the impact of lower sales volumes. The higher warranty and installation costs were in our ILS segment and included higher warranty events with the largest impact from fiber lasers, primarily sold into China, as well as the impact of lower sales volumes.

Our gross profit percentage has been and will continue to be affected by a variety of factors including shipment volumes, product mix, pricing on volume orders, 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.

OEM Laser Sources

Our OLS gross profit percentage decreased by 5.4% to 47.3% in fiscal 2019 from 52.7% in fiscal 2018 primarily due to unfavorable product margins (4.0%) as a result of unfavorable absorption of manufacturing costs on lower volumes and lower shipments of higher margin flat panel display systems as well as higher other costs (1.5%) due to higher inventory provisions for excess and obsolete inventory in certain business units and higher freight and duty costs as a percentage of sales. The lower margins within the flat panel display systems market included the unfavorable impact of lower shipments of ELA tools and consumable service parts, partially offset by the 0.4% favorable impact of a fee of \$7.0 million related to the cancellation of orders from one customer for our ELA tools and the favorable impact of the weaker Euro. Partially offsetting the decrease in gross profit percentage was the 0.1% favorable impact of lower warranty costs due to fewer warranty events in the microelectronics market net of the unfavorable impact of lower sales.

Industrial Lasers & Systems

Our ILS gross profit percentage decreased by 13.4% to 13.3% in fiscal 2019 from 26.7% in fiscal 2018. The decrease included a 2.9% unfavorable impact primarily related to the write-off of inventories and severance costs due to our exit from a portion of our HPFL business in Hamburg, Germany. The decrease also included the 1.2% unfavorable impact of higher amortization of intangibles due to our acquisition of OR Laser in the second quarter of fiscal 2018 and Ondax in the first quarter of fiscal 2019 as well as the impact of lower sales, partially offset by the favorable impact of foreign exchange rates. Excluding the 4.1% unfavorable impact of the restructuring charges and purchase accounting adjustments, gross profit percentage decreased 9.3% compared to fiscal 2018 primarily due to unfavorable product costs (3.5%) including unfavorable absorption of manufacturing costs on lower

volumes over multiple products and higher other costs (3.3%) including higher inventory provisions for excess and obsolete inventory and higher shipping and duty charges as a percentage of sales. In addition, gross profit percentage was unfavorably impacted (2.5%) by higher warranty events particularly for our HPFL and global tools products sold in China.

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 2019		Fiscal 2018	
	Amount	Percentage of total net sales	Amount	Percentage of total net sales
	(Dollars in thousands)			
Research and development	\$117,353	8.2%	\$132,586	7.0%
Selling, general and administrative	272,257	19.0%	293,632	15.4%
Impairment and other charges	—	—%	766	—%
Amortization of intangible assets	13,760	1.0%	10,690	0.6%
Total operating expenses	<u>\$403,370</u>	<u>28.2%</u>	<u>\$437,674</u>	<u>23.0%</u>

Research and development

Fiscal 2019 research and development (“R&D”) expenses decreased \$15.2 million, or 11%, from fiscal 2018, but increased to 8.2% of sales, compared to 7.0% in fiscal 2018. The decrease in R&D expenses was primarily due to \$15.2 million lower spending on headcount and materials, higher customer reimbursements and the favorable impact of foreign exchange rates (primarily the weaker Euro). The lower headcount spending included lower variable compensation, the impact of headcount reductions and higher savings from company holiday shutdowns (two holiday shutdown periods in fiscal 2019 versus one in fiscal 2018) partially offset by restructuring costs for severance due to our exit from a portion of our HPFL business in Hamburg, Germany. R&D expenses also decreased \$0.8 million as a result of lower charges for increases in deferred compensation plan liabilities and by \$0.3 million as a result of lower stock-based compensation. Partially offsetting these decreases, R&D expenses increased \$1.1 million in incremental spending due to expenses incurred by OR Laser, which we acquired in the second quarter of fiscal 2018, and Ondax, which we acquired in the first quarter of fiscal 2019.

On a segment basis as compared to fiscal 2018, OLS R&D spending decreased \$3.4 million in fiscal 2019 primarily due to lower net spending on headcount and materials, higher customer reimbursements and the favorable impact of foreign exchange rates. ILS R&D spending decreased \$5.7 million primarily due to lower net spending on headcount and materials, higher customer reimbursements and the favorable impact of foreign exchange rates, partially offset by higher restructuring costs for severance and the acquisitions of OR Laser and Ondax. Corporate and other R&D spending decreased \$6.1 million primarily due to lower headcount spending in our Advanced Research Business unit, lower charges for increases in deferred compensation plan liabilities and lower stock-based compensation.

Selling, general and administrative

Fiscal 2019 selling, general and administrative (“SG&A”) expenses decreased \$21.4 million, or 7%, from fiscal 2018. The decrease was primarily due to \$12.8 million lower spending on headcount due to lower variable compensation, the favorable impact of foreign exchange rates, higher savings from company holiday shutdowns and the impact of lower headcount offset by higher restructuring and other

severance costs. SG&A expenses also decreased due to \$11.7 million lower variable spending and \$2.8 million lower charges for increases in deferred compensation plan liabilities. The lower variable spending includes lower spending on legal, consulting and infrastructure related to integration activities, acquisitions and compliance with the terms of our credit agreement (the “Credit Agreement”), the favorable impact of foreign exchange rates and a \$1.3 million benefit from amounts received on a resolved asset recovery matter, partially offset by higher bad debt expense of \$3.1 million for specific customers primarily located in Asia and Europe. The decreases were offset by \$3.5 million higher stock-based compensation expense and \$2.4 million higher incremental spending due to expenses incurred by OR Laser, which we acquired in the second quarter of fiscal 2018, and Ondax, which we acquired in the first quarter of fiscal 2019.

On a segment basis as compared to fiscal 2018, OLS SG&A expenses decreased \$10.5 million primarily due to lower spending on variable compensation, lower other variable spending and the favorable impact of foreign exchange rates. ILS SG&A spending decreased \$6.3 million primarily due to lower variable compensation, lower spending on benefits and salaries, the favorable impact of foreign exchange rates and lower other variable spending, partially offset by the acquisitions of OR Laser and Ondax. Corporate and other SG&A spending decreased \$4.6 million primarily due to lower charges for the deferred compensation plan, lower variable compensation, and lower spending on legal, consulting and infrastructure related to integration activities, acquisitions and compliance with the terms of the Credit Agreement, all of which was partially offset by higher stock-based compensation expense.

Impairment and other charges

In the fourth quarter of fiscal 2017, management decided to sell several entities that were acquired in the Rofin acquisition. Although the sale was not completed as of the end of fiscal 2017, we recorded a non-cash impairment charge of \$2.9 million to operating expense in our results of operations in the fourth quarter of fiscal 2017 to reduce our carrying value in these entities to fair value. We completed the sale of these entities on April 27, 2018. In fiscal 2018, we recorded additional charges of \$0.3 million related to the impairment and sale of these entities. See Note 19, “Discontinued Operations and Sale of Assets Held for Sale” in the Notes to Consolidated Financial Statements under Item 15 of this annual report for further discussion. In addition, in fiscal 2018, we recorded impairment charges of \$0.5 million to reduce the carrying value of a building to its fair value.

Amortization of intangible assets

Amortization of intangible assets increased \$3.1 million, or 29%, from fiscal 2018 to fiscal 2019 primarily due to the acceleration of amortization for an abandoned in-process research and development project (\$4.7 million) due to our decision in the third quarter of fiscal 2019 to exit from a portion of our HPFL business in Hamburg, Germany, and amortization of intangibles related to our acquisitions of Ondax and Quantum assets in the first quarter of fiscal 2019. The increases were partially offset by the favorable impact of foreign exchange rates and the completion of the amortization of certain intangibles from acquisitions.

Other income (expense), net

Other income (expense), net, changed by \$8.4 million to other expense of \$23.0 million in fiscal 2019 from other expense of \$31.5 million in fiscal 2018. The lower expenses were primarily due to \$6.7 million lower interest expense and \$5.5 million lower foreign exchange losses, partially offset by \$3.7 million lower gains, net of expenses, on our deferred compensation plan assets and \$0.9 million higher expense from the non-service portion of periodic pension costs. Interest expense decreased primarily due to lower amortization of bond issue costs related to our Euro senior secured term loan facility (the “Euro Term Loan”) and lower interest on the Euro Term Loan due to voluntary additional

payments of principal and an interest rate reduction in fiscal 2018, partially offset by higher interest expense on line of credit borrowings made in the first quarter of fiscal 2019.

Income taxes

On December 22, 2017, the Tax Cuts and Jobs Act (the “Tax Act”) was enacted. The Tax Act changes are broad and complex. We elected to pay the one-time transition tax calculated under the Tax Act over a period of up to eight years. There may be an ongoing impact of the Tax Act due to changes in interpretations of the Tax Act, any legislative action to address questions that arise because of the Tax Act and any changes in accounting standards for income taxes. Additionally, long-standing international tax policies that determine each country’s jurisdiction to tax cross-border international trade are evolving as a result of the Base Erosion and Profit Shifting reporting requirements implemented by the Organization for Economic Co-operation and Development. As these tax laws and regulations change, our future financial results could be materially impacted. Based on the unpredictability of these possible changes, it is very difficult to assess whether the overall effect of such potential tax changes would be cumulatively positive or negative for our earnings and cash flow. Such changes could, however, adversely impact our financial results.

The effective tax rate on income from continuing operations before income taxes for fiscal 2019 of 10.4% was lower than the U.S. federal tax rate of 21.0% primarily due to the tax benefit from losses of our German subsidiaries, which are subject to higher tax rates than U.S. tax rates, adjustments related to the Tax Act’s transition tax, the net excess tax benefits from restricted stock unit vesting, the benefit of federal research and development tax credits and our Singapore and South Korea tax exemptions. These amounts were partially offset by an accrual for foreign withholding taxes on certain current year foreign earnings not considered permanently reinvested, stock-based compensation not deductible for tax purposes and limitations on the deductibility of compensation under Internal Revenue Code (“IRC”) Section 162(m).

The effective tax rate on income from continuing operations before income taxes for fiscal 2018 of 31.6% was higher than the effective U.S. federal blended tax rate of 24.5% primarily due to the Tax Act’s one-time mandatory deemed repatriation transition tax, the impact of income subject to foreign tax rates that are higher than the U.S. tax rates, the remeasurement of deferred tax assets and liabilities based on the newly enacted U.S. federal tax rate of 21.0%, an accrual for foreign withholding taxes and state income taxes on certain foreign earnings not considered permanently reinvested, stock-based compensation not deductible for tax purposes and limitations on the deductibility of compensation under IRC Section 162(m). These amounts are partially offset by the excess tax benefits from stock award exercises and restricted stock unit vesting, the benefit of foreign tax credits, the benefit of federal research and development tax credits, the benefit of a domestic manufacturing deduction under IRC Section 199 and the Singapore tax exemption.

Coherent Singapore made an additional capital contribution to Coherent Korea in fiscal 2019 to take advantage of the High-Tech tax exemption provided by the Korean authorities. The High-Tech tax exemption is effective retroactively to the beginning of fiscal 2019. The impact of this tax exemption decreased Coherent Korea income taxes by approximately \$2.4 million in fiscal 2019. The benefit of the tax holiday on net income per diluted share was \$0.10.

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 Coherent Singapore income taxes by approximately \$3.9 million and \$2.5 million in fiscal 2019 and 2018, respectively. The benefits of the tax holiday on net income per diluted share were \$0.16 and \$0.10, respectively.

FINANCIAL CONDITION

Liquidity and capital resources

At September 28, 2019, we had assets classified as cash and cash equivalents and short-term investments, in an aggregate amount of \$306.0 million, compared to \$310.6 million at September 29, 2018. In addition, at September 28, 2019, we had \$12.8 million of restricted cash. At September 28, 2019, approximately \$240.3 million of our cash and securities was held in certain of our foreign subsidiaries and branches, \$228.4 million of which was denominated in currencies other than the U.S. dollar. Cash held by foreign subsidiaries includes cash in certain entities where we intend to permanently reinvest our accumulated earnings 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 foreign withholding taxes and certain state taxes. 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 historically asserted our intention to indefinitely reinvest foreign earnings. In December 2017, we reevaluated our assertion as a result of the enactment of the Tax Act and no longer consider certain foreign earnings to be indefinitely reinvested in our foreign subsidiaries. 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.

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 from our Euro Term Loan used to finance our acquisition of Rofin, proceeds received from the sale of our stock through our employee stock purchase plan as well as borrowings under our revolving credit facility (“Revolving Credit Facility”). Our historical uses of cash have primarily been for acquisitions of businesses and technologies, the repurchase of our common stock, capital expenditures and debt issuance costs. 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	
	2019	2018
Net cash provided by operating activities	\$181,401	\$ 236,111
Purchases of property and equipment	(83,283)	(90,757)
Acquisition of businesses, net of cash acquired	(18,881)	(45,448)
Proceeds from sale of discontinued operation (the Hull Business)	—	25,000
Proceeds from sales of other entities	—	6,250
Borrowings, net of repayments	263	(173,252)
Issuance of shares under employee stock plans	11,811	10,574
Repurchase of common stock	(77,410)	(100,000)
Net settlement of restricted common stock	(15,179)	(36,320)

Net cash provided by operating activities decreased by \$54.7 million in fiscal 2019 compared to fiscal 2018. The decrease in cash provided by operating activities in fiscal 2019 was primarily due to lower net income and lower cash flows from income taxes payable and deferred taxes, partially offset by higher cash flows from accounts receivable, inventories, deferred revenue and accrued payroll. We believe that our existing cash, cash equivalents and short term investments combined with cash to be provided by operating activities and 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 to consider 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, if any, through existing cash balances and cash flows from operations (as in our acquisition of OR Laser, Ondax and certain Quantum assets) and additional borrowings (as in our acquisition of Rofin). 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.

In fiscal 2018, we made debt principal payments of \$170.1 million, including voluntary prepayments of \$162.1 million, recorded interest expense on the Euro Term Loan of \$14.9 million and recorded \$9.6 million amortization of debt issuance costs.

In fiscal 2019, we made debt principal payments of \$7.5 million, recorded interest expense on the Euro Term Loan of \$11.7 million and recorded \$4.6 million amortization of debt issuance costs. On November 20, 2018, we borrowed an additional \$40.0 million under our Revolving Credit Facility, subsequently repaid \$30.0 million of these borrowings on July 29, 2019 and recorded interest expense related to it of \$1.9 million in fiscal 2019.

On October 5, 2018, we acquired privately held Ondax for approximately \$12.0 million, excluding transaction costs. On October 5, 2018, we acquired certain assets of Quantum for approximately \$7.0 million, excluding transaction costs. On March 8, 2018, we acquired privately held OR Laser for approximately \$47.4 million, excluding transaction costs.

On April 27, 2018, we completed the sale of several entities that we acquired in the Rofin acquisition for approximately \$6.3 million.

On February 6, 2018, our board of directors authorized a stock repurchase program authorizing the Company to repurchase up to \$100.0 million of our common stock from time to time through January 31, 2019. During fiscal 2018, we repurchased and retired 574,946 shares of outstanding common stock under this program at an average price of \$173.91 per share for a total of \$100.0 million, thereby repurchasing the full amount authorized under this program. See Note 12, "Stock Repurchases" in the Notes to Consolidated Financial Statements.

On October 28, 2018, our board of directors authorized a stock repurchase program authorizing the Company to repurchase up to \$250.0 million of our common stock through December 31, 2019, with a limit of no more than \$75.0 million per quarter. During fiscal 2019, we repurchased and retired 603,828 shares of outstanding common stock under this program at an average price of \$128.20 per share for a total of \$77.4 million. See Note 12, "Stock Repurchases" in the Notes to Condensed Consolidated Financial Statements.

Additional sources of cash available to us were international currency lines of credit and bank credit facilities totaling \$26.0 million as of September 28, 2019, of which \$20.8 million was unused and available. These unsecured international credit facilities were used in Europe and Japan during fiscal 2018. As of September 28, 2019, we had utilized \$5.2 million of the international credit facilities as guarantees in Europe.

Our ratio of current assets to current liabilities increased to 4.6:1 at September 28, 2019 compared to 3.3:1 at September 29, 2018. The increase in our ratio was primarily due to lower income taxes payable, partially offset by decreases in our ratio due to lower accounts receivable and inventories. Our cash and cash equivalents, short-term investments and working capital are as follows (in thousands):

	Fiscal	
	2019	2018
Cash and cash equivalents	\$305,833	\$310,495
Short-term investments	120	120
Working capital	854,507	865,664

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 September 28, 2019 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	\$ 66,290	\$ 19,578	\$24,984	\$ 10,973	\$10,755
Asset retirement obligations	5,545	155	932	2,652	1,806
Debt principal, interest and fees	460,689	26,504	44,748	389,437	—
Pension obligations	60,437	2,197	4,576	5,287	48,377
Purchase commitments for inventory	60,923	59,849	538	536	—
Purchase obligations-other	17,096	12,893	1,868	2,335	—
Total	<u>\$670,980</u>	<u>\$121,176</u>	<u>\$77,646</u>	<u>\$411,220</u>	<u>\$60,938</u>

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 \$42.9 million at September 28, 2019. As of September 28, 2019, we had gross unrecognized tax benefits of \$63.9 million which includes penalties and interest of \$5.8 million. Approximately \$37.4 million has been recorded as a noncurrent liability. At this time, we are unable to make a reasonably reliable estimate of the timing of payments in individual years in connection with these tax liabilities; therefore, such amounts are not included in the above contractual obligation table.

Changes in financial condition

Cash provided by operating activities in fiscal 2019 was \$181.4 million, which included depreciation and amortization of \$116.4 million, net income of \$53.8 million, stock-based compensation expense of \$36.5 million, non-cash restructuring charges of \$12.6 million and amortization of debt issue costs of \$4.6 million, partially offset by cash used by operating assets and liabilities of \$19.1 million (primarily lower income taxes payable, accounts payable, customer deposits and deferred income net of lower accounts receivable and lower inventories) and net decreases in deferred tax assets of \$14.9 million. Cash provided by operating activities in fiscal 2018 was \$236.1 million, which included net income of \$247.4 million, depreciation and amortization of \$113.4 million, stock-based compensation expense of \$32.7 million, net decreases in deferred tax assets of \$16.6 million and amortization of debt issue costs

of \$9.6 million, partially offset by cash used by operating assets and liabilities of \$187.1 million (primarily increases in inventories, increases in accounts receivable, decreases in deferred income and decreases in accrued payroll).

Cash used in investing activities in fiscal 2019 was \$100.3 million, which included \$78.0 million, net of proceeds from dispositions, used to acquire property and equipment and to purchase and upgrade buildings, \$18.9 million net of cash acquired to purchase Ondax and Quantum and \$3.4 million invested in 3D-Micromac AG, a private company in Germany. Cash used in investing activities in fiscal 2018 was \$67.7 million, which included \$86.4 million, net of proceeds from dispositions, used to acquire property and equipment and to purchase and upgrade buildings and \$45.4 million net of cash acquired to purchase OR Laser partially offset by \$32.3 million net sales of available-for-sale securities, \$25.0 million proceeds from the sale of discontinued operations and \$6.3 million proceeds from the sale of other entities.

Cash used in financing activities in fiscal 2019 was \$80.5 million, which included \$77.4 million used to repurchase shares of our common stock and \$15.2 million outflows due to net settlement of restricted stock units, partially offset by \$11.8 million generated from our employee stock purchase plans and \$0.3 million net debt borrowings. Cash used in financing activities in fiscal 2018 was \$299.0 million, which included \$173.3 million net debt payments, \$100.0 million in repurchases of our common stock and \$36.3 million outflows due to net settlement of restricted stock units, partially offset by \$10.6 million generated from our employee stock purchase plans.

Changes in exchange rates in fiscal 2019 resulted in a decrease in cash balances of \$6.0 million. Changes in exchange rates in fiscal 2018 resulted in a decrease in cash balances of \$2.4 million.

RECENT ACCOUNTING PRONOUNCEMENTS

See Note 2, “Significant Accounting Policies” in the Notes to Consolidated Financial Statements under Item 15 of this annual report 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, business combinations, accounting for long-lived assets (including goodwill and intangible assets), inventory valuation, warranty reserves and accounting for income taxes.

Revenue Recognition

Revenue is recognized when transfer of control to the customer occurs in an amount reflecting the consideration that we expect to be entitled. We determine revenue recognition by applying the following five-step approach: (1) identification of the contract, or contracts, with a customer; (2) identification of the performance obligations in the contract; (3) determination of the transaction price; (4) allocation of the transaction price to the performance obligations in the contract; and (5) recognition of revenue when, or as, we satisfy each performance obligation.

The transaction price is determined based on the consideration to which we will be entitled in exchange for transferring goods or services to the customer adjusted for estimated variable consideration, if any, as more fully described in Note 2, “Significant Accounting Policies—Revenue Recognition,” in the Notes to Consolidated Financial Statements under Item 15 of this annual report. The majority of products and services offered by us have readily observable selling prices. As a part of our stand-alone selling price policy, we review product pricing on a periodic basis to identify any significant changes and revise our expected selling price assumptions as appropriate. Revenue is generally recognized when control of the product is transferred to the customer (i.e., when our performance obligation is satisfied), which typically occurs at shipment but which can occur over time for certain of our maintenance, extended warranty or custom product contracts. When goods or services have been delivered to the customer, but all conditions for revenue recognition have not been met, deferred revenue and deferred costs are recorded on our consolidated balance sheet. Recognizing revenue over time also includes an estimation of the progress towards completion based on the projected costs for the contract.

Business Combinations

We include the results of operations of the businesses that we acquire as of the respective dates of acquisition. We allocate the fair value of the purchase price of our business acquisitions to the tangible assets acquired, liabilities assumed, and intangible assets acquired, based on their estimated fair values. The excess of the purchase price over the fair values of these identifiable assets and liabilities is recorded as goodwill. Additional information existing as of the acquisition date, but unknown to us at that time, may become known during the remainder of the measurement period, not to exceed 12 months from the acquisition date, which may result in changes to the amounts and allocations recorded.

Long-Lived Assets and Goodwill

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: OLS and ILS.

Goodwill is tested for impairment on an annual basis and between annual tests in certain circumstances, and written down when impaired (See Note 8, “Goodwill and Intangible Assets” in the Notes to Consolidated Financial Statements under Item 15 of this annual report). 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 January 2017, the FASB issued amended guidance that simplifies the subsequent measurement of goodwill by eliminating Step 2 from the goodwill impairment test. Under the amendments in this update, an entity should perform its annual, or interim, goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount and recognize an impairment charge for the amount

by which the carrying amount exceeds the reporting unit's fair value. The new standard will become effective for our fiscal year beginning October 2, 2021. We elected to early adopt the standard in the fourth quarter of fiscal 2017 for our fiscal 2017 impairment tests.

For both our OLS and ILS reporting units, we elected to bypass the qualitative assessment in fiscal 2019 and proceeded directly to performing the first step of goodwill impairment, the quantitative analysis. Accordingly, we performed the Step 1 test during the fourth quarter of fiscal 2019. 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. Our assumptions used in the forecasts are based on historical data, supplemented by current and anticipated market conditions, estimated growth rates and management's plans. The rate of return or cost of capital is weighted based on the capitalization of comparable companies. We utilized a discount rate for each of our reporting units that represents the risks that our businesses face, considering their sizes, their current economic environment and other industry data as we believe is appropriate. The discount rates for our OLS and ILS reporting units were 12.0% and 12.5%, respectively. The Market approach determines fair value by comparing the reporting units to comparable companies in similar lines of business that are publicly traded. The selection of comparable companies is based on the markets in which the reporting units operate giving consideration to risk profiles, size, geography and diversity of products and services. 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. We utilized multiples for each of our reporting units that represent the risks that our businesses face, considering their sizes, their current economic environment and other industry data as we believe is appropriate. For example, the TEV to FTM (forward twelve months) Revenue multiples for our OLS and ILS reporting units were 2.0 and 1.4, respectively. These multiples are then applied to the applicable 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 an impairment charge was not required as the estimated fair values of the OLS and ILS reporting units were substantially in excess of their carrying values. The ILS reporting unit has a higher level of sensitivity to impairment as management currently assesses the various estimates and assumptions, including the discount rates, future net sales, long term growth rates and margin forecasts, used to conduct these tests. Adverse changes to one or more of these estimates or assumptions could cause us to recognize a material impairment charge on the ILS reporting unit in future periods. At the beginning of the fourth quarter of fiscal 2019, the estimated fair value of the OLS and ILS reporting unit exceeded its carrying value by approximately 246% and 61%, respectively.

At September 28, 2019, we had \$427.1 million of goodwill (\$96.8 million OLS and \$330.3 million in ILS), \$84.8 million of purchased intangible assets and \$323.4 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 net realizable value. 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 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 periods ranging from 24 to 36 months 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 to 18 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.

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 2019, we increased our valuation allowance on deferred tax assets by \$7.8 million to \$41.5 million, primarily due to the net operating losses generated from certain foreign entities and California research and development tax credits, which are not expected to be recognized. As of September 28, 2019, we had U.S. federal deferred tax assets related to research and development 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. 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.

We historically asserted our intention to indefinitely reinvest foreign earnings. In December 2017, we reevaluated our assertion as a result of the enactment of the Tax Act and no longer consider certain foreign earnings to be indefinitely reinvested in our foreign subsidiaries. As a result of this change in assertion, we recorded a \$14.6 million tax expense against our foreign earnings that are not indefinitely reinvested as of fiscal 2019. This is mainly related to foreign withholding taxes and state income taxes. We have not provided deferred taxes on other foreign earnings and profits of \$451.6 million that are still considered indefinitely reinvested and may be subject to additional foreign withholding taxes and certain state taxes if repatriated. We also have not recognized any deferred taxes for outside basis differences in foreign subsidiaries.

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 2019 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 each of fiscal 2019 and 2018 year-ends, the fair value of our available-for-sale debt securities was \$0.1 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 2019 or 2018 year-end.

We are exposed to market risks related to fluctuations in interest rates related to our Euro Term Loan. As of September 28, 2019, we owed \$398.9 million on this loan with an interest rate of 2.75%. We performed a sensitivity analysis on the outstanding portion of our debt obligation as of September 28, 2019. Should the current average interest rate increase or decrease by 10%, the resulting annual increase or decrease to interest expense would be approximately \$1.1 million as of September 28, 2019.

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, the Singapore Dollar and the Chinese Renminbi. Additionally, we have operations in different countries around the world with costs incurred in the foregoing currencies and other local currencies, such as British Pound Sterling, Malaysian Ringgit, Swiss Franc, Taiwan Dollar, Swedish Krona, Canadian Dollar and Vietnamese Dong. As a result, our earnings, cash flows and cash balances are exposed to fluctuations in foreign currency exchange rates. For example, because of our significant manufacturing operations in Europe, a weakening Euro is advantageous and a strengthening Euro is disadvantageous 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.

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 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 September 28, 2019, approximately \$240.3 million of our cash, cash equivalents and short-term investments were held outside the U.S. in certain of our foreign operations, \$228.4 million of which was denominated in currencies other than the U.S. dollar.

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.

See Note 7, “Derivative Instruments and Hedging Activities” in our Notes to Consolidated Financial Statements under Item 15 of this annual report for further discussion of our derivatives and hedging activities.

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 81 of this annual report.

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

Not applicable.

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 September 28, 2019, 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 September 28, 2019. The effectiveness of our internal control over financial reporting as of September 28, 2019 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

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 have been no changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting during the three months ended September 28, 2019.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of Coherent, Inc.:

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Coherent, Inc. and subsidiaries (the “Company”) as of September 28, 2019, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of September 28, 2019, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended September 28, 2019, of the Company and our report dated November 26, 2019, expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

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 are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. 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.

Definition and Limitations of Internal Control over Financial Reporting

A company’s 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. 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 its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to 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.

/s/ DELOITTE & TOUCHE LLP

San Jose, California
November 26, 2019

ITEM 9B. OTHER INFORMATION

Not applicable.

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, as amended, will be set forth under the caption “Delinquent Section 16(a) Reports,” if applicable, (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” and (v) our executive officers will be set forth under the caption “Our Executive Officers” in our proxy statement for use in connection with our upcoming Annual Meeting of Stockholders to be held in 2020 (the “2020 Proxy Statement”) and is incorporated herein by reference or will be included in a Form 10-K/A as an amendment to this Form 10-K. The 2020 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 and may be found as follows:

1. From our main Web page, first click on “Company”.
2. Next, click on “Business Conduct Policies”.

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

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 our 2020 Proxy Statement and is incorporated herein by reference or will be included in a Form 10-K/A as an amendment to this Form 10-K.

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 2020 Proxy Statement and is incorporated herein by reference or will be included in a Form 10-K/A as an amendment to this Form 10-K.

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 2020 Proxy Statement and is incorporated herein by reference or will be included in a Form 10-K/A as an amendment to this Form 10-K.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this item will be included under the caption “Ratification of the Appointment of Deloitte & Touche LLP as Independent Registered Public Accounting Firm—Principal Accounting Fees and Services” in our 2020 Proxy Statement and is incorporated herein by reference or will be included in a Form 10-K/A as an amendment to this Form 10-K.

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:

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Consolidated Statements of Operations—Years ended September 28, 2019, September 29, 2018 and September 30, 2017	91
Consolidated Statements of Comprehensive Income—Years ended September 28, 2019, September 29, 2018 and September 30, 2017	92
Consolidated Statements of Stockholders' Equity—Years ended September 28, 2019, September 29, 2018 and September 30, 2017	93
Consolidated Statements of Cash Flows—Years ended September 28, 2019, September 29, 2018 and September 30, 2017	94
Notes to Consolidated Financial Statements	96
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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 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 of Coherent, Inc. as amended and restated on January 28, 2018. (Previously filed as Exhibit 3.1 to the Company's Current Report on Form 8-K filed on January 31, 2018)
- 4.1 Description of Capital Stock.
- 10.1*‡ Form of Indemnification Agreement. (Previously filed as Exhibit 10.18 to Form 10-K for the fiscal year ended October 2, 2010)
- 10.2*‡ Amended and Restated Employee Stock Purchase Plan. (Previously filed as Exhibit 10.1 to Form S-8 filed on June 12, 2012)
- 10.3*‡ Change of Control and Leadership Change Severance Plan, as amended and restated effective April 13, 2019. (Previously filed as Exhibit 10.1 to Form 10-Q for the fiscal quarter March 30, 2019)
- 10.4*‡ Variable Compensation Plan, as amended. (Previously filed as Exhibit 10.7 to Form 10-K for the fiscal year ended October 1, 2011)
- 10.5*‡ Supplementary Retirement Plan. (Previously filed as Exhibit 10.5 to Form 10-Q for the fiscal quarter ended April 1, 2006)
- 10.6*‡ 2005 Deferred Compensation Plan. (Previously filed as Exhibit 10.1 to Form 10-Q for the fiscal quarter ended December 31, 2011)
- 10.7*‡ 2011 Equity Incentive Plan. (Previously filed as Exhibit 10.1 to Form S-8 filed on May 6, 2011)
- 10.8*‡ 2011 Equity Incentive Plan-Form of RSU Agreement for members of the Board of Directors. (Previously filed as Exhibit 10.1 to Form 10-Q for the fiscal quarter ended July 2, 2011)
- 10.9*‡ 2011 Equity Incentive Plan-Form of Option Agreement for members of the Board of Directors. (Previously filed as Exhibit 10.2 to Form 10-Q for the fiscal quarter ended July 2, 2011)
- 10.10*‡ 2011 Equity Incentive Plan-Form of Time-Based RSU Agreement. (Previously filed as Exhibit 10.23 to Form 10-K for the fiscal year ended October 1, 2011)

**Exhibit
Numbers**

- 10.11‡ 2011 Equity Incentive Plan-Form of Performance RSU Agreement.
- 10.12*‡ 2011 Equity Incentive Plan-Form of Global RSU Agreement. (Previously filed as Exhibit 10.12 to Form 10-K for the fiscal year ended September 29, 2018)
- 10.13‡ 2011 Equity Incentive Plan-Form of Global Performance RSU Agreement.
- 10.14*‡ Offer letter with Kevin Palatnik. (Previously filed as Exhibit 10.3 to Form 10-Q for the fiscal quarter ended January 2, 2016)
- 10.15*‡ Offer letter with Thomas Merk. (Previously filed as Exhibit 10.3 to Form 10-Q filed for the fiscal quarter ended December 31, 2016)
- 10.16*‡ Managing director agreement with Thomas Merk. (Previously filed as Exhibit 10.4 to Form 10-Q for the fiscal quarter ended December 31, 2016)
- 10.17* CEO Transition and Retirement Agreement, dated April 13, 2019, between the Company and John Ambroseo. (Previously filed as Exhibit 10.2 to Form 10-Q for the fiscal quarter ended March 30, 2019).
- 10.18* 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 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)
- 10.19* Amendment No. 1 and Waiver to Credit Agreement, dated as of May 8, 2017, by and among Coherent, Inc., Coherent Holding GmbH, the Guarantors party thereto, the Lenders party thereto and Barclays Bank PLC, as Administrative Agent. (Previously filed as Exhibit 10.1 to Form 8-K filed on May 9, 2017)
- 10.20* Amendment No. 2 to Credit Agreement, dated as of July 5, 2017, by and among Coherent, Inc., Coherent Holding GmbH, the Guarantors party thereto and Barclays Bank PLC as Administrative Agent. (Previously filed as Exhibit 10.2 to Form 10-Q for the fiscal quarter ended July 1, 2017)
- 10.21* Transition Agreement and Release, dated February 4, 2019, between the Company and Paul Sechrist. (Previously filed as Exhibit 10.2 to Form 10-Q for the fiscal quarter ended December 29, 2018)
- 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.

**Exhibit
Numbers**

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.
101.INS	Inline XBRL Instance.
101.SCH	Inline XBRL Taxonomy Extension Schema.
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase.
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase.
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase.
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase.
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101).

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

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

** Furnished herewith.

/s/ SUSAN M. JAMES

Susan M. James
(Director)

November 26, 2019
Date

/s/ BEVERLY KAY MATTHEWS

Beverly Kay Matthews
(Director)

November 26, 2019
Date

/s/ MICHAEL R. McMULLEN

Michael R. McMullen
(Director)

November 26, 2019
Date

/s/ GARRY W. ROGERSON

Garry W. Rogerson
(Director)

November 26, 2019
Date

/s/ STEVE SKAGGS

Steve Skaggs
(Director)

November 26, 2019
Date

/s/ SANDEEP VIJ

Sandeep Vij
(Director)

November 26, 2019
Date

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 2019 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 September 28, 2019 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

John R. Ambroseo
President and Chief Executive Officer

/s/ KEVIN S. PALATNIK

Kevin S. Palatnik
Executive Vice President and Chief Financial Officer

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of Coherent, Inc.:

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Coherent, Inc. and subsidiaries (the “Company”) as of September 28, 2019 and September 29, 2018, the related consolidated statements of operations, comprehensive income, stockholders’ equity, and cash flows, for each of the three years in the period ended September 28, 2019, and the related notes (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of September 28, 2019 and September 29, 2018, and the results of its operations and its cash flows for each of the three years in the period ended September 28, 2019, 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) (PCAOB), the Company’s internal control over financial reporting as of September 28, 2019, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated November 26, 2019, expressed an unqualified opinion on the Company’s internal control over financial reporting.

Basis for Opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Goodwill—Industrial Lasers & Systems Reporting Unit—Refer to Notes 2 and 8 to the financial statements

Critical Audit Matter Description

The Company tests goodwill for impairment annually by comparing the carrying value of each of its reporting units to its estimated fair value as of the evaluation date. The estimates of fair value of the reporting units are computed using a combination of an income approach, which requires management to make significant estimates and assumptions related to the forecasts of future net sales and margins and the selection of the discount rate, and a market approach, which is derived from metrics of comparable publicly traded companies.

As of September 28, 2019, the goodwill balance was \$427.1 million, of which \$330.3 million was allocated to the Industrial Lasers & Systems Reporting Unit (“ILS”). The fair value of ILS exceeded its carrying value as of the measurement date and, therefore, no impairment was recognized.

We identified the goodwill valuation for ILS as a critical audit matter due to the significant estimates and assumptions made by management to estimate the fair value of ILS under the income approach and the difference between its fair value and carrying value. This required a high degree of auditor judgment and an increased extent of effort, including the need to involve our fair value specialists, when performing audit procedures to evaluate the reasonableness of management’s estimates and assumptions related to the forecasts of future net sales and margins and selection of the discount rate.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the forecasts of future net sales and margins and the selection of the discount rate used to estimate the fair value under the income approach for ILS included the following, among others:

- We tested the effectiveness of controls over management’s goodwill impairment evaluation, including those over the forecasts of future net sales and margins and the selection of the discount rate.
- We evaluated the reasonableness of management’s forecasts of future net sales and margins by comparing the forecasts to:
 - Historical net sales and margins, and
 - Management’s long-range strategic plan which was communicated to the Board of Directors, and
 - Forecasted information included in Company press releases, as well as, in analyst and industry reports for the Company and companies in its peer group.
- We evaluated whether the forecasts were consistent with evidence obtained in other areas of the audit.
- With the assistance of our fair value specialists, we evaluated the selection of the discount rate, including testing the underlying source information and the mathematical accuracy of the calculations by developing a range of independent estimates and comparing those to the rate selected by management.

/s/ DELOITTE & TOUCHE LLP

San Jose, California
November 26, 2019

We have served as the Company’s auditor since 1976.

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

	<u>September 28, 2019</u>	<u>September 29, 2018</u>
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 305,833	\$ 310,495
Restricted cash	792	858
Short-term investments	120	120
Accounts receivable—net of allowances of \$8,690 and \$4,568, respectively	267,553	355,208
Inventories	442,530	486,741
Prepaid expenses and other assets	77,993	85,080
Total current assets	<u>1,094,821</u>	<u>1,238,502</u>
Property and equipment, net	323,434	311,793
Goodwill	427,101	442,940
Intangible assets, net	84,813	142,293
Non-current restricted cash	12,036	12,692
Other assets	140,964	111,749
Total assets	<u>\$2,083,169</u>	<u>\$2,259,969</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Short-term borrowings and current portion of long-term obligations	\$ 14,863	\$ 5,072
Accounts payable	51,531	70,292
Income taxes payable	6,185	114,145
Other current liabilities	167,735	183,329
Total current liabilities	<u>240,314</u>	<u>372,838</u>
Long-term obligations	392,238	420,711
Other long-term liabilities	165,881	151,956
Commitments and contingencies (Note 11)		
Stockholders' equity:		
Common stock, Authorized—500,000 shares, par value \$.01 per share:		
Outstanding—23,982 shares and 24,299 shares, respectively	238	242
Additional paid-in capital	34,320	78,700
Accumulated other comprehensive income (loss)	(36,336)	2,833
Retained earnings	1,286,514	1,232,689
Total stockholders' equity	<u>1,284,736</u>	<u>1,314,464</u>
Total liabilities and stockholders' equity	<u>\$2,083,169</u>	<u>\$2,259,969</u>

See accompanying Notes to Consolidated Financial Statements.

COHERENT, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share data)

	Year Ended		
	September 28, 2019	September 29, 2018	September 30, 2017
Net sales	\$1,430,640	\$1,902,573	\$1,723,311
Cost of sales	944,175	1,071,882	973,042
Gross profit	486,465	830,691	750,269
Operating expenses:			
Research and development	117,353	132,586	119,166
Selling, general and administrative	272,257	293,632	292,084
Gain on business combination	—	—	(5,416)
Impairment and other charges	—	766	2,916
Amortization of intangible assets	13,760	10,690	16,024
Total operating expenses	403,370	437,674	424,774
Income from operations	83,095	393,017	325,495
Other income (expense):			
Interest income	1,119	1,571	1,090
Interest expense	(19,122)	(25,847)	(34,362)
Other—net	(5,044)	(7,186)	9,832
Total other expense, net	(23,047)	(31,462)	(23,440)
Income from continuing operations before income taxes	60,048	361,555	302,055
Provision for income taxes	6,223	114,195	93,411
Net income from continuing operations	53,825	247,360	208,644
Loss from discontinued operations, net of income taxes	—	(2)	(1,522)
Net income	\$ 53,825	\$ 247,358	\$ 207,122
Basic net income (loss) per share:			
Income per share from continuing operations	\$ 2.23	\$ 10.07	\$ 8.52
Loss per share from discontinued operations, net of income taxes	\$ —	\$ —	\$ (0.06)
Net income per share	\$ 2.23	\$ 10.07	\$ 8.46
Diluted net income (loss) per share:			
Income per share from continuing operations	\$ 2.22	\$ 9.95	\$ 8.42
Loss per share from discontinued operations, net of income taxes	\$ —	\$ —	\$ (0.06)
Net income per share	\$ 2.22	\$ 9.95	\$ 8.36
Shares used in computation:			
Basic	24,118	24,572	24,487
Diluted	24,279	24,851	24,777

See accompanying Notes to Consolidated Financial Statements.

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

	Year Ended		
	September 28, 2019	September 29, 2018	September 30, 2017
Net income	\$ 53,825	\$247,358	\$207,122
Other comprehensive income (loss):(1)			
Translation adjustment, net of taxes(2)	(32,609)	(18,065)	24,923
Changes in unrealized losses on available-for-sale securities, net of taxes(3)	—	(4)	(3,330)
Defined benefit pension plans, net of taxes(4)	(6,560)	996	3,613
Other comprehensive income (loss), net of tax	(39,169)	(17,073)	25,206
Comprehensive income	<u>\$ 14,656</u>	<u>\$230,285</u>	<u>\$232,328</u>

- (1) Reclassification adjustments were not significant during fiscal 2019, 2018 and 2017.
- (2) Tax benefits of \$(5,161), \$0 and \$(326) were provided on translation adjustments during fiscal 2019, 2018 and 2017, respectively.
- (3) Tax benefits of \$0, \$(2) and \$(1,876) were provided on changes in unrealized losses on available-for-sale securities during fiscal 2019, 2018 and 2017, respectively.
- (4) Tax expenses (benefits) of \$(2,371), \$202 and \$1,747 were provided on changes in defined benefit pension plans during fiscal 2019, 2018 and 2017, respectively.

COHERENT, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
Three Years in the Period Ended September 28, 2019
(In thousands)

	Common Stock Shares	Common Stock Par Value	Add. Paid-in Capital	Accum. Other Comp. Income (Loss)	Retained Earnings	Total
Balances, October 1, 2016	24,324	\$242	\$151,298	\$ (5,300)	\$ 764,588	\$ 910,828
Common stock issued under stock plans, net of shares withheld for employee taxes	307	3	(7,609)	—	—	(7,606)
Tax impact from employee stock options . . .	—	—	1,628	—	—	1,628
Purchase of non-controlling interest	—	—	(528)	—	—	(528)
Stock-based compensation	—	—	26,614	—	—	26,614
Net income	—	—	—	—	207,122	207,122
Other comprehensive income, net of tax . . .	—	—	—	25,206	—	25,206
Balances, September 30, 2017	24,631	245	171,403	19,906	971,710	1,163,264
Common stock issued under stock plans, net of shares withheld for employee taxes	243	3	(25,749)	—	—	(25,746)
Repurchases of common stock	(575)	(6)	(99,994)	—	—	(100,000)
Cumulative effect of change in accounting principle	—	—	—	—	13,621	13,621
Stock-based compensation	—	—	33,040	—	—	33,040
Net income	—	—	—	—	247,358	247,358
Other comprehensive loss, net of tax	—	—	—	(17,073)	—	(17,073)
Balances, September 29, 2018	24,299	242	78,700	2,833	1,232,689	1,314,464
Common stock issued under stock plans, net of shares withheld for employee taxes	287	2	(3,370)	—	—	(3,368)
Repurchases of common stock	(604)	(6)	(77,404)	—	—	(77,410)
Stock-based compensation	—	—	36,394	—	—	36,394
Net income	—	—	—	—	53,825	53,825
Other comprehensive loss, net of tax	—	—	—	(39,169)	—	(39,169)
Balances, September 28, 2019	23,982	\$238	\$ 34,320	\$(36,336)	\$1,286,514	\$1,284,736

See accompanying Notes to Consolidated Financial Statements

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

	Year Ended		
	September 28, 2019	September 29, 2018	September 30, 2017
Cash flows from operating activities:			
Net income	\$ 53,825	\$247,358	\$ 207,122
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	54,925	53,342	43,689
Amortization of intangible assets	61,460	60,039	60,556
Gain on business combination	—	—	(5,416)
Impairment and other charges	—	766	2,916
Deferred income taxes	(14,930)	16,607	(19,752)
Amortization of debt issuance cost	4,647	9,565	7,202
Stock-based compensation	36,466	32,738	26,272
Excess tax benefits from stock-based compensation arrangements	—	—	(1,628)
Non-cash restructuring charges	12,609	1,246	6,439
Non-cash pension impact	(8,931)	980	5,360
Other non-cash expense	421	559	1,443
Changes in assets and liabilities, net of effect of acquisitions:			
Accounts receivable	82,078	(47,020)	(52,516)
Inventories	17,805	(78,123)	(11,419)
Prepaid expenses and other assets	14,074	(6,695)	(4,367)
Other long-term assets	(549)	(7,692)	(2,762)
Accounts payable	(15,160)	(9,736)	8,276
Income taxes payable/receivable	(119,929)	474	66,820
Other current liabilities	(13,155)	(42,820)	47,458
Other long-term liabilities	15,745	4,523	3,314
Cash flows from discontinued operations	—	—	(4,891)
Net cash provided by operating activities	181,401	236,111	384,116
Cash flows from investing activities:			
Purchases of property and equipment	(83,283)	(90,757)	(63,774)
Proceeds from dispositions of property and equipment	5,294	4,405	1,953
Purchases of available-for-sale securities	(11,552)	(54,442)	(32,449)
Proceeds from sales and maturities of available-for-sale securities	11,552	86,786	25,218
Acquisition of businesses, net of cash acquired	(18,881)	(45,448)	(740,481)
Investment at cost	(3,423)	—	—
Proceeds from sale of discontinued operation	—	25,000	—
Proceeds from sale of other entities	—	6,250	—
Other	—	470	—
Cash flows from discontinued operations	—	—	(755)
Net cash used in investing activities	(100,293)	(67,736)	(810,288)

See accompanying Notes to Consolidated Financial Statements

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

	Year Ended		
	September 28, 2019	September 29, 2018	September 30, 2017
Cash flows from financing activities:			
Short-term borrowings	\$ 119,594	\$ 89,092	\$ 8,863
Repayments of short-term borrowings	(111,794)	(90,751)	(30,819)
Proceeds from long-term borrowings	—	—	740,685
Repayments of long-term borrowings	(7,537)	(171,593)	(179,580)
Cash paid to subsidiaries' minority shareholders	—	—	(816)
Issuance of common stock under employee stock option and purchase plans	11,811	10,574	8,111
Excess tax benefits from stock-based compensation arrangements	—	—	1,628
Repurchase of common stock	(77,410)	(100,000)	—
Net settlement of restricted common stock	(15,179)	(36,320)	(15,717)
Debt issuance costs	—	—	(26,367)
Net cash provided by (used in) financing activities	(80,515)	(298,998)	505,988
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(5,977)	(2,419)	22,924
Net increase (decrease) in cash, cash equivalents and restricted cash	(5,384)	(133,042)	102,740
Cash, cash equivalents and restricted cash, beginning of year	324,045	457,087	354,347
Cash, cash equivalents and restricted cash, end of year	\$ 318,661	\$ 324,045	\$ 457,087
Supplemental disclosure of cash flow information:			
Cash paid during the year for:			
Interest	\$ 14,475	\$ 16,282	\$ 27,160
Income taxes	\$ 156,650	\$ 101,924	\$ 57,517
Cash received during the year for:			
Income taxes	\$ 23,416	\$ 5,203	\$ 2,513
Noncash investing and financing activities:			
Unpaid property and equipment purchases	\$ 4,406	\$ 6,176	\$ 3,197
Use of previously owned equity shares in acquisition	\$ —	\$ —	\$ 20,685

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the consolidated balance sheets that sum to the total of the same amounts shown in the consolidated statements of cash flows.

	September 28, 2019	September 29, 2018	September 30, 2017
Cash and cash equivalents	\$305,833	\$310,495	\$443,066
Restricted cash, current	792	858	1,097
Restricted cash, non-current	12,036	12,692	12,924
Total cash, cash equivalents, and restricted cash shown in the consolidated statement of cash flows	\$318,661	\$324,045	\$457,087

See accompanying Notes to Consolidated Financial Statements

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. DESCRIPTION OF BUSINESS

Founded in 1966, Coherent, Inc. provides lasers, laser-based technologies and laser-based system solutions in a broad range of commercial, industrial 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 2019, 2018 and 2017 ended on September 28, 2019, September 29, 2018 and September 30, 2017, respectively, and are referred to in these financial statements as fiscal 2019, fiscal 2018, and fiscal 2017 for convenience. Each of fiscal 2019, 2018 and 2017 included 52 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 direct and indirect subsidiaries (collectively, the “Company”, “we”, “our”, “us” or “Coherent”). Intercompany balances and transactions have been eliminated.

Business Combinations

We include the results of operations of the businesses that we acquire as of the respective dates of acquisition. We allocate the fair value of the purchase price of our business acquisitions to the tangible assets acquired, liabilities assumed, and intangible assets acquired, based on their estimated fair values. The excess of the purchase price over the fair values of these identifiable assets and liabilities is recorded as goodwill.

On November 7, 2016, we acquired Rofin-Sinar Technologies, Inc. and its direct and indirect subsidiaries (“Rofin”). On March 8, 2018, we acquired privately held O.R. Lasertechnologie GmbH and certain assets of its U.S.-based affiliate (collectively “OR Laser”). On October 5, 2018, we acquired privately held Ondax, Inc. (“Ondax”). The significant accounting policies of Rofin, OR Laser and Ondax have been aligned to conform to those of Coherent, and the consolidated financial statements include the results of Rofin, OR Laser and Ondax as of their acquisition dates.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. SIGNIFICANT ACCOUNTING POLICIES (Continued)

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. Short-term and long-term debt is carried at amortized cost, which approximates its fair value based on borrowing rates currently available to us for loans with similar terms.

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 2019 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 2019 year-end, the majority of our short-term investments were in U.S. Treasury and agency obligations. Cash equivalents and short-term investments are maintained with several financial institutions and may exceed the amount of insurance provided on such balances. At September 28, 2019, we held cash and cash equivalents and short-term investments outside the U.S. in certain of our foreign operations totaling approximately \$240.3 million, \$228.4 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 28.6% and 16.4% of accounts receivable at fiscal 2019 and fiscal 2018 year-end, respectively. We had another customer who accounted for 16.7% of accounts receivable at fiscal 2018 year-end.

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, Chinese Renminbi, Singapore Dollar, British Pound, Malaysian Ringgit, Swiss Franc, Canadian Dollar, Swedish Krona and Vietnamese Dong. 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

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. SIGNIFICANT ACCOUNTING POLICIES (Continued)

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, including both losses for uncollectible accounts receivable and sales returns. 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		
	2019	2018	2017
Beginning balance	\$ 4,568	\$ 6,890	\$ 2,420
Additions charged to expenses	5,210	1,980	4,190
Accruals related to acquisitions	—	37	4,390
Deductions from reserves	(1,088)	(4,339)	(4,110)
Ending balance	<u>\$ 8,690</u>	<u>\$ 4,568</u>	<u>\$ 6,890</u>

Inventories

Inventories are stated at the lower of cost (first-in, first-out or weighted average cost) or net realizable value. Inventories are as follows (in thousands):

	Fiscal year-end	
	2019	2018
Purchased parts and assemblies	\$134,298	\$137,566
Work-in-process	174,550	186,240
Finished goods	133,682	162,935
Total inventories	<u>\$442,530</u>	<u>\$486,741</u>

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. SIGNIFICANT ACCOUNTING POLICIES (Continued)

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):

	Fiscal year-end		Useful Life
	2019	2018	
Land	\$ 19,490	\$ 17,655	
Buildings and improvements	173,333	165,535	5 - 40 years
Equipment, furniture and fixtures	389,225	359,721	3 - 10 years
Leasehold improvements	94,878	89,399	shorter of asset life or lease term
	<u>676,926</u>	<u>632,310</u>	
Accumulated depreciation and amortization	<u>(353,492)</u>	<u>(320,517)</u>	
Property and equipment, net	<u>\$ 323,434</u>	<u>\$ 311,793</u>	

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 2019 year-end, gross expected future cash flows of \$5.5 million would be required to fulfill these obligations.

The following table reconciles changes in our asset retirement liability for fiscal 2019 and 2018 (in thousands):

Asset retirement liability as of September 30, 2017	\$ 5,382
Adjustment to asset retirement obligations recognized	(123)
Additional asset retirement obligations due to acquisition	466
Accretion recognized	156
Changes due to foreign currency exchange	<u>(79)</u>
Asset retirement liability as of September 29, 2018	5,802
Reduction to asset retirement obligations	(1,155)
Adjustments and additions to asset retirement obligations recognized . . .	390
Accretion recognized	127
Changes due to foreign currency exchange	<u>(90)</u>
Asset retirement liability as of September 28, 2019	<u>\$ 5,074</u>

At September 28, 2019, \$0.1 million and \$4.9 million of the asset retirement liability were included in Other current liabilities and Other long-term liabilities, respectively, on our consolidated balance sheets. At September 29, 2018, \$1.3 million and \$4.5 million of the asset retirement liability were

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. SIGNIFICANT ACCOUNTING POLICIES (Continued)

included in Other current liabilities and Other long-term liabilities, respectively, 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 2018, we recorded impairment charges of \$0.3 million on the net assets of several entities acquired in the acquisition of Rofin to write them down to reflect our best estimate of fair value, less costs to sell (See Note 19, “Discontinued Operations and Sale of Assets Held for Sale”). In addition, in fiscal 2018, we recorded an impairment charge of \$0.5 million to reduce the carrying value of a building to its fair value.

Goodwill

Goodwill is tested for impairment on an annual basis and between annual tests in certain circumstances, and written down when impaired (See Note 8, “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 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 the impairment test, and then resume performing the qualitative assessment in any subsequent period. In our fiscal 2019 annual testing, we elected to bypass the qualitative assessment and proceed directly to performing the goodwill impairment test for both our OEM Laser Sources (“OLS”) and Industrial Lasers & Systems (“ILS”) segments. Accordingly, we performed our impairment test using the opening balance sheet as of the first day of the fourth quarter and noted no impairment for either segment in fiscal 2019. At the beginning of the fourth quarter of fiscal 2019, the estimated fair value of the ILS reporting unit exceeded its book value by approximately 61%. In our fiscal 2018 annual testing, we performed a qualitative assessment of the goodwill for both our OLS and ILS reporting units using the opening balance sheet as of the first day of the fourth quarter and noted no impairment for either segment.

Intangible Assets

Intangible assets, including acquired existing technology, customer relationships, trade name and patents are amortized on a straight-line basis over their estimated useful lives, currently 3 year to 15 years (See Note 8, “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

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. SIGNIFICANT ACCOUNTING POLICIES (Continued)

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 to 18 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 2019, 2018 and 2017 were as follows (in thousands):

	Fiscal		
	2019	2018	2017
Beginning balance	\$ 40,220	\$ 36,149	\$ 15,949
Additions related to current period sales	52,271	58,865	41,365
Warranty costs incurred in the current period	(54,538)	(51,935)	(31,825)
Accruals resulting from acquisitions	21	179	14,314
Adjustments to accruals related to foreign exchange and other	(1,514)	(3,038)	(3,654)
Ending balance	<u>\$ 36,460</u>	<u>\$ 40,220</u>	<u>\$ 36,149</u>

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

Effective September 30, 2018, we adopted ASU 2014-09, Revenue from Contracts with Customers (“ASC 606”), using the modified retrospective transition method applied to contracts that were not completed as of September 29, 2018. Revenue for the reporting periods after September 30, 2018 are presented under ASC 606, while prior period amounts are reported in accordance with our historical accounting under ASC 605, Revenue Recognition (“ASC 605”). There was no impact on the opening accumulated retained earnings, revenues, costs, deferred income, customer deposits or other balances as of September 30, 2018 due to the adoption of ASC 606.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. SIGNIFICANT ACCOUNTING POLICIES (Continued)

Under ASC 606, we determine revenue recognition by applying the following five-step approach:

- Step 1 Identification of the contract, or contracts, with a customer;
- Step 2 Identification of the performance obligations in the contract;
- Step 3 Determination of the transaction price;
- Step 4 Allocation of the transaction price to the performance obligations in the contract;
and
- Step 5 Recognition of revenue when, or as, we satisfy each performance obligation.

Contracts and customer purchase orders, which in some cases are governed by master sales agreements, are generally used to determine the existence of an arrangement. In addition, shipping documents and customer acceptance, if applicable, are used to verify delivery and transfer of control. Performance obligations are identified based on the products or services that will be transferred to the customer that are considered distinct. Being distinct is defined as products or services that the customer can benefit from either on its own or together with other resources that are readily available from third parties or from us, and by the product or service being separately identifiable from other promises in the contract. We assess our ability to collect from our customers based primarily on the creditworthiness and past payment history of each customer. Revenue from all sales are recognized at the transaction price. The transaction price is determined based on the consideration to which we will be entitled in exchange for transferring goods or services to the customer adjusted for estimated variable consideration, if any. The consideration associated with customer contracts is generally fixed. Variable consideration includes discounts, rebates, credits and incentives, or other similar items. The amount of consideration that can vary is not a substantial portion of the total consideration. Variable consideration estimates are re-assessed at each reporting period until a final outcome is determined. Changes to the original transaction price due to a change in estimated variable consideration are calculated on a retrospective basis, with the adjustment recorded in the period in which the change occurs.

Sales to customers are generally not subject to any price protection or return rights. Accordingly, upon application of steps one through five above, product revenue is recognized upon shipment and transfer of control. The majority of products and services offered by us have readily observable selling prices. As a part of our stand-alone selling price policy, we review product pricing on a periodic basis to identify any significant changes and revise our expected selling price assumptions as appropriate.

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

Revenue recognition at a point in time

Revenues recognized at a point in time consist primarily of product, installation and training. The majority of our sales are made to original equipment manufacturers (“OEMs”), distributors, representatives and end-users. Sales made to customers generally do not require installation of the products by us and are not subject to other post-delivery obligations. Sales to end-users in the scientific market typically require installation by us and, thus, involve post-delivery obligations; however, our post-delivery installation obligations are not essential to the functionality of our products and represent a separate performance obligation. We recognize revenue for these sales following the transfer of control of such products to the customer, which typically occurs upon shipment or delivery depending on the terms of the underlying contracts. In those instances that we have agreed to perform installation

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. SIGNIFICANT ACCOUNTING POLICIES (Continued)

or provide training, we defer revenue related to installation or training until these services have been rendered.

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 more advanced performance than our published specifications, the revenue is recognized when the control transfers or the revenue is deferred until customer acceptance occurs.

Revenue recognition over time

We periodically enter into contracts in which a customer may purchase a combination of goods and/or services, such as products with maintenance contracts or extended warranty. These contracts are evaluated to determine if the multiple promises are separate performance obligations. Once we determine the performance obligations, we then determine the transaction price, which includes estimating the amount of variable consideration, if any. We then allocate the transaction price to each performance obligation in the contract based on a relative stand-alone selling price charged separately to customers. Extended warranties are sold separately from products and represent a distinct performance obligation. Revenue related to the performance obligation for extended warranties is recognized over time as the customer simultaneously receives and consumes the benefits provided by us.

Customized products, for which we have an enforceable right to payment for performance completed to date, are recorded over time. We use the output method to recognize revenue over time for such contracts as it best depicts the satisfaction of our performance obligations.

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. Customs duties billed to customers are recorded in cost of sales.

Warranty

We provide warranties on the majority of our product sales and reserves for estimated warranty costs are recorded during the period of sale. These standard warranties are assurance type warranties and do not offer any services beyond the assurance that the product will continue working as specified. Therefore, these warranties are not considered separate performance obligations in the arrangement. Instead, the expected cost of the warranty is accrued as an expense. 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 to 18 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.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. SIGNIFICANT ACCOUNTING POLICIES (Continued)

Costs of obtaining a contract

We recognize the incremental direct costs of obtaining a contract from a customer as an expense, which primarily includes sales commissions. Sales commissions are recorded at a point of time when control of the product transfers or over a period of time when sales commission provided is expected to be recovered through future services. The costs are recorded within selling, general and administrative expense. Costs incurred prior to the transfer of control of the product to the customer and costs to be amortized over a future period are classified as a prepaid asset and are included in prepaid expenses and other assets. Upon adoption of ASC 606, we determined there was an immaterial impact on sales commissions and therefore, we did not record a transition adjustment on adoption. As of September 28, 2019, costs of obtaining a contract to be amortized over a future period of \$0.1 million were classified as a prepaid asset and are included in prepaid expenses and other assets.

Payment terms

Our standard payment terms are 30 days but vary by the industry and location of the customer and the products or services offered. The time between invoicing and when payment is due is not significant. As our standard payment terms are less than one year, we have elected the practical expedient under ASC 606-10-32-18 and therefore are not required to assess whether each contract has a significant financing component.

Customer deposits and deferred revenue

When we receive consideration from a customer prior to transferring goods or services under the terms of a sales contract, we record customer deposits or deferred revenue, depending on whether or not the product has shipped to the customer, which are included in other current liabilities or other long-term liabilities when the payment is made or due, whichever is earlier. We recognize deferred revenue as net sales after control of the goods or services has been transferred to the customer and all revenue recognition criteria are met.

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 \$3.8 million, \$3.2 million and \$2.9 million were offset against research and development costs in fiscal 2019, 2018 and 2017, 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.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. SIGNIFICANT ACCOUNTING POLICIES (Continued)

Comprehensive Income (Loss)

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 (net of tax) at fiscal 2019 year-end was substantially comprised of accumulated translation adjustments of \$(34.4) million and deferred actuarial losses on pension plans of \$(2.0) million. Accumulated other comprehensive income (net of tax) at fiscal 2018 year-end was substantially comprised of accumulated translation adjustments of \$(1.8) million and deferred actuarial gains on pension plans of \$4.6 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 plan 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		
	<u>2019</u>	<u>2018</u>	<u>2017</u>
Weighted average shares outstanding—basic	24,118	24,572	24,487
Dilutive effect of employee stock awards	161	279	290
Weighted average shares outstanding—diluted	<u>24,279</u>	<u>24,851</u>	<u>24,777</u>
Net income from continuing operations	\$53,825	\$247,360	\$208,644
Loss from discontinued operations, net of income taxes	<u>—</u>	<u>(2)</u>	<u>(1,522)</u>
Net income	<u>\$53,825</u>	<u>\$247,358</u>	<u>\$207,122</u>

There were 98,103, 103,547 and 505 potentially dilutive securities excluded from the dilutive share calculation for fiscal 2019, 2018 and 2017, respectively, as their effect was anti-dilutive.

Stock-Based Compensation

We recognize compensation expense for all share-based payment awards based on the fair value of such awards. 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 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 13, “Employee Stock Award 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.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. SIGNIFICANT ACCOUNTING POLICIES (Continued)

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, 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.

We historically asserted our intention to indefinitely reinvest foreign earnings. In December 2017, we reevaluated our assertion as a result of enactment of the Tax Cuts and Jobs Act (the "Tax Act") and no longer consider certain foreign earnings to be indefinitely reinvested in our foreign subsidiaries. As a result of this change in assertion, we recorded a \$14.6 million tax expense against our foreign earnings that are not indefinitely reinvested as of fiscal 2019. This is mainly related to foreign withholding taxes and state income taxes. We have not provided deferred taxes on other foreign earnings and profits of \$451.6 million that are still considered indefinitely reinvested and may be subject to additional foreign withholding taxes and certain state taxes if repatriated. We also have not recognized any deferred taxes for outside basis differences in foreign subsidiaries.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. SIGNIFICANT ACCOUNTING POLICIES (Continued)

Adoption of New Accounting Pronouncements

We adopted ASC 606 and all related amendments as of September 30, 2018 using the modified retrospective transition method applied to contracts that were not completed as of September 29, 2018 and all new contracts entered into by us subsequent to September 29, 2018. All prior period financial statements and disclosures are presented in accordance with ASC 605. We concluded that the adoption of the new standard did not have a material impact on the timing or amount of revenue recognized as the majority of our sales are not bundled. Therefore, revenue is recorded at the point-in-time when control transfers, which is consistent with the timing of revenue recognition under ASC 605. See Note 2, “Significant Accounting Policies—Revenue Recognition” and Note 3, “Revenue Recognition” for more information.

Recently Issued Accounting Pronouncements

In February 2016, the FASB issued accounting guidance (ASC 842, Leases) that modifies lease accounting for lessees to increase transparency and comparability by recording lease assets and liabilities for operating leases and disclosing key information about leasing arrangements. The new standard will become effective for our fiscal year 2020, which begins on September 29, 2019. ASC 842 among other things, allows an optional transition method by which companies may elect not to recast the comparative periods presented in financial statements in the period of adoption and recognize a cumulative effect adjustment in the period of adoption. We plan to adopt the new standard using the optional transition method. We intend to elect the package of practical expedients which allows us to not reassess 1) whether any expired or existing contracts are or contain leases; 2) the lease classification for any expired or existing leases; and 3) initial direct costs for any existing leases. We also will elect to use the practical expedient allowed in the standard to not separate lease and non-lease components and not record short term leases when calculating the lease liability under ASC 842. We have reviewed the requirements of this standard and have formulated a plan for implementation. We continue to implement internal controls and key system functionality to enable the preparation of financial information. We are finalizing the accumulation of lease data, including new leases entered into at the end of fiscal year 2019, and preparing the final transition adjustment calculations. We currently estimate that the adoption of the standard will result in the recognition of \$90 million to \$100 million in lease related right-of-use assets and liabilities on our consolidated balance sheet, primarily related to real estate leases. The estimate could change as we finalize estimates and proceed towards implementation of the standard. We expect the standard will not have a material impact on our consolidated statements of operations.

In June 2016, the FASB issued ASU 2016-13, Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments and a subsequent amendment, ASU 2018-19 (collectively, Topic 326). Topic 326 requires measurement and recognition of expected credit losses for financial assets held. The new standard will become effective for our fiscal year 2021, which begins on October 4, 2020. We are currently evaluating the impact of our pending adoption of Topic 326 on our consolidated financial statements. We expect the standard will not have a material impact on our consolidated statements of operations.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

3. REVENUE RECOGNITION

Disaggregation of Revenue

Based on the information that our chief operating decision maker (“CODM”) uses to manage the business, we disaggregate revenue by type and market application within each segment. No other level of disaggregation is required considering the type of products, customers, markets, contracts, duration of contracts, timing of transfer of control and sales channels.

The following tables summarize revenue from contracts with customers (in thousands):

Sales by revenue type and segment

	Fiscal					
	2019		2018		2017	
	OEM Laser Sources	Industrial Lasers & Systems	OEM Laser Sources	Industrial Lasers & Systems	OEM Laser Sources	Industrial Lasers & Systems
<i>Net sales:</i>						
Products(1)	\$532,863	\$430,878	\$ 890,591	\$512,818	\$ 813,343	\$472,970
Other product and service revenues(2)	<u>353,813</u>	<u>113,086</u>	<u>368,886</u>	<u>130,278</u>	<u>330,277</u>	<u>106,721</u>
Total net sales	<u>\$886,676</u>	<u>\$543,964</u>	<u>\$1,259,477</u>	<u>\$643,096</u>	<u>\$1,143,620</u>	<u>\$579,691</u>

(1) Net sales primarily recognized at a point in time.

(2) Includes sales of spare parts, related accessories and other consumable parts as well as revenues from service agreements, of which \$54.3 million for fiscal 2019 was recognized over time.

Sales by market application and segment

	Fiscal					
	2019		2018		2017	
	OEM Laser Sources	Industrial Lasers & Systems	OEM Laser Sources	Industrial Lasers & Systems	OEM Laser Sources	Industrial Lasers & Systems
<i>Net sales:</i>						
Microelectronics	\$568,387	\$ 63,789	\$ 951,166	\$ 85,188	\$ 838,268	\$ 55,975
Materials processing	38,017	366,861	46,467	474,437	57,055	454,854
OEM components and instrumentation	163,095	103,693	140,616	80,207	135,624	67,458
Scientific and government programs	<u>117,177</u>	<u>9,621</u>	<u>121,228</u>	<u>3,264</u>	<u>112,673</u>	<u>1,404</u>
Total net sales	<u>\$886,676</u>	<u>\$543,964</u>	<u>\$1,259,477</u>	<u>\$643,096</u>	<u>\$1,143,620</u>	<u>\$579,691</u>

See Note 17, “Segment and Geographic Information” for revenue disaggregation by reportable segment and geographic region.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

3. REVENUE RECOGNITION (Continued)

Contract Balances

We record accounts receivable when we have an unconditional right to the consideration. Contract liabilities are recorded when cash payments are received or due in advance of performance. Contract liabilities consist of customer deposits and deferred revenue, where we have unsatisfied or partly satisfied performance obligations. Contract liabilities classified as customer deposits are included in other current liabilities and contract liabilities classified as deferred revenue are included in other current liabilities or other long-term liabilities on our condensed consolidated balance sheets. Payment terms vary by customer.

A rollforward of our customer deposits and deferred revenue is as follows (in thousands):

Beginning balance, September 30, 2018	\$ 55,637
Amount of customer deposits and deferred revenue recognized in income	(189,318)
Additions to customer deposits and deferred revenue	177,753
Translation adjustments	<u>(1,522)</u>
Ending balance, September 28, 2019	<u>\$ 42,550</u>

Remaining performance obligations represent the transaction price allocated to performance obligations that are unsatisfied or partially unsatisfied as of the end of the reporting period. The following table includes estimated revenue expected to be recognized in the future related to performance obligations for sales of maintenance agreements, extended warranties, installation, and contracts with customer acceptance provisions included in customer deposits and deferred revenue as of September 28, 2019 (in thousands):

	<u>1 year</u>	<u>Thereafter</u>	<u>Total</u>
Performance Obligations as of September 30, 2018 . . .	\$50,546	\$5,091	\$55,637
Performance Obligations as of September 28, 2019 . . .	34,538	8,012	42,550

4. BUSINESS COMBINATIONS

Fiscal 2019 Acquisitions

Ondax

On October 5, 2018, we acquired privately held Ondax for approximately \$12.0 million, excluding transaction costs. Ondax developed and produced photonic components which are used on an OEM basis by the laser industry as well as incorporated into its own stabilized lasers and Raman Spectroscopy systems. Ondax’s operating results have been included in our Industrial Lasers & Systems segment. See Note 17, “Segment and Geographic Information.”

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

4. BUSINESS COMBINATIONS (Continued)

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

Tangible assets:	
Cash	\$ 103
Accounts receivable	534
Inventories	1,793
Prepaid expenses and other assets	17
Deferred tax assets	681
Property and equipment	122
Liabilities assumed	(499)
Intangible assets:	
Existing technology	5,600
Customer relationships	300
Goodwill	3,333
Total	<u>\$11,984</u>

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 1 to 8 years. The fair values of the acquired intangibles were determined using the income approach. In performing these valuations, the key underlying probability-adjusted assumptions of the discounted cash flows were projected revenues, gross margin expectations and operating cost estimates. The valuations were based on the information that was available as of the acquisition date and the expectations and assumptions that have been deemed reasonable by our management. There are inherent uncertainties and management judgment required in these determinations. This acquisition resulted in a purchase price that exceeded the estimated fair value of tangible and intangible assets, which was allocated to goodwill.

We believe the amount of goodwill relative to identifiable intangible assets relates to several factors including: (1) potential buyer-specific synergies related to the development of new technologies; and (2) the potential to leverage our sales force to attract new customers.

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

Quantum

On October 5, 2018, we acquired certain assets of Quantum Coating, Inc. (“Quantum”) for approximately \$7.0 million, excluding transaction costs, and accounted for the transaction as an asset purchase.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

4. BUSINESS COMBINATIONS (Continued)

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

Tangible assets:	
Property and equipment	\$2,770
Intangible assets:	
Existing technology	1,600
Customer relationships	230
Production know-how	2,300
Backlog	<u>100</u>
Total	<u>\$7,000</u>

The identifiable intangible assets are being amortized over their respective useful lives of 1 to 5 years. The fair values of the acquired intangibles were determined using the income approach. In performing these valuations, the key underlying probability-adjusted assumptions of the discounted cash flows were projected revenues, gross margin expectations and operating cost estimates. The valuations were based on the information that was available as of the acquisition date and the expectations and assumptions that have been deemed reasonable by our management. There are inherent uncertainties and management judgment required in these determinations.

Fiscal 2018 Acquisitions

OR Laser

On March 8, 2018, we acquired OR Laser for approximately \$47.4 million, excluding transaction costs. OR Laser produced laser-based material processing equipment for a variety of uses, including additive manufacturing, welding, cladding, marking, engraving and drilling. OR Laser’s operating results have been included in our Industrial Lasers & Systems segment. See Note 17, “Segment and Geographic Information.”

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

Tangible assets:	
Cash	\$ 1,936
Accounts receivable	3,973
Inventories	2,360
Prepaid expenses and other assets	630
Property and equipment	1,515
Liabilities assumed	(5,119)
Deferred tax liabilities	(4,517)
Intangible assets:	
Existing technology	14,100
Non-competition	200
Backlog	100
Customer relationships	700
Trademarks	50
Goodwill	<u>31,456</u>
Total	<u>\$47,384</u>

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

4. BUSINESS COMBINATIONS (Continued)

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 1 to 8 years. The fair value of the acquired intangibles was determined using the income approach. In performing these valuations, the key underlying probability-adjusted assumptions of the discounted cash flows were projected revenues, gross margin expectations and operating cost estimates. The valuations were based on the information that was available as of the acquisition date and the expectations and assumptions that have been deemed reasonable by our management. There are inherent uncertainties and management judgment required in these determinations. This acquisition resulted in a purchase price that exceeded the estimated fair value of tangible and intangible assets, which was allocated to goodwill.

We believe the amount of goodwill relative to identifiable intangible assets relates to several factors including: (1) potential buyer-specific synergies related to the development of new technologies related primarily to the additive manufacturing business; and (2) the potential to leverage our sales force to attract new customers and revenue and cross-sell to existing customers.

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

We expensed \$0.6 million of acquisition-related costs as selling, general and administrative expenses in our consolidated statement of operations in fiscal 2018.

Fiscal 2017 Acquisitions

Rofin

On November 7, 2016, we completed our acquisition of Rofin pursuant to the Merger Agreement dated March 16, 2016. Rofin was one of the world's leading developers and manufacturers of high-performance industrial laser sources and laser-based solutions and components. Rofin's operating results have been included primarily in our Industrial Lasers & Systems segment. See Note 17, "Segment and Geographic Information."

As a condition of the acquisition, we were required to divest and hold separate Rofin's low power CO₂ laser business based in Hull, United Kingdom (the "Hull Business"), and had reported this business separately as a discontinued operation until its divestiture. We completed the divestiture of the Hull Business on October 11, 2017, after receiving approval for the terms of the sale from the European Commission. See Note 19, "Discontinued Operations and Sale of Assets Held for Sale."

The total purchase consideration has been allocated to the tangible and identifiable intangible assets acquired and liabilities assumed based on a valuation analysis.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

4. BUSINESS COMBINATIONS (Continued)

The total purchase consideration allocated to net assets acquired was approximately \$936.3 million and consisted of the following (in thousands):

Cash consideration to Rofin’s shareholders	\$904,491
Cash settlement paid for Rofin employee stock options	<u>15,290</u>
Total cash payments to Rofin shareholders and option holders	919,781
Add: fair value of previously owned Rofin shares	20,685
Less: post-merger stock compensation expense	<u>(4,152)</u>
Total purchase price to allocate	<u>\$936,314</u>

The acquisition was an all-cash transaction at a price of \$32.50 per share of Rofin common stock. 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 in Note 10, “Borrowings.” The total payment of \$15.3 million due to the cancellation of options held by employees of Rofin was allocated between total estimated merger consideration of \$11.1 million and post-merger stock-based compensation expense of \$4.2 million based on the portion of the total service period of the underlying options that had not been completed by the merger date.

We recognized a gain of \$5.4 million in the first quarter of fiscal 2017 on the increase in fair value from the date of purchase for the shares of Rofin we owned before the acquisition.

Under the acquisition method of accounting, the total estimated acquisition consideration is allocated to the acquired tangible and intangible assets and assumed liabilities of Rofin based on their fair values as of the acquisition date. Any excess of the acquisition consideration over the fair value of assets acquired and liabilities assumed is allocated to goodwill. We concluded that all such goodwill will not be deductible for tax purposes.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

4. BUSINESS COMBINATIONS (Continued)

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

Cash, cash equivalents and short-term investments	\$ 163,425
Accounts receivable	90,877
Inventory	189,869
Prepaid expenses and other assets	15,362
Assets held for sale, current	29,545
Property and equipment	125,723
Other assets	31,854
Intangible assets:	
Existing technology	169,029
In-process research and development	6,000
Backlog	5,600
Customer relationships	39,209
Trademarks	5,699
Patents	300
Goodwill	298,170
Current portion of long-term obligations	(3,633)
Current liabilities held for sale	(7,001)
Accounts payable	(21,314)
Other current liabilities	(68,242)
Long-term debt	(11,641)
Other long-term liabilities	(122,517)
Total	<u>\$ 936,314</u>

The fair value write-up of acquired finished goods and work-in-process inventory was \$26.4 million, which was amortized over the expected period during which the acquired inventory was sold, or 6 months. Accordingly, for fiscal 2017, we recorded \$26.4 million of incremental cost of sales associated with the fair value write-up of inventory acquired in the merger with Rofin. The fair value write-up of inventory acquired was fully amortized in fiscal 2017.

The fair value write-up of acquired property, plant and equipment of \$36.0 million will be amortized over the useful lives of the assets, ranging from 3 to 31 years. Property, plant and equipment is valued at its value-in-use, unless there was a known plan to dispose of the asset.

The acquired existing technology, backlog, trademarks and patents are being amortized on a straight-line basis, which approximates the economic use of the asset, over their estimated useful lives of 3 to 5 years, 6 months, 3 years, and 5 years, respectively. Customer relationships are being amortized on an accelerated basis utilizing free cash flows over periods ranging from 5 to 10 years. The useful lives of in-process research and development will be defined in the future upon further evaluation of the status of these applications. The fair value of the acquired intangibles was determined using the income approach. In performing these valuations, the key underlying probability-adjusted assumptions of the discounted cash flows were projected revenues, gross margin expectations and operating cost estimates. The valuations were based on the information that was available as of the acquisition date and the expectations and assumptions that have been deemed reasonable by our management. There are inherent uncertainties and management judgment required in these determinations. This acquisition

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

4. BUSINESS COMBINATIONS (Continued)

resulted in a purchase price that exceeded the estimated fair value of tangible and intangible assets, which was allocated to goodwill.

We believe the amount of goodwill relative to identifiable intangible assets relates to several factors including: (1) potential buyer-specific synergies related to market opportunities for a combined product offering; and (2) potential to leverage our sales force to attract new customers and revenue and cross sell to existing customers.

In-process research and development (“IPR&D”) consists of two projects that had not yet reached technological feasibility as of the date of the acquisition. Acquired IPR&D assets are initially recognized at fair value and are classified as indefinite-lived assets until the successful completion or abandonment of the associated research and development efforts. The value assigned to IPR&D was determined by considering the value of the products under development to the overall development plan, estimating the resulting net cash flows from the projects when completed and discounting the net cash flows to their present value. During the development period, these assets will not be amortized as charges to earnings; instead these assets will be subject to periodic impairment testing. Upon successful completion of the development process for the acquired IPR&D projects, the assets would then be considered finite-lived intangible assets and amortization of the assets will commence. One project was completed in December 2017 and amortization for that project began in the quarter ended March 31, 2018 over a useful life of 5.0 years. During the third quarter of fiscal 2019, in conjunction with our decision to co-locate the manufacturing and engineering of our High Power Fiber Lasers (“HPFL”) products at our Hamburg, Germany, facility to our Tampere, Finland, location and exit a portion of our HPFL business, expected to be completed during fiscal 2020, we abandoned the remaining in-process research and development project totaling \$4.7 million and fully amortized the intangible asset. See Note 18, “Restructuring Charges.”

We expensed \$17.6 million of acquisition-related costs as selling, general and administrative expenses in our consolidated statements of operations during fiscal 2017.

None of the goodwill was deductible for tax purposes.

The results of this acquisition were included in our consolidated operations beginning on November 7, 2016. The amount of continuing Rofin net sales and net loss from continuing operations included in our consolidated statements of operations for fiscal 2017 was approximately \$434.9 million and \$48.1 million, respectively.

Unaudited Pro Forma Information

The following unaudited pro forma financial information presents our combined results of operations as if the acquisition of Rofin and the related issuance of our Euro Term Loan had occurred on October 4, 2015. The unaudited pro forma financial information is not necessarily indicative of what our consolidated results of operations actually would have been had the acquisition been completed on October 4, 2015. In addition, the unaudited pro forma financial information does not attempt to project

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

4. BUSINESS COMBINATIONS (Continued)

the future results of operations of the combined company. The actual results may differ significantly from the pro forma results presented here due to many factors.

In Thousands	Fiscal 2017
Total net sales	\$1,798,539
Net income	\$ 233,012
Net income per share:	
Basic	\$ 9.52
Diluted	\$ 9.40

The unaudited pro forma financial information above includes the net income of Rofin’s low power CO₂ laser business based in Hull, United Kingdom, which is recorded as a discontinued operation in fiscal 2017. See Note 19, “Discontinued Operations and Sale of Assets Held for Sale.”

The unaudited pro forma financial information above reflects the following material adjustments:

- Incremental amortization and depreciation expense related to the estimated fair value of identifiable intangible assets and property, plant and equipment from the purchase price allocation.
- The exclusion of amortization of inventory step-up to its estimated fair value from fiscal 2017.
- The exclusion of revenue adjustments as a result of the reduction in customer deposits and deferred revenue related to its estimated fair value from fiscal 2017.
- Incremental interest expense and amortization of debt issuance costs related to our Euro Term Loan and Revolving Credit Facility (as defined in Note 10, “Borrowings”).
- The exclusion of acquisition costs incurred by both Coherent and Rofin from fiscal 2017.
- The exclusion of a stock-based compensation charge related to the acceleration of Rofin options from fiscal 2017.
- The exclusion of a gain on business combination for our previously owned shares of Rofin from fiscal 2017.
- The exclusion of a foreign exchange gain on forward contracts related to our debt commitment and debt issuance from fiscal 2017.
- The estimated tax impact of the above adjustments.

5. 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 September 28, 2019, we had one investment carried on a cost basis. See Note 9, “Balance Sheet Details.” If we were to fair value this investment, it would be based upon Level 3 inputs. This investment is not considered material to our consolidated financial statements. At September 29, 2018, we did not have any assets or liabilities valued based on Level 3 valuations.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

5. FAIR VALUES (Continued)

We measure the fair value of outstanding debt obligations for disclosure purposes on a recurring basis. As of September 28, 2019, the current and long-term portion of long-term obligations of \$14.9 million and \$392.2 million, respectively, are reported at amortized cost. As of September 29, 2018, the current and long-term portion of long-term obligations of \$5.1 million and \$420.7 million, respectively, are reported at amortized cost. These outstanding obligations are classified as Level 2 as they are not actively traded and are valued using a discounted cash flow model that uses observable market inputs. Based on the discounted cash flow model, the fair value of the outstanding debt approximates amortized cost.

Financial assets and liabilities measured at fair value as of September 28, 2019 and September 29, 2018 are summarized below (in thousands):

	Aggregate Fair Value	Quoted Prices in Active Markets for Identical Assets	Significant Other Observable Inputs	Aggregate Fair Value	Quoted Prices in Active Markets for Identical Assets	Significant Other Observable Inputs
	Fiscal year-end 2019			Fiscal year-end 2018		
		(Level 1)	(Level 2)		(Level 1)	(Level 2)
Assets:						
Cash equivalents:						
Money market fund deposits . .	\$21,422	\$21,422	\$ —	\$56,285	\$56,285	\$ —
Short-term investments:						
U.S. Treasury and agency obligations(1)	120	—	120	120	—	120
Prepaid and other assets:						
Foreign currency contracts(2) . .	370	—	370	1,007	—	1,007
Money market fund deposits— Deferred comp and supplemental plan(3)	433	433	—	522	522	—
Mutual funds—Deferred comp and supplemental plan(3) . . .	22,419	22,419	—	21,862	21,862	—
Total	<u>\$44,764</u>	<u>\$44,274</u>	<u>\$ 490</u>	<u>\$79,796</u>	<u>\$78,669</u>	<u>\$ 1,127</u>
Liabilities:						
Other current liabilities:						
Foreign currency contracts(2) . .	(960)	—	(960)	(1,879)	—	(1,879)
Total	<u>\$43,804</u>	<u>\$44,274</u>	<u>\$(470)</u>	<u>\$77,917</u>	<u>\$78,669</u>	<u>\$ (752)</u>

(1) 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.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

5. FAIR VALUES (Continued)

- (2) 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 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. See Note 7, "Derivative Instruments and Hedging Activities."
- (3) 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.

6. 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 2019 year-end			
	Cost Basis	Unrealized Gains	Unrealized Losses	Fair Value
Cash and cash equivalents	\$305,833	\$—	\$—	\$305,833
Short-term investments:				
Available-for-sale securities:				
U.S. Treasury and agency obligations	\$ 120	\$—	\$—	\$ 120
Total short-term investments	\$ 120	\$—	\$—	\$ 120
	Fiscal 2018 year-end			
	Cost Basis	Unrealized Gains	Unrealized Losses	Fair Value
Cash and cash equivalents	\$310,495	\$—	\$—	\$310,495
Short-term investments:				
Available-for-sale securities:				
U.S. Treasury and agency obligations	\$ 120	\$—	\$—	\$ 120
Total short-term investments	\$ 120	\$—	\$—	\$ 120

There were no unrealized gains or losses at September 28, 2019 or September 29, 2018.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

6. SHORT-TERM INVESTMENTS (Continued)

The amortized cost and estimated fair value of available-for-sale investments in debt securities as of September 28, 2019 and September 29, 2018 classified as short-term investments on our consolidated balance sheets, were as follows (in thousands):

	Fiscal year-end			
	2019		2018	
	Amortized Cost	Estimated Fair Value	Amortized Cost	Estimated Fair Value
Investments in available-for-sale debt securities due in less than one year	<u>\$120</u>	<u>\$120</u>	<u>\$120</u>	<u>\$120</u>

During fiscal 2019, we received no proceeds from the sale of available-for-sale securities and realized no gross gains or losses. During fiscal 2018, we received proceeds totaling \$26.9 million from the sale of available-for-sale securities and realized no gross gains or losses.

7. 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, Singapore Dollar and Chinese Renminbi. 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 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 speculative or trading purposes. The credit risk amounts represent our 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.

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 Euro Term Loan (denominated in Euros) in an amount of the Euro equivalent of \$750.0 million to finance the U.S. dollar payment for our acquisition of Rofin. In the fourth quarter of fiscal 2016, we recognized an unrealized loss of \$2.2 million on these forward contracts. In the first quarter of fiscal 2017, we settled these forward contracts at a net gain of \$9.1 million, resulting in a realized gain of \$11.3 million in the first quarter of fiscal 2017.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

7. DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES (Continued)

Non-Designated Derivatives

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

	U.S. Notional Contract Value		U.S. Fair Value	
	Fiscal 2019 year-end	Fiscal 2018 year-end	Fiscal 2019 year-end	Fiscal 2018 year-end
Foreign currency hedge contracts				
Purchase	\$ 53,920	\$ 169,437	\$(117)	\$(1,704)
Sell	\$(86,984)	\$(125,165)	\$(473)	\$ 832

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 5, “Fair Values.”

During fiscal 2019, 2018 and 2017, we recognized a loss of \$5.8 million, a loss of \$5.5 million and a gain of \$17.8 million, respectively, in other income (expense) for derivative instruments not designated as hedging instruments. The fiscal 2017 gain included the above \$11.3 million realized gain on the forward contracts related to the loan commitment.

Master Netting Arrangements

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 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. The impact of netting derivative assets and liabilities is not material to our financial position for any of the periods presented. 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.

8. 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.

As a result of the acquisition of Rofin in the first quarter of fiscal 2017, we reorganized our prior two reporting segments (Specialty Laser Systems and Commercial Lasers and Components) into two new reporting segments for the combined company: OEM Laser Sources (“OLS”) and Industrial Lasers & Systems (“ILS”). This segment reorganization was based upon the organizational structure of the combined company and how the chief operating decision maker (“CODM”) receives and utilizes information provided to allocate resources and make decisions.

For both the OLS and ILS reporting units, we elected to bypass the qualitative assessment in fiscal 2019 and proceed directly to performing the goodwill impairment test. We performed our test using the

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

8. GOODWILL AND INTANGIBLE ASSETS (Continued)

opening balance sheet as of the first day of the fourth quarter of fiscal 2019 and noted no impairment. We determined the fair value of the OLS and ILS reporting units for the 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 impairment analysis and concluded that an impairment charge was not required as the estimated fair value of both the OLS and ILS reporting units was significantly in excess of their carrying values. Between the completion of our assessment and the end of the fourth quarter of fiscal 2019, 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 2019 and 2018 are as follows (in thousands):

	<u>Industrial Lasers & Systems(1)</u>	<u>OEM Laser Sources(2)</u>	<u>Total</u>
Balance as of September 30, 2017	\$315,516	\$102,178	\$417,694
Additions (see Note 4)	31,456	—	31,456
Translation adjustments	<u>(4,764)</u>	<u>(1,446)</u>	<u>(6,210)</u>
Balance as of September 29, 2018	342,208	100,732	442,940
Additions (see Note 4)	3,333	—	3,333
Translation adjustments	<u>(15,260)</u>	<u>(3,912)</u>	<u>(19,172)</u>
Balance as of September 28, 2019	<u>\$330,281</u>	<u>\$ 96,820</u>	<u>\$427,101</u>

- (1) Gross amount of goodwill for our ILS segment was \$343.3 million at September 28, 2019 and \$355.2 million at September 29, 2018, respectively. At both September 28, 2019 and September 29, 2018, the accumulated impairment loss for the ILS reporting unit was \$13.0 million reflecting an impairment charge in fiscal 2009.
- (2) Gross amount of goodwill for our OLS segment was \$105.5 million and \$109.5 million at September 28, 2019 and September 29, 2018, respectively. At both September 28, 2019 and September 29, 2018, the accumulated impairment loss for the OLS reporting unit was \$8.7 million reflecting impairment charges in fiscal 2003 and fiscal 2009.

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.

In fiscal 2019 and 2018, we did not have any impairment of intangible assets as a result of the impairment analysis.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

8. GOODWILL AND INTANGIBLE ASSETS (Continued)

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

	Fiscal year-end 2019			Fiscal year-end 2018		
	Gross Carrying Amount	Accumulated Amortization	Net	Gross Carrying Amount	Accumulated Amortization	Net
Existing technology	\$193,704	\$(131,429)	\$62,275	\$201,759	\$ (94,376)	\$107,383
Customer relationships	42,083	(21,512)	20,571	50,359	(22,383)	27,976
Trade name	5,261	(5,138)	123	5,888	(3,818)	2,070
Production know-how	2,300	(456)	1,844	—	—	—
In-process research and development	—	—	—	4,864	—	4,864
Total	\$243,348	\$(158,535)	\$84,813	\$262,870	\$(120,577)	\$142,293

For accounting purposes, when an intangible asset is fully amortized, it is removed from the disclosure schedule.

During the third quarter of fiscal 2019, in conjunction with our decision to co-locate the manufacturing and engineering of our HPFL products at our Hamburg, Germany, facility to our Tampere, Finland, location and exit a portion of our HPFL business, expected to be completed during fiscal 2020, we abandoned the in-process research and development project totaling \$4.7 million and fully amortized the intangible asset. See Note 18, “Restructuring Charges.”

The weighted average remaining amortization periods for existing technology, customer relationships, trade names and production know-how are approximately 2.1 years, 6.3 years, 0.1 years and 4.0 years, respectively. Amortization expense for intangible assets during fiscal 2019, 2018, and 2017 was \$61.5 million, \$60.0 million and \$60.6 million, respectively. The change in accumulated amortization also includes \$7.8 million (decrease) and \$2.6 million (decrease) of foreign exchange impact for fiscal 2019 and fiscal 2018, respectively.

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

	Estimated Amortization Expense
2020	\$47,346
2021	17,403
2022	6,799
2023	4,346
2024	3,015
Thereafter	5,904
Total	\$84,813

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

9. BALANCE SHEET DETAILS

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

	<u>Fiscal year-end</u>	
	<u>2019</u>	<u>2018</u>
Prepaid and refundable income taxes	\$44,096	\$37,884
Other taxes receivable	11,208	16,930
Prepaid expenses and other assets	22,689	30,266
Total prepaid expenses and other assets	<u>\$77,993</u>	<u>\$85,080</u>

Other assets consist of the following (in thousands):

	<u>Fiscal year-end</u>	
	<u>2019</u>	<u>2018</u>
Assets related to deferred compensation arrangements (see Note 13)	\$ 35,842	\$ 37,370
Deferred tax assets (see Note 16)	87,011	64,858
Other assets(1)	18,111	9,521
Total other assets	<u>\$140,964</u>	<u>\$111,749</u>

(1) In the first quarter of fiscal 2019, we invested 3.0 million Euro (\$3.4 million) in 3D-Micromac AG, a private company in Germany. The investment is included in other assets and is being carried on a cost basis and will be adjusted for impairment if we determine that indicators of impairment exist at any point in time.

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

	<u>Fiscal year-end</u>	
	<u>2019</u>	<u>2018</u>
Accrued payroll and benefits	\$ 55,698	\$ 55,704
Accrued expenses and other	41,039	36,859
Warranty reserve (see Note 2)	36,460	40,220
Customer deposits	10,843	19,933
Deferred revenue	23,695	30,613
Total other current liabilities	<u>\$167,735</u>	<u>\$183,329</u>

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

9. BALANCE SHEET DETAILS (Continued)

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

	Fiscal year-end	
	2019	2018
Long-term taxes payable	\$ 37,385	\$ 36,336
Deferred compensation (see Note 13)	39,715	40,895
Deferred tax liabilities (see Note 16)	27,785	26,339
Deferred revenue	8,012	5,091
Asset retirement obligations liability (see Note 2)	4,934	4,529
Defined benefit plan liabilities (see Note 14)	45,862	37,528
Other long-term liabilities	2,188	1,238
Total other long-term liabilities	\$165,881	\$151,956

10. BORROWINGS

On November 7, 2016 (the “Closing Date”), we entered into a Credit Agreement by and among us, Coherent Holding BV & Co. K.G. (formerly 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 an L/C Issuer, Bank of America, N.A., as an L/C Issuer, and MUFG Union Bank, N.A., as an L/C Issuer (the “Initial Credit Agreement” and, as amended by the Amendments (defined below), the “Credit Agreement”). The Initial 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 (the “Revolving Credit Facility”) with a \$30.0 million letter of credit sublimit and a \$10.0 million swing line sublimit, in each case, which may be increased from time to time pursuant to an incremental feature set forth in the Credit Agreement. On November 7, 2016, the Borrower 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. On November 7, 2016, we also used 10.0 million Euros of the capacity under the Revolving Credit Facility for the issuance of a letter of credit. On November 20, 2018, we borrowed an additional \$40.0 million under the Revolving Credit Facility and on July 29, 2019, we repaid \$30.0 million of the amount borrowed. The Initial Credit Agreement was amended on May 8, 2017 (the “First Amendment”) to reduce the interest rate margins applicable to the Euro Term Loan and was amended again on July 5, 2017 (the “Second Amendment” and, together with the First Amendment, the “Amendments”) to make certain technical changes in connection with the conversion of the Borrower from a German company with limited liability to a German limited partnership.

The Credit Agreement contains customary mandatory prepayment provisions. The Borrower has the right to prepay loans under the Credit Agreement in whole or in part at any time without premium or penalty, subject to customary breakage costs. 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.

As of September 28, 2019, the outstanding principal amount of the Euro Term Loan was 364.9 million Euros. As of September 28, 2019, the outstanding principal amount of the Revolving Credit Facility was \$10.0 million plus a 10.0 million Euro letter of credit.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

10. BORROWINGS (Continued)

Loans under the Credit Agreement bear interest, at the Borrower's option, at a rate equal to either (i)(x) in the case of calculations with respect to U.S. Dollars or certain other alternative currencies, the London interbank offered rate (the "LIBOR") or (y) in the case of calculations with respect to the Euro, the euro interbank offered rate ("EURIBOR" and, together with LIBOR, 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 that is subject to adjustment pursuant to a pricing grid based on consolidated total gross leverage ratio. At September 28, 2019, the applicable margin for Euro Term Loans borrowed as Eurocurrency Rate loans, was 2.00% per annum and as Base Rate loans was 1.00% per annum and the applicable margin for revolving loans borrowed as Eurocurrency Rate loans was 3.75% per annum and as Base Rate loans was 2.75% per annum. 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 (or at three month intervals if the interest period exceeds three 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 of their assets to secure such obligations.

The Credit Agreement contains customary affirmative 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. We were in compliance with all covenants at September 28, 2019.

We incurred \$28.5 million of debt issuance costs related to the Euro Term Loan and \$0.5 million of debt issuance costs to the original lenders related to the First Amendment, which are included in short-term borrowings and current portion of long-term obligations and long-term obligations in the consolidated balance sheets and will be amortized to interest expense over the seven year life of the Euro Term Loan using the effective interest method, adjusted to accelerate amortization related to voluntary repayments. We incurred \$2.3 million of debt issuance costs in connection with the Revolving Credit Facility which were capitalized and included in prepaid expenses and other assets and other assets in the consolidated balance sheets and will be amortized to interest expense using the straight-line method over the contractual term of 5 years of the Revolving Credit Facility.

Additional sources of cash available to us were international currency lines of credit and bank credit facilities totaling \$26.0 million as of September 28, 2019, of which \$20.8 million was unused and

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

10. BORROWINGS (Continued)

available. These unsecured international facilities were used in Europe and Japan in fiscal 2019. As of September 28, 2019, we had utilized \$5.2 million of the international credit facilities as guarantees in Europe.

Short-term borrowings and current portion of long-term obligations consist of the following (in thousands):

	Fiscal year-end	
	2019	2018
Current portion of Euro Term Loan(1)	\$ 2,748	\$3,092
1.3% Term loan due 2024	1,367	1,448
1.0% State of Connecticut term loan due 2023	378	374
Capital lease obligations	370	158
Line of credit borrowings	10,000	—
Total current portion of long-term obligations	<u>\$14,863</u>	<u>\$5,072</u>

(1) Net of debt issuance costs of \$4.6 million and \$4.7 million at September 28, 2019 and September 29, 2018, respectively.

Long-term obligations consist of the following (in thousands):

	Fiscal year-end	
	2019	2018
Euro Term Loan due 2024(1)	\$385,208	\$411,661
1.3% Term loan due 2024	5,466	7,242
1.0% State of Connecticut term loan due 2023	1,028	1,406
Capital lease obligations	536	402
Total long-term obligations	<u>\$392,238</u>	<u>\$420,711</u>

(1) Net of debt issuance costs of \$6.4 million and \$11.2 million at September 28, 2019 and September 29, 2018, respectively.

Contractual maturities of our debt obligations, excluding line of credit borrowings, as of September 28, 2019 are as follows (in thousands):

	Amount
2020	\$ 9,439
2021	9,442
2022	9,193
2023	9,003
2024	370,976
Total	<u>\$408,053</u>

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

11. COMMITMENTS AND CONTINGENCIES

Indemnifications

In the normal course of business, we enter into agreements that contain a variety of representations and warranties and provide for general indemnification. Exposure under these agreements is unknown because claims may be made against us in the future and we may record charges in the future as a result of these indemnification obligations. As of September 28, 2019, we did not have any material indemnification claims that were probable or reasonably possible.

Commitments

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

Future minimum payments under our non-cancellable operating leases at September 28, 2019 are as follows (in thousands):

	<u>Amount</u>
2020	\$19,578
2021	14,579
2022	10,405
2023	6,817
2024	4,156
Thereafter through 2032	10,755
Total	\$66,290

Rent expense was \$22.9 million, \$22.1 million and \$16.5 million in fiscal 2019, 2018 and 2017, respectively.

As of September 28, 2019, we had total purchase commitments for inventory of approximately \$60.9 million and purchase obligations for fixed assets and services of \$17.1 million compared to \$126.1 million of purchase commitments for inventory and \$15.6 million of purchase obligations for fixed assets and services at September 29, 2018. The inventory decrease was primarily due to lower commitments to support the lower backlog of shipments of large ELA tools used in the flat panel display market and the lower demand in the materials processing market. The fixed assets and services increase was primarily due to the expansion of our manufacturing capacity in Scotland.

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 alleging patent infringement against two of our subsidiaries in the Regional Court of Düsseldorf, Germany. Our subsidiaries subsequently filed a separate nullity action with the Federal Patent Court in Munich, Germany, requesting that the court hold that the patent in question was invalid based on prior art. The court found the patent to be invalid, and Imra appealed the decision to the Federal Court of Justice, the highest civil jurisdiction court in Germany. The Federal Court of Justice dismissed the appeal on March 27, 2018, effectively

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

11. COMMITMENTS AND CONTINGENCIES (Continued)

ending the case in favor of Coherent. In addition, as of April 3, 2019, all of the involved courts had finalized the granting of costs and statutory attorneys' fees to Coherent of an aggregate amount of approximately \$0.1 million. Imra has since paid this amount.

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 customs compliance, product classifications, duty calculations and payments are reviewed or audited by government agencies. Any adverse result in such a review or audit could negatively affect our results in the period in which they occur.

We are currently in discussions with the German government regarding an export compliance matter involving one of our German subsidiaries. We believe that this involves less than approximately 1.5 million Euros in transactions over the past three years and do not believe that the final resolution of this matter will be material to our consolidated financial position, results of operations or cash flows. However, the German government investigation is ongoing and it is possible that substantial payments, fines, penalties or damages could result. Even though we do not currently expect this matter to be material to our consolidated financial position, results of operations or cash flows, circumstances could change as the investigation progresses.

12. STOCK REPURCHASES

On February 6, 2018, our board of directors authorized a stock repurchase program authorizing the Company to repurchase up to \$100.0 million of our common stock from time to time through January 31, 2019. During fiscal 2018, we repurchased and retired 574,946 shares of outstanding common stock under this program at an average price of \$173.91 per share for a total of \$100.0 million, thereby repurchasing the full amount authorized under this program.

On October 28, 2018, our board of directors authorized a stock repurchase program authorizing the Company to repurchase up to \$250.0 million of our common stock through December 31, 2019, with a limit of no more than \$75.0 million per quarter. During fiscal 2019, we repurchased and retired 603,828 shares of outstanding common stock under this program at an average price of \$128.20 per share for a total of \$77.4 million.

13. 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, we choose to invest in insurance contracts and mutual funds in order to approximate the changes

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

13. EMPLOYEE STOCK AWARD AND BENEFIT PLANS (Continued)

in the liability to the employees. These investments and the liability to the employees were as follows (in thousands):

	Fiscal year-end	
	2019	2018
Cash surrender value of life insurance contracts	\$16,223	\$15,830
Fair value of mutual and money market funds	22,852	22,384
Total assets	\$39,075	\$38,214
Total assets, included in:		
Prepaid expenses and other assets	\$ 3,233	\$ 844
Other assets	35,842	37,370
Total assets	\$39,075	\$38,214
Total deferred compensation liability, included in:		
Other current liabilities	\$ 3,233	\$ 844
Other long-term liabilities	39,715	40,895
Total deferred compensation liability	\$42,948	\$41,739

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 net gains of \$1.1 million in fiscal 2019, \$4.8 million in fiscal 2018 and \$5.0 million (including a \$1.3 million death benefit) in fiscal 2017. Changes in the obligation to plan participants are recorded as a component of operating expenses and cost of sales; such amounts were net losses of \$1.5 million in fiscal 2019, \$5.2 million in fiscal 2018 and \$3.9 million in fiscal 2017. Liabilities associated with participant balances under our deferred compensation plans are affected 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 and Company matching contributions on their first day of employment. The Company’s contributions (net of forfeitures) during fiscal 2019, 2018, and 2017 were \$5.7 million, \$5.6 million and \$4.8 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 2019, 2018 and 2017, a total of 108,034 shares,

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

13. EMPLOYEE STOCK AWARD AND BENEFIT PLANS (Continued)

66,099 shares and 95,678 shares, respectively, were purchased by and distributed to employees at an average price of \$109.32, \$159.97 and \$81.82 per share, respectively. At fiscal 2019 year-end, we had 250,749 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 a number of different equity-based grants, including options, time-based restricted stock units and performance restricted stock units. 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 4,489,186 shares remained available for grant at fiscal 2019 year-end. At fiscal 2019 year-end, all outstanding stock options and restricted stock units have been issued under plans approved by our shareholders.

Historically, option grants to employees vested over the four years from the original grant date. Since adoption of the 2011 Plan, no stock options have been granted to employees. Some vested options made to one non-employee director under a prior stock plan remain outstanding.

Non-employee directors are automatically granted time-based restricted stock units upon first joining the Board of Directors and then upon reelection. New non-employee directors initially receive an award of restricted stock units valued at approximately \$225,000 which vest over a two year period. The annual grant for non-employee directors is a value of approximately \$225,000 in 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, though from time-to-time, depending upon exceptional circumstances, the Company has granted restricted stock unit awards with one or two year vesting.
- 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) over the performance period compared with the performance of the applicable Russell Index (or as otherwise determined by the Compensation and HR Committee).

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

13. EMPLOYEE STOCK AWARD AND BENEFIT PLANS (Continued)

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

Employee Stock Purchase Plan

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 2019, 2018 and 2017 were estimated using the following weighted-average assumptions:

	Employee Stock Purchase Plans		
	Fiscal		
	2019	2018	2017
Expected life in years	0.5	0.5	0.5
Expected volatility	47.9%	50.1%	33.0%
Risk-free interest rate	2.4%	1.6%	0.7%
Weighted average fair value per share	\$40.77	\$64.39	\$39.40

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 restricted 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 applicable Russell Index and could range from no units to a maximum of twice

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

13. EMPLOYEE STOCK AWARD AND BENEFIT PLANS (Continued)

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		
	2019	2018	2017
Risk-free interest rate	2.9%	1.7%	1.3%
Volatility	43.7%	37.0%	31.0%
Weighted average fair value	\$117.43	\$315.05	\$163.17

We recognize the estimated cost of these awards, as determined under the simulation model, over the related service period of approximately 3 years, 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 2019, 2018 and 2017 (in thousands):

	Fiscal		
	2019	2018	2017
Cost of sales	\$ 4,880	\$ 4,403	\$ 3,541
Research and development	2,990	3,247	2,973
Selling, general and administrative	28,596	25,088	23,911
Income tax benefit	(4,946)	(5,073)	(7,073)
	<u>\$31,520</u>	<u>\$27,665</u>	<u>\$23,352</u>

As a result of our acquisition of Rofin on November 7, 2016, we made a payment of \$15.3 million due to the cancellation of options held by employees of Rofin. The payment was allocated between total estimated merger consideration of \$11.1 million and post-merger stock-based compensation expense of \$4.2 million, recorded in the first quarter of fiscal 2017, based on the portion of the total service period of the underlying options that have not been completed by the merger date.

During fiscal 2019, \$4.8 million of stock-based compensation cost was capitalized as part of inventory for all stock plans, \$4.8 million was amortized into cost of sales and \$1.5 million remained in inventory at September 28, 2019. During fiscal 2018, \$4.7 million of stock-based compensation cost was capitalized as part of inventory for all stock plans, \$4.4 million was amortized into cost of sales and \$1.5 million remained in inventory at September 29, 2018.

At fiscal 2019 year-end, the total compensation cost related to unvested stock-based awards granted to employees under our stock plans but not yet recognized was approximately \$33.1 million. We do not estimate forfeitures. This cost will be amortized on a straight-line basis over a weighted-average period of approximately 1.5 years.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

13. EMPLOYEE STOCK AWARD AND BENEFIT PLANS (Continued)

The stock option exercise tax benefits, if any, are reported in the statement of cash flows. The tax benefits result from tax deductions in excess of the stock-based compensation cost recognized and are determined on a grant-by-grant basis. During fiscal 2017, we recorded approximately \$1.6 million of excess tax benefits as cash flows from financing activities. We adopted the new accounting standard on share-based compensation in the first quarter of fiscal 2018. As a result, we recognized net excess tax benefits from stock award exercises and restricted stock unit vesting as a discrete tax benefit, which reduced the provision for income taxes by \$2.5 million and \$12.8 million for fiscal 2019 and 2018, respectively.

Stock Awards Activity

At each of fiscal 2019, 2018 and 2017 year-end, we had 24,000 shares subject to vested stock options outstanding. The vested stock options at fiscal 2019 are held by one non-employee director and expire on September 20, 2021.

The following table summarizes the activity of our time-based and performance restricted stock units for fiscal 2019, 2018 and 2017 (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 October 1, 2016	459	\$ 66.47	169	\$ 74.10
Granted	186	131.54	115	163.17
Vested(1)	(229)	66.02	(104)	77.10
Forfeited	(17)	84.79	(4)	70.57
Nonvested stock at September 30, 2017	399	\$118.83	176	\$105.34
Granted	99	254.20	78	315.05
Vested(1)	(213)	88.45	(95)	70.57
Forfeited	(6)	119.66	—	—
Nonvested stock at September 29, 2018	279	\$155.24	159	\$155.76
Granted	195	128.25	105	117.43
Vested(1)	(169)	127.90	(131)	74.48
Forfeited	(10)	170.97	—	—
Nonvested stock at September 28, 2019	295	\$152.47	133	\$184.26

(1) Service-based restricted stock units vested during each fiscal year. Performance-based restricted stock 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

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

13. EMPLOYEE STOCK AWARD AND BENEFIT PLANS (Continued)

withheld to cover tax payments was 120,000 in fiscal 2019, 131,000 in fiscal 2018 and 131,000 in fiscal 2017; tax payments made were \$15.2 million, \$36.3 million and \$15.7 million, respectively.

14. DEFINED BENEFIT PLANS

As a result of the Rofin acquisition, we have assumed all assets and liabilities of Rofin's defined benefit plans for the Rofin-Sinar Laser, GmbH ("RSL") and Rofin-Sinar Inc. ("RS Inc.") employees. The U.S. plan began in fiscal 1995 and is partially funded. Any new employees hired after January 1, 2007, are not eligible for the RS Inc. pension plan. As is the customary practice with German companies, the German pension plan is unfunded. Any new employees hired after 2000 are not eligible for the RSL pension plan. The measurement date of these pension plans is September 30. For these pension plans, actuarial gains and losses are deferred into OCI and amortized over future periods.

Effective January 1, 2012, the RS Inc. defined benefit plan was amended to exclude highly compensated employees, as defined by the Internal Revenue Service, from receiving future years of service under the RS Inc. defined benefit plan. A non-qualified defined benefit plan was created to replace the benefits lost by the employees that were otherwise excluded from the qualified defined benefit plan. Effective August 31, 2018 both the RS Inc. plans were amended to freeze all future compensation benefit accruals.

In addition, we have defined benefit plans in South Korea, Japan, Spain and Italy, covering all full-time employees with at least one year of service, and a defined benefit plan in Germany covering two individuals. As is the customary practice with European and Asian companies, the plans are unfunded, with the exception of the Spanish plan which is partially funded. We have elected to recognize all actuarial gains and losses on these plans immediately, as incurred. The measurement date of these defined benefit plans is September 30.

For financial reporting purposes, the calculation of net periodic pension costs is based upon a number of actuarial assumptions including a discount rate for plan obligations, an assumed rate of return on pension assets and an assumed rate of compensation increase for employees covered by the plan. All of these assumptions were based upon management's judgment, considering all known trends and uncertainties. Actual results that differ from these assumptions would impact future expense recognition and the cash funding requirements of our defined benefit plans.

Components of net periodic cost are as follows for fiscal 2019, 2018 and 2017 (in thousands):

	Fiscal		
	2019	2018	2017
Service cost	\$1,955	\$ 2,262	\$2,077
Interest cost	1,308	1,230	1,086
Expected return on plan assets	(817)	(787)	(736)
Recognized net actuarial (gain) loss	470	240	(236)
Foreign exchange impacts	(79)	(56)	(6)
Recognition of curtailment gain due to plan freeze	—	(1,236)	—
Net periodic pension cost	<u>\$2,837</u>	<u>\$ 1,653</u>	<u>\$2,185</u>

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

14. DEFINED BENEFIT PLANS (Continued)

The service cost component of net periodic costs is included in selling, general and administrative (“SG&A”) expenses, and the interest costs, net actuarial (gain) loss and other components are included in Other-net within other income (expense) in the consolidated statements of operations.

The changes in projected benefit obligations and plan assets, as well as the ending balance sheet amounts for our defined benefit plans, are as follows (in thousands):

	<u>Fiscal 2019</u>	<u>Fiscal 2018</u>
Change in benefit obligation:		
Projected benefit obligation at beginning of year	\$ 51,499	\$ 52,547
Service cost	1,955	2,262
Interest cost	1,308	1,230
Assumption change	9,505	(1,517)
Experience (gain) loss	(308)	596
Foreign exchange rate impacts	(1,889)	(460)
Benefits paid—total	(1,633)	(1,923)
Curtailement gain	—	(1,236)
Projected benefit obligation at end of year	<u>\$ 60,437</u>	<u>\$ 51,499</u>
Projected benefit obligation at end of year:		
U.S. plans	\$ 18,892	\$ 15,754
Foreign plans	41,545	35,745
Projected benefit obligation at end of year	<u>\$ 60,437</u>	<u>\$ 51,499</u>
Change in plan assets:		
Fair value of plan assets at beginning of year	\$ 12,486	\$ 11,856
Actual return on plan assets	539	672
Employer contributions	455	361
Benefits paid—funded plan	(483)	(403)
Fair value of plan assets at end of year	<u>\$ 12,997</u>	<u>\$ 12,486</u>
Fair value of plan assets at end of year:		
U.S. plans	\$ 12,766	\$ 12,323
Foreign plans	231	163
Fair value of plan assets at end of year	<u>12,997</u>	<u>12,486</u>
Unfunded status at end of year	<u>\$(47,440)</u>	<u>\$(39,013)</u>
Amounts recognized in the consolidated balance sheet:		
Accrued benefit liability—current	\$ (1,578)	\$ (1,485)
Accrued benefit liability—non current	(45,862)	(37,528)
Accumulated other comprehensive (gain) loss (pre-tax)	2,590	(6,340)

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

14. DEFINED BENEFIT PLANS (Continued)

The information for plans with an accumulated benefit obligation in excess of plan assets is as follows (in thousands):

	<u>Fiscal year-end</u>	
	<u>2019</u>	<u>2018</u>
Projected benefit obligation	\$60,437	\$51,499
Accumulated benefit obligation	55,941	47,713
Fair value of plan assets	12,997	12,486

The weighted-average rates used to determine the net periodic benefit costs are as follows:

	<u>Fiscal 2019</u>	<u>Fiscal 2018</u>
Discount rate:		
U.S.	3.0%	4.2%
Foreign	0.8%	1.9%
Expected return on plan assets:		
U.S.	5.8%	6.8%
Rate of compensation increase		
U.S.	—%	—%
Foreign	2.1%	1.5%

We recognize the over (under) funded status of the defined benefit plans in our consolidated balance sheets. We also recognize, in other comprehensive income (loss), certain gains and losses that arise for the period but are deferred under current pension accounting rules. A one percent change in the discount rate or the expected rate of return on plan assets would not have a material impact on the projected benefit obligation or the net periodic benefit cost. The decrease in discount rates for U.S. and foreign plans was the primary reason for the assumption change and the increase in the projected benefit obligation.

Expected benefit payments for each of the next five fiscal years and the five years aggregated thereafter is as follows (in thousands):

	<u>Amount</u>
2020	\$ 2,197
2021	1,872
2022	2,704
2023	2,462
2024	2,825
2025 - 2029	15,381
Total	<u>\$27,441</u>

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

14. DEFINED BENEFIT PLANS (Continued)

Our pension plan asset allocations at September 28, 2019 and September 29, 2018 by asset category are as follows:

	Allocation		
	Target	Fiscal 2019	Fiscal 2018
Equity securities	34%	33%	51%
Debt securities	66%	67%	49%
Total plan assets	100%	100%	100%

We employ a total return investment approach whereby a mix of equity, debt securities and government securities are used to maximize the long-term return of plan assets for a prudent level of risk. The intent of this strategy is to minimize plan expenses by maximizing investment returns within that prudent level of risk. Furthermore, equity investments are diversified across U.S. and non-U.S. stocks as well as growth, value and small and large capitalizations. Additionally, cash balances are maintained at levels adequate to meet near-term plan expenses and benefit payments. Investment risk is measured and monitored on an ongoing basis through semi-annual investment portfolio reviews.

Investments in our defined benefit plan are stated at fair value. Level 1 assets are valued using quoted market prices that represent the asset value of the shares held by the trusts. The level 2 assets are investments in pooled funds, which are valued using a model to reflect the valuation of their underlying assets that are publicly traded with observable values. The fair value of level 3 pension plan assets are measured by compiling the portfolio holdings and independently valuing the securities in those portfolios.

The fair values of our pension plan assets, by level within the fair value hierarchy, at September 28, 2019 are as follows:

Asset categories	Level 1	Level 2	Level 3	Total
Cash and cash equivalents:				
Money market	\$503	\$ —	\$—	\$ 503
Equity securities:				
Small cap	—	135	—	135
Mid cap	—	250	—	250
Large cap	—	751	—	751
Total market stock	—	1,689	—	1,689
International	—	1,276	—	1,276
Emerging markets	—	204	—	204
Debt securities:				
Bonds and mortgages	—	3,110	—	3,110
Inflation protected	—	634	—	634
High yield	—	634	—	634
Liability driven investments	—	3,811	—	3,811
Total plan assets	\$503	\$12,494	\$—	\$12,997

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

14. DEFINED BENEFIT PLANS (Continued)

The fair values of our pension plan assets, by level within the fair value hierarchy, at September 29, 2018 are as follows:

<u>Asset categories</u>	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	<u>Total</u>
Cash and cash equivalents:				
Money market	\$—	\$ 708	\$—	\$ 708
Equity securities:				
Small cap	—	297	—	297
Mid cap	—	593	—	593
Large cap	—	2,368	—	2,368
Total market stock	—	1,067	—	1,067
International	—	1,762	—	1,762
Emerging markets	—	263	—	263
Debt securities:				
Bonds and mortgages	—	4,229	—	4,229
Inflation protected	—	593	—	593
High yield	—	606	—	606
Total plan assets	<u>\$—</u>	<u>\$12,486</u>	<u>\$—</u>	<u>\$12,486</u>

15. OTHER INCOME (EXPENSE), NET

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

	<u>Fiscal</u>		
	<u>2019</u>	<u>2018</u>	<u>2017</u>
Foreign exchange gain (loss)	\$(5,774)	\$(11,286)	\$4,656
Gain on deferred compensation investments, net (Note 13)	1,140	4,835	4,955
Other	(410)	(735)	221
Other—net	<u>\$(5,044)</u>	<u>\$ (7,186)</u>	<u>\$9,832</u>

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

16. INCOME TAXES

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

	Fiscal		
	<u>2019</u>	<u>2018</u>	<u>2017</u>
Currently payable:			
Federal	\$ 1,995	\$ 1,163	\$ 5,617
State	557	114	1,022
Foreign	13,448	107,487	116,022
	<u>16,000</u>	<u>108,764</u>	<u>122,661</u>
Deferred and other:			
Federal	(407)	26,334	1,413
State	516	(489)	(153)
Foreign	(9,886)	(20,414)	(30,510)
	<u>(9,777)</u>	<u>5,431</u>	<u>(29,250)</u>
Provision for income taxes	<u>\$ 6,223</u>	<u>\$114,195</u>	<u>\$ 93,411</u>

The components of income from continuing operations before income taxes consist of (in thousands):

	Fiscal		
	<u>2019</u>	<u>2018</u>	<u>2017</u>
United States	\$54,480	\$ 65,272	\$ 25,540
Foreign	5,568	296,283	276,515
Income from continuing operations before income taxes	<u>\$60,048</u>	<u>\$361,555</u>	<u>\$302,055</u>

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

16. INCOME TAXES (Continued)

The reconciliation of the income tax expense at the U.S. Federal statutory rate (21.0% in fiscal 2019, 24.5% in fiscal 2018 and 35.0% in fiscal 2017) to actual income tax expense is as follows (in thousands):

	Fiscal		
	2019	2018	2017
Federal statutory tax expense	\$12,610	\$ 88,684	\$105,719
Valuation allowance	7,925	4,263	4,454
Foreign taxes at rates greater (less) than U.S. rates, net	(8,210)	8,417	(12,346)
Stock-based compensation	556	(8,536)	3,969
State income taxes, net of federal income tax benefit	1,131	(373)	398
Research and development credit	(3,665)	(6,972)	(7,884)
Deferred compensation	(206)	(560)	(1,022)
Release of unrecognized tax benefits	(6,688)	(352)	(538)
Release of interest accrued for unrecognized tax benefits	(205)	(156)	(78)
U.S. tax reform impact	—	26,653	—
Deferred taxes on foreign earnings	1,215	—	—
Write-off of withholding tax credits	1,134	—	—
Other, net	626	3,127	739
Provision for income taxes	\$ 6,223	\$114,195	\$ 93,411
Effective tax rate	10.4%	31.6%	30.9%

On December 22, 2017, the Tax Act was enacted. The Tax Act contains significant changes to U.S. tax law, including lowering the U.S. corporate income tax rate to 21.0%, implementing a territorial tax system with a one-time transition tax assessment on previously tax-deferred foreign earnings and imposing new taxes on certain foreign-sourced income. We elected to pay the one-time transition tax over a period of up to eight years.

In conjunction with the Tax Act, the SEC issued guidance under Staff Accounting Bulletin No. 118 (“SAB 118”) directing taxpayers to record the impact of the Tax Act as “provisional” when they do not have all the necessary information to complete the accounting under ASC 740. The guidance allowed for a measurement period of up to one year after the enactment date of the Tax Act to finalize the recording of the related tax impact. In accordance with SAB 118, we recorded provisional estimates to our consolidated financial statements in fiscal 2018 based on the Tax Act. During the first quarter of fiscal 2019, we further analyzed the income tax effects of the Tax Act and determined there were no material changes to the provisional amounts disclosed in our fiscal 2018 financial statements. Although our accounting for the effects of the Tax Act is complete under SAB 118, there may be future adjustments based on interpretations by the U.S. federal and state governments and regulatory organizations, legislative updates or new regulations, or changes in accounting standards for income taxes.

The Tax Act also includes provisions for Global Intangible Low-Taxed Income (“GILTI”) wherein taxes on foreign income are imposed in excess of a deemed return on tangible assets of foreign corporations. In general, this income will effectively be taxed at a 10.5% tax rate reduced by any available current year foreign tax credits. This provision became effective for taxable years beginning

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

16. INCOME TAXES (Continued)

after December 31, 2017, which was our fiscal 2019. We have elected to treat tax generated by the GILTI provisions as a period expense.

The effective tax rate on income from continuing operations before income taxes for fiscal 2019 of 10.4% was lower than the U.S. federal tax rate of 21.0% primarily due to the tax benefit from losses of our German subsidiaries, which are subject to higher tax rates than U.S. tax rates, adjustments related to the Tax Act's transition tax, the net excess tax benefits from restricted stock unit vesting, the benefit of federal research and development tax credits and our Singapore and South Korea tax exemptions. These amounts are partially offset by an accrual for foreign withholding taxes on certain current year foreign earnings not considered permanently reinvested, stock-based compensation not deductible for tax purposes and limitations on the deductibility of compensation under Internal Revenue Code Section 162(m).

Coherent Singapore made an additional capital contribution to Coherent Korea in 2019 to take advantage of the High-Tech tax exemption provided by the Korean authorities. The High-Tech tax exemption is effective retroactively to the beginning of fiscal 2019. The impact of this tax exemption decreased Coherent Korea income taxes by approximately \$2.4 million in fiscal 2019. The benefit of the tax holiday on net income per diluted share was \$0.10.

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 Coherent Singapore income taxes by approximately \$3.9 million, \$2.5 million and \$1.1 million in fiscal 2019, fiscal 2018 and fiscal 2017, respectively. The benefits of the tax holiday on net income per diluted share were \$0.16, \$0.10 and \$0.04, respectively.

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

	<u>Fiscal year-end</u>	
	<u>2019</u>	<u>2018</u>
Deferred tax assets:		
Reserves and accruals not currently deductible	\$ 40,687	\$ 36,467
Operating loss carryforwards and tax credits	71,890	67,068
Deferred revenue	986	2,682
Inventory capitalization	—	2,450
Stock-based compensation	5,649	5,267
Competent authority offset to transfer pricing tax reserves . .	10,585	10,585
Accumulated translation adjustment	5,459	432
Other	4,423	351
Total gross deferred tax assets	<u>139,679</u>	<u>125,302</u>
Valuation allowance	<u>(41,491)</u>	<u>(33,731)</u>
Total net deferred tax assets	<u>98,188</u>	<u>91,571</u>
Deferred tax liabilities:		
Depreciation and amortization	23,625	39,358
U.S. tax reform impacts	14,603	13,694
Inventory capitalization	734	—
Total gross deferred tax liabilities	<u>38,962</u>	<u>53,052</u>
Net deferred tax assets	<u>\$ 59,226</u>	<u>\$ 38,519</u>

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

16. INCOME TAXES (Continued)

In determining our fiscal 2019 and 2018 tax provisions under ASC 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 2019 and 2018 year-ends.

During fiscal 2019, we increased our valuation allowance on deferred tax assets by \$7.8 million to \$41.5 million, primarily due to the net operating losses generated from certain foreign entities and California research and development tax credits, which are not expected to be recognized. At September 28, 2019, we 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. Management determined that there is sufficient positive evidence to conclude that it is more likely than not that sufficient taxable income will exist in the future allowing us to recognize these deferred tax assets.

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

	Fiscal year-end	
	2019	2018
Non-current deferred income tax assets	\$ 87,011	\$ 64,858
Non-current deferred income tax liabilities	(27,785)	(26,339)
Net deferred tax assets	\$ 59,226	\$ 38,519

We have various tax attribute carryforwards which include the following:

- Foreign federal and local gross net operating loss carryforwards are \$61.6 million, of which \$47.0 million have no expiration date and \$14.6 million have various expiration dates beginning in fiscal 2020. Among the total of \$61.6 million foreign net operating loss carryforwards, a valuation allowance of \$31.7 million has been provided for certain jurisdictions since the recovery of the carryforwards is uncertain. U.S. federal and certain state gross net operating loss carryforwards are \$14.0 million and \$30.7 million, respectively, which were acquired from our acquisitions. A full valuation allowance against certain other state net operating losses of \$30.7 million has been recorded. California gross net operating loss carryforwards are \$2.8 million and are scheduled to expire beginning in fiscal 2032.
- U.S. federal R&D credit carryforwards of \$35.4 million are scheduled to expire beginning in fiscal 2025. California R&D credit carryforwards of \$32.2 million have no expiration date. A total of \$27.1 million valuation allowance, before U.S. federal benefit, has been recorded against California R&D credit carryforwards of \$32.2 million since the recovery of the carryforwards is uncertain. Other states R&D credit carryforwards of \$3.9 million are scheduled to expire beginning in fiscal 2020. A valuation allowance totaling \$2.7 million, before U.S. federal benefit, has been recorded against certain state R&D credit carryforwards of \$3.9 million since the recovery of the carryforwards is uncertain.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

16. INCOME TAXES (Continued)

- U.S. federal foreign tax credit carryforwards of \$51.9 million are scheduled to expire beginning in fiscal 2022.

We are subject to taxation and file income tax returns in the U.S. federal jurisdiction and in many state and foreign jurisdictions. Our most significant tax jurisdictions are the U.S. and Germany. For U.S. federal and German income tax purposes, all years prior to fiscal 2016 and 2010, respectively, are closed to examination. In our other major foreign jurisdictions and our major state jurisdictions, the years prior to fiscal 2013 and 2015, respectively, are closed. Earlier years in our various jurisdictions may remain open for adjustment to the extent that we have tax attribute carryforwards from those years.

In November 2018, Coherent Korea Ltd. received a tax audit notice for fiscal 2016. The audit began in December 2018. The South Korean tax authorities also performed an audit focused on intercompany transfer pricing arrangements for fiscal 2014, 2015 and 2017. In May 2019, the South Korean tax authorities issued transfer pricing assessments for taxes, royalties and sales commissions. We are in the process of appealing and contesting these assessments through the Competent Authority process between South Korea, Germany and the United States. Accordingly, there is no change to our tax reserves at the time of filing of this annual report. We are continuing to monitor and evaluate this situation.

In Germany, various Coherent and legacy Rofin entities are under audit for the years 2010 through 2016. The timing and the resolution of income tax examinations is highly uncertain, and the amounts ultimately paid, if any, upon resolution of the issues raised by the taxing authorities may differ materially from the amounts accrued for each year. 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. Although the timing of resolution, settlement and closure of audits is not certain, we do not believe it is reasonably possible that our unrecognized tax benefits will materially change in the next 12 months.

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

	Fiscal year-end		
	2019	2018	2017
Balance as of the beginning of the year	\$65,882	\$47,566	\$20,442
Increase related to acquisitions	—	—	25,151
Tax positions related to current year:			
Additions	605	19,033	1,326
Reductions	—	—	—
Tax positions related to prior year:			
Additions	448	117	4,951
Reductions	(6,071)	—	(65)
Lapses in statutes of limitations	(639)	(700)	(610)
Decrease in unrecognized tax benefits based on audit results	—	—	(5,217)
Foreign currency revaluation adjustment	(2,114)	(134)	1,588
Balance as of end of year	<u>\$58,111</u>	<u>\$65,882</u>	<u>\$47,566</u>

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

16. INCOME TAXES (Continued)

As of September 28, 2019, the total amount of gross unrecognized tax benefits including gross interest and penalties was \$63.9 million, of which \$43.9 million, if recognized, would affect our effective tax rate. We reassessed the computation of the transition tax liability based upon the issuance of new guidance and the availability of additional substantiation in fiscal 2019. The adjustments resulted in a tax benefit of approximately \$6.0 million, which was recorded in fiscal 2019. Our total gross unrecognized tax benefit, net of certain deferred tax assets is classified as a long-term taxes payable in the consolidated balance sheets. We include interest and penalties related to unrecognized tax benefits within the provision for income taxes. As of September 28, 2019, the total amount of gross interest and penalties accrued was \$5.8 million and it is classified as long-term taxes payable in the consolidated balance sheets. As of September 29, 2018, we had accrued \$4.4 million for the gross interest and penalties and it is classified as Other long-term liabilities in the consolidated balance sheets.

A summary of the fiscal tax years that remain subject to examination, as of September 28, 2019, for our major tax jurisdictions is:

United States—Federal	2016—forward
United States—Various States	2015—forward
Netherlands	2014—forward
Germany	2010—forward
Japan	2013—forward
South Korea	2014—forward
United Kingdom	2017—forward

17. SEGMENT AND GEOGRAPHIC INFORMATION

At September 28, 2019, we were organized into two reporting segments, OLS and ILS, based upon our organizational structure and how the CODM receives and utilizes information provided to allocate resources and make decisions. This segmentation reflects the go-to-market strategies and synergies for our broad portfolio of laser technologies and products. While both segments deliver cost-effective, highly reliable photonics solutions, the OLS business segment is focused on high performance laser sources and complex optical sub-systems, typically used in microelectronics manufacturing, medical diagnostics and therapeutic applications, as well as in scientific research. Our ILS business segment delivers high performance laser sources, sub-systems and tools primarily used for industrial laser materials processing, serving important end markets like automotive, machine tool, consumer goods and medical device manufacturing. Rofin’s operating results have been included primarily in our ILS segment. Ondax’s and OR Laser’s operating results have been included in our ILS segment.

We have identified OLS and ILS 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 CODM as he assesses the performance of the segments and decides how to allocate resources to the segments. Income from continuing 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

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

17. SEGMENT AND GEOGRAPHIC INFORMATION (Continued)

disclosures. Income from continuing 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 certain operating expenses to our operating segments and we manage them 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 continuing operations for our operating segments and a reconciliation of our total income from continuing operations to income from continuing operations before income taxes (in thousands):

	Fiscal		
	2019	2018	2017
<i>Net sales:</i>			
OEM Laser Sources	\$ 886,676	\$1,259,477	\$1,143,620
Industrial Lasers & Systems	543,964	643,096	579,691
Total net sales	<u>\$1,430,640</u>	<u>\$1,902,573</u>	<u>\$1,723,311</u>
<i>Income (loss) from continuing operations:</i>			
OEM Laser Sources	\$ 239,073	\$ 469,835	\$ 432,839
Industrial Lasers & Systems	(93,133)	(3,687)	(26,447)
Corporate and other	(62,845)	(73,131)	(80,897)
Total income from continuing operations	\$ 83,095	\$ 393,017	\$ 325,495
Total other expense, net	<u>(23,047)</u>	<u>(31,462)</u>	<u>(23,440)</u>
Income from continuing operations before income taxes	<u>\$ 60,048</u>	<u>\$ 361,555</u>	<u>\$ 302,055</u>

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 2019, 2018 and 2017 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.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

17. SEGMENT AND GEOGRAPHIC INFORMATION (Continued)

Sales to unaffiliated customers are as follows (in thousands):

<u>SALES</u>	<u>Fiscal</u>		
	<u>2019</u>	<u>2018</u>	<u>2017</u>
United States	\$ 339,585	\$ 309,495	\$ 297,699
Foreign countries:			
South Korea	313,461	652,313	628,369
China	194,653	235,568	162,316
Japan	138,028	180,223	154,985
Asia-Pacific, other	93,389	124,733	107,713
Germany	145,285	166,926	145,835
Europe, other	148,680	171,936	162,162
Rest of World	57,559	61,379	64,232
Total foreign countries sales	1,091,055	1,593,078	1,425,612
Total sales	\$1,430,640	\$1,902,573	\$1,723,311

Long-lived assets, which include all non-current assets other than goodwill, intangibles, non-current restricted cash, our investment in 3D-Micromac AG and deferred taxes, by geographic region, are as follows (in thousands):

<u>LONG-LIVED ASSETS</u>	<u>Fiscal year-end</u>	
	<u>2019</u>	<u>2018</u>
United States	\$151,640	\$124,312
Foreign countries:		
Germany	152,529	168,755
Europe, other	29,815	22,962
Asia-Pacific	39,977	42,652
Total foreign countries long-lived assets	222,321	234,369
Total long-lived assets	\$373,961	\$358,681

Major Customers

We had one major customer who accounted for 16.8%, 25.8% and 22.9% of consolidated revenue during fiscal 2019, 2018 and 2017, respectively. The customer purchased primarily from our OLS segment.

18. RESTRUCTURING CHARGES

In the first quarter of fiscal 2017, we began the implementation of planned restructuring activities in connection with the acquisition of Rofin. The activities under this plan primarily related to exiting our legacy high power fiber laser product line, change of control payments to Rofin officers, the exiting of two product lines acquired in the acquisition of Rofin, realignment of our supply chain due to segment reorganization and consolidation of sales and distribution offices as well as certain manufacturing sites. These activities resulted in charges primarily for employee termination, other exit related costs associated with the write-off of property and equipment and inventory and early lease termination costs.

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

18. RESTRUCTURING CHARGES (Continued)

In June 2019, we announced our plans to co-locate the manufacturing and engineering of our HPFL products at our Hamburg, Germany, facility to our Tampere, Finland, location and exit a portion of our HPFL business, expected to be completed during fiscal 2020. In conjunction with this announcement, we recorded charges in the third and fourth quarters of fiscal 2019 totaling \$19.7 million primarily related to write-offs of excess inventory, which is recorded in cost of sales, and estimated severance.

We have also announced our intent to vacate our leased facility in Santa Clara at the end of the current lease term in calendar 2020 and combine operations at our Santa Clara headquarters. We did not incur material expenses in fiscal 2019 related to this project.

The following table presents our current liability as accrued on our balance sheets for restructuring charges. The table sets forth an analysis of the components of the restructuring charges and payments and other deductions made against the accrual for fiscal 2019 and fiscal 2018 (in thousands):

	Severance Related	Asset Write-Offs	Other	Total
Balances, September 30, 2017	\$ 1,301	\$ —	\$ —	\$ 1,301
Provision	1,795	1,287	867	3,949
Payments and other	<u>(2,260)</u>	<u>(1,287)</u>	<u>(581)</u>	<u>(4,128)</u>
Balances, September 29, 2018	836	—	286	1,122
Provision	9,172	12,609	940	22,721
Payments and other	<u>(1,729)</u>	<u>(12,609)</u>	<u>(1,011)</u>	<u>(15,349)</u>
Balances, September 28, 2019	<u>\$ 8,279</u>	<u>\$ —</u>	<u>\$ 215</u>	<u>\$ 8,494</u>

At September 28, 2019, \$8.3 million of accrued severance related costs were included in other current liabilities and are expected to result in cash expenditures through the fourth quarter of fiscal 2020. The severance related, asset write-offs of inventory and other costs in fiscal 2019 primarily related to the exit of a portion of our HPFL business in Hamburg, Germany. The severance related, asset write-offs of inventory and other costs in fiscal 2019 and 2018 other than those related to the exit of a portion of our HPFL business in Hamburg, Germany primarily related to the consolidation of certain manufacturing sites.

By segment, \$21.9 million and \$2.8 million of restructuring costs were incurred in the ILS segment and \$0.8 million and \$1.1 million were incurred in the OLS segment in fiscal 2019 and 2018, respectively. Restructuring charges are recorded in cost of sales, research and development and selling, general and administrative expenses in our consolidated statements of operations.

19. DISCONTINUED OPERATIONS AND SALE OF ASSETS HELD FOR SALE

Discontinued Operations

Discontinued operations are from the Hull Business that we acquired as part of our acquisition of Rofin. As a condition of the acquisition, we were required to divest and hold separate the Hull Business and reported this business separately as a discontinued operation until its divestiture. We completed the divestiture of the Hull Business on October 11, 2017, after receiving approval for the terms of the sale from the European Commission. As a result of the divestiture, we recorded a loss in discontinued operations of \$2,000 in the first quarter of fiscal 2018. For financial statement purposes, the results of operations for this discontinued business have been segregated from those of the

COHERENT, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

19. DISCONTINUED OPERATIONS AND SALE OF ASSETS HELD FOR SALE (Continued)

continuing operations and are presented in our consolidated financial statements as discontinued operations.

Sale of Assets Held for Sale

In the fourth quarter of fiscal 2017, management decided to sell several entities that we acquired in the Rofin acquisition. Although the sale was not completed as of the end of fiscal 2017, we recorded a non-cash impairment charge of \$2.9 million to operating expense in our results of operations in the fourth quarter of fiscal 2017 to reduce our carrying value in these entities to fair value. On April 27, 2018, we completed the sale of these entities acquired in the Rofin acquisition in exchange for cash of \$6.3 million and we recognized a net loss of \$0.3 million in fiscal 2018 related to the sale and impairment of the entities.

QUARTERLY FINANCIAL INFORMATION (UNAUDITED)

Summarized quarterly financial data for the years ended September 28, 2019 and September 29, 2018 are as follows (in thousands, except per share amounts):

	<u>First Quarter</u>	<u>Second Quarter</u>	<u>Third Quarter</u>	<u>Fourth Quarter</u>
Fiscal 2019:				
Net sales	\$383,146	\$372,860	\$339,170	\$335,464
Gross profit	149,350	130,717	98,003	108,395
Net income (loss)	35,550	20,750	(3,099)	624
Net income (loss) per basic share	\$ 1.46	\$ 0.86	\$ (0.13)	\$ 0.03
Net income (loss) per diluted share	\$ 1.45	\$ 0.85	\$ (0.13)	\$ 0.03
Fiscal 2018:				
Net sales	\$477,565	\$481,118	\$482,342	\$461,548
Gross profit	217,023	215,430	208,336	189,902
Net income	41,901	65,302	66,970	73,185
Net income per basic share	\$ 1.70	\$ 2.64	\$ 2.72	\$ 3.02
Net income per diluted share	\$ 1.67	\$ 2.61	\$ 2.69	\$ 2.99

DIRECTORS AND EXECUTIVE OFFICERS OF COHERENT, INC.

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Chairman of the Board, Coherent, Inc.
Former Chief Executive Officer,
Advanced Energy Industries, Inc.

Andreas W. Mattes

President and Chief Executive Officer
Coherent, Inc.

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Pamela Fletcher

Vice President – eDelivery and Mobility Solutions
and Global Innovation at General Motors Company

Susan James*

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Industrial Lasers & Systems

Kevin Palatnik

Executive Vice President and
Chief Financial Officer

Mark Sobey, Ph.D.

Executive Vice President and Chief Operating Officer

Independent Registered Public

Accounting Firm Deloitte & Touche, LLP

San Jose, CA

SEC Form 10-K

Form 10-K for the 2019 fiscal year was filed with the Securities and Exchange Commission on November 26, 2019, as amended by the Form 10-K/A filed on January 24, 2020. Copies will be made available without charge upon request.

* Retiring at annual meeting



INVESTOR RELATIONS

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Coherent invites security analysts and representatives of portfolio management firms to contact:

Kevin Palatnik

Executive Vice President and
Chief Financial Officer
Coherent, Inc.
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Please send change of address and other correspondence to the transfer agent:

American Stock Transfer & Trust Company, LLC

6201 15th Avenue
Brooklyn, NY 11219
Telephone: (800) 937-5449
info@astfinancial.com
www.astfinancial.com

Annual meeting of shareholders will be held on
April 27, 2020 at 8:30 a.m. Pacific time

Stock Symbol

Common Stock traded under the symbol
COHR

Coherent, Inc. is an equal opportunity employer, M/F/H/V

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Readers are encouraged to refer to the risk disclosures described in the Company's Form 10-K, 10-K/A, 10-Q and 8-K, as applicable.



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