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

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**FORM 10-Q**

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(Mark One)

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

**For the Quarterly Period Ended December 29, 2018**

**or**

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

**For the transition period from            to  
Commission File Number: 001-33962**

**COHERENT, INC.**

**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**94-1622541**  
(I.R.S. Employer  
Identification No.)

**5100 Patrick Henry Drive, Santa Clara, California 95054**  
(Address of principal executive offices) (Zip Code)

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

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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 (§232.405 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 ☒

The number of shares outstanding of registrant's common stock, par value \$.01 per share, on February 4, 2019 was 24,326,589.

**COHERENT, INC.****INDEX**

	<u>Page</u>
<b>Part I. Financial Information</b>	
Item 1. Financial Statements (unaudited)	
Condensed Consolidated Statements of Operations	
Three months ended December 29, 2018 and December 30, 2017	4
Condensed Consolidated Statements of Comprehensive Income	
Three months ended December 29, 2018 and December 30, 2017	5
Condensed Consolidated Statements of Stockholders' Equity	
Three months ended December 29, 2018 and December 30, 2017	6
Condensed Consolidated Balance Sheets	
December 29, 2018 and September 29, 2018	7
Condensed Consolidated Statements of Cash Flows	
Three months ended December 29, 2018 and December 30, 2017	8
Notes to Condensed Consolidated Financial Statements	9
Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations	31
Item 3. Quantitative and Qualitative Disclosures About Market Risk	43
Item 4. Controls and Procedures	45
<b>Part II. Other Information</b>	
Item 1. Legal Proceedings	46
Item 1A. Risk Factors	46
Item 2. Unregistered Sales of Equity Securities and Use of Proceeds	63
Item 5. Other Information	65
Item 6. Exhibits	66
<b>Signatures</b>	67

**SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS**

This quarterly report contains certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. All statements included in or incorporated by reference in this quarterly report, other than statements of historical fact, are forward-looking statements. These statements are generally accompanied by words such as "trend," "may," "will," "could," "would," "should," "expect," "plan," "anticipate," "rely," "believe," "estimate," "predict," "intend," "potential," "continue," "outlook," "forecast" or the negative of such terms, or other comparable terminology, including without limitation statements made under "Our Strategy" and in "Management's Discussion and Analysis of Financial Condition and Results of Operations." Forward-looking statements also include the assumptions underlying or relating to any of the foregoing statements. Actual results of Coherent, Inc. (referred to herein as the Company, we, our or Coherent) may differ significantly from those anticipated in these forward-looking statements as a result of various factors, including those discussed in the sections captioned "Our Strategy," "Risk Factors" and "Key Performance Indicators," as well as any other cautionary language in this quarterly report. All forward-looking statements included in the 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. FINANCIAL INFORMATION****ITEM 1. FINANCIAL STATEMENTS**

**COHERENT, INC. AND SUBSIDIARIES**  
**CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS**  
*(Unaudited; in thousands, except per share data)*

	Three Months Ended	
	December 29, 2018	December 30, 2017
<b>Net sales</b>	<b>\$ 383,146</b>	<b>\$ 477,565</b>
<b>Cost of sales</b>	<b>233,796</b>	<b>260,542</b>
<b>Gross profit</b>	<b>149,350</b>	<b>217,023</b>
<b>Operating expenses:</b>		
Research and development	28,942	31,392
Selling, general and administrative	64,557	73,437
Impairment and other charges	—	265
Amortization of intangible assets	3,040	2,606
Total operating expenses	96,539	107,700
<b>Income from operations</b>	<b>52,811</b>	<b>109,323</b>
<b>Other income (expense):</b>		
Interest income	228	471
Interest expense	(4,901)	(8,747)
Other—net	(4,478)	(224)
Total other income (expense), net	(9,151)	(8,500)
<b>Income from continuing operations before income taxes</b>	<b>43,660</b>	<b>100,823</b>
Provision for income taxes	8,110	58,920
<b>Net income from continuing operations</b>	<b>35,550</b>	<b>41,903</b>
Loss from discontinued operations, net of income taxes	—	(2)
<b>Net income</b>	<b>\$ 35,550</b>	<b>\$ 41,901</b>
<b>Net income per share:</b>		
Basic	\$ 1.46	\$ 1.70
Diluted	\$ 1.45	\$ 1.67
<b>Shares used in computation:</b>		
Basic	24,268	24,635
Diluted	24,472	25,025

*See Accompanying Notes to Condensed Consolidated Financial Statements.*

**COHERENT, INC. AND SUBSIDIARIES**  
**CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME**  
*(Unaudited; in thousands)*

	<b>Three Months Ended</b>	
	<b>December 29, 2018</b>	<b>December 30, 2017</b>
Net income	<b>\$ 35,550</b>	\$ 41,901
Other comprehensive income (loss): <sup>(1)</sup>		
Translation adjustment, net of taxes <sup>(2)</sup>	<b>(5,690)</b>	92
Changes in unrealized losses on available-for-sale securities, net of taxes <sup>(3)</sup>	—	(7)
Defined benefit pension plans, net of taxes <sup>(4)</sup>	<b>8</b>	147
Other comprehensive income (loss), net of tax	<b>(5,682)</b>	232
Comprehensive income	<b><u>\$ 29,868</u></b>	<b><u>\$ 42,133</u></b>

- (1) Reclassification adjustments were not significant during the three months ended December 29, 2018 and December 30, 2017.
- (2) Tax benefits of \$2,755 and \$0 were provided on translation adjustments during the three months ended December 29, 2018 and December 30, 2017, respectively.
- (3) Tax benefits of \$0 and \$4 were provided on changes in unrealized gains (losses) on available-for-sale securities for the three months ended December 29, 2018 and December 30, 2017, respectively.
- (4) Tax benefits of \$6 and \$46 were provided on changes in defined benefit pension plans for the three months ended December 29, 2018 and December 30, 2017, respectively.

*See Accompanying Notes to Condensed Consolidated Financial Statements.*

**COHERENT, INC. AND SUBSIDIARIES**  
**CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY**  
*(Unaudited; in thousands)*

	Common Stock Shares	Common Stock Par Value	Add. Paid-in Capital	Accum. Other Comp. Income (Loss)	Retained Earnings	Total
<b>Balances, September 30, 2017</b>	<b>24,631</b>	<b>\$ 245</b>	<b>\$ 171,403</b>	<b>\$ 19,906</b>	<b>\$ 971,710</b>	<b>\$ 1,163,264</b>
Common stock issued under stock plans, net of shares withheld for employee taxes	191	2	(30,749)	—	—	(30,747)
Cumulative effect of change in accounting principle	—	—	—	—	13,621	13,621
Stock-based compensation	—	—	7,110	—	—	7,110
Net income	—	—	—	—	41,901	41,901
Other comprehensive income, net of tax	—	—	—	232	—	232
<b>Balances, December 30, 2017</b>	<b>24,822</b>	<b>\$ 247</b>	<b>\$ 147,764</b>	<b>\$ 20,138</b>	<b>\$ 1,027,232</b>	<b>\$ 1,195,381</b>

	Common Stock Shares	Common Stock Par Value	Add. Paid-in Capital	Accum. Other Comp. Income (Loss)	Retained Earnings	Total
<b>Balances, September 29, 2018</b>	<b>24,299</b>	<b>\$ 242</b>	<b>\$ 78,700</b>	<b>\$ 2,833</b>	<b>\$ 1,232,689</b>	<b>\$ 1,314,464</b>
Common stock issued under stock plans, net of shares withheld for employee taxes	223	2	(9,141)	—	—	(9,139)
Repurchase of common stock	(195)	(2)	(25,499)	—	—	(25,501)
Stock-based compensation	—	—	7,791	—	—	7,791
Net income	—	—	—	—	35,550	35,550
Other comprehensive loss, net of tax	—	—	—	(5,682)	—	(5,682)
<b>Balances, December 29, 2018</b>	<b>24,327</b>	<b>\$ 242</b>	<b>\$ 51,851</b>	<b>\$ (2,849)</b>	<b>\$ 1,268,239</b>	<b>\$ 1,317,483</b>

*See Accompanying Notes to Condensed Consolidated Financial Statements.*

**COHERENT, INC. AND SUBSIDIARIES**  
**CONDENSED CONSOLIDATED BALANCE SHEETS**  
*(Unaudited; in thousands, except par value)*

	December 29, 2018	September 29, 2018
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	\$ 314,997	\$ 310,495
Restricted cash	827	858
Short-term investments	5,019	120
Accounts receivable—net of allowances of \$5,018 and \$4,568, respectively	330,892	355,208
Inventories	493,156	486,741
Prepaid expenses and other assets	84,141	85,080
Total current assets	<u>1,229,032</u>	<u>1,238,502</u>
Property and equipment, net	320,933	311,793
Goodwill	442,236	442,940
Intangible assets, net	135,941	142,293
Non-current restricted cash	12,514	12,692
Other assets	112,956	111,749
Total assets	<u><u>\$ 2,253,612</u></u>	<u><u>\$ 2,259,969</u></u>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current liabilities:		
Short-term borrowings and current-portion of long-term obligations	\$ 46,670	\$ 5,072
Accounts payable	74,738	70,292
Income taxes payable	94,302	114,145
Other current liabilities	161,401	183,329
Total current liabilities	<u>377,111</u>	<u>372,838</u>
Long-term obligations	413,505	420,711
Other long-term liabilities	145,513	151,956
Commitments and contingencies (Note 12)		
Stockholders' equity:		
Common stock, Authorized—500,000 shares, par value \$.01 per share:		
Outstanding—24,327 shares and 24,299 shares, respectively	242	242
Additional paid-in capital	51,851	78,700
Accumulated other comprehensive income (loss)	(2,849)	2,833
Retained earnings	1,268,239	1,232,689
Total stockholders' equity	<u>1,317,483</u>	<u>1,314,464</u>
Total liabilities and stockholders' equity	<u><u>\$ 2,253,612</u></u>	<u><u>\$ 2,259,969</u></u>

*See Accompanying Notes to Condensed Consolidated Financial Statements.*

**COHERENT, INC. AND SUBSIDIARIES**  
**CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS**  
*(Unaudited; in thousands)*

	Three Months Ended	
	December 29, 2018	December 30, 2017
<b>Cash flows from operating activities:</b>		
Net income	\$ 35,550	\$ 41,901
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	13,916	12,555
Amortization of intangible assets	15,067	15,100
Deferred income taxes	(1,505)	13,121
Amortization of debt issuance cost	1,288	3,815
Stock-based compensation	7,876	7,076
Non-cash restructuring charges	76	430
Other non-cash expense	1	377
Changes in assets and liabilities, net of effect of acquisitions:		
Accounts receivable	23,635	(1,219)
Inventories	(9,501)	(16,128)
Prepaid expenses and other assets	1,199	(6,364)
Other long-term assets	2,332	(3,365)
Accounts payable	4,736	4,676
Income taxes payable/receivable	(21,842)	29,751
Other current liabilities	(20,685)	(39,336)
Other long-term liabilities	(832)	2,588
Cash flows from discontinued operations	—	2
Net cash provided by operating activities	51,311	64,980
<b>Cash flows from investing activities:</b>		
Purchases of property and equipment	(23,137)	(23,683)
Proceeds from dispositions of property and equipment	—	26
Purchases of available-for-sale securities	(5,000)	(14,894)
Proceeds from sales and maturities of available-for-sale securities	121	9,711
Acquisition of businesses, net of cash acquired	(18,881)	—
Investment at cost	(3,423)	—
Proceeds from sale of discontinued operation	—	25,000
Net cash used in investing activities	(50,320)	(3,840)
<b>Cash flows from financing activities:</b>		
Short-term borrowings	68,124	2,354
Repayments of short-term borrowings	(26,476)	(622)
Repayments of long-term borrowings	(1,907)	(90,363)
Issuance of common stock under employee stock option and purchase plans	5,704	4,899
Net settlement of restricted common stock	(14,843)	(35,646)
Repurchase of common stock	(25,501)	—
Net cash provided by (used in) financing activities	5,101	(119,378)
<b>Effect of exchange rate changes on cash, cash equivalents and restricted cash</b>	<b>(1,799)</b>	<b>943</b>
<b>Net increase (decrease) in cash, cash equivalents and restricted cash</b>	<b>4,293</b>	<b>(57,295)</b>
<b>Cash, cash equivalents and restricted cash, beginning of period</b>	<b>324,045</b>	<b>457,087</b>
<b>Cash, cash equivalents and restricted cash, end of period</b>	<b>\$ 328,338</b>	<b>\$ 399,792</b>
<b>Non-cash investing and financing activities:</b>		
Unpaid property and equipment purchases	\$ 6,082	\$ 3,853

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the condensed consolidated balance sheets that sum to the total of the same amounts shown in the condensed consolidated statements of cash flows.

	December 29, 2018	December 30, 2017
Cash and cash equivalents	\$ 314,997	\$ 385,735
Restricted cash, current	827	1,100
Restricted cash, non-current	12,514	12,957
Total cash, cash equivalents, and restricted cash shown in the condensed consolidated statement of cash flows	\$ 328,338	\$ 399,792

*See Accompanying Notes to Condensed Consolidated Financial Statements.*



**COHERENT, INC. AND SUBSIDIARIES**  
**NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS**  
*(Unaudited)*

**1. BASIS OF PRESENTATION**

The accompanying unaudited condensed consolidated financial statements have been prepared pursuant to the rules and regulations of the Securities and Exchange Commission ("SEC"). Certain information and footnote disclosures normally included in financial statements prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP") have been condensed or omitted pursuant to such rules and regulations. These interim condensed consolidated financial statements and notes thereto should be read in conjunction with the consolidated financial statements and notes thereto filed by Coherent, Inc. on Form 10-K for the fiscal year ended September 29, 2018. In the opinion of management, all adjustments necessary for a fair presentation of financial condition and results of operation as of and for the periods presented have been made and include only normal recurring adjustments. Interim results of operations are not necessarily indicative of results to be expected for the year or any other interim periods. Our fiscal year ends on the Saturday closest to September 30 and our first fiscal quarters include 13 weeks of operations in each fiscal year presented. Fiscal year 2019 and 2018 both include 52 weeks.

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.

On October 5, 2018, we acquired privately held Ondax, Inc. ("Ondax"). On March 8, 2018, we acquired privately held O.R. Lasertechnologie GmbH and certain assets of its U.S.-based affiliate (collectively "OR Laser"). The significant accounting policies of Ondax and OR Laser have been aligned to conform to those of Coherent, and the consolidated financial statements include the results of Ondax and OR Laser as of their acquisition dates.

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.

**Change in Significant Accounting Policies - Revenue Recognition**

Except for the adoption of Accounting Standard Update ("ASU") 2014-09, Revenue from Contracts with Customers ("ASC 606") on September 30, 2018, there have been no significant changes to our significant accounting policies as of and for the three months ended December 29, 2018, as compared to the significant accounting policies described in our Annual Report on Form 10-K for the year ended September 29, 2018.

Effective September 30, 2018, we adopted ASC 606, using the modified retrospective transition method applied to contracts that were not completed as of September 30, 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. There was no impact on the opening accumulated retained earnings, revenues, costs, deferred income, customer deposits or other balances as of September 30, 2018 or the quarter ended December 29, 2018 due to the adoption of ASC 606.

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 of 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 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 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.

#### *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, therefore, we did not record a transition adjustment on adoption.

#### *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.

## **2. RECENT ACCOUNTING STANDARDS**

#### **Adoption of New Accounting Pronouncement**

In May 2014, the Financial Accounting Standards Board ("the FASB") issued ASC 606, which outlines a single, comprehensive model for entities to use in accounting for revenue arising from contracts with customers. The core principle of ASC 606 is to recognize revenue when promised goods or services are transferred to customers in an amount that reflects the consideration that is expected to be received for those goods or services. ASC 606 defines a five-step process to achieve this core principle and, accordingly, we expect more judgment and estimates may be required within the revenue recognition process than were required under the previous revenue recognition standard, including identifying performance obligations in the contract, estimating the amount of variable consideration to include in the transaction price and allocating the transaction price to each separate performance obligation. ASC 606 permits two methods of adoption: retrospectively to each prior reporting period presented (the full retrospective method), or retrospectively with the cumulative effect of initially applying the guidance recognized at the date of initial application (the modified retrospective method).

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 will be recorded at the point-in-time when control transfers, which is consistent with the timing of revenue recognition under ASC 605. See Note 1, "Basis of Presentation" and Note 3, "Revenue Recognition" to the Notes to Condensed Consolidated Financial Statements for more

information. There was no impact on the opening accumulated retained earnings, revenues, costs, deferred income, customer deposits or other balances as of September 30, 2018 or the quarter ended December 29, 2018 due to the adoption of ASC 606.

In August 2018, the Securities and Exchange Commission ("SEC") adopted amendments to certain disclosure requirements in Securities Act Release No. 33-10532, Disclosure Update and Simplification. The amendments became effective on November 5, 2018. The SEC staff subsequently indicated that it would not object if a filer's first presentation of changes in shareholders' equity is included in its Form 10-Q for the quarter that begins after the final rule's effective date. Among the amendments is the requirement to present the changes in shareholders' equity in the interim financial statements (either in a separate statement or footnote) in quarterly reports on Form 10-Q. The analysis should present a reconciliation of the beginning balance to the ending balance of each period for which a consolidated statement of operations is required to be filed. We adopted this amendment and have included the first presentation of changes in stockholders' equity in this quarterly report on Form 10-Q for our first quarter of fiscal 2019.

### Recently Issued Accounting Pronouncements

In February 2016, the FASB issued accounting guidance 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. We will adopt the new guidance utilizing the modified retrospective transition method. 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 expect the standard will have a material impact on our consolidated balance sheets, but will not have a material impact on our consolidated income statements. The most significant impact will be the recognition of Right-Of-Use assets and lease liabilities for operating leases, while our accounting for capital leases will remain substantially unchanged. We will continue to assess and disclose the impact that this new guidance will have on our consolidated financial statements, disclosures and related controls, when known.

## 3. REVENUE RECOGNITION

### *Disaggregation of Revenue*

Based on the information that our chief operating decision maker 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

	Three months ended			
	December 29, 2018		December 30, 2017	
	OEM Laser Sources	Industrial Lasers & Systems	OEM Laser Sources	Industrial Lasers & Systems
Net sales:				
Products <sup>(1)</sup>	\$ 152,742	\$ 111,975	\$ 230,768	\$ 118,260
Other product and service revenues <sup>(2)</sup>	89,606	28,823	94,889	33,648
Total net sales	\$ 242,348	\$ 140,798	\$ 325,657	\$ 151,908

(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 \$12.6 million for the three months ended December 29, 2018 was recognized over time.

#### Sales by market application and segment

	Three months ended			
	December 29, 2018		December 30, 2017	
	OEM Laser Sources	Industrial Lasers & Systems	OEM Laser Sources	Industrial Lasers & Systems
<u>Net sales:</u>				
Microelectronics	\$ 162,203	\$ 16,206	\$ 250,237	\$ 17,939
Materials processing	8,802	95,841	10,453	117,008
OEM components and instrumentation	39,219	27,134	32,997	15,859
Scientific and government programs	32,124	1,617	31,970	1,102
Total net sales	<u>\$ 242,348</u>	<u>\$ 140,798</u>	<u>\$ 325,657</u>	<u>\$ 151,908</u>

See Note 18, "Segment and Geographic Information" for revenue disaggregation by reportable segment and geographic region.

### **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 <sup>(1)</sup>	\$ 55,637
Amount of customer deposits and deferred revenue recognized in income	(50,916)
Additions to customer deposits and deferred revenue	41,270
Translation adjustments	(339)
Ending balance, December 29, 2018 <sup>(2)</sup>	<u>\$ 45,652</u>

(1) Beginning customer deposits and deferred revenue as of September 30, 2018 includes \$50,546 of current portion and \$5,091 of long-term portion.

(2) Ending customer deposits and deferred revenue as of December 29, 2018 includes \$40,143 of current portion and \$5,509 of long-term portion.

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 December 29, 2018 (in thousands):

	Remainder of fiscal 2019	Fiscal 2020	Fiscal 2021 and after	Total
Performance Obligations	\$ 37,626	\$ 5,177	\$ 2,849	\$ 45,652

## **4. BUSINESS COMBINATIONS**

### **Fiscal 2019 Acquisitions**

#### **Ondax**

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. Ondax's operating results have been included in our Industrial Lasers & Systems segment. See Note 18, "Segment and Geographic Information."

Our preliminary 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		458
Property and equipment		122
Liabilities assumed		(499)
Intangible assets:		
Existing technology		5,600
Customer relationships		300
Goodwill		3,556
Total	\$	<u>11,984</u>

Results of operations for the business have been included in our condensed 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 preliminary 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 will account for the transaction as an asset purchase.

Our preliminary 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		100
Total	\$	<u>7,000</u>

The identifiable intangible assets are being amortized over their respective preliminary 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 18, "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		31,456
Total	\$	<u>47,384</u>

Results of operations for the business have been included in our condensed 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 preliminary 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 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.

**5. FAIR VALUES**

We have not changed our valuation techniques in measuring the fair value of any financial assets and liabilities during the period. 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 December 29, 2018, 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 condensed consolidated financial statements. As of September 29, 2018, we did not have any assets or liabilities valued based upon Level 3 inputs.

We measure the fair value of outstanding debt obligations for disclosure purposes on a recurring basis. As of December 29, 2018, the current and long-term portion of long-term obligations of \$5.7 million and \$413.5 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 December 29, 2018 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
	December 29, 2018			September 29, 2018		
	(Level 1)	(Level 2)		(Level 1)	(Level 2)	
<b>Assets:</b>						
Cash equivalents:						
Money market fund deposits	\$ 42,679	\$ 42,679	\$ —	\$ 56,285	\$ 56,285	\$ —
U.S. Treasury and agency obligations <sup>(1)</sup>	121	—	121	—	—	—
Commercial paper <sup>(1)</sup>	1,197	—	1,197	—	—	—
Short-term investments:						
U.S. Treasury and agency obligations <sup>(1)</sup>	5,019	—	5,019	120	—	120
Prepaid and other assets:						
Foreign currency contracts <sup>(2)</sup>	789	—	789	1,007	—	1,007
Money market fund deposits — Deferred comp and supplemental plan <sup>(3)</sup>	808	808	—	522	522	—
Mutual funds — Deferred comp and supplemental plan <sup>(3)</sup>	20,467	20,467	—	21,862	21,862	—
<b>Total</b>	<b>\$ 71,080</b>	<b>\$ 63,954</b>	<b>\$ 7,126</b>	<b>\$ 79,796</b>	<b>\$ 78,669</b>	<b>\$ 1,127</b>
<b>Liabilities:</b>						
Other current liabilities:						
Foreign currency contracts <sup>(2)</sup>	(1,361)	—	(1,361)	(1,879)	—	(1,879)
<b>Total</b>	<b>\$ 69,719</b>	<b>\$ 63,954</b>	<b>\$ 5,765</b>	<b>\$ 77,917</b>	<b>\$ 78,669</b>	<b>\$ (752)</b>

- (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.
- (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 other comprehensive income ("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):

	December 29, 2018			
	Cost Basis	Unrealized Gains	Unrealized Losses	Fair Value
Cash and cash equivalents	\$ 314,996	\$ 1	\$ —	\$ 314,997
Short-term investments:				
Available-for-sale securities:				
U.S. Treasury and agency obligations	5,000	19	—	5,019
Total short-term investments	\$ 5,000	\$ 19	\$ —	\$ 5,019

September 29, 2018				
	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 losses at December 29, 2018. There were no unrealized gains or losses at September 29, 2018.

The amortized cost and estimated fair value of available-for-sale investments in debt securities as of December 29, 2018 and September 29, 2018 classified as short-term investments on our condensed consolidated balance sheet were as follows (in thousands):

	December 29, 2018		September 29, 2018	
	Amortized Cost	Estimated Fair Value	Amortized Cost	Estimated Fair Value
Investments in available-for-sale debt securities due in less than one year	\$ 5,000	\$ 5,019	\$ 120	\$ 120

During the three months ended December 29, 2018, we received no proceeds from the sale of available-for-sale securities and realized no gross gains or losses. During the three months ended December 30, 2017, we received proceeds totaling \$2.4 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 and Chinese Renminbi (RMB).

As a result, our earnings, cash flows and cash balances are exposed to fluctuations in foreign currency exchange rates. We attempt to limit these exposures through financial market instruments. We utilize derivative instruments, primarily forward contracts with maturities of 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 the Company's gross exposure to potential accounting loss on derivative instruments that are outstanding or unsettled if all counterparties failed to perform according to the terms of the contract, based on then-current currency rates at each respective date.

#### *Non-Designated Derivatives*

The 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	
	December 29, 2018	September 29, 2018	December 29, 2018	September 29, 2018
Euro currency hedge contracts				
Purchase	\$ 135,736	\$ 126,589	\$ 611	\$ (1,554)
Sell	\$ (7,134)	\$ (8,701)	\$ (31)	\$ 43
Japanese Yen currency hedge contracts				
Purchase	\$ 2,288	\$ —	\$ 36	\$ —
Sell	\$ (41,210)	\$ (27,473)	\$ (809)	\$ 637
South Korean Won currency hedge contracts				
Purchase	\$ 1,660	\$ 2,778	\$ (16)	\$ 27
Sell	\$ (39,665)	\$ (31,920)	\$ (147)	\$ (109)
Chinese RMB currency hedge contracts				
Purchase	\$ 2,191	\$ 5,852	\$ (16)	\$ (33)
Sell	\$ (37,938)	\$ (51,137)	\$ (331)	\$ 300
Singapore Dollar currency hedge contracts				
Purchase	\$ 34,687	\$ 30,127	\$ 69	\$ (131)
Other foreign currency hedge contracts				
Purchase	\$ 5,682	\$ 4,091	\$ 21	\$ (13)
Sell	\$ (7,387)	\$ (5,934)	\$ 41	\$ (39)

The fair value of our derivative instruments is included in prepaid expenses and other assets and in other current liabilities in our Condensed Consolidated Balance Sheets. See Note 5, "Fair Values."

During the three months ended December 29, 2018 and December 30, 2017, we recognized losses of \$3.7 million and \$2.6 million, respectively, in other income (expense) for derivative instruments not designated as hedging instruments.

#### *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 condensed 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

During the three months ended December 29, 2018, we noted no indications of impairment or triggering events to cause us to review goodwill for potential impairment. We will conduct our annual goodwill testing during the fourth fiscal quarter.

The changes in the carrying amount of goodwill by segment for the period from September 29, 2018 to December 29, 2018 are as follows (in thousands):

	OEM Laser Sources	Industrial Lasers & Systems	Total
Balance as of September 29, 2018	\$ 100,732	\$ 342,208	\$ 442,940
Additions (see Note 4)	—	3,556	3,556
Translation adjustments and other	(1,106)	(3,154)	(4,260)
Balance as of December 29, 2018	<u>\$ 99,626</u>	<u>\$ 342,610</u>	<u>\$ 442,236</u>

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

	December 29, 2018			September 29, 2018		
	Gross Carrying Amount	Accumulated Amortization	Net	Gross Carrying Amount	Accumulated Amortization	Net
Existing technology	\$ 206,454	\$ (104,889)	\$ 101,565	\$ 201,759	\$ (94,376)	\$ 107,383
Customer relationships	49,238	(23,384)	25,854	50,359	(22,383)	27,976
Trade name	5,788	(4,233)	1,555	5,888	(3,818)	2,070
Production know-how	2,300	(114)	2,186	—	—	—
In-process research & development	4,781	—	4,781	4,864	—	4,864
Total	<u>\$ 268,561</u>	<u>\$ (132,620)</u>	<u>\$ 135,941</u>	<u>\$ 262,870</u>	<u>\$ (120,577)</u>	<u>\$ 142,293</u>

For accounting purposes, when an intangible asset is fully amortized, it is removed from the disclosure schedule.

Amortization expense for intangible assets for the three months ended December 29, 2018 and December 30, 2017 was \$15.1 million and \$15.1 million, respectively. The change in the accumulated amortization also includes \$2.4 million (decrease) and \$0.1 million (increase) of foreign exchange impact for the three months ended December 29, 2018 and December 30, 2017, respectively.

At December 29, 2018, estimated amortization expense for the remainder of fiscal 2019, the next five succeeding fiscal years and all fiscal years thereafter are as follows (in thousands):

	Estimated Amortization Expense
2019 (remainder)	\$ 42,342
2020	49,637
2021	18,328
2022	7,188
2023	4,491
2024	3,108
Thereafter	6,066
Total (excluding IPR&D)	<u>\$ 131,160</u>

## 9. BALANCE SHEET DETAILS

Inventories consist of the following (in thousands):

	December 29, 2018	September 29, 2018
Purchased parts and assemblies	\$ 148,940	\$ 137,566
Work-in-process	178,947	186,240
Finished goods	165,269	162,935
Total inventories	<u>\$ 493,156</u>	<u>\$ 486,741</u>

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

	December 29, 2018	September 29, 2018
Prepaid and refundable income taxes	\$ 39,165	\$ 37,884
Other taxes receivable	15,267	16,930
Prepaid expenses and other assets	29,709	30,266
Total prepaid expenses and other assets	<u>\$ 84,141</u>	<u>\$ 85,080</u>

Other assets consist of the following (in thousands):

	December 29, 2018	September 29, 2018
Assets related to deferred compensation arrangements	\$ 35,465	\$ 37,370
Deferred tax assets	65,043	64,858
Other assets <sup>(1)</sup>	12,448	9,521
Total other assets	<u>\$ 112,956</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 company that specializes in laser micromachining. The investment is included in other assets and is being carried on a cost basis and will be adjusted, as necessary, for impairment.

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

	December 29, 2018	September 29, 2018
Accrued payroll and benefits	\$ 45,044	\$ 55,704
Deferred revenue	21,997	30,613
Warranty reserve	40,489	40,220
Accrued expenses and other	35,725	36,859
Customer deposits	18,146	19,933
Total other current liabilities	<u>\$ 161,401</u>	<u>\$ 183,329</u>

Components of the reserve for warranty costs during the first three months of fiscal 2019 and 2018 were as follows (in thousands):

	Three Months Ended	
	December 29, 2018	December 30, 2017
Beginning balance	\$ 40,220	\$ 36,149
Additions related to current period sales	17,081	14,140
Warranty costs incurred in the current period	(16,376)	(12,404)
Accruals resulting from acquisitions	21	—
Adjustments to accruals related to foreign exchange and other	(457)	(76)
Ending balance	<u>\$ 40,489</u>	<u>\$ 37,809</u>

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

	December 29, 2018	September 29, 2018
Long-term taxes payable	\$ 35,709	\$ 36,336
Deferred compensation	39,021	40,895
Defined benefit plan liabilities	37,873	37,528
Deferred tax liabilities	21,615	26,339
Deferred revenue	5,509	5,091
Asset retirement obligations liability	4,551	4,529
Other long-term liabilities	1,235	1,238
Total other long-term liabilities	<u>\$ 145,513</u>	<u>\$ 151,956</u>

## 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. 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 December 29, 2018, the outstanding principal amount of the Euro Term Loan was 369.9 million Euros. As of December 29, 2018, the outstanding amount of the Revolving Credit Facility was \$40.0 million plus a 10.0 million Euro letter of credit.

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 December 29, 2018, 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% 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 of than or equal to 3.50 to 1.00. We were in compliance with all covenants at December 29, 2018.

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 condensed 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 condensed consolidated balance sheets and will be amortized to interest expense using the straight-line method over the contractual term of five years of the Revolving Credit Facility.

Additional sources of cash available to us were international currency lines of credit and bank credit facilities totaling \$26.4 million as of December 29, 2018, of which \$18.0 million was unused and available. These unsecured international credit facilities were used in Europe and Japan during the first three months of fiscal 2019. As of December 29, 2018, we had utilized \$7.4 million of the international credit facilities as guarantees in Europe and \$1.0 million of the international credit facilities as borrowings in Japan.

Short-term borrowings and current portion of long-term obligations consist of the following (in thousands):

	December 29, 2018	September 29, 2018
Current portion of Euro Term Loan <sup>(1)</sup>	\$ 3,065	\$ 3,092
1.3% Term loan due 2024	1,783	1,448
1.0% State of Connecticut term loan due 2023	375	374
OR Laser loans	158	158
Capital lease obligations	270	—
Line of credit borrowings	41,019	—
Total short-term borrowings and current portion of long-term obligations	<u>\$ 46,670</u>	<u>\$ 5,072</u>

(1) Net of debt issuance costs of \$4.6 million and \$4.7 million at December 29, 2018 and September 29, 2018, respectively.

Long-term obligations consist of the following (in thousands):

	December 29, 2018	September 29, 2018
Euro Term Loan due 2024 <sup>(1)</sup>	\$ 404,562	\$ 411,661
1.3% Term loan due 2024	6,775	7,242
1.0% State of Connecticut term loan due 2023	1,312	1,406
OR Laser loans	364	402
Capital lease obligations	492	—
Total long-term obligations	<u>\$ 413,505</u>	<u>\$ 420,711</u>

(1) Net of debt issuance costs of \$9.9 million and \$11.2 million at December 29, 2018 and September 29, 2018, respectively.

Contractual maturities of our debt obligations as of December 29, 2018 are as follows (in thousands):

	Amount
2019 (remainder)	\$ 7,766
2020	9,823
2021	9,808
2022	9,555
2023	9,461
2024	387,199
Total	<u>\$ 433,612</u>

## 11. STOCK-BASED COMPENSATION

### 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

The fair values of shares purchased under the Employee Stock Purchase Plan ("ESPP") for the three months ended December 29, 2018 and December 30, 2017, respectively, were estimated using the following weighted-average assumptions:

	Employee Stock Purchase Plan	
	Three Months Ended	
	December 29, 2018	December 30, 2017
Expected life in years	0.5	0.5
Expected volatility	48.3%	47.9%
Risk-free interest rate	2.35%	1.21%
Expected dividend yield	—%	—%
Weighted average fair value per share	\$ 42.80	\$ 70.75

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 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:

	Three Months Ended	
	December 29, 2018	December 30, 2017
Risk-free interest rate	2.9%	1.7%
Volatility	43.7%	37.0%
Weighted average fair value per share	\$ 117.43	\$ 315.05

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 condensed consolidated statements of operations for the three months ended December 29, 2018 and December 30, 2017 (in thousands):

	Three Months Ended	
	December 29, 2018	December 30, 2017
Cost of sales	\$ 1,237	\$ 988
Research and development	650	668
Selling, general and administrative	5,989	5,420
Income tax benefit	(1,233)	(1,609)
	<u>\$ 6,643</u>	<u>\$ 5,467</u>

During the three months ended December 29, 2018, \$1.2 million of stock-based compensation cost was capitalized as part of inventory for all stock plans, \$1.2 million was amortized into cost of sales and \$1.4 million remained in inventory at December 29, 2018. During the three months ended December 30, 2017, \$1.0 million of stock-based compensation was capitalized as part of inventory for all stock plans, \$1.0 million was amortized into cost of sales and \$1.3 million remained in inventory at December 30, 2017.

At December 29, 2018, the total compensation cost related to unvested stock-based awards granted to employees under our stock plans but not yet recognized was approximately \$51.6 million. We do not estimate forfeitures. This cost will be amortized on a straight-line basis over a weighted-average period of approximately 1.6 years.

### Stock Awards Activity

The following table summarizes the activity of our time-based and performance restricted stock units for the first three months of fiscal 2019 (in thousands, except per share amounts):

	Time Based Restricted Stock Units		Performance Restricted Stock Units	
	Number of Shares	Weighted Average Grant Date Fair Value	Number of Shares	Weighted Average Grant Date Fair Value
Nonvested stock at September 29, 2018	279	\$ 155.24	159	\$ 155.76
Granted	149	123.26	105	117.43
Vested <sup>(1)</sup>	(155)	125.08	(131)	74.48
Forfeited	(1)	189.16	—	—
Nonvested stock at December 29, 2018	<u>272</u>	<u>\$ 154.70</u>	<u>133</u>	<u>\$ 184.26</u>

(1) Service-based restricted stock units vested during the 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.



## 12. 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 December 29, 2018, we did not have any material indemnification claims that were probable or reasonably possible.

### 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. 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.

## 13. 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.

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 the first quarter of fiscal 2019, we repurchased and retired 194,801 shares of outstanding common stock under this program at an average price of \$130.91 per share for a total of \$25.5 million.

## 14. 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):

	Three Months Ended	
	December 29, 2018	December 30, 2017
Weighted average shares outstanding—basic	24,268	24,635
Dilutive effect of employee stock awards	204	390
Weighted average shares outstanding—diluted	24,472	25,025
<b>Net income from continuing operations</b>	<b>\$ 35,550</b>	<b>\$ 41,903</b>
Loss from discontinued operations, net of income taxes	—	(2)
<b>Net income</b>	<b>\$ 35,550</b>	<b>\$ 41,901</b>

A total of 100,520 and 19,375 potentially dilutive securities have been excluded from the diluted share calculation for the three months ended December 29, 2018 and December 30, 2017, respectively, as their effect was anti-dilutive.

## 15. OTHER INCOME (EXPENSE)

Other income (expense) is as follows (in thousands):

	Three Months Ended	
	December 29, 2018	December 30, 2017
Foreign exchange loss	\$ (2,177)	\$ (2,235)
Gain (loss) on deferred compensation investments, net	(2,125)	1,855
Other	(176)	156
Other—net	<u>\$ (4,478)</u>	<u>\$ (224)</u>

## 16. INCOME TAXES

Income tax expense includes a provision for federal, state and foreign taxes based on the annual estimated effective tax rate applicable to us and our subsidiaries, adjusted for items which are considered discrete to the period.

On December 22, 2017, the Tax Cuts and Jobs Act (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% and implementing a territorial tax system. The Securities Exchange Commission 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 allows 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 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 changes in interpretations of the Tax Act, any legislative updates or final regulations under the Tax Act, any changes in accounting standards for income taxes or related interpretations or any updates or changes in estimates we have utilized to calculate the transitional impact.

The Tax Act also made other significant changes to U.S. federal income tax laws, including a global intangible low-taxed income tax (GILTI) and a base erosion anti-abuse tax (BEAT) which became effective for us beginning on September 30, 2018. There is no material impact of GILTI and BEAT expected.

Our effective tax rate on income from continuing operations before income taxes for the three months ended December 29, 2018 was 18.6%. Our effective tax rate for the three months ended December 29, 2018 was lower than the U.S. federal tax rate of 21.0% primarily due to the excess tax benefits from restricted stock unit vesting, the benefit of federal research and development tax credits and our Singapore tax exemption. This amount is partially offset by the impact of income subject to foreign tax rates that are higher than the U.S. tax rates, stock-based compensation not deductible for tax purposes and limitations on the deductibility of compensation under IRC Section 162(m).

Our effective tax rate on income from continuing operations before income taxes for the three months ended December 30, 2017 was 58.4%. Our effective tax rate for the three months ended December 30, 2017 was higher than the 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 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%, 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 our Singapore tax exemption.

## 17. DEFINED BENEFIT PLANS

For the three months ended December 29, 2018 and December 30, 2017, net periodic cost under our defined benefit plans was \$0.6 million and \$0.5 million, respectively.

## 18. SEGMENT AND GEOGRAPHIC INFORMATION

At December 29, 2018, we were organized into two reporting segments, OEM Laser Sources ("OLS") and Industrial Lasers & Systems ("ILS"), based upon our organizational structure 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 medical 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. 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 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 to our operating segments certain operating expenses which we manage separately at the corporate level. These unallocated costs include stock-based compensation and corporate functions (certain research and development, management, finance, legal and human resources) and are included in the results below under Corporate and other in the reconciliation of operating results. Management does not consider unallocated Corporate and other costs in its measurement of segment performance.

The following table provides net sales and income from 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):

	Three Months Ended	
	December 29, 2018	December 30, 2017
<u>Net sales:</u>		
OEM Laser Sources	\$ 242,348	\$ 325,657
Industrial Lasers & Systems	140,798	151,908
Total net sales	<u>\$ 383,146</u>	<u>\$ 477,565</u>
<u>Income (loss) from continuing operations:</u>		
OEM Laser Sources	\$ 78,858	\$ 127,717
Industrial Lasers & Systems	(13,704)	1,213
Corporate and other	(12,343)	(19,607)
Total income from continuing operations	<u>52,811</u>	<u>109,323</u>
Total other income (expense), net	<u>(9,151)</u>	<u>(8,500)</u>
Income from continuing operations before income taxes	<u>\$ 43,660</u>	<u>\$ 100,823</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 first quarter of fiscal 2019 and 2018 is based on the location of the end customer.

Sales to unaffiliated customers are as follows (in thousands):

	Three months ended	
	December 29, 2018	December 30, 2017
<u>SALES</u>		
United States	\$ 84,030	\$ 71,944
Foreign countries:		
South Korea	106,526	178,367
China	47,544	77,504
Europe, other	36,289	40,505
Japan	29,837	29,620
Germany	37,885	35,995
Asia-Pacific, other	27,228	29,982
Rest of World	13,807	13,648
Total foreign countries sales	<u>299,116</u>	<u>405,621</u>
Total sales	<u>\$ 383,146</u>	<u>\$ 477,565</u>

### Major Customers

We had one customer during the three months ended December 29, 2018 and December 30, 2017 that accounted for 18.5% and 32.8% of net sales, respectively. The customer purchased primarily from our OLS segment.

We had one customer that accounted for 22.0% and 16.4% of accounts receivable at December 29, 2018 and September 29, 2018, respectively. We had another customer that accounted for 12.5% and 16.7% of accounts receivable at December 29, 2018 and September 29, 2018, respectively. The customers purchased primarily from our OLS segment.

## 19. RESTRUCTURING CHARGES

In the first quarter of fiscal 2017, we began the implementation of planned restructuring activities in connection with the acquisition of Rofin. These activities primarily relate 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 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 the first three months of fiscal 2019 and 2018 (in thousands):

	Severance Related	Asset Write- Offs	Other	Total
Balances, September 29, 2018	\$ 836	\$ —	\$ 286	\$ 1,122
Provision	212	76	188	476
Payments and other	(447)	(76)	(244)	(767)
Balances, December 29, 2018	<u>\$ 601</u>	<u>\$ —</u>	<u>\$ 230</u>	<u>\$ 831</u>

	Severance Related	Asset Write- Offs	Other	Total
Balances, September 30, 2017	\$ 1,301	\$ —	\$ —	\$ 1,301
Provision	629	430	105	1,164
Payments and other	(755)	(430)	(105)	(1,290)
Balances, December 30, 2017	<u>\$ 1,175</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 1,175</u>

At December 29, 2018, \$0.8 million of accrued severance related costs were included in other current liabilities. The current year severance related, asset write-offs of equipment and other costs are related to the consolidation of certain manufacturing sites. The severance related costs in the first three months of fiscal 2018 are primarily comprised of severance pay for employees being terminated due to the consolidation of certain manufacturing sites. The asset write-offs in the first three months of fiscal 2018 are primarily comprised of write-offs of inventory and equipment due to the consolidation of certain manufacturing sites.

By segment, \$0.5 million of restructuring costs were incurred in the ILS segment and \$0.0 million were incurred in the OLS segment in the three months ended December 29, 2018, respectively. \$0.4 million of restructuring costs were incurred in the ILS segment and \$0.8 million were incurred in the OLS segment in the three months ended December 30, 2017, respectively. Restructuring charges are recorded in cost of sales, research and development and selling, general and administrative expenses in our condensed consolidated statements of operations.

## 20. 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 continuing operations and are presented in our condensed consolidated financial statements as discontinued operations. The results from discontinued operations in the first quarter of fiscal 2018 to the date of divestiture (October 11, 2017) were immaterial and were not included in our condensed consolidated results of 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. In the first and second quarters of fiscal 2018, we recorded additional non-cash impairment charges (recoveries) of \$0.3 million and \$(0.5) million, respectively, to operating expense in our results of operations 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 an additional loss on the sale of \$0.5 million in the third quarter of fiscal 2018, for a net loss of \$0.3 million in fiscal 2018 related to the sale and impairment of these entities.

## ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

### COMPANY OVERVIEW

#### BUSINESS BACKGROUND

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 medical 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 to our operating segments certain operating expenses, which we manage separately at the corporate level. These unallocated costs include stock-based compensation and corporate functions (certain advanced research and development, management, finance, legal and human resources) and are included in Corporate and other. Management does not consider unallocated Corporate and other costs in its measurement of segment performance.

#### MARKET APPLICATIONS

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

#### 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 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.
- **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.

## APPLICATION OF CRITICAL ACCOUNTING POLICIES

Our discussion and analysis of financial condition and results of operations are based upon our condensed 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 condensed consolidated 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 condensed consolidated 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. See Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K for our fiscal year ended September 29, 2018 and Note 1, "Basis of Presentation" in the Notes to Condensed Consolidated Financial Statements.

## KEY PERFORMANCE INDICATORS

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

	Three Months Ended			
	December 29, 2018	December 30, 2017	Change	% Change
	(Dollars in thousands)			
Net sales—OEM Laser Sources	\$ 242,348	\$ 325,657	\$ (83,309)	(25.6)%
Net sales—Industrial Lasers & Systems	\$ 140,798	\$ 151,908	\$ (11,110)	(7.3)%
Gross profit as a percentage of net sales—OEM Laser Sources	50.7%	53.9%	(3.2)%	
Gross profit as a percentage of net sales—Industrial Lasers & Systems	19.6%	28.0%	(8.4)%	
Research and development as a percentage of net sales	7.6%	6.6%	1.0 %	
Income from continuing operations before income taxes	\$ 43,660	\$ 100,823	\$ (57,163)	(56.7)%
Net cash provided by operating activities	\$ 51,311	\$ 64,980	\$ (13,669)	(21.0)%
Days sales outstanding in receivables	77.7	58.3	19.4	
Annualized first quarter inventory turns	1.9	2.4	(0.5)	
Capital spending as a percentage of net sales	6.0%	5.0%	1.0 %	
Net income from continuing operations as a percentage of net sales	9.3%	8.8%	0.5 %	
Adjusted EBITDA as a percentage of net sales	23.1%	30.9%	(7.8)%	



## **Net Sales**

Net sales include sales of lasers, laser tools, related accessories and services. Net sales for the first quarter of fiscal 2019 decreased 25.6% in our OLS segment and decreased 7.3% in our ILS segment from the same quarter one year ago. For a description of the reasons for changes in net sales refer to the "Results of Operations" section of this quarterly report.

## **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 in the first quarter of fiscal 2019 decreased to 50.7% from 53.9% in our OLS segment and decreased to 19.6% from 28.0% in our ILS segment from the same quarter one year ago. For a description of the reasons for changes in gross profit refer to the "Results of Operations" section of this quarterly report.

## **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 7.6% for the first quarter of fiscal 2019 from 6.6% for the same quarter one year ago. For a description of the reasons for changes in R&D spending refer to the "Results of Operations" section of this quarterly report.

## **Net Cash Provided by Operating Activities**

Net cash provided by operating activities as reflected on our Condensed 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 of this quarterly report.

## **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 90 days for quarters. 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 the first quarter of fiscal 2019 increased to 77.7 days from 58.3 days compared to the same quarter one year ago. The increase was primarily due to a delay in collection of a large amount of receivables, which slipped into the beginning of January 2019 as well as a significantly higher concentration of sales in the last month of the quarter ended December 29, 2018 for ELA tools used in the Asian flat panel display market as well as slower collections in Asia and Europe.

## **Annualized First Quarter Inventory Turns**

We calculate annualized first quarter inventory turns as the cost of sales during the first quarter annualized and divided by net inventories at the end of the first 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 inventory turns for the first quarter of fiscal 2019 decreased to 1.9 from 2.4 turns compared to the same quarter a year ago primarily as a result of increased levels of inventory, including service inventory, due to a decrease in demand for sales of our large ELA tools as well as inventory increases in certain other business units due to demand increases.

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

Capital spending as a percentage of net sales ("capital spending percentage") is calculated as capital expenditures for the period divided by net sales for the period. Capital spending percentage indicates the extent to which we are expanding or improving our operations, including investments in technology and equipment. Management monitors capital spending levels as this assists us in measuring our cash flows, net of capital expenditures. Our capital spending percentage increased to 6.0% for the first quarter of fiscal 2019 from 5.0% for the first quarter of fiscal 2018 primarily due to the impact of lower revenues in the

first quarter of fiscal 2019 compared to the first quarter of fiscal 2018. The aggregate amount of capital spending was flat when comparing the two quarters.

### 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 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:

	Three Months Ended	
	December 29, 2018	December 30, 2017
Net income from continuing operations as a percentage of net sales	9.3%	8.8%
Income tax expense	2.1%	12.3%
Interest and other income (expense), net	1.8%	2.2%
Depreciation and amortization	7.6%	5.8%
Restructuring charges	0.1%	0.2%
Purchase accounting step-up	0.1%	—%
Impairment and other charges	—%	0.1%
Stock-based compensation	2.1%	1.5%
Adjusted EBITDA as a percentage of net sales	23.1%	30.9%

### SIGNIFICANT EVENTS

#### Acquisitions

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 Condensed Consolidated Financial Statements.

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 Condensed Consolidated Financial Statements.

#### Stock repurchases

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 the first quarter of fiscal 2019, we repurchased and retired 194,801 shares of outstanding common stock under this program at an average price of \$130.91 per share for a total of \$25.5 million.

**RESULTS OF OPERATIONS****CONSOLIDATED SUMMARY**

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

	Three Months Ended	
	December 29, 2018	December 30, 2017
<b>Net sales</b>	<b>100.0 %</b>	100.0 %
<b>Cost of sales</b>	<b>61.0 %</b>	54.6 %
<b>Gross profit</b>	<b>39.0 %</b>	45.4 %
<b>Operating expenses:</b>		
Research and development	7.6 %	6.6 %
Selling, general and administrative	16.8 %	15.4 %
Impairment and other charges	— %	0.1 %
Amortization of intangible assets	0.8 %	0.4 %
Total operating expenses	25.2 %	22.5 %
<b>Income from operations</b>	<b>13.8 %</b>	22.9 %
<b>Other income (expense), net</b>	<b>(2.4)%</b>	(1.8)%
<b>Income from continuing operations before income taxes</b>	<b>11.4 %</b>	21.1 %
Provision for income taxes	2.1 %	12.3 %
<b>Net income from continuing operations</b>	<b>9.3 %</b>	8.8 %

Net income from continuing operations for the first quarter of fiscal 2019 was \$35.6 million (\$1.45 per diluted share). This included \$10.8 million of after-tax amortization of intangible assets, \$6.6 million of after-tax stock-based compensation expense, \$0.4 million of after-tax restructuring costs, \$0.4 million of after-tax amortization of purchase accounting inventory step up and \$2.6 million of excess tax benefits for employee stock-based compensation. Net income from continuing operations for the first quarter of fiscal 2018 was \$41.9 million (\$1.67 per diluted share), including \$10.8 million of after-tax amortization of intangible assets, \$5.5 million of after-tax stock-based compensation expense, \$0.9 million of after-tax restructuring costs, \$0.3 million of after-tax charges for the impairment of net assets of several entities held for sale, \$41.7 million of a largely one time additional income tax expense due to the provisions under the U.S. Tax Cuts and Jobs Act and \$12.5 million of excess tax benefits for employee stock-based compensation.

**NET SALES****Market Application**

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

	Three Months Ended			
	December 29, 2018		December 30, 2017	
	Amount	Percentage of total net sales	Amount	Percentage of total net sales
<b>Consolidated:</b>				
Microelectronics	\$ 178,409	46.6%	\$ 268,176	56.2%
Materials processing	104,643	27.3%	127,461	26.7%
OEM components and instrumentation	66,353	17.3%	48,856	10.2%
Scientific and government programs	33,741	8.8%	33,072	6.9%
Total	<u>\$ 383,146</u>	<u>100.0%</u>	<u>\$ 477,565</u>	<u>100.0%</u>

Net sales for the first quarter of fiscal 2019 decreased by \$94.4 million, or 20%, compared to the first quarter of fiscal 2018, with decreases in the microelectronics and materials processing markets partially offset by increases in the OEM components and instrumentation and scientific and government programs markets. The acquisitions of OR Laser on March 8, 2018 and Ondax on October 5, 2018 added \$2.6 million and \$1.3 million, respectively, in net sales to the materials processing market in the ILS segment in the first quarter of fiscal 2019. We continued to experience softening in the microelectronics and materials processing markets in the first quarter of fiscal 2019, particularly in China.

The decrease in the microelectronics market of \$89.8 million, or 33%, was primarily due to 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 total flat panel display revenues, including both systems and services, will decrease in fiscal 2019 as compared to fiscal 2018, although services are expected to grow and partially offset the expected decrease in systems revenues. In addition, we have experienced some customer push outs and order cancellations and expect to experience additional customer push outs over the next several quarters. We expect additional investment in OLED capacity for consumer products will be required for a fiscal 2020 recovery to occur. In semiconductor applications within the microelectronics market, we expect semiconductor capital equipment spending to decrease in fiscal 2019 as a result of decreased memory prices and the impact of tariffs and trade relations, to be partially offset by strong service revenues. We also expect fiscal 2019 demand in advanced packaging applications to be similar to fiscal 2018 levels.

Sales in the materials processing market decreased \$22.8 million, or 18%, primarily due to economic conditions in China, with lower shipments for machine tools, automotive, consumer goods and other materials processing applications. Market conditions in these markets began to noticeably erode in the fourth quarter of fiscal 2018, resulting in some Chinese customers pushing out or, to a lesser extent, cancelling orders in the fourth quarter of fiscal 2018 and the first quarter of fiscal 2019. In addition, the Chinese market was also impacted by tariffs on U.S. goods and we experienced stronger price competition for fiber laser products in certain end markets. While we expect these impacts to continue through the remainder of fiscal 2019, we are seeing stronger demand in automotive applications in both Europe and Asia as well as growth in Chinese medical device applications.

The increase in the OEM components and instrumentation market of \$17.5 million, or 36%, was due primarily to higher shipments for military, medical and bio-instrumentation applications. Within OEM components and instrumentation applications, we are seeing strong demand in the bio-instrumentation market, particularly in flow cytometry and sequencing applications and higher demand for consumables in the medical market in dental and urology applications. In addition, we are seeing strength in defense spending for U.S. directed-energy programs and in satellite optics.

Sales in the scientific and government programs market increased \$0.7 million, or 2%, due to higher demand for advanced research applications used by university and government research groups, particularly in Asia and Europe. We expect demand in the scientific and government programs market to continue to fluctuate from quarter to quarter.

## 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 medical 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 tables set forth, for the periods indicated, the amount of net sales and their relative percentages of total net sales by segment (dollars in thousands):

	Three Months Ended			
	December 29, 2018		December 30, 2017	
	Amount	Percentage of total net sales	Amount	Percentage of total net sales
<b>Consolidated:</b>				
OEM Laser Sources (OLS)	\$ 242,348	63.3%	\$ 325,657	68.2%
Industrial Lasers & Systems (ILS)	140,798	36.7%	151,908	31.8%
Total	<u>\$ 383,146</u>	<u>100.0%</u>	<u>\$ 477,565</u>	<u>100.0%</u>

Net sales for the first quarter of fiscal 2019 decreased by \$94.4 million, or 20%, compared to the first quarter of fiscal 2018, with decreases of \$83.3 million, or 26%, in our OLS segment and \$11.1 million, or 7%, in our ILS segment.

The decrease in our OLS segment sales was primarily due to lower shipments of ELA tools used in the flat panel display market and lower revenues from consumable service parts as well as lower shipments for materials processing applications partially offset by higher shipments for military and bio-instrumentation applications. The decrease in our ILS segment sales was primarily due to lower shipments for materials processing applications partially offset by higher shipments for military and medical applications within the OEM components and instrumentation market.

## **GROSS PROFIT**

### **Consolidated**

Our gross profit percentage decreased by 6.4% to 39.0% in the first quarter of fiscal 2019 from 45.4% in the first quarter of fiscal 2018.

The 6.4% decrease in gross profit percentage was primarily due to higher other costs (2.1%), unfavorable product margins (2.0%), higher warranty costs (1.8%) and higher intangibles amortization (0.5%) as a percentage of sales. 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 unfavorable product margins were primarily in our OLS segment and were due to the impact from the unfavorable absorption of manufacturing costs on lower volumes and unfavorable mix from lower shipments of ELA tools used in the flat panel display market, partially offset by the favorable impact (1.1%) of a fee of \$7.0 million related to the cancellation of orders from one customer for our ELA tools as well as the favorable impact on costs due to the weaker Euro. The higher warranty costs, primarily in our ILS segment, included higher warranty events with the largest impact for fiber lasers, primarily sold into China. Intangibles amortization expense as a percentage of sales was higher in the first quarter of fiscal 2019 due to amortization related to the acquisitions 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.

Our gross profit percentage has been and will continue to be affected by a variety of factors including market and product mix, pricing on volume orders, shipment volumes, our ability to manufacture advanced and more complex products, manufacturing efficiencies, excess and obsolete inventory write-downs, warranty costs, amortization of intangibles, pricing by competitors or suppliers, new product introductions, production volume, customization and reconfiguration of systems, commodity prices and foreign currency fluctuations, particularly the recent volatility of the Euro and to a lesser extent, the Japanese Yen and South Korean Won.

### **OEM Laser Sources**

The gross profit percentage in our OLS segment decreased by 3.2% to 50.7% in the first quarter of fiscal 2019 from 53.9% in the first quarter of fiscal 2018.

The 3.2% decrease in gross profit percentage was primarily due to higher other costs (1.9%) 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 as well as unfavorable product margins (1.6%) as a result of unfavorable absorption of manufacturing costs on lower volumes partially offset by higher margins within flat panel display systems. The higher margins within flat panel display systems included the impact of a fee of \$7.0 million related to the cancellation of orders from one customer for our ELA tools (1.5%) and the favorable impact of the weaker Euro, partially offset by the unfavorable impact of lower shipments of flat panel display systems. Partially offsetting the decrease in gross profit percentage, the favorable impact of lower intangibles amortization (0.3%) as a percentage of sales was due to the completion of amortization of intangibles from certain acquisitions in fiscal 2018.

### **Industrial Lasers & Systems**

The gross profit percentage in our ILS segment decreased by 8.4% to 19.6% in the first quarter of fiscal 2019 from 28.0% in the first quarter of fiscal 2018.

The 8.4% decrease in gross profit percentage compared to the first quarter of fiscal 2018 was primarily due to higher warranty costs (4.8%) due to higher warranty events particularly for our fiber laser and global tools products, higher other costs (1.9%) and unfavorable product costs (0.4%) over multiple products. Other costs were more unfavorable due to higher inventory

provisions for excess and obsolete inventory and higher shipping and duty charges as a percentage of sales, including the impact of lower sales volumes. In addition, the gross profit percentage in the first quarter of fiscal 2019 included a 1.3% unfavorable net impact of higher purchase accounting adjustments compared to the first quarter of fiscal 2018. The first quarter of fiscal 2019 included the unfavorable impact of higher amortization of intangibles (1.0%) as a percentage of sales due to our acquisition of OR Laser in the second quarter of fiscal 2018 and Ondax in the first quarter of fiscal 2019 and a charge (0.3%) for amortization of inventory step-up related to our acquisition of Ondax compared to no charge in the first quarter of fiscal 2018.

## OPERATING EXPENSES:

	Three Months Ended			
	December 29, 2018		December 30, 2017	
	Amount	Percentage of total net sales	Amount	Percentage of total net sales
(Dollars in thousands)				
Research and development	\$ 28,942	7.6%	\$ 31,392	6.6%
Selling, general and administrative	64,557	16.8%	73,437	15.4%
Impairment and other charges	—	—%	265	0.1%
Amortization of intangible assets	3,040	0.8%	2,606	0.4%
Total operating expenses	\$ 96,539	25.2%	\$ 107,700	22.5%

### Research and development

Research and development ("R&D") expenses decreased \$2.5 million, or 8%, during the first quarter of fiscal 2019 compared to the same quarter one year ago. The decrease was primarily due to \$2.7 million lower spending on R&D activities, with lower spending on headcount including lower variable compensation and higher savings from company shutdowns, lower spending on materials and the favorable impact of foreign exchange rates (primarily the weaker Euro). R&D expenses also decreased \$0.6 million as a result of lower charges for increases in deferred compensation plan liabilities. Offsetting the decreases, R&D expenses increased \$0.8 million in incremental spending due to the acquisition of OR Laser in the second quarter of fiscal 2018 and Ondax in the first quarter of fiscal 2019.

On a segment basis as compared to the prior year period, OLS spending decreased \$0.6 million primarily due to lower net spending on R&D activities including the favorable impact of foreign exchange rates. ILS spending decreased \$0.7 million primarily due to lower net spending on R&D activities and the favorable impact of foreign exchange rates partially offset by the acquisitions of OR Laser and Ondax. Corporate and other spending decreased \$1.2 million primarily due to lower charges for increases in deferred compensation plan liabilities and lower headcount spending in our Advanced Research Business unit.

### Selling, general and administrative

Selling, general and administrative ("SG&A") expenses decreased \$8.9 million, or 12%, during the first quarter of fiscal 2019 compared to the same quarter one year ago. The decrease was primarily due to \$5.6 million lower payroll spending due to lower variable compensation and the favorable impact of foreign exchange rates and \$3.3 million lower charges for increases in deferred compensation plan liabilities. In addition, SG&A expenses decreased due to \$2.1 million lower variable spending including lower spending on legal, consulting and infrastructure related to integration activities and compliance with the terms of the Credit Agreement, as well as the favorable impact of foreign exchange rates. The decreases were offset by \$1.5 million higher incremental spending due to the acquisition of OR Laser in the second quarter of fiscal 2018 and Ondax in the first quarter of fiscal 2019 and \$0.6 million higher stock-based compensation expense.

On a segment basis as compared to the prior year period, OLS expenses decreased \$3.7 million primarily due to lower spending on variable compensation, other legal and infrastructure related to integration activities and the favorable impact of foreign exchange rates. ILS spending increased \$0.9 million primarily due to the acquisitions of OR Laser and Ondax partially offset by lower variable compensation and the favorable impact of foreign exchange rates. Corporate and other spending decreased \$6.1 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 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 we acquired in the Rofin acquisition. Although the sale of the entities was not completed until the third quarter of fiscal 2018, we recorded non-cash impairment charges of \$0.3 million to operating expense in our results of operations in the first quarter of fiscal 2018. See Note 20, "Discontinued Operations and Sale of Assets Held for Sale" in the Notes to Condensed Consolidated Financial Statements.

## **Amortization of intangible assets**

Amortization of intangible assets increased \$0.4 million in the three months ended December 29, 2018 compared to the same period last year. The increase was primarily due to the amortization of intangibles related to our acquisitions of Ondax and Quantum assets in the first quarter of fiscal 2019 as well as our acquisition of OR Laser in the second quarter of fiscal 2018 partially offset by the completion of the amortization of certain intangibles from other acquisitions and the favorable impact of foreign exchange rates.

## **OTHER INCOME (EXPENSE) — NET**

Other income (expense), net, changed by \$0.7 million to other expense of \$9.2 million in the first quarter of fiscal 2019 from other expense of \$8.5 million in the first quarter of fiscal 2018. The increase in net other expense was primarily due to \$4.0 million lower gains/higher losses, net of expenses, on our deferred compensation plan assets and \$0.2 million lower interest income partially offset by \$3.8 million lower interest expense. Interest expense decreased primarily due to lower amortization of bond issue costs related to the Euro Term Loan and lower interest on the Euro Term Loan due to paydown of principal and an interest rate reduction.

## **INCOME TAXES**

Our effective tax rate on income from continuing operations before income taxes for the three months ended December 29, 2018 was 18.6%. Our effective tax rate for the three months ended December 29, 2018 was lower than the U.S. federal tax rate of 21.0% primarily due to the excess tax benefits from restricted stock unit vesting, the benefit of federal research and development tax credits and our Singapore tax exemption. This amount is partially offset by the impact of income subject to foreign tax rates that are higher than the U.S. tax rates, stock-based compensation not deductible for tax purposes and limitations on the deductibility of compensation under IRC Section 162(m).

Our effective tax rate on income from continuing operations before income taxes for the three months ended December 30, 2017 was 58.4%. Our effective tax rate for the three months ended December 30, 2017 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%, 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 our Singapore tax exemption.

## **LIQUIDITY AND CAPITAL RESOURCES**

At December 29, 2018, we had assets classified as cash and cash equivalents and short-term investments, in an aggregate amount of \$320.0 million, compared to \$310.6 million at September 29, 2018. In addition, at December 29, 2018, we had \$13.3 million of restricted cash. At December 29, 2018, approximately \$219.0 million of our cash and securities was held in certain of our foreign subsidiaries and branches, \$202.4 million of which was denominated in currencies other than the U.S. dollar. At December 29, 2018, we had approximately \$218.3 million of cash held by foreign subsidiaries including 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. However, we have reevaluated our historic assertion as a result of the enactment of the Tax Act and no longer consider certain historic 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 "Part I, Item 3. 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 and our domestic line of credit. 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 condensed consolidated statements of cash flows and the notes to condensed consolidated financial statements:

	Three Months Ended	
	December 29, 2018	December 30, 2017
	(in thousands)	
Net cash provided by operating activities	\$ 51,311	\$ 64,980
Acquisition of businesses, net of cash acquired	(18,881)	—
Investment in 3D-Micromac AG	(3,423)	—
Issuance of shares under employee stock plans	5,704	4,899
Net settlement of restricted common stock	(14,843)	(35,646)
Repurchase of common stock	(25,501)	—
Borrowings, net of repayments	39,741	(88,631)
Purchases of property and equipment	(23,137)	(23,683)
Proceeds from sale of discontinued operation (the Hull Business)	—	25,000

Net cash provided by operating activities decreased by \$13.7 million for the first three months of fiscal 2019 compared to the same period one year ago. The decrease in cash provided by operating activities was primarily due to lower cash flows from income taxes payable and deferred taxes as well as lower net income, which were partially offset by higher cash flows from accounts receivable, deferred revenue, inventories and payroll accruals. 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 additional borrowings (as in our acquisition of Rofin), existing cash balances and cash flows from operations (as in our acquisitions of OR Laser, Ondax and certain Quantum assets). 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 the first three months of fiscal 2019, we made debt principal payments of \$1.9 million, recorded interest expense on the Euro Term Loan of \$3.1 million and recorded \$1.3 million amortization of debt issuance costs. On November 20, 2018, we borrowed an additional \$40.0 million under the Revolving Credit Facility and recorded interest expense of \$0.3 million.

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 Coating, Inc. 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 October 11, 2017, we completed the sale of the Hull Business for approximately \$25.0 million.

On February 6, 2018, our board of directors authorized a buyback 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 at an average price of \$173.91 per share for a total of \$100.0 million. See Note 13, "Stock Repurchases" in the Notes to Condensed 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 the first quarter of fiscal 2019, we repurchased and retired 194,801 shares of outstanding common stock under this program at an average price of \$130.91 per share for a total of \$25.5 million. See Note 13, "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 \$26.4 million as of December 29, 2018, of which \$18.0 million was unused and available. These unsecured international credit facilities were used in Europe and Japan during the first three months of fiscal 2019. As of December 29, 2018, we had utilized \$7.4 million of the international credit facilities as guarantees in Europe and \$1.0 million as borrowings in Japan.

Our ratio of current assets to current liabilities remained at 3.3:1 at December 29, 2018 compared to September 29, 2018. The increases in our ratio due to lower income taxes payable and other current liabilities were offset by decreases in our ratio due to short-term borrowings against our line of credit and lower accounts receivable. Our cash and cash equivalents, short-term investments and working capital are as follows:

	December 29, 2018	September 29, 2018
	(in thousands)	
Cash and cash equivalents	\$ 314,997	\$ 310,495
Short-term investments	5,019	120
Working capital	851,921	865,664

### Contractual Obligations and Off-Balance Sheet Arrangements

We have no off-balance sheet arrangements as defined under Regulation S-K of the Securities Act of 1933. Information regarding our operating lease payments, asset retirement obligations, long-term debt payments, pension obligations, purchase commitments with suppliers and purchase obligations is provided in Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" of our Annual Report on Form 10-K for the fiscal year ended September 29, 2018. There have been no material changes in contractual obligations outside of the ordinary course of business since September 29, 2018. Information regarding our other financial commitments at December 29, 2018 is provided in the Notes to Condensed Consolidated Financial Statements in this report.

### Changes in Financial Condition

Cash provided by operating activities during the first three months of fiscal 2019 was \$51.3 million, which included net income of \$35.6 million, depreciation and amortization of \$30.3 million and stock-based compensation expense of \$7.9 million partially offset by cash used by operating assets and liabilities of \$21.0 million (primarily lower income taxes payable, accrued payroll and deferred income as well as higher inventories net of lower accounts receivable) and net increases in deferred tax assets of \$1.5 million. Cash provided by operating activities during the first three months of fiscal 2018 was \$65.0 million, which included net income of \$41.9 million, depreciation and amortization of \$31.5 million, stock-based compensation expense of \$7.1 million, net decreases in deferred tax assets of \$13.1 million and non-cash restructuring charges of \$0.4 million partially

offset by cash used by operating assets and liabilities of \$29.4 million (primarily decreases in deferred income and increases in inventories net of higher income taxes payable).

Cash used in investing activities during the first three months of fiscal 2019 was \$50.3 million, which included \$23.1 million used to acquire property and equipment and purchase and upgrade buildings, \$18.9 million net of cash acquired to purchase Ondax and Quantum, \$4.9 million net purchases of available-for-sale securities and \$3.4 million invested in 3D-Micromac AG. Cash used in investing activities during the first three months of fiscal 2018 was \$3.8 million, which included \$23.7 million, net of proceeds from dispositions, used to acquire property and equipment and purchase and upgrade buildings and \$5.2 million net purchases of available-for-sale securities partially offset by \$25.0 million proceeds from the sale of discontinued operations.

Cash provided by financing activities during the first three months of fiscal 2019 was \$5.1 million, which included \$39.7 million net debt borrowings and \$5.7 million generated from our employee stock option and purchase plans partially offset by \$25.5 million repurchases of our common stock and \$14.8 million outflows due to net settlement of restricted stock units. Cash used in financing activities during the first three months of fiscal 2018 was \$119.4 million, which included \$88.6 million net debt payments and \$35.6 million outflows due to net settlement of restricted stock units partially offset by \$4.9 million generated from our employee stock option and purchase plans.

Changes in exchange rates during the first three months of fiscal 2019 resulted in a decrease in cash balances of \$1.8 million. Changes in exchange rates during the first three months of fiscal 2018 resulted in an increase in cash balances of \$0.9 million.

### **RECENT ACCOUNTING STANDARDS**

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

### ITEM 3. 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 market 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 December 29, 2018, 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 December 29, 2018, the fair value of our available-for-sale debt securities was \$6.3 million, \$1.3 million of which was classified as cash and cash equivalents and \$5.0 million of which was classified as short-term investments.

We are exposed to market risks related to fluctuations in interest rates related to our Euro Term Loan. As of December 29, 2018, we owed \$422.1 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 December 29, 2018. 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 December 29, 2018.

#### Foreign currency exchange risk

We maintain operations in various countries outside of the United States and have foreign subsidiaries that manufacture and sell our products in various global markets. The majority of our sales are transacted in U.S. dollars. However, we do generate revenues in other currencies, primarily the Euro, the Japanese Yen, the South Korean Won and the Chinese 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, Singapore Dollar, Malaysian Ringgit, Swiss Franc, Taiwan Dollar, Swedish Krona and Canadian Dollar. 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 condensed 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 December 29, 2018, approximately \$219.0 million of our cash, cash equivalents and short-term investments were held outside the U.S. in certain of our foreign operations, \$202.4 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.

The following table provides information about our foreign exchange forward contracts at December 29, 2018. The table presents the weighted average contractual foreign currency exchange rates, the value of the contracts in U.S. dollars at the

contract exchange rate as of the contract maturity date and fair value. The U.S. fair value represents the fair value of the contracts valued at December 29, 2018 rates.

Forward contracts to sell (buy) foreign currencies for U.S. dollars (in thousands, except contract rates):

	<b>Average Contract Rate</b>	<b>U.S. Notional Contract Value</b>	<b>U.S. Fair Value</b>
Non-Designated - For U.S. Dollars			
Euro	1.1367	\$ (128,602)	\$ (580)
Japanese Yen	113.1376	\$ 38,922	\$ 773
British Pound	1.2783	\$ 5,150	\$ (52)
South Korean Won	1,127.1330	\$ 38,005	\$ 163
Chinese Renminbi	6.9767	\$ 35,747	\$ 347
Singapore Dollar	1.3743	\$ (34,687)	\$ (69)
Malaysian Ringgit	4.2074	\$ 1,460	\$ 10
Taiwan Dollar	30.8250	\$ 777	\$ 1
Swiss Franc	0.9946	\$ (2,755)	\$ (12)
Swedish Krona	9.0461	\$ (2,927)	\$ (9)

## **ITEM 4. 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 December 29, 2018 ("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.

### **Changes in Internal Control over Financial Reporting**

Except for the implementation of certain internal controls related to the adoption of the new revenue recognition standard, there were 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 December 29, 2018.

### **Inherent Limitations over Internal Control**

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

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

Management, including our Chief Executive Officer and Chief Financial Officer, 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.

## PART II. OTHER INFORMATION

### ITEM 1. LEGAL PROCEEDINGS

Information with respect to this item may be found in Note 12, "Commitments and Contingencies" in the Notes to Condensed Consolidated Financial Statements in Part I, Item 1 of this report and is incorporated herein by reference.

### 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" of our Annual Report on Form 10-K for the fiscal year ended September 29, 2018 and the risk of our businesses described elsewhere in this quarterly 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;
- impact of government economic policies on macroeconomic conditions, including 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;
- fluctuations in demand for our products or downturns in the industries that we serve;
- the ability of our suppliers, both internal and external, to produce and deliver components and parts, including sole or limited source components, in a timely manner, in the quantity, quality and prices desired;
- the timing of receipt 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 recently enacted and aforementioned U.S. tax law, the 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;
- 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 products as part of our integration efforts;
- 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;
- 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;
- costs related to acquisitions of technology or businesses;
- impairment of goodwill, intangible assets and other long-lived assets;
- our ability to meet our expectations and forecasts and those of public market analysts and investors;
- the availability of research funding by governments with regard to our customers in the scientific business, such as universities;

- continued government spending on defense-related and scientific research projects where we are a subcontractor;
- maintenance of supply relating to products sold to the government on terms which we would prefer not to accept;
- changes in policy, interpretations, or challenges to the allowability of costs incurred under government cost accounting standards;
- 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, particularly with regard to sales from our Glasgow, Scotland facility to other jurisdictions and purchases of supplies from outside the United Kingdom by such facility;
- 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, such as varying product mix, we believe that quarter-to-quarter and year-to-year comparisons of our historical operating results may not be meaningful. You should not rely on our results for any quarter or year as an indication of our future performance. Our operating results in future quarters and years may be below public market analysts' or investors' expectations, which would likely cause the price of our stock to fall. In addition, over the past several years, U.S. and global equity markets have experienced significant price and volume fluctuations that have affected the stock prices of many technology companies both in and outside our industry. There has not always been a direct correlation between this volatility and the performance of particular companies subject to these stock price fluctuations. These factors, as well as general economic and political conditions or investors' concerns regarding the credibility of corporate financial statements, may have a material adverse effect on the market price of our stock in the future.



***We depend on sole source or limited source suppliers, 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 disasters, such as the flooding in Thailand and the earthquake, tsunami and resulting nuclear disaster in Japan and severe flooding and power loss in the Eastern part of the United States in recent years. 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 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 the first quarter of 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, 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 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 December 29, 2018, flat panel display systems represented 32% of our backlog. Since our backlog includes higher average selling price flat panel display systems compared to 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; and
- the disruption of, or the loss of momentum in, our business or 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 in the future 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. There can be no assurances that we will be successful 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 the Credit Agreement which provided for a 670 million Euro term loan, all of which was drawn, and a \$100 million revolving credit facility, under which a 10 million Euro letter of credit was issued. As of December 29, 2018, 369.9 million Euros were outstanding under the term loan. As of December 29, 2018, the revolving credit facility had been used for guarantees of 10.0 million Euros as well as borrowings of \$40 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 of than or equal to 3.50 to 1.00. The Credit Agreement contains customary events of default that include, among other things, payment defaults, cross defaults with certain other indebtedness, violation of covenants, inaccuracy of representations and warranties in any material respect, change in control of us and 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 negatively impact global economic activity going forward. 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 I, Item 4. 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 "Part I, Item 3. 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, 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 the three months ended December 29, 2018, 78% of our net sales were derived from customers outside of the United States. For fiscal 2018, fiscal 2017 and fiscal 2016, 84%, 83%, and 76%, 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 in recent years. Such a slowdown may cause us to reduce our presence in certain countries, which may negatively affect the overall level of business in such countries. Our foreign sales are primarily through our direct sales force. Additionally, some foreign sales are made through foreign distributors and representatives. Our foreign operations and sales are subject to a number of risks, including:

- 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;
- 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;
- 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. Any potential intellectual property litigation could also force us to do one or more of the following:

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

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

***If our goodwill or intangible assets become impaired, we may be required to record a significant charge to earnings.***

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

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

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

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

Customers often view the purchase of our products as a significant and strategic decision. As a result, customers typically expend significant effort in evaluating, testing and qualifying our products before making a decision to purchase them, resulting in a lengthy initial sales cycle. While our customers are evaluating our products and before they place an order with us, we may incur substantial sales and marketing and research and development expenses to customize our products to the customers' needs. We may also expend significant management efforts, increase manufacturing capacity and order long lead-time components or materials prior to receiving an order. Even after this evaluation process, a potential customer may not purchase 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. and Trumpf GmbH, as well as other smaller companies. Some of our competitors are large companies that have significant financial, technical, marketing and other resources. These competitors may be able to devote greater resources than we can to the development, promotion, sale and support of their products. Some of our competitors are much better positioned than we are to acquire other companies in order to gain new technologies or products that may displace our product lines. Any of these acquisitions could give our competitors a strategic advantage. Any business combinations or mergers among our competitors, forming larger companies with greater resources, could result in increased competition, price reductions, reduced margins or loss of market share, any of which could materially and adversely affect our business, results of operations and financial condition.

Additional competitors may enter the markets in which we serve, both foreign and domestic, and we are likely to compete with new companies in the future. We may encounter potential customers that, due to existing relationships with our competitors, are committed to the products offered by these competitors. Further, our current or potential customers may determine to develop and produce products for their own use which are competitive to our products. 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;
- 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 recent U.S. tax law changes are subject to further interpretations from the U.S. federal and state governments and regulatory organizations, such as the Treasury Department and/or the Internal Revenue Service. Updated guidance and interpretations could change the provisional tax liabilities or the accounting treatment of them. We may pay the transition tax calculated under the Tax Act over a period of up to eight years.

***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 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. 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 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 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 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS**

### ***Sales of Unregistered Securities***

Not applicable.

### ***Purchases of Equity Securities by the Issuer and Affiliated Purchasers***

On November 6, 2018, we announced that 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 the first quarter of fiscal 2019, we repurchased and retired 194,801 shares of outstanding common stock under this program at an average price of \$130.91 per share for a total of \$25.5 million.

The following table summarizes share repurchase activity for the three months ended December 29, 2018:

Period	Total Number of Shares Purchased	Average price paid per share	Total Number of Shares Purchased As Part of Publicly Announced Program	Maximum Approximate Dollar Value of Shares That May Yet Be Purchased Under the Program
September 30, 2018 - October 31, 2018	—	\$ —	—	\$ 250,000,000
November 1, 2018 - November 30, 2018	140,000	\$ 128.52	140,000	\$ 232,007,200
December 1, 2018 - December 29, 2018	54,801	\$ 137.02	54,801	\$ 224,498,367
Total	<u>194,801</u>	<u>\$ 130.91</u>	<u>194,801</u>	





## **ITEM 5. OTHER INFORMATION**

As previously disclosed, the Company and Paul Sechrist, Executive Vice President, Worldwide Sales and Service, agreed on November 13, 2018 that Mr. Sechrist would continue in his current role until on or about the end of fiscal 2019, after which he would transition to the position of special advisor to the Company's Chief Executive Officer. On February 4, 2019, the Company and Mr. Sechrist entered into a transition agreement and release setting forth the terms of such transition. Pursuant to the agreement, Mr. Sechrist will become a special advisor to the Company's Chief Executive Officer effective on September 29, 2019, and will serve in such capacity through September 30, 2021. During that time, Mr. Sechrist will provide strategic and other services reasonably requested by the Company's Chief Executive Officer and has agreed to not compete with the Company. As a special advisor to the Company's Chief Executive Officer, 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.

The foregoing description of the transition agreement and release does not purport to be complete and is qualified in its entirety by reference to the full text of the agreement, a copy of which is filed as Exhibit 10.2 hereto and incorporated herein by reference.

**ITEM 6. EXHIBITS**

<b>Exhibit No.</b>	<b>Description</b>
10.1‡	Change of Control Severance Plan, as amended and restated effective December 6, 2018 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 11, 2018).
10.2‡	Transition Agreement and Release, dated February 4, 2019, between the Company and Paul Sechrist.
31.1	Certification of Chief Executive Officer pursuant to Exchange Act Rule 13a-14(a)/15d-14(a) as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Financial Officer pursuant to Exchange Act Rule 13a-14(a)/15d-14(a) as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2*	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema
101.CAL	XBRL Taxonomy Extension Calculation Linkbase
101.DEF	XBRL Taxonomy Extension Definition Linkbase
101.LAB	XBRL Taxonomy Extension Label Linkbase
101.PRE	XBRL Taxonomy Extension Presentation Linkbase

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

\* Furnished herewith.

**COHERENT, INC.**

**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized.

**Coherent, Inc.**

(Registrant)

Date: February 6, 2019

/s/: JOHN R. AMBROSEO

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John R. Ambroseo

President and Chief Executive Officer

(Principal Executive Officer)

Date: February 6, 2019

/s/: KEVIN S. PALATNIK

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Kevin S. Palatnik

Executive Vice President and Chief Financial  
Officer

(Principal Financial and Accounting Officer)