NANOMETRICS INC
Form 10-Q
August 03, 2017

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

(Mark One)

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended July 1, 2017

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: 000-13470

NANOMETRICS INCORPORATED

(Exact name of registrant as specified in its charter)

Delaware	94-2276314
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)
1550 Buckeye Drive	
Milpitas, California	95035
(Address of principal executive offices)	(Zip Code)

Registrant’s telephone number, including area code: (408) 545-6000

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

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

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

Large accelerated filer		Accelerated filer
Non-accelerated filer	(Do not check if a smaller reporting company)	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 by Rule 12b-2 of the Exchange Act) Yes No

As of July 28, 2017, there were 25,495,418 shares of common stock, $0.001 par value, issued and outstanding.

NANOMETRICS INCORPORATED

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FOR THE QUARTER ENDED JULY 1, 2017

PART I — FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS
NANOMETRICS INCORPORATED

CONDENSED CONSOLIDATED BALANCE SHEETS

(In thousands except share and per share amounts)

(Unaudited)

	July 1, 2017	December 31, 2016
ASSETS		
Current assets:		
Cash and cash equivalents	$42,354	$ 47,062
Marketable securities	93,340	82,899
Accounts receivable, net of allowances of $55 and $73, respectively	46,966	39,457
Inventories	48,862	38,837
Inventories-delivered systems	1,674	2,457
Prepaid expenses and other	8,887	5,667
Total current assets	242,083	216,379
Property, plant and equipment, net	42,018	44,226
Goodwill	9,756	8,940
Intangible assets, net	309	412
Deferred income tax assets	17,827	17,399
Other assets	399	474
Total assets	$312,392	$ 287,830
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$14,925	$ 11,342
Accrued payroll and related expenses	10,615	12,656
Deferred revenue	11,045	9,168
Other current liabilities	7,368	8,047
Income taxes payable	1,258	813
Total current liabilities	45,211	42,026
Deferred revenue	776	816
Income taxes payable	882	841
Deferred tax liability	21	20
Other long-term liabilities	375	353
Total liabilities	47,265	44,056
Commitments and contingencies (Note 9)		
Stockholders' equity:		

Preferred stock, $0.001 par value; 3,000,000 shares authorized; no shares issued or outstanding	—	—
Common stock, $0.001 par value, 47,000,000 shares authorized: 25,474,086 and 25,070,889, respectively, issued and outstanding	25	25
Additional paid-in capital	275,908	271,969
Accumulated deficit	(7,449)	(22,174)
Accumulated other comprehensive income (loss)	(3,357)	(6,046)
Total stockholders' equity	265,127	243,774
Total liabilities and stockholders' equity	$312,392	$ 287,830

See Notes to Condensed Consolidated Financial Statements

NANOMETRICS INCORPORATED

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS

(In thousands except per share amounts)

(Unaudited)

	Three Months Ended		Six Months Ended	
	July 1, 2017	June 25, 2016	July 1, 2017	June 25, 2016
Net revenues:				
Products	$53,576	$47,445	$101,751	$86,659
Service	10,851	8,322	21,990	16,597
Total net revenues	64,427	55,767	123,741	103,256
Costs of net revenues:				
Cost of products	25,337	21,736	50,815	39,815
Cost of service	5,417	5,164	10,754	9,648
Amortization of intangible assets	52	442	104	877
Total costs of net revenues	30,806	27,342	61,673	50,340
Gross profit	33,621	28,425	62,068	52,916
Operating expenses:				
Research and development	9,139	7,511	17,833	15,579
Selling	7,239	7,823	15,177	15,072
General and administrative	6,591	5,755	12,898	11,175
Amortization of intangible assets	—	-	-	24
Total operating expenses	22,969	21,089	45,908	41,850
Income from operations	10,652	7,336	16,160	11,066
Other income (expense):				
Interest income	3	12	4	21
Interest expense	(19)	(67)	(59)	(184)
Other income (expense), net	274	(394)	271	(169)
Total other income (expense), net	258	(449)	216	(332)
Income before income taxes	10,910	6,887	16,376	10,734
Provision for income taxes	2,622	856	2,736	1,236
Net income	$8,288	$6,031	$13,640	$9,498
Net income per share:				
Basic	$0.33	$0.25	$0.54	$0.39
Diluted	$0.32	$0.24	$0.53	$0.38
Weighted average shares used in per share calculation:				
Basic	25,307	24,524	25,220	24,416
Diluted	25,906	24,927	25,880	24,773

See Notes to Condensed Consolidated Financial Statements

NANOMETRICS INCORPORATED

CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(In thousands)

(Unaudited)

	Three Months Ended		Six Months Ended	
	July 1, 2017	June 25, 2016	July 1, 2017	June 25, 2016
Net income	$8,288	$6,031	$13,640	$9,498
Other comprehensive income:				
Change in foreign currency translation adjustment	761	547	2,706	1,499
Net change on unrealized gains on available-for-sale investments	(8)	37	(17)	72
Other comprehensive income:	753	584	2,689	1,571
Comprehensive income	$9,041	$6,615	$16,329	$11,069

See Notes to Condensed Consolidated Financial Statements

NANOMETRICS INCORPORATED

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

(In thousands)

(Unaudited)

	Six Months Ended	
	July 1, 2017	June 25, 2016
Cash flows from operating activities:		
Net income	$13,640	$9,498
Reconciliation of net income to net cash provided by operating activities:		
Depreciation and amortization	3,552	4,305
Stock-based compensation	4,327	3,432
Disposal of fixed assets	98	128
Inventory write-down	1,015	1,046
Deferred income taxes	798	(30)
Changes in fair value of contingent payments to Zygo Corporation	—	95
Changes in assets and liabilities:		
Accounts receivable	(4,720)	(14,277)
Inventories	(10,090)	6,457
Inventories-delivered systems	783	(6,737)
Prepaid expenses and other	(947)	(151)
Accounts payable, accrued and other liabilities	(521)	(1,511)
Deferred revenue	1,837	12,080
Income taxes payable	486	(1,115)
Net cash provided by operating activities	10,258	13,220
Cash flows from investing activities:		
Payments to acquire certain assets	(2,000)	—
Sales of marketable securities	27,391	—
Maturities of marketable securities	40,923	21,816
Purchases of marketable securities	(78,787)	(12,880)
Purchases of property, plant and equipment	(1,536)	(2,528)
Net cash provided by (used in) investing activities	(14,009)	6,408
Cash flows from financing activities:		
Payments to Zygo Corporation related to acquisition	—	(315)
Proceeds from sale of shares under employee stock option plans and purchase plan	2,865	3,466
Taxes paid on net issuance of stock awards	(3,392)	(1,288)
Net cash provided by (used in) financing activities	(527)	1,863
Effect of exchange rate changes on cash and cash equivalents	(430)	387
Net increase (decrease) in cash and cash equivalents	(4,708)	21,878

Cash and cash equivalents, beginning of period	47,062	38,154
Cash and cash equivalents, end of period	$42,354	$60,032
Supplemental disclosure of non-cash investing activities:		
Transfer of property, plant and equipment to inventory, net	$550	$278

See Notes to Consolidated Financial Statements

NANOMETRICS INCORPORATED

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

(Unaudited)

Note 1. Nature of Business and Basis of Presentation

Description of Business – Nanometrics Incorporated ("Nanometrics" or the "Company") and its wholly-owned subsidiaries design, manufacture, market, sell and support optical critical dimension ("OCD"), thin film and overlay dimension metrology and inspection systems used primarily in the manufacturing of semiconductors, solar photovoltaics ("solar PV") and high-brightness LEDs ("HB-LED"), as well as by customers in the silicon wafer and data storage industries. Nanometrics' metrology systems precisely measure a wide range of film types deposited on substrates during manufacturing to control manufacturing processes and increase production yields in the fabrication of integrated circuits. The Company's OCD technology is a patented critical dimension measurement technology that is used to precisely determine the dimensions on the semiconductor wafer that directly control the resulting performance of the integrated circuit devices. The thin film metrology systems use a broad spectrum of wavelengths, high-sensitivity optics, proprietary software, and patented technology to measure the thickness and uniformity of films deposited on silicon and other substrates as well as their chemical composition. The overlay metrology systems are used to measure the overlay accuracy of successive layers of semiconductor patterns on wafers in the photolithography process. Nanometrics' inspection systems are used to find defects on patterned and unpatterned wafers at nearly every stage of the semiconductor production flow. The corporate headquarters of Nanometrics is located in Milpitas, California.

Basis of Presentation – The accompanying condensed consolidated financial statements ("financial statements") have been prepared on a consistent basis with the audited consolidated financial statements as of December 31, 2016, and include all normal recurring adjustments necessary to fairly state the information set forth therein. All significant intercompany accounts and transactions have been eliminated in consolidation.

The financial statements have been prepared in accordance with the regulations of the United States Securities and Exchange Commission ("SEC") for interim periods in accordance with S-X Article 10, and, therefore, omit certain information and footnote disclosure necessary to present the statements in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). The operating results for interim periods are not necessarily indicative of the operating results that may be expected for the entire year. These financial statements should be read in conjunction with the audited consolidated financial statements and notes thereto for the fiscal year ended December 31, 2016, which were included in the Company's Annual Report on Form 10-K filed with the SEC on March 3, 2017.

Fiscal Period – The Company uses a 52/53 week fiscal year ending on the last Saturday of the calendar year. All references to the quarter refer to Nanometrics' fiscal quarter. The fiscal quarters reported herein are 13 week periods.

Use of Estimates – The preparation of financial statements in conformity with U.S. 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 financial statements and the reported amounts of revenues and expenses during the reported period. Actual results could differ materially from those estimates. Estimates are used for, but not limited to, revenue recognition, the provision for doubtful accounts, the provision for excess, obsolete, or slow moving inventories, valuation of intangible and long-lived assets, warranty accruals, income taxes, valuation of stock-based compensation, and contingencies.

Revenue Recognition – The Company derives revenue from the sale of process control metrology and inspection systems and related upgrades ("product revenue") as well as spare part sales, billable service and service contracts (together "service revenue"). Upgrades are system software and hardware performance upgrades that extend the features and functionality of a product. Upgrades are included in product revenue, which consists of sales of complete, advanced process control metrology and inspection systems (the "system(s)"). Nanometrics' systems consist of hardware and software components that function together to deliver the essential functionality of the system. Arrangements for sales of systems and upgrades often include defined customer-specified acceptance criteria.

In summary, the Company recognizes revenue when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the seller's price is fixed or determinable, and collectability is reasonably assured.

NANOMETRICS INCORPORATED

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(Unaudited)

For repeat product sales to existing customers, revenue recognition occurs at the time title and risk of loss transfer to the customer, which usually occurs upon shipment from the Company's manufacturing location, if it can be reliably demonstrated that the product has successfully met the defined customer specified acceptance criteria and all other recognition criteria have been met. For initial sales where the product has not previously met the defined customer specified acceptance criteria, product revenues are recognized upon the earlier of receipt of written customer acceptance or expiration of the contractual acceptance period. In Japan, where contractual terms with the customer specify risk of loss and title transfers upon customer acceptance, revenue is recognized upon receipt of written customer acceptance, provided that all other recognition criteria have been met.

The Company warrants its products against defects in manufacturing. Upon recognition of product revenue, a liability is recorded for anticipated warranty costs. On occasion, customers request a warranty period longer than the Company's standard warranty. In those instances, where extended warranty services are separately quoted to the customer, the associated revenue is deferred and recognized as service revenue ratably over the term of the extended warranty period. The portion of service contracts and extended warranty services agreements that are uncompleted at the end of any reporting period are included in deferred revenue.

The Company sells software that is considered to be an upgrade to a customer's existing systems. These standalone software upgrades are not essential to the tangible product's functionality and are accounted for under software revenue recognition rules which require vendor specific objective evidence (“VSOE”) of fair value to allocate revenue in a multiple element arrangement. Revenue from software sales is recognized when the software is delivered to the customer, provided that all other recognition criteria have been met.

The majority of other upgrades are sold based on published specifications. For simple upgrades that do not require major configuration, revenue is recognized at the time title and risk of loss transfer to the customer which is usually upon shipment. For complex and extensive upgrades, specific acceptance or prior acceptance for a similar upgrade is required in order to recognize revenue.

Revenue related to spare parts is recognized upon shipment. Revenue related to billable services is recognized as the services are performed. Service contracts may be purchased by the customer during or after the warranty period and revenue is recognized ratably over the service contract period.

Frequently, the Company delivers products and various services in a single transaction. The Company's deliverables consist of tools, installation, upgrades, billable services, spare parts, and service contracts. The Company's typical multi-element arrangements include a sale of one or multiple tools that include installation and standard warranty. Other arrangements consist of a sale of tools bundled with service elements or delivery of different types of services. The Company's tools, upgrades, and spare parts are generally delivered to customers within a period of up to six months from order date. Installation is usually performed soon after delivery of the tool. The portion of revenue associated with installation is deferred based on relative selling price and that revenue is recognized upon completion of the installation and receipt of final acceptance. Billable services are billed on a time and materials basis and performed as requested by customers. Under service contract arrangements, services are provided as needed over the fixed arrangement term, which terms can be up to twelve months. The Company does not grant its customers a general right of return or any refund terms and imposes a penalty on orders cancelled prior to the scheduled shipment date.

The Company evaluates its revenue arrangements to identify deliverables and to determine whether these deliverables are separable into multiple units of accounting. The Company allocates the arrangement consideration among the deliverables based on relative selling prices. The Company has established VSOE for some of its products and services when a substantial majority of selling prices falls within a narrow range when sold separately. For deliverables with no established VSOE, the Company uses best estimate of selling price to determine standalone selling price for such deliverable. The Company does not use third party evidence to determine standalone selling price since this information is not widely available in the market as the Company's products contain a significant element of proprietary technology and the solutions offered differ substantially from competitors. The Company has established a process for developing estimated selling prices, which incorporates historical selling prices, the effect of market conditions, gross margin objectives, pricing practices, as well as entity-specific factors. The Company monitors and evaluates estimated selling price on a regular basis to ensure that changes in circumstances are accounted for in a timely manner.

When certain elements in multiple-element arrangements are not delivered, or accepted at the end of a reporting period, the relative selling prices of undelivered elements are deferred until these elements are delivered and/or accepted. If deliverables cannot be accounted for as separate units of accounting, the entire arrangement is accounted for as a single unit of accounting and revenue is deferred until all elements are delivered and all revenue recognition requirements are met.

NANOMETRICS INCORPORATED

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(Unaudited)

Note 2. Recent Accounting Pronouncements

Accounting Standards Adopted

In March 2016, the FASB issued an accounting standards update that simplifies several aspects of the accounting for share-based payment award transactions, including income tax consequences, classification of awards as equity or liability, and classification on the statement of cash flows. The new standard requires adoption of certain amendments relevant to the Company to be applied using a modified retrospective transition method by means of cumulative effect adjustment to retained earnings as of the beginning of the fiscal year 2017.

The new standard permits entities to make an accounting policy election related to how forfeitures will impact the recognition of compensation cost for stock-based compensation. The Company has elected to account for forfeitures as they occur and adopted this change on a modified retrospective basis. The cumulative effect of this change resulted in a $0.1 million increase to accumulated deficit as of January 1, 2017.

Furthermore, the standard requires excess tax benefits and tax deficiencies to be recorded in the income statement when the awards vest or are settled rather than paid-in capital. The Company recorded the cumulative effect of this change as a $1.2 million reduction to accumulated deficit in the first quarter of fiscal 2017 to reflect the recognition of excess tax benefits in prior years, with a corresponding adjustment to deferred tax assets and long-term tax liabilities. The Company adopted the guidance related to the recognition of excess tax benefits and deficiencies as income tax expense or benefit on a modified retrospective basis. In addition, the Company elected to report cash flows related to excess tax benefits on a prospective basis. The presentation requirements for cash flows related to employee taxes paid for withheld shares had no impact to the Company’s statement of cash flows since such cash flows have historically been presented as a financing activity.

In July 2015, the FASB issued an accounting standards update which simplifies the measurement of inventory by requiring inventory to be measured at the lower of cost and net realizable value. The new standard applies only to inventories for which cost is determined by methods other than last-in-first-out and the retail inventory method. Effective in the first quarter of fiscal 2017, the Company adopted this guidance. The adoption of this guidance did not have a significant impact on the Company’s consolidated financial condition and results of operation.

Accounting Standards Not Yet Adopted

In January 2017, the Financial Accounting Standards Board (the "FASB") issued an accounting standard update which simplifies the subsequent measurement of goodwill and removes step 2 from the goodwill impairment test. Instead, an entity should record an impairment charge based on excess of a reporting unit’s carrying amount over its fair value. The standard is effective for public companies for fiscal years beginning after December 15, 2019. Early adoption is permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017. The adoption of this guidance is not expected to have a significant impact on the Company’s consolidated financial condition and results of operations.

In October 2016, the FASB issued an accounting standard update which requires the recognition of the income tax consequences of an intra-entity transfer of an asset, other than inventory, when the transfer occurs. This standard will be effective for annual reporting periods beginning after December 15, 2017, including interim reporting period within those annual periods. Early adoption is permitted. This standard update is required to be adopted using the modified retrospective approach, with a cumulative catch-up adjustment to retained earnings in the period of adoption. The Company is currently evaluating the impact of adopting this standard on its consolidated financial condition and results of operations.

In August 2016, the FASB issued an accounting standard which addresses eight specific cash flow classification issues. This update is effective for public companies for fiscal years beginning after December 15, 2017 and interim periods within those fiscal years. Early adoption is permitted, including in an interim period. If early adopted in an interim period, any adjustments should be reflected as of the beginning of the fiscal year that includes that interim period, and all the amendments must be adopted in the same period. The standard is to be applied through a retrospective transition method to each period presented. If it is impracticable to apply retrospectively for some of the issues, the amendments for those issues would be applied prospectively as of the earliest date practicable. The adoption of this guidance is not expected to have a significant impact on the Company’s consolidated statement of cash flows.

NANOMETRICS INCORPORATED

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(Unaudited)

In June 2016, the FASB issued an accounting standard which requires measurement and timely recognition of expected credit losses for financial assets. The update is effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. Early adoption is permitted as of the fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. The standard is to be applied through a cumulative-effect adjustment to retained earnings as of the beginning of the first reporting period in which the guidance is effective. The Company is currently evaluating the effect of this update on its consolidated financial condition and results of operations.

In February 2016, the FASB issued an accounting standards update which requires lessees to record a right-of-use asset and a corresponding lease liability on the balance sheet (with the exception of short-term leases). For lessees, leases will continue to be classified as either operating or financing in the income statement. The standard is effective for public companies for annual reporting periods beginning after December 15, 2018, including interim periods within those fiscal years. Early adoption is permitted. This standard is required to be applied with a modified retrospective transition approach. The Company generally does not finance purchases of equipment or other capital, but does lease some equipment and facilities. The Company is currently evaluating the impact of this standard on its consolidated financial statements and related disclosures but anticipates most its existing operating lease commitments will be recognized as operating lease liabilities and right-of-use assets.

In May 2014, the FASB issued an accounting standards update which requires an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. The updated standard will replace most existing revenue recognition guidance in U.S. GAAP when it becomes effective and permits the use of either the retrospective or cumulative effect transition method. In August 2015, the FASB deferred for one year the effective date of the new revenue standard, with early adoption permitted but not earlier than the original effective date. Consequently, the new standard will be effective for the Company on December 31, 2017 and the Company does not plan to adopt early. The Company has not yet selected a transition method and is currently evaluating the effect that the updated standard will have on its consolidated financial statements and related disclosures.

While the Company continues to assess the impact of the new standard, the Company believes the most likely impact will be to the accounting for arrangements that include incentives or services bundled with purchases. Under current U.S. GAAP, the revenue attributable to these incentives is recognized when the incentives performance conditions are met. While the Company currently expects revenue related to these arrangements to remain unchanged, the nature of the performance obligations may change the timing of the revenue recognition. The Company is currently evaluating the impact of the new standard on these arrangements and will continue to monitor industry activities and other guidance provided by the accounting profession and regulators and adjust our approach and implementation plans as required.

Note 3. Fair Value Measurements and Disclosures

The Company determines the fair values of its financial instruments based on the fair value hierarchy established in FASB Accounting Standards Codification ("ASC") 820, Fair Value Measurement, which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The classification of a financial asset or liability within the hierarchy is based upon the lowest level input that is significant to the fair value measurement. The fair value hierarchy prioritizes the inputs into the following three levels that may be used to measure fair value:

Level 1 — Quoted prices in active markets for identical assets or liabilities.

Level 2 — Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument.

Level 3 — Unobservable inputs that are supported by little or no market activity and are significant to the fair value of the assets or liabilities. Such unobservable inputs include an estimated discount rate used in the Company’s discounted present value analysis of future cash flows, which reflects the Company’s estimate of debt with similar terms in the current credit markets. As there is currently minimal activity in such markets, the actual rate could be materially different.

NANOMETRICS INCORPORATED

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(Unaudited)

Fair value is defined as the price that would be received upon the sale of an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The standard assumes that the transaction to sell the asset or transfer the liability occurs in the principal or most advantageous market for the asset or liability and establishes that the fair value of an asset or liability shall be determined based on the assumptions that market participants would use in pricing the asset or liability.

The following tables present the Company's assets and liabilities measured at estimated fair value on a recurring basis, excluding accrued interest components, categorized in accordance with the fair value hierarchy (in thousands), as of the following dates:

	July 1, 2017 Fair Value Measurements Using Input Types				December 31, 2016 Fair Value Measurements Using Input Types			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets:								
Cash equivalents:								
Money market funds	$5,371	$—	$ —	$5,371	$959	$—	$ —	$959
Commercial paper and corporate debt securities	—	2,996	—	2,996	—	2,499	—	2,499
Total cash equivalents	$5,371	$2,996	$ —	$8,367	$959	$2,499	$ —	$3,458
Marketable securities:								
U.S. Treasury securities and U.S. Government agency debt securities	—	5,747	—	5,747	—	17,072	—	17,072
Certificates of deposits	—	26,308	—	26,308	—	23,019	—	23,019
Commercial paper	—	17,424	—	17,424	—	22,402	—	22,402
Municipal securities and corporate debt securities	—	38,012	—	38,012	—	14,943	—	14,943
Asset-backed Securities	—	5,849	—	5,849	—	5,463	—	5,463
Total marketable securities	$—	$93,340	$ —	$93,340	$-	$82,899	$ —	$82,899
Total[(1)]	$5,371	$96,336	$ —	$101,707	$959	$85,398	$ —	$86,357

[(1)] Excludes $34.0 million and $43.6 million held in operating accounts as of July 1, 2017 and December 31, 2016, respectively. See "Cash and Investments" in Note 4 of the Notes to Consolidated Financial Statements for more information.

The fair values of the marketable securities that are classified as Level 1 in the table above were derived from quoted market prices for identical assets or liabilities in active markets that the Company has the ability to access. The fair value of marketable securities that are classified as Level 2 in the table above were derived from non-binding market consensus prices that were corroborated by observable market data, quoted market prices for similar instruments, or pricing models, such as discounted cash flow techniques with all significant inputs derived from or corroborated by observable market data. There were no transfers of instruments between Level 1, Level 2 and Level 3 during the financial periods presented.

Derivatives

The Company uses foreign currency exchange forward contracts to mitigate variability in gains and losses generated from the re-measurement of certain monetary assets and liabilities denominated in foreign currencies. These derivatives are carried at fair value with changes recorded in other income (expense), net in the consolidated statements of operations. Changes in the fair value of these derivatives are largely offset by re-measurement of the underlying assets and liabilities. The derivatives have maturities of approximately 30 days.

The settlement of forward foreign currency contracts included in the three months ended July 1, 2017 and June 25, 2016 was a loss of $0.3 million and $0.8 million, respectively. The settlement of forward foreign currency contracts included in the six months ended July 1, 2017 and June 25, 2016 was a gain of $0.7 million and a loss of $1.3 million, respectively. These are included in other income (expense), net, in the consolidated statements of operations.

NANOMETRICS INCORPORATED

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(Unaudited)

The following table presents the notional amounts and fair values of the Company's outstanding derivative instruments in U.S. Dollar equivalent (in millions):

	As of July 1, 2017			As of December 31, 2016		
		Fair Value			Fair Value	
	Notional Amount	Asset	Liability	Notional Amount	Asset	Liability
Undesignated Hedges:						
Forward Foreign Currency Contracts						
Purchase	20.0	—	—	12.6	—	—
Sell	11.5	—	—	1.3	—	—

Note 4. Cash and Investments

The following tables present cash, cash equivalents, and available-for-sale investments as of the following dates (in thousands):

	July 1, 2017			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Market Value
Cash	$33,987	$ —	$ —	$33,987
Cash equivalents:				
Money market funds	5,371	—	—	5,371
Commercial paper and corporate debt securities	2,996	—	—	2,996
Marketable securities:		—	—	
U.S. Treasury securities	3,004	—	(2)	3,002
U.S. Government agency securities	2,750	—	(5)	2,745
Certificate of deposits	26,298	10	—	26,308
Commercial paper	17,427	—	(3)	17,424
Corporate debt securities	38,035	—	(23)	38,012
Asset-backed securities	5,850	—	(1)	5,849
Total cash, cash equivalents, and marketable securities	$135,718	$ 10	$ (34)	$135,694

	December 31, 2016			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Market Value
Cash	$43,604	$ —	$ —	$43,604
Cash equivalents:				
Money market funds	959	—	—	959
Commercial paper and corporate debt securities	2,499	—	—	2,499
Marketable securities:				
U.S. Treasury securities	5,667	—	—	5,667
U.S. Government agency securities	11,412	—	(7)	11,405
Certificates of deposits	23,000	19	—	23,019
Commercial paper	22,402	—	—	22,402
Corporate debt securities	14,194	—	(6)	14,188
Municipal securities	756	—	(1)	755
Asset-backed securities	5,466	—	(3)	5,463
Total cash, cash equivalents, and marketable securities	$129,959	$ 19	$ (17)	$129,961

Available-for-sale marketable securities, readily convertible to cash, with maturity dates of 90 days or less are classified as cash equivalents, while those with maturity dates greater than 90 days are classified as marketable securities within short-term assets. All

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(Unaudited)

marketable securities as of July 1, 2017 and December 31, 2016, were available-for-sale and reported at fair value based on the estimated or quoted market prices as of the balance sheet date.

Realized gains and losses on sale of securities are recorded in other income (expense), net, in the Company's statement of operations. Net realized gains and losses for three months and six months ended July 1, 2017 and June 25, 2016 were not material.

Unrealized gains or losses, net of tax effect, are recorded in accumulated other comprehensive income (loss) within stockholders' equity. Both the gross unrealized gains and gross unrealized losses for the three months and six months ended July 1, 2017 and June 25, 2016 were insignificant and no marketable securities had other than temporary impairment.

All marketable securities as of July 1, 2017 and December 31, 2016, had maturity dates of less than two years.

Note 5. Accounts Receivable

The Company maintains arrangements under which eligible accounts receivable in Japan are sold without recourse to unrelated third-party financial institutions. These receivables were not included in the consolidated balance sheets as the criteria for sale treatment had been met. The Company pays administrative fees as well as interest ranging from 0.61% to 1.68% based on the anticipated length of time between the date the sale is consummated and the expected collection date of the receivables sold.

The Company sold $4.2 million and $5.2 million of receivables during the three months ended July 1, 2017 and June 25, 2016, respectively, and $9.4 and $19.4 million of receivables during the six months ended July 1, 2017 and June 25, 2016. There were no material gains or losses on the sale of such receivables. There were no amounts due from such third party financial institutions at July 1, 2017 and December 31, 2016.

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(Unaudited)

Note 6. Financial Statement Components

The following tables provide details of selected financial statement components as of the following dates (in thousands):

	At July 1, 2017	December 31, 2016
Inventories:		
Raw materials and sub-assemblies	$28,556	$ 23,506
Work in process	14,692	10,347
Finished goods	5,614	4,984
Inventories	48,862	38,837
Inventories-delivered systems	1,674	2,457
Total inventories	$50,536	$ 41,294
Property, plant and equipment, net:(1)		
Land	$15,571	$ 15,568
Building and improvements	20,628	20,532
Machinery and equipment	37,247	35,659
Furniture and fixtures	2,440	2,282
Software	10,532	9,756
Capital in progress	1,139	2,748
Total property, plant and equipment, gross	87,557	86,545
Accumulated depreciation and amortization	(45,539)	(42,319)
Total property, plant and equipment, net	$42,018	$ 44,226

(1) Total depreciation and amortization expense was $1.6 million and $1.7 million for the three months ended July 1, 2017 and June 25, 2016, respectively, and $3.4 million for both six months ended July 1, 2017 and June 25, 2016.

	At July 1, 2017	December 31, 2016
Other Current Liabilities:		
Accrued warranty	$4,602	$ 3,838
Customer deposits	—	581
Retrofit liability	613	432
Accrued professional services	720	424
Accrued royalties	60	1,233
Other	1,373	1,539
Total other current liabilities	$7,368	$ 8,047

Components of Accumulated Other Comprehensive Income (Loss)

	Years Ended			
	Foreign Currency Translations	Defined Benefit Pension Plans	Unrealized Income (Loss) on Investment	Accumulated Other Comprehensive Income
Balance as of December 31, 2016	$(5,817)	$ (227)	$ (2)	$ (6,046)
Current period change	2,706	—	(17)	2,689
Balance as of July 1, 2017	$(3,111)	$ (227)	$ (19)	$ (3,357)

The items above, except for unrealized income (loss) on investment, did not impact the Company’s income tax provision. The amounts reclassified from each component of accumulated other comprehensive income (loss) into income statement line items were insignificant.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(Unaudited)

Note 7. Goodwill and Intangible Assets

The following table summarizes the activity in the Company’s goodwill during the six months ended July 1, 2017:

	(in thousands)
Balance as of December 31, 2016	$ 8,940
Foreign currency movements	816
Balance as of July 1, 2017	$ 9,756

Finite-lived intangible assets are recorded at cost, less accumulated amortization. Finite-lived intangible assets as of July 1, 2017 and December 31, 2016 consisted of the following (in thousands):

	July 1, 2017		
	Adjusted cost	Accumulated amortization	Net carrying amount
Developed technology	$16,491	$ (16,215)	$ 276
Customer relationships	9,395	(9,395)	—
Brand names	1,927	(1,927)	—
Patented technology	2,252	(2,219)	33
Trademark	80	(80)	—
Total	$30,145	$ (29,836)	$ 309

	December 31, 2016		
	Adjusted cost	Accumulated amortization	Net carrying amount
Developed technology	$15,726	$ (15,380)	$ 346
Customer relationships	9,322	(9,322)	—
Brand names	1,927	(1,927)	—
Patented technology	2,252	(2,186)	66
Trademark	80	(80)	—

Total	$29,307	$ (28,895)	$ 412

The amortization of finite-lived intangibles is computed using the straight-line method. Estimated lives of finite-lived intangibles range from two to ten years. The total amortization expense for the three months ended July 1, 2017 and June 25, 2016 was $0.1 million and $0.4 million, respectively. Total amortization expense for the six months ended July 1, 2017 and June 25, 2016 was $0.1 million and $0.9 million, respectively.

There were no impairment charges related to intangible assets recorded during the three and six months ended July 1, 2017 and June 25, 2016.

The estimated future amortization expense of finite intangible assets as of July 1, 2017 is as follows (in thousands):

Fiscal Years	Amounts
2017 (remaining six months)	103
2018	140
2019	66
Thereafter	—
Total future amortization expense	$ 309

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Note 8. Warranties

The Company generally sells its products with a 12 months repair or replacement warranty from the date of acceptance or shipment date. The Company provides an accrual for estimated future warranty costs based upon the historical relationship of warranty costs to the cost of products sold. The estimated future warranty obligations related to product sales are recorded in the period in which the related revenue is recognized. The estimated future warranty obligations are affected by the warranty periods, sales volumes, product failure rates, material usage, and labor and replacement costs incurred in correcting a product failure. If actual product failure rates, material usage, labor or replacement costs were to differ from the Company's estimates, revisions to the estimated warranty obligations would be required. For new product introductions where limited or no historical information exists, the Company may use warranty information from other previous product introductions to guide it in estimating its warranty accrual.

Components of the warranty accrual, which were included in the accompanying condensed consolidated balance sheets with other current liabilities, were as follows (in thousands):

	Three Months Ended		Six Months Ended	
	July 1, 2017	June 25, 2016	July 1, 2017	June 25, 2016
Balance as of beginning of period	$4,244	$4,377	$3,838	$4,504
Accruals for warranties issued during period	1,411	1,368	2,780	2,429
Settlements during the period	(1,053)	(1,189)	(2,016)	(2,377)
Balance as of end of period	$4,602	$4,556	$4,602	$4,556

Note 9. Commitments and Contingencies

Intellectual Property Indemnification Obligations – The Company will, from time to time, in the normal course of business, agree to indemnify certain customers, vendors or others against third party claims that the Company's products, when used for their intended purpose(s), or the Company's intellectual property, infringe the intellectual property rights of such third parties or other claims made against parties with whom it enters into contractual relationships. It is not possible to determine the maximum potential amount of liability under these indemnification obligations due to the limited history of prior indemnification claims and the unique facts and circumstances that are likely to be involved in each particular claim. Historically, the Company has not made payments under these obligations and believes that the estimated fair value of these agreements is immaterial. Accordingly, no liabilities have been recorded for these obligations in the accompanying condensed consolidated balance sheets as of July 1, 2017 and December 31, 2016.

Note 10. Net Income Per Share

The Company presents both basic and diluted net income per share on the face of its condensed consolidated statements of operations. Basic net income per share excludes the effect of potentially dilutive shares and is computed by dividing net income by the weighted-average number of shares of common stock outstanding for the period. Diluted net income per share is computed using the weighted-average number of shares of common stock outstanding for the period plus the effect of all dilutive securities representing potential shares of common stock outstanding during the period.

A reconciliation of the share denominator of the basic and diluted net income per share computations for three and six months ended July 1, 2017 and June 25, 2016 is as follows (in thousands):

	Three Month Ended		Six Months Ended	
	July 1, 2017	June 25, 2016	July 1, 2017	June 25, 2016
Weighted average common shares outstanding used in basic net income (loss) per share calculation	25,307	24,524	25,220	24,416
Potential dilutive common stock equivalents, using treasury stock method	599	403	660	357
Weighted average shares used in diluted net income (loss) per share calculation	25,906	24,927	25,880	24,773

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Note 11. Stockholders' Equity and Stock-Based Compensation

Options and Employee Stock Purchase Plan ("ESPP") Awards

The fair value of each option and ESPP award is estimated on the grant date using the Black-Scholes valuation model and the assumptions noted in the following table. The expected lives of options granted were calculated using the simplified method allowed by the Staff Accounting Bulletin No. 107, Share-Based Payment. The risk-free rates were based on the U.S Treasury rates in effect during the corresponding period of grant. The expected volatility was based on the historical volatility of the Company's stock price. The dividend yield reflects that the Company has not paid any cash dividends since inception and does not intend to pay any cash dividends in the foreseeable future.

	Three Months Ended		Six Months Ended	
	July 1, 2017	June 25, 2016	July 1, 2017	June 25, 2016
Employee Stock Purchase Plan:				
Expected life	0.5 years	0.5 years	0.5 years	0.5 years
Volatility	35.2%	39.1%	35.2%	39.1%
Risk free interest rate	0.65%	0.49%	0.65%	0.49%
Dividends	—	—	—	—

No stock options were awarded during the six months ended July 1, 2017 and June 25, 2016, respectively.

A summary of activity of stock options during the six months ended July 1, 2017 is as follows:

	Number of Shares Outstanding (Options)	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (in Thousands)
Options				

Outstanding at December 31, 2016	440,545	$ 15.06	2.12	$ 4,405
Exercised	(111,871)	$ 14.66		
Cancelled	(438)	$ 15.60		
Outstanding at July 1, 2017	328,236	$ 15.20	1.76	$ 3,313
Exercisable at July 1, 2017	328,236	$ 15.20	1.76	$ 3,313

The aggregate intrinsic value in the above table represents the total pretax intrinsic value, based on the Company's closing stock price of $25.29 as of June 30, 2017, the last trading day of the quarter, which would have been received by the option holders had all option holders exercised their options as of that date. The total intrinsic value of options exercised during the three months ended July 1, 2017 and June 25, 2016 was $0.6 million and $1.4 million, respectively, and during the six months ended July 1, 2017 and June 25, 2016 was $1.5 and $1.4 million, respectively.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(Unaudited)

Restricted Stock Units (“RSUs”)

Time-based RSUs are valued using the market value of the Company’s common stock on the date of grant, assuming no expectation of dividends paid.

A summary of activity for RSUs is as follows:

Summary of activity for RSUs	Number of RSUs	Weighted Average Fair Value
Outstanding RSUs as of December 31, 2016	819,785	$ 16.79
Granted	306,333	$ 27.44
Released	(315,228)	$ 17.03
Cancelled	(27,644)	$ 16.01
Outstanding RSUs as of July 1, 2017	783,246	$ 20.89

Market-Based Performance Stock Units (“PSUs”)

In addition to granting RSUs that vest on the passage of time only, the Company granted PSUs to key executives. The PSUs vest in three equal tranches over one, two and three years based on the relative performance of the Company’s stock during those periods, compared to a peer group over the same period. If target stock price performance is achieved, 66.7% of the shares of the Company’s common stock subject to the PSUs will vest. Up to a maximum of 100% of the shares subject to the PSUs will vest if the maximum stock price performance is achieved for each tranche.

A summary of activity for PSUs is as follows:

Summary of activity for PSUs	Number of PSUs	Weighted Average Fair Value
Outstanding PSUs as of December 31, 2016	107,500	$ 9.94
Granted	59,550	26.75
Released	(38,500)	10.41
Cancelled	(4,000)	12.64
Outstanding PSUs as of July 1, 2017	124,550	$ 17.86

The preceding table reflects the maximum awards that can be achieved upon full vesting.

Valuation of PSUs

On the date of grant, the Company estimated the fair value of PSUs using a Monte Carlo simulation model. The assumptions for the valuation of PSUs are summarized as follows:

	2017 Award	2016 Award
Grant Date Fair Value Per Share	26.75	$ 8.52
Weighted-average assumptions/inputs:		
Expected Dividend	—	—
Range of risk-free interest rates	1.40%	0.92%
Range of expected volatilities for peer group	23%-62%	22%-93%

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(Unaudited)

Stock-based Compensation Expense

Stock-based compensation expense for all share-based payment awards made to the Company’s employees and directors pursuant to the employee stock option and employee stock purchase plans by function were as follows (in thousands):

	Three Months Ended		Six Months Ended	
	July 1, 2017	June 25, 2016	July 1, 2017	June 25, 2016
Cost of products	$215	$ 89	$412	$ 156
Cost of service	157	114	302	218
Research and development	355	313	754	598
Selling	528	463	1,067	955
General and administrative	908	764	1,792	1,505
Total stock-based compensation expense related to employee stock options and employee stock purchases	$2,163	$ 1,743	$4,327	$ 3,432

Note 12. Income Taxes

The Company accounts for income taxes under the provisions of ASC 740, Accounting for Income Taxes. The Company adjusts its effective tax rate each quarter to be consistent with the estimated annual effective tax rate. The Company also records the tax effect of unusual or infrequently occurring discrete items, including changes in judgment about valuation allowances and effects of changes in tax laws or tax rates, in the interim period in which they occur. The Company's effective tax rate reflects the impact of a portion of its earnings being taxed in foreign jurisdictions as well as a valuation allowance maintained on certain deferred tax assets.

The provision for income taxes consists of the following (in thousands):

	Three Months Ended		Six Months Ended	
	July 1, 2017	June 25, 2016	July 1, 2017	June 25, 2016
Provision for income taxes	$2,622	$ 856	$2,736	$ 1,236

The Company recorded a tax provision of $2.6 million and $0.9 million for the three months ended July 1, 2017 and June 25, 2016, respectively. The increase in the tax provision for 2017 from 2016 was primarily related to an increase in the Company's profitability and a decrease in the Company's tax benefit associated with the settlement of equity options/awards.

The Company recorded a tax provision of $2.7 million and $1.2 million for the six months ended July 1, 2017 and June 25, 2016, respectively. The increase in the tax provision for 2017 from 2016 was primarily related to an increase in the Company's profitability and a decrease in the Company's tax benefit associated with the settlement of equity options/awards offset by a one-time benefit related to an entity classification change.

The Company continues to maintain a valuation allowance against its California and certain foreign deferred tax assets as a result of uncertainties regarding the realization of the asset due to cumulative losses and uncertainty of future taxable income. The Company will continue to assess the realizability of the deferred tax assets in each of the applicable jurisdictions and maintain the valuation allowances until sufficient positive evidence exists to support a reversal. In the event the Company determines that the deferred tax assets are realizable, an adjustment to the valuation allowance will be reflected in the tax provision for the period such determination is made.

The Company is subject to taxation in the U.S. and various states including California, and foreign jurisdictions including Korea, Japan, Taiwan, and China. Due to tax attribute carry-forwards, the Company is subject to examination for tax years 2003 forward for U.S. tax purposes. The Company is also subject to examination in various states for tax years 2002 forward. The Company is subject to examination for tax years 2007 forward for various foreign jurisdictions.

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The Company accrues interest and penalties related to unrecognized tax benefits in its provision for income taxes. The total amount of penalties and interest were not material as of July 1, 2017 and June 25, 2016. During the next twelve months, the Company anticipates increases in its unrecognized tax benefits of approximately $0.4 million.

Note 13. Segment, Geographic, Product and Significant Customer Information

The Company has one operating segment, which is the sale, design, manufacture, marketing and support of optical critical dimension and thin film systems. The following tables summarize total net revenues and long-lived assets (excluding intangible assets) attributed to significant countries (in thousands):

	Three Months Ended		Six Months Ended	
	July 1, 2017	June 25, 2016	July 1, 2017	June 25, 2016
Total net revenues [1]:				
South Korea	$31,500	$4,468	$50,119	$12,904
Japan	9,267	6,379	12,620	13,567
United States	8,297	8,904	21,870	16,095
China	7,330	13,009	14,017	19,515
Taiwan	4,878	5,151	16,711	10,629
Singapore	963	16,617	2,454	26,519
Other	2,192	1,239	5,950	4,027
Total net revenues	$64,427	$55,767	$123,741	$103,256

	July 1, 2017	December 31, 2016
Long-lived tangible assets:		
United States	$40,626	$ 42,688
International	1,392	1,538
Total long-lived tangible assets	$42,018	$ 44,226

The following customers accounted for 10% or more of total accounts receivable, net:

At

	July 1, 2017	December 31, 2016
Samsung Electronics Co. Ltd.	20%	14%
SK Hynix	18%	***
Micron Technology, Inc.	13%	12%
Taiwan Semiconductor Manufacturing Company Limited	***	20%
Intel Corporation	***	11%
Toshiba Corporation	***	10%

*** The customer accounted for less than 10% of total accounts receivable, net, as of that period end.

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(Unaudited)

The following customers accounted for 10% or more of total net revenues:

	Three Months Ended		Six Months Ended	
	July 1, 2017	June 25, 2016	July 1, 2017	June 25, 2016
Samsung Electronics Co. Ltd.	30%	***	26%	***
SK Hynix	23%	***	18%	***
Taiwan Semiconductor Manufacturing Company Limited	***	***	11%	***
Intel Corporation	***	24%	11%	20%
Micron Technology, Inc.	***	36%	***	31%
Toshiba Corporation	10%	***	***	11%

***The customer accounted for less than 10% of total net revenues during the period.

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

This Quarterly Report on Form 10-Q contains forward-looking statements that involve risks and uncertainties. The statements contained in this document that are not purely historical are forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, including, without limitation, statements regarding future periods, financial results, revenues, margins, growth, customers, tax rates, product performance, and the impact of accounting rules on our business and the future implications of our statements regarding goals, strategy, and similar terms. We may identify these statements by the use of words such as "anticipate," "believe," "continue," "could," "estimate," "expect," "may," "might," "project," "will," and other similar expressions. All forward-looking statements included in this document are based on information available to us on the date hereof, and we assume no obligation to update any such forward-looking statements, except as may otherwise be required by law.

Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain risks, uncertainties and changes in circumstances, many of which may be difficult to predict or beyond our control, including those factors referenced in this document, and in Part I, Item 1A, Risk Factors, in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, filed with the Securities and Exchange Commission ("SEC") on March 3, 2017 (our "Annual Report"). In particular, our results could vary significantly based on: changes in customer and industry spending; rate and extent of changes in product mix; adoption of new products; timing of orders, shipments, and acceptance of products; our ability to secure volume supply agreements; and general economic conditions. In evaluating our business, investors should carefully consider these factors in addition to any other risks and uncertainties set forth elsewhere. The occurrence of the events described in the risk factors of our Annual Report and elsewhere in this report as well as other risks and uncertainties could materially and adversely affect our business, operating results and financial condition. While management believes that the discussion and analysis in this report is adequate for a fair presentation of the information presented, we recommend that you read this discussion and analysis in conjunction with (i) our audited consolidated financial statements and notes thereto for the fiscal year ended December 31, 2016, which were included in our Annual Report, (ii) the section captioned "Risk Factors" in our Annual Report, and (iii) our other filings with the SEC.

Overview

Together with our subsidiaries, we are a leading provider of advanced, high-performance process control metrology and inspection systems used primarily in the fabrication of semiconductors and other solid-state devices, including sensors, optoelectronic devices, high-brightness LEDs ("HB-LED"), discretes, and data storage components. Our automated and integrated metrology systems measure critical dimensions, device structures, topography and various thin film properties, including three-dimensional features and film thickness, as well as optical, electrical and material properties. Our process control solutions are deployed throughout the fabrication process, from front-end-of-line substrate manufacturing, to high-volume production of semiconductors and other devices, to advanced three-dimensional wafer-level packaging applications. Our systems enable advanced process control for device manufacturers, providing improved device yield at reduced manufacturing cycle time, supporting accelerated product life cycles in the semiconductor and other device markets.

Principal factors that impact our revenue growth include capital expenditures by manufacturers of semiconductors to increase capacity and to enable their development of new technologies, and our ability to improve market share. The increasing complexity of the manufacturing processes for semiconductors is an important factor in the demand for our innovative metrology systems. Our strategy is to continue to innovate organically as well as to evaluate strategic acquisitions to address business challenges and opportunities.

Our revenues are derived primarily from product and software sales but are also derived from customer service, upgrades and software for the installed base of our products. For the six months ended July 1, 2017, we derived 82% of our total net revenues from product, upgrade and software sales, and 18% of our total net revenues from services.

Nanometrics Products

We offer a diverse line of systems to address the broad range of process control requirements of the semiconductor manufacturing industry. In addition, we believe that our product development and engineering expertise, as well as strategic acquisitions will enable us to develop and offer advanced process control solutions that, in the future, should address industry advancement and trends.

Automated Systems

Our automated systems primarily consist of fully automated metrology systems that are employed in semiconductor production environments. The Atlas® III, Atlas II+ and Atlas XP/Atlas XP+ represent our line of high-performance metrology systems providing optical critical dimension ("OCD®"), thin film metrology and wafer stress for transistor and interconnect metrology applications. The OCD technology is supported by our NanoCD® suite of solutions including our NanoDiffract® software and NanoGen™ scalable computing engine that enables visualization, modeling, and analysis of complex structures. The UniFire™ system measures multiple parameters at any given process step in the advanced packaging process flow for critical dimension, overlay, and topography applications and has recently added inspection capabilities for both front-end-of-line ("FEOL") patterned wafer and advanced packaging related applications.

Integrated Systems

Our integrated metrology ("IM") systems are installed directly onto wafer processing equipment to provide near real-time measurements for improved process control and maximum throughput. Our IM systems are sold directly to end customers. The IMPULSE+ and IMPULSE® represent our latest metrology platform for OCD and thin film metrology, and have been successfully qualified on numerous independent Wafer Fabrication Equipment Suppliers' platforms. Our NanoCD suite of solutions is sold in conjunction with our IMPULSE® systems. Our Trajectory® system provides in-line measurement of layers in thin film thickness and composition in semiconductor applications and is qualified in production with major device makers.

Software

NanoDiffract® is a modeling, visualization and analysis software that takes signals from the automated and integrated metrology systems providing critical dimension, thickness, and optical properties from in line measurements. The software has an intuitive three-dimensional modeling interface to provide visualization of today's advanced and complex semiconductor devices. There are proprietary fitting algorithms in NanoDiffract that enable very accurate and very fast calculations for signal processing for high fidelity model based measurements.

SpectraProbe™ is a model-less fitting engine that enables fast time to solution for in-line excursion detection and control. SpectraProbe complements the high-fidelity modeling of NanoDiffract with a simple machine learning interface for rapid recipe deployment. SpectraProbe expands the types of structures that can be used for metrology and control including in-die and on-device areas. Both analysis packages are supported by the automated and integrated systems, can be deployed in run-time environments and support off-line processing as part of a factory control solution when deployed on NanoCentral and NanoGen servers.

Materials Characterization

Our materials characterization products include systems that are used to monitor the physical, optical, electrical and material characteristics of discrete electronic industry, opto-electronic, HB-LED, solar photovoltaics, compound semiconductor, strained silicon and silicon-on-insulator ("SOI") devices, including composition, crystal structure, layer thickness, dopant concentration, contamination and electron mobility.

The RPMBlue™ is our photoluminescence mapping system designed specifically for the HB-LED market, and is complemented by the RPMBlue-FS, enabling a breadth of research and development configurability. We sell Fourier-Transform Infrared ("FTIR") automated and manual systems in the QS2200/3300 and QS1200 respectively. The NanoSpec® line, including the NanoSpec II, supports thin film measurement across all applications in both low volume production and research applications.

We are continually working to strengthen our competitive position by developing new technologies and products in our market segment. We have expanded our product offerings to address growing applications within the semiconductor manufacturing and adjacent industries. In pursuit of our goals, we have:

- Introduced new products, applications, and upgrades in every core product line and primary market served;
- Diversified our product line and served markets through acquisitions, such as: the 2006 acquisition of Accent Optical Technologies, Inc., a supplier of overlay and thin film metrology and process control systems; the 2008 acquisition of Tevet Process Control Technologies (“Tevet”), an integrated metrology supplier; the 2009 acquisition of the UniFire™ product line from Zygo Corporation, a wholly owned subsidiary of AMETEK, Inc.; and the 2011 acquisition of Nanda Technologies GmbH, a supplier of high sensitivity, high throughput defect inspection systems;
- Continued development of new measurement and inspection technologies for advanced fabrication processes and packaging.

Important Themes and Significant Trends

The semiconductor equipment industry is characterized by new manufacturing processes (node) coming to market every two to three years. At every new node in the semiconductor industry, our customers drive the need for metrology as a major component of device manufacturing. These trends include:

- Proliferation of Optical Critical Dimension Metrology across Fabrication Processes. Device dimensions must be carefully controlled during each step of processing. These patterned structures are measured at many subsequent production stops including Chemical Mechanical Polishing, Etch, and Thin Film processing, all driving broader OCD adoption. Our proprietary OCD systems and software can provide the critical process control of these circuit dimensions that is necessary for successful manufacturing of these state-of-the-art devices. Nanometrics OCD technology is broadly adopted across NAND, DRAM, and logic semiconductor manufacturing processes.
- Proliferation of 3D Transistor Architectures. Our end customers continue to improve device density and performance by scaling front-end-of-line transistor architectures. Many of these designs, including FinFET transistors, have buried features and high aspect ratio stacked features that enable improved performance and density. The advanced designs require additional process control to manage the complex shapes and materials properties, driving additional applications of our systems.
- Proliferation of High-Density 3D-NAND. Our end customers have migrated to multi (many) layered high aspect ratio 3D-NAND devices. Many stacks of NAND cells are formed in parallel. These 3D-NAND architecture enables cost effective density scaling, removing the burden of density from lithography to deposition and etch processes. These devices require additional process control of deposition stacks, planarization processes, and critical high aspect ratio etch processes. Nanometrics thin films and OCD technologies are adopted across the 3D-NAND process including the periphery CMOS processing, NAND cell formation, and Interconnect of the devices.
- Adoption of New Types of Thin Film Materials. The need for ever increasing device circuit speed coupled with lower power consumption has pushed semiconductor device manufacturers to new materials and processing methods with single atom/sub nanometer control over these processes.
- Need for Improved Process Control to Drive Process Efficiencies. Competitive forces influencing semiconductor device manufacturers, such as price-cutting, shorter product life cycles and time to market, place pressure on manufacturers to rapidly achieve production efficiency. Device manufacturers are using our integrated and automated systems throughout the fabrication process to ensure that manufacturing processes scale rapidly, are accurate and can be repeated on a consistent basis.

Critical Accounting Policies and Estimates

The preparation of our financial statements conforms to accounting principles generally accepted in the United States of America, which requires management to make estimates and judgments in applying our accounting policies that have an important impact on our reported amounts of assets, liabilities, revenue, expenses and related disclosures at the date of our financial statements. On an ongoing basis, management evaluates its estimates including those related to bad debts, inventory valuations, warranty obligations, impairment and income taxes. Management bases its estimates and judgments on historical experience and on various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from management’s estimates.

There were no significant changes in our critical accounting policies during the six months ended July 1, 2017. Please refer to Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” in our Annual Report for a complete discussion of our critical accounting policies.

Recent Accounting Pronouncements

See Note 2 of the Unaudited Condensed Consolidated Financial Statements for a description of recent accounting pronouncements, including the respective dates of adoption and effects or anticipated effects on our results of operations and financial condition.

Results of Operations

Net Revenues

Our net revenues comprised the following product lines (in thousands, except percentages):

	Three Months Ended				Six Months Ended			
	July 1, 2017	June 25, 2016	Change		July 1, 2017	June 25, 2016	Change	
Automated systems	$38,739	$26,980	$11,759	43.6 %	$73,407	$55,594	$17,813	32.0 %
Integrated systems	10,404	18,507	(8,103)	-43.8 %	19,879	26,800	(6,921)	-25.8 %
Materials characterization systems	4,433	1,958	2,475	126.4 %	8,465	4,265	4,200	98.5 %
Total product revenue	53,576	47,445	6,131	12.9 %	101,751	86,659	15,092	17.4 %
Service	10,851	8,322	2,529	30.4 %	21,990	16,597	5,393	32.5 %
Total net revenues	$64,427	$55,767	$8,660	15.5 %	$123,741	$103,256	$20,485	19.8 %

For three months ended July 1, 2017, total net revenues increased by $8.7 million relative to the comparable 2016 period. The increase was due to $6.1 million increase in product revenue and a $2.6 million increase in service revenue. The increase in product revenue is primarily driven by higher Automated System sales (principally the Atlas® line), which increased by $11.8 million, comprising mostly higher revenue from our customers in the Foundry and Memory markets, offset in part by a decrease of $8.1 million in Integrated systems sales due to timing. The increase in service revenue was primarily driven by higher billable service, contract and spares revenue, as a result of our increasing installed base.

For the six months ended July 1, 2017, as compared to the same period in 2016, revenues increased by $20.5 million, or 19.8%. The increase was due to a $17.8 million increase in sales of Automated Systems and a $4.2 million increase sales in Materials characterization systems, offset in part by a decrease of $6.9 million in Integrated systems sales due to timing. The increase in service revenue was primarily driven by higher billable service, contract and spares revenue, as a result of our increasing installed base.

Capital spending by our customers is dependent on the timing of new semiconductor fabrication plants, capacity expansion within existing plants, and the adoption of new technology for current and future manufacturing needs. Future results will vary significantly based on changes in any of these factors. With a significant portion of the world's semiconductor manufacturing capacity located in Asia, a substantial portion of our revenues continue to be generated in that region. Although sales to customers within individual countries of that region will vary from time to time, we expect that a substantial portion of our revenues will continue to be generated in Asia.

Gross margin

Our gross margin breakdown was as follows:

	Three Months Ended	Six Months Ended

	July 1, 2017	June 25, 2016	July 1, 2017	June 25, 2016
Products	52.6%	53.3 %	50.0%	53.0 %
Service	50.1%	37.9 %	51.1%	41.9 %

The calculation of product gross margin includes both cost of products and amortization of intangibles. The gross margin on product revenue decreased to 52.6% in the three months ended July 1, 2017 from 53.3% in the three months ended June 25, 2016, reflecting a decrease of 0.7 percentage points from the comparable 2016 period. The decrease in the second quarter of 2017 was due to a less favorable product and customer mix. The gross margin on our services business increased to 50.1% in the three months ended July 1, 2017 from 37.9% in the three months ended June 25, 2016, reflecting an improvement in margin of 12.2 percentage points. The increase in service business' gross margin in the three months ended July 1, 2017 is attributable to improved margins for service parts, as well as, higher service labor utilization.

The gross margin on product revenue decreased to 50.0% in the six months ended July 1, 2017 from 53.0% in the six months ended June 25, 2016, reflecting a decrease of 3.0 percentage points from the comparable 2016 period. The decrease was driven by the less favorable product and customer mix and higher installation and warranty costs. The gross margin on our services business increased to 51.1% in the six months ended July 1, 2017 from 41.9% in the six months ended June 25, 2016. This is attributable to overall improvement in margin of service parts and higher utilization of our service personnel.

Operating expenses

Our operating expenses comprised the following categories (in thousands, except percentages):

	Three Months Ended				Six Months Ended			
	July 1, 2017	June 25, 2016	Change		July 1, 2017	June 25, 2016	Change	
Research and Development	$9,139	$7,511	$1,628	21.7%	$17,833	$15,579	$2,254	14.5 %
Selling	7,239	7,823	(584)	-7.5 %	15,177	15,072	105	0.7 %
General and administrative	6,591	5,755	836	14.5%	12,898	11,175	1,723	15.4 %
Amortization of intangible assets	—	—	—	NM	-	24	(24)	-100.0%
Total operating expenses	$22,969	$21,089	$1,880	8.9 %	$45,908	$41,850	$4,058	9.7 %

Research and development

Investments in research and development personnel and associated projects are part of our strategy to ensure our products remain competitive and meet customers' needs. For the three months ended July 1, 2017, research and development costs increased by $1.6 million or 21.7%, compared to the same period in 2016. The increase was driven by additional headcount and higher spending in program related expenses for product development of our next generation systems and platforms.

For the six months ended July 1, 2017, research and development costs increased by $2.3 million or 14.5%, compared to the same period in 2016. The increase is primarily driven by additional headcount and higher spending in program related expenses to support continuing investments in our research and development efforts.

Selling

Selling expenses decreased by $0.6 million or 7.5% in the three months ended July 1, 2017 compared to the same period in 2016. The decrease was due to lower commission costs and higher utilization of sales application personnel for installation and warranty, which is included in cost of net revenues. For the six months ended July 1, 2017, selling expenses increased by $0.1 million or 0.7%, compared to the same period in 2016, due to additional headcount, offset in part by the decreases in commission costs and increase utilization of sales application personnel for installation and warranty, which is included in cost of net revenues.

General and administrative

General and administrative expenses increased by $0.8 million or 14.5% in the three months ended July 1, 2017 compared to the three months ended June 25, 2016. The increase was primarily due to higher variable compensation costs and recruiting expenses and higher professional services fees.

For the six months ended July 1, 2017, general and administrative expenses increased by $1.7 million or 15.4%, compared to the same period in 2016. The increase is primarily driven by increase in variable compensation and recruiting costs and higher professional services fees.

Amortization of intangible assets

Amortization of intangible assets included in operating expenses in the six months ended July 1, 2017 compared to the six months ended June 25, 2016 decreased as a result of the full amortization of certain intangible assets.

Other income (expense), net.

Our other income (expense), net, consisted of the following items (in thousands, except percentages):

	Three Months Ended July 1, 2017	June 25, 2016	Change		Six Months Ended July 1, 2017	June 25, 2016	Change	
Interest Income	$3	$ 12	$ (10)	-83.3 %	$4	$ 21	$ (18)	-85.7 %
Interest Expense	(19)	(67)	49	-73.1 %	(59)	(184)	126	-68.5 %
Interest income (expense), net	(16)	(55)	39	-70.9 %	(55)	(163)	108	-66.3 %
Net gains on investments	300	82	218	265.9 %	565	159	406	255.3 %
Other gains (losses), net	(26)	(476)	450	-94.5 %	(294)	(328)	34	-10.4 %
Other income (loss), net	274	(394)	668	-169.5%	271	(169)	440	-260.4%
Total other income (expense), net	$258	$ (449)	$ 707	-157.5%	$216	$ (332)	$ 548	-165.1%

Other income (expense), net increased by $0.7 million in the three months ended July 1, 2017 and $0.5 million in the six months ended July 1, 2017 relative to the comparable 2016 periods. These changes were principally due to increase in net investment gains which is in line with the increase in our cash and cash equivalents balance in the fiscal year 2017 compared to the same period in 2016. Furthermore, the increases were driven by favorable net revaluation of inter-company balances based on fluctuations in foreign exchange rates relative to the U.S. dollar, offset by hedging gains and losses.

Provision for income taxes

We recorded a tax provision of $2.6 million and $0.8 million in three months ended July 1, 2017 and June 25, 2016, respectively. The increase in the tax provision for 2017 from 2016 was primarily related to an increase in our profitability and a decrease in our tax benefit associated with the settlement of equity options/awards for the three months ended July 1, 2017.

We recorded a tax provision of $2.7 million and $1.2 million for the six months ended July 1, 2017 and June 25, 2016, respectively. The increase in the tax provision for 2017 from 2016 was primarily related to an increase in our profitability and a decrease in our tax benefit associated with the settlement of equity options/awards offset by a one-time benefit related to an entity classification change.

Our provision for income taxes for the three and six months ended July 1, 2017 of $2.6 million and $2.7 million, respectively, reflects an effective tax rate of 24.0% and 16.7%, respectively. The tax rate for the three and six months ended July 1, 2017 differs from the Federal statutory rate of 35.0% primarily due to foreign income being subject to tax at lower rates, tax benefits associated with the settlement of equity options/awards, tax benefits from federal R&D credits, and a one-time benefit related to an entity classification change.

As of July 1, 2017, we continue to maintain a valuation allowance against our California and certain foreign deferred tax assets as a result of uncertainties regarding the realization of the asset due to cumulative losses and uncertainty of future taxable income. We will continue to assess the realizability of the deferred tax assets in each of the applicable jurisdictions and maintain the valuation allowances until sufficient positive evidence exists to support a reversal. In the event we determine that the deferred tax assets are realizable, an adjustment to the valuation allowance will be reflected in the tax provision for the period such determination is made.

We are subject to taxation in the U.S. and various states including California, and foreign jurisdictions including Korea, Japan, Taiwan, and China. Due to tax attribute carry-forwards, we are subject to examination for tax years 2003 forward for U.S. tax purposes. We are also subject to examination in various states for tax years 2002 forward. We are subject to examination for tax years 2007 forward for various foreign jurisdictions.

We accrue interest and penalties related to unrecognized tax benefits in our provision for income taxes. The total amount of penalties and interest were not material as of July 1, 2017 and June 25, 2016. During the next twelve months, we anticipate increases in our unrecognized tax benefits of approximately $0.4 million.

Liquidity and Capital Resources

Our principal sources of liquidity are cash and cash equivalents, and marketable securities, and cash flow generated from our operations. Our liquidity is affected by many factors, including those that relate to our specific operations and those that relate to the uncertainties of global and regional economies and the sectors of the semiconductor industry in which we operate in. Although our cash requirements will fluctuate based on the timing and extent of these factors, we believe our existing cash, cash equivalents and marketable securities, combined with cash currently projected to be generated from our operations, will be sufficient to satisfy our working capital needs, capital asset purchases, outstanding commitments and other liquidity requirements associated with our existing operations over the next twelve months.

The following tables present selected financial information and statistics as of July 1, 2017 and December 31, 2016 and for the six months ended July 1, 2017 and June 25, 2016 (in millions):

	As of July 1, 2017	December 31, 2016
Cash, cash equivalents and marketable securities	$135.7	$ 130.0
Working capital	$196.9	$ 174.4

	Six Months Ended July 1, 2017	June 25, 2016
Cash provided by operating activities	$10.3	$ 13.2
Cash used in investing activities	$(14.0)	$ 6.4
Cash provided by (used in) financing activities	$(0.5)	$ 1.9

Cash, cash equivalents and marketable securities totaled $135.7 million at July 1, 2017, which reflects an increase of $5.7 million from December 31, 2016. Of our total cash, cash equivalents and marketable securities at July 1, 2017, approximately $15.0 million were held by foreign subsidiaries, a portion of which would have to be repatriated to the United States. We currently do not intend nor foresee a need to repatriate these funds and do not rely on unrepatriated earnings as a source of funds for our domestic business. We believe we have sufficient cash flow and borrowing capacity in the United States to fund our domestic operations and strategic needs.

Working capital was $196.9 million at July 1, 2017, which reflects an increase of $22.5 million when compared to $174.4 million at December 31, 2016. This is primarily due to increases in accounts receivables, inventories, prepaid expenses and other assets balances offset in part by increases in accounts payable and deferred revenue balances.

Cash provided by operating activities during the six months ended July 1, 2017 was $10.3 million, consisting primarily of net income of $13.6 million, adjusted for non-cash items of $9.8 million, partially offset by $13.2 million of net cash outflows related to changes in operating assets and liabilities. The changes in operating assets and liabilities is generally driven by the timing of our customer payments for accounts receivable and timing of our vendor payments for accounts payable. We expect that cash provided by operating activities may fluctuate in future periods due to several factors, including variations in our operating results, accounts receivable collections performance, inventory and supply chain management, vendor payment initiatives, tax benefits or charges from stock-based compensation, and the timing and amount of compensation and other payments. Cash used in investing activities of $14.0 million during the six months ended July 1, 2017 consisted primarily of $78.8 million purchases of marketable securities and payments for acquisition of property, plant and equipment and certain assets of $3.5 million, net of sales and maturities of marketable securities of $68.3 million. Cash used in financing activities of $0.5 million during the six months ended July 1, 2017 consisted primarily of $3.4 million cash paid for taxes on net issuance of stock awards, partially offset by proceeds from the issuance of common stock from the employee stock purchase program and the exercise of stock options of $2.9 million.

Cash provided by operating activities of $13.2 million during the six months ended June 25, 2016 was a result of $9.5 million of net income, and non-cash adjustments to net income of $9.0 million partially offset by a net change in operating assets and liabilities of $5.3 million. The increase for the six months ended June 25, 2016 was primarily attributable to higher net income and increased deferred revenue. This was partially offset by the other changes to operating assets and liabilities, which is generally driven by the timing of customer payments for accounts receivable and timing of vendor payments for accounts payable. Cash provided by investing activities of $6.4 million during the six months ended June 25, 2016 consisted primarily of cash provided by maturities of marketable securities, net of purchases, of $8.9 million, partially offset by cash used to acquire property, plant and equipment of $2.5 million. Cash provided by financing activities of $1.9 million during the six months ended June 25, 2016 consisted primarily of $3.5 million in proceeds from the issuance of common stock from the employee stock purchase program and the exercise of stock options, partially offset by cash paid for taxes on net issuance of stock awards of $1.3 million, and royalty payments to Zygo of $0.3 million.

Off-Balance Sheet Arrangements

As of July 1, 2017, we had no off-balance sheet arrangements or obligations.

Contractual Obligations

There have been no material changes outside the ordinary course of our business from those reported in our Annual Report on Form 10-K.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Our exposure to market risk does not differ materially from that discussed in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, filed with the SEC on March 3, 2017. However, we cannot give any assurance as to the effect that future changes in interest rates or foreign currency rates will have on our consolidated financial position, results of operations or cash flows.

Foreign Currency Risk

Our exposure to foreign currency exchange rate fluctuations arises in part from intercompany balances in which costs are charged between our U.S. headquarters and our foreign subsidiaries. On our consolidated balance sheet these intercompany balances are eliminated and thus no consolidated balances are associated with these intercompany balances; however, since each foreign entity's functional currency is generally its respective local currency, there is exposure to foreign exchange risk on a consolidated basis. Intercompany balances are denominated primarily in U.S. dollars and, to a lesser extent, other local currencies.

We enter into foreign currency forward exchange contracts to protect against currency exchange risks associated with existing assets and liabilities. A foreign currency forward exchange contract acts as a hedge by increasing in value when underlying assets decrease in value or underlying liabilities increase in value due to changes in foreign exchange rates. Conversely, a foreign currency forward exchange contract decreases in value when underlying assets increase in value or underlying liabilities decrease in value due to changes in foreign exchange rates. These forward contracts are not designated as accounting hedges, so the unrealized gains and losses are recognized in other income (expense), net, in advance of the actual foreign currency cash flows with the fair value of these forward contracts being recorded as accrued liabilities or other current assets.

We do not use forward contracts for trading purposes. Our forward contracts generally have maturities of 30 days or less. We enter into foreign currency forward exchange contracts based on estimated future asset and liability exposures, and the effectiveness of our hedging program depends on our ability to estimate these future asset and liability exposures. Recognized gains and losses with respect to our current hedging activities will ultimately depend on how accurately we are able to match the amount of foreign currency forward exchange contracts with actual underlying asset and liability exposures.

We actively monitor our foreign currency risks, but there is no guarantee that our foreign currency hedging activities will substantially offset the impact of fluctuations in currency exchange rates on our results of operations, cash flows and financial position. See “Note 3, Fair Value Measurement and Disclosures” in the Notes to Consolidated Financial Statements for more information regarding our derivatives and hedging activities.

Interest Rate Risk

Our exposure to market risk resulting from changes in interest rates relates primarily to our investment portfolio. As of July 1, 2017, and December 31, 2016, we held $93.3 million and $82.9 million, respectively, in marketable securities. The fair value of our marketable securities could be adversely impacted due to a rise in interest rates, but we do not believe such impact would be material. Securities with longer maturities are subject to a greater interest rate risk than those with shorter maturities and as of July 1, 2017 and December 31, 2016, the average duration of our portfolio was less than nine months. We do not hold securities for trading purposes.

ITEM 4.CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management evaluated, with the participation of our Chief Executive Officer (“CEO”), and our Chief Financial Officer (“CFO”), the effectiveness of our disclosure controls and procedures as of the end of the period covered by this Quarterly Report on Form 10-Q. Based on the evaluation, our CEO and CFO concluded that as of July 1, 2017, our disclosure controls and procedures were not effective as a result of the material weakness in our internal control over financial reporting, as described in the Report of Management on Internal Control over Financial Reporting in Item 9A of our Annual Report on Form 10-K for the year ended December 31, 2016, which continues to exist as of July 1, 2017.

Notwithstanding the identified material weakness, management, including our CEO and CFO, believes the consolidated financial statements included in this Quarterly Report on Form 10-Q fairly represent in all material respects our financial condition, results of operations and cash flows at and for the periods presented in accordance with U.S. GAAP

Remediation Plan

As disclosed in Item 9A of our Annual Report on Form 10-K for the year ended December 31, 2016, our management concluded that our internal control over financial reporting was not effective at December 31, 2016.

Management identified the following material weakness in the Company’s internal control over financial reporting as of December 31, 2016:

The Company did not design and maintain an effective control over the existence of inventories subject to the cycle count program. Specifically, the control was not effectively designed and maintained to verify all inventories that should be subject to the cycle count program were included and were counted at the frequency levels required under the Company’s policies. This control deficiency did not result in a material adjustment to the inventory and cost accounts and disclosures for the year ended December 31, 2016. However, this control deficiency could result in misstatements of the aforementioned accounts and disclosures that would result in a material misstatement to the annual or interim consolidated financial statements that would not be prevented or detected. Accordingly, our management has determined that this control deficiency constitutes a material weakness that had not been remediated as of July 1, 2017.

We are actively engaged in completing the remediation initiatives to improve the Company’s internal control which we began implementing in the beginning of fiscal 2017.

A summary of the remediation plan is provided below.

The Company has developed a plan of remediation to strengthen our overall controls over accounting for the existence of inventories subject to our cycle count program. Additionally, we have updated the Company's part master with the correct cycle-count frequency requirements.

To address the material weakness, the following remedial actions have been implemented:

- Implementation of additional quarterly reporting and monitoring controls over additions to or changes to the Company's item master records.
- Design of an automated methodology for determining and assigning the frequency levels each item should be counted.

Our goal is to remediate this material weakness by the end of fiscal 2017, subject to there being sufficient opportunities to conclude, through testing, that the enhanced control is designed and operating effectively.

Changes in Internal Control over Financial Reporting

During the quarter ended July 1, 2017, there were no changes in our internal controls over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls

Our management, including our CEO and CFO, has designed our disclosure controls and procedures and our internal control over financial reporting to provide reasonable assurances that the controls' objectives will be met. However, management does not expect that disclosure controls and procedures or our internal control over financial reporting will prevent or detect all error and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. 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. Further, because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, within Nanometrics have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of simple error or mistake. Controls can also be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. The design of any system of controls is based in part on certain assumptions about the likelihood of future events, and there can be no assurance that any system's design will succeed in achieving its stated goals under all potential future conditions. Projections of any evaluation of a system's control effectiveness into future periods are subject to risks. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures.

PART II — OTHER INFORMATION

ITEM 1A. RISK FACTORS

Investing in our securities involves a high degree of risk. In assessing these risks, you should carefully consider the information included in this report, including our financial statements and the related notes thereto. You should carefully review and consider all of the risk factors set forth in Part l, “Item 1A. Risk Factors” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, filed with the SEC on March 3, 2017. The risks described in our Annual Report on Form 10-K are not the only ones we face. Additional risks and uncertainties that are not currently known to us or that we currently believe are immaterial may also impair our business operations. Our business, operating results and financial conditions could be materially harmed by any of these risks. The trading price of our common stock could decline due to any of these risks and investors may lose all or part of their investment. There have been no material changes in our risk factors from those discussed in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016.

ITEM 6. EXHIBITS

The following exhibits are filed, furnished or incorporated by reference with this Quarterly Report on Form 10-Q:

Exhibit No.	Description
3.(i)	Certificate of Incorporation
3.1(1)	Certificate of Incorporation of the Registrant
3.(ii)	Bylaws
3.2(2)	Bylaws of the Registrant
4	Instruments Defining the Rights of Security Holders, Including Indentures
4.1	Reference is made to Exhibits 3.1 and 3.2
10	Material Contracts
10.1	Nanometrics Incorporated 2017 Executive Performance Bonus Plan (incorporated by reference to Appendix A to the Nanometrics Incorporated proxy statement on Schedule 14A, filed with the SEC on April 4, 2017).
10.2	Nanometrics Incorporated 2005 Equity Incentive Plan, as amended and restated (incorporated by reference to Appendix B to the Nanometrics Incorporated proxy statement on Schedule 14A, filed with the SEC on April 4, 2017).
31	Rule 13a-14(a)/15d-14(a) Certifications
31.1(3)	Certification of Timothy J. Stultz, principal executive officer of the Registrant, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2(3)	Certification of Jeffrey Andreson, principal financial officer and principal accounting officer of the Registrant, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32	Section 1350 Certifications
32.1(4)	Certification of Timothy J. Stultz, principal executive officer of the Registrant, and Jeffrey Andreson, principal financial officer and principal accounting officer of the Registrant pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101(4)	The following financial statements, formatted in XBRL: (i) Condensed Consolidated Balance Sheets at July 1, 2017, and December 31, 2016, (ii) Condensed Consolidated Statements of Operations for the three and three months ended July 1, 2017 and June 25, 2016, (iii) Condensed Consolidated Statements of Cash Flows for the six months ended July 1, 2017 and June 25, 2016, and (v) Notes to Unaudited Condensed Consolidated Financial Statements.
101.INS	XBRL Instance Document

101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

(1) Incorporated by reference to Exhibit 3.1 filed with the Registrant's Current Report on Form 8-K (File No. 000-13470) filed on October 5, 2006.
(2) Incorporated by reference to Exhibit 3.1 filed with the Registrant's Current Report on Form 8-K (File No. 000-13470) filed on April 12, 2012.
(3) Filed herewith.
(4) Furnished herewith

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.

NANOMETRICS INCORPORATED
(Registrant)

By: /S/ JEFFREY ANDRESON
Jeffrey Andreson
Chief Financial Officer
(Duly Authorized and Principal Financial Officer)

Dated: August 3, 2017

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101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

(1) Incorporated by reference to Exhibit 3.1 filed with the Registrant's Current Report on Form 8-K (File No. 000-13470) filed on October 5, 2006.
(2) Incorporated by reference to Exhibit 3.1 filed with the Registrant's Current Report on Form 8-K (File No. 000-13470) filed on April 12, 2012.
(3) Filed herewith.
(4) Furnished herewith