NANOMETRICS INC
Form 10-K
March 07, 2014

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

FORM 10-K
(Mark One)

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

For the fiscal year ended December 28, 2013
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: 0-13470

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

Title of each class	Name of each exchange on which registered
Common Stock, $0.001 par value per share	The NASDAQ Stock Market LLC (NASDAQ Global Select Market)

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

Indicate by check mark if the Registrant is a well-known seasoned issuer as defined in Rule 405 of the Securities Act. Yes ¨ No ý.
Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ¨ No ý.
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 ý 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 ý No ¨.

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ¨

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See 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	ý
Non-accelerated filer	¨	Smaller reporting company	¨

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

As of June 29, 2013, the last business day of the Registrant's most recently completed second fiscal quarter, the aggregate market value of the common stock of Registrant held by non-affiliates, based upon the closing sales price for the Registrant's common stock for such date, as quoted on the NASDAQ Global Select Market, was approximately $340.2 million. Shares of common stock held by each officer and director and by each person who owned 5% or more of the outstanding common stock have been excluded because such persons may be

deemed to be “affiliates” as that term is defined under the rules and regulations of the Exchange Act. This determination of affiliate status is not necessarily a conclusive determination for any other purpose.

The number of shares of the Registrant’s common stock outstanding as of March 1, 2014 was 23,756,107.

DOCUMENTS INCORPORATED BY REFERENCE

The Registrant has incorporated by reference into Part III of this Annual Report on Form 10-K portions of its Proxy Statement for its 2014 Annual Meeting of Stockholders to be filed pursuant to Regulation 14A. The Proxy Statement will be filed within 120 days of Registrant’s fiscal year ended December 28, 2013.

Table of Contents

NANOMETRICS INCORPORATED
FORM 10-K
FOR THE FISCAL YEAR ENDED DECEMBER 28, 2013
TABLE OF CONTENTS

PART I			4
	ITEM 1.	BUSINESS	4
	ITEM 1A.	RISK FACTORS	11
	ITEM 1B.	UNRESOLVED STAFF COMMENTS	21
	ITEM 2.	PROPERTIES	21
	ITEM 3.	LEGAL PROCEEDINGS	22
	ITEM 4.	MINE SAFETY DISCLOSURES	22
PART II			22
	ITEM 5.	MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES	22
	ITEM 6.	SELECTED FINANCIAL DATA	24
	ITEM 7.	MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS	24
	ITEM 7A.	QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK	36
	ITEM 8.	FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA	38
	ITEM 9.	CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE	73
	ITEM 9A.	CONTROLS AND PROCEDURES	74
	ITEM 9B.	OTHER INFORMATION	74
PART III			75
	ITEM 10.	DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE	75
	ITEM 11.	EXECUTIVE COMPENSATION	75
	ITEM 12.	SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS	75
	ITEM 13.	CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE	76
	ITEM 14.	PRINCIPAL ACCOUNTING FEES AND SERVICES	76
PART IV			76
	ITEM 15.	EXHIBITS, FINANCIAL STATEMENT SCHEDULES	76
SIGNATURES			77

Table of Contents

CAUTIONARY INFORMATION REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K for the year ended December 28, 2013, or "Form 10-K," contains forward-looking statements concerning our business, operations, and financial performance and condition as well as our plans, objectives, and expectations for business operations and financial performance and condition. Any statements contained herein that are not of historical facts may be deemed to be forward-looking statements. You can identify these statements by words such as "anticipate," "assume," "believe," "could," "estimate," "expect," "intend," "may," "plan," "s "would," and other similar expressions that are predictions of or indicate future events and future trends. These forward-looking statements are based on current expectations, estimates, forecasts, and projections about our business and the industry in which we operate and management's beliefs and assumptions and are not guarantees of future performance or development and involve known and unknown risks, uncertainties, and other factors that are in some cases beyond our control. As a result, any or all of our forward-looking statements in this Form 10-K may turn out to be inaccurate. Factors that could materially affect our business operations and financial performance and condition include, but are not limited to, those risks and uncertainties described herein under "Item 1A - Risk Factors." You are urged to consider these factors carefully in evaluating the forward-looking statements and are cautioned not to place undue reliance on the forward-looking statements. The forward-looking statements are based on information available to us as of the filing date of this Form 10-K. Unless required by law, we do not intend to publicly update or revise any forward-looking statements to reflect new information or future events or otherwise. You should, however, review the factors and risks we describe in the reports we will file from time to time with the Securities and Exchange Commission, or SEC, after the date of this Form 10-K.

PART I

ITEM 1. BUSINESS

Overview

Nanometrics Incorporated and its subsidiaries ("Nanometrics", the "Company", or "we") is a leading provider of advanced, high-performance process control metrology and inspection systems used primarily in the fabrication of integrated circuits, high-brightness LEDs ("HB-LED"), discrete components and data storage devices. Our automated and integrated systems address numerous process control applications, including critical dimension and film thickness measurement, device topography, defect inspection, overlay registration, and analysis of various other film properties such as optical, electrical and material characteristics. 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 wafer-scale packaging applications. Our systems enable device manufacturers to improve yields, increase productivity and lower their manufacturing costs.

We were incorporated in California in 1975, and reincorporated in Delaware in 2006. We have been publicly traded since 1984 (NASDAQ: NANO). We have been a pioneer and innovator in the field of optical metrology and have an installed base of over 6,500 systems in over 150 production factories worldwide. Our major customers and original equipment manufacturer ("OEM") partners include Intel Corporation, SK Hynix Semiconductor, Inc., Samsung Electronics Co. Ltd., Micron, Inc. and Taiwan Semiconductor Manufacturing Company Limited.

Additional information about us is available on our website at http://www.nanometrics.com. The information that can be accessed through our website, however, is not part of this Annual Report. Our investor relations web page is located at http://www.nanometrics.com/investor.html. Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and any amendments to those reports are available on our web page as soon as reasonably practicable after we electronically file or furnish such materials to the United States Securities and Exchange Commission ("SEC"). In addition, the reports and materials that we file with the SEC are available at the SEC's website (http://www.sec.gov) and at the SEC's Public Reference Room at 100 F Street, NE, Washington DC 20549. Interested parties may obtain information on the operation of the Public Reference Room by calling the SEC at

1-800-SEC-0330.

Industry Background

We participate in the sale, design, manufacture, marketing and support of process control systems for thin film metrology, optical critical dimension metrology, advanced 3-D packaging process control, overlay registration, and wafer defect inspection used for semiconductor manufacturing. Semiconductors are primarily packaged as integrated circuits within electronic devices, including consumer electronics, server and enterprise systems, mobile computing devices (including smart phones and tablets),

Table of Contents

data storage devices, and LEDs, and a multitude of other electronic products being proliferated worldwide. Integrated circuits are made up of semiconductor material layers integrating millions or billions of transistors and other electronic components, connected through a complex wiring scheme of small copper or aluminum wires, ultimately packaged into thin form factors to be mounted on circuit boards or other substrates. Our core focus is the measurement and control of the structure, composition, and geometry of the devices from the transistor layer through advanced wafer-scale packaging to improve device performance and manufacturing yields. Our end customers manufacture many types of integrated circuits for a multitude of applications, each having unique manufacturing challenges. This includes integrated circuits to enable information processing and management (logic integrated circuits), memory storage (NAND, 3D-NAND, NOR, and DRAM), thin film head components for hard disk drives, analog devices (e.g., Wi-Fi and 4G radio integrated circuits), and alternative energy devices such as LEDs and solar cells.

Demand for our products continues to be driven by our customers' desire for higher overall chip performance, and improvements in power efficiency, logic processing capability, data storage volume and manufacturing yield. To achieve these goals, our customers have increased their use of more complex materials and processing methods in their manufacturing flow. The majority of our chip customers manufacture devices in production runs defined by the smallest printed feature and the associated circuit manufacturing methods, known as a technology node. Current production is running at the 28nm node with customers migrating toward 22nm and below, and in some cases our customers are implementing new materials and methods in high volume manufacturing, including materials to reduce power consumption including high dielectric constant (or high-k) materials, fin-fet or tri-gate transistors. To shrink features, new methods including double or quadruple patterning lithography have been deployed. The use of these new materials and methods requires additional process control and we believe has increased demand for our products. Next-generation devices with features smaller than 16nm are in early production, which in turn likely will require new advancements in metrology and inspection capabilities. DRAM memory makers have shifted to 2x node production with development for 2y node devices currently underway (where x or y represent successively smaller geometries). Non-volatile memory makers of NAND and NOR devices are ramping 1x node devices into high volume manufacturing with work extending into early 1y node production and 1z node development as well as simultaneously developing stacked or 3D non-volatile memory structures. Foundry and logic manufacturers are ramping production of both 28nm and 22nm node devices and beginning investment into pilot production of 1x node devices and development of 1y devices. Thin film head components for hard disk drives are also being driven to smaller sizes to support next generation hard disk drives with ever increasing storage capacity requiring continued improvements in read and write head component scaling. We also enable clean energy device manufacturers, such as for LEDs and solar Photo-Voltaics ("PVs"), to achieve higher yields and lower manufacturing costs.

Our Business

We offer a diverse line of process control and inspection products and technologies to address the manufacturing requirements of the semiconductor (and other solid state device) manufacturing industry. Our metrology systems measure and characterize the physical dimensions, material composition, optical and electrical characteristics and other critical parameters of solid state devices, from initial wafer substrate manufacturing through final packaging. For the photolithographic process, thin-film metrology, critical-dimension systems provide control of device dimensions and layer alignment. Advanced packaging technology requires metrology systems to control wafer scale features for through-silicon-via (“TSV”) and flip-chip technologies. Our metrology systems for materials monitor the physical, optical, and electrical characteristics of materials including compound semiconductor, LEDs, solar PVs and silicon wafers. Our defect inspection systems locate large area and microscopic defects on patterned and unpatterned wafers. The system can be used for inspection at nearly every stage of the semiconductor production flow.

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 industry. In continuance of our goals, we have:

•Introduced new products and applications 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; 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

Table of Contents

- Researched and developed innovative applications of existing technology to new market opportunities within the solar PV, HB-LED, and data storage industries.

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 engineering expertise, strategic acquisitions, supplier alliances and short-cycle production strategies enable us to develop and offer advanced process control solutions in the future that should address industry advancement and trends.

Automated Standalone Systems

Our automated systems are made up of both semi-automated and fully automated metrology systems which are employed in both high-volume and low-volume production environments. The Atlas® II, Atlas II+, Atlas XP/Atlas XP+ and Atlas-M 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 enables users to measure multiple parameters at any given process step in the advanced packaging process flow for critical dimension, overlay, and topography applications. Our SPARK™ defect inspection system, offers ultra-fast inspection of patterned and unpatterned semiconductor wafers.

We continue to offer automated products for 200mm factories running at 90nm nodes and above, as well as systems supporting micro-electrical mechanical systems ("MEMS").

System Platform

The Lynx® platform enables cluster metrology factory automation for improved cost of ownership to our customers by combining our Atlas® II and IMPULSE®, UniFire metrology and SPARK inspection systems in configurations to provide high throughput, reduced footprint systems for leading 300mm wafer metrology applications including OCD and thin film process control.

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 and through OEM channels. The IMPULSE® system is our latest metrology platform for OCD, and thin film metrology, and has been successfully qualified on numerous OEM platforms. Our 90x0 system is qualified for OEM and direct sales supporting thin film and OCD applications. Our NanoCD solutions suite is sold in conjunction with our IMPULSE® and legacy 90x0 systems. Our Trajectory® system provides in-line measurement of layers in thin film thickness and composition in semiconductor applications.

Materials Characterization

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

Our Vertex™ is a photoluminescence ("PL") mapping system designed for high-volume compound semiconductor metrology applications including power control and photonics applications. The RPMBlue™ is our latest PL mapping system designed specifically for the HB-LED market. We sell Fourier-Transform Infrared ("FTIR") automated and manual systems in the QS2200/3300 and QS1200 respectively. The FTIR systems are spectrometers designed for non-destructive wafer analysis for various applications. The NanoSpec® line, including the NanoSpec II products supporting thin film measurement across all applications in both low volume production and research applications.

Our process control systems can be categorized as follows:

Table of Contents

System	Market	Applications
System Platform		
Lynx	Semiconductor	Platform
OCD Analysis		
NanoDiffract	Semiconductor	OCD
NanoGen	Semiconductor	OCD
Automated Standalone Systems		
Atlas II/Atlas II+/Atlas XP/Atlas XP+/Atlas-M	Semiconductor	Film Thickness, Film Stress, CD
SPARK	Semiconductor	Defect Inspection and Advanced Packaging Applications
UniFire	Semiconductor	Film Thickness, Overlay, CD, and Advanced Packaging Applications

System	Market	Applications
Integrated Systems		
IMPULSE	Semiconductor	Film Thickness, CD
9010 Series	Semiconductor	Film Thickness, CD
9000 Series	Semiconductor	Film Thickness
Trajectory	Semiconductor, Solar PV	Film Thickness, Composition
Materials Characterization Instruments		
ECVPro	Compound Semiconductor, Solar PV, HB-LED	Electrical Properties
HL5500	Compound Semiconductor, Solar PV, HB-LED	Electrical Properties
QS1200	Substrate Semiconductor, Solar PV	Substrate Properties, Film Composition and Thickness
QS2200/3300	Substrate Semiconductor	Substrate Properties, Film Composition
NanoSpec® II	Semiconductor	Film Thickness (Tabletop)
RPMBlue™	HB-LED	Epitaxial Layer Properties
Stratus	Semiconductor	Substrate Properties, Film Composition and Thickness (Tabletop)
VerteX	Compound Semiconductor, Solar PV, HB-LED	Epitaxial Layer Properties

Customers

We sell our metrology and inspection systems worldwide to several semiconductor manufacturers and equipment suppliers, producers of HB-LEDs, solar PVs, data storage devices, silicon wafers and photomasks. The majority of our systems are sold to customers located in Asia and the United States. Three customers, Intel Corporation, SK Hynix Inc. and Samsung Electronics Co. Ltd., represented 30.0%, 18.4% and 14.4%, respectively, of our total net revenues in fiscal year 2013. Three customers, Samsung Electronics Co. Ltd., Intel Corporation and SK Hynix Inc., represented 27.8%, 22.3% and 16.5%, respectively, of our total net revenues in the fiscal year 2012. Three customers, Samsung Electronics Co. Ltd., Intel Corporation and SK Hynix Inc. represented 30.0%, 16.9% and 11.4%, respectively, of our total net revenues in the fiscal year 2011.

Sales and Marketing

We believe that the capability for direct sales and support is beneficial for developing and maintaining close customer relationships and for rapidly responding to changing customer requirements. We provide local direct sales, service and application support through our worldwide offices located in the United States, South Korea, Japan, Taiwan, China, Singapore,

Table of Contents

United Kingdom, France and Italy, and work with selected dealers and sales representatives in Asia and in the United States and other countries. Our employees include our technical applications team, which comprises technically experienced sales engineers who are knowledgeable in the use of metrology systems generally and the unique features and advantages of our specific products. Supported by our technical applications team, our sales and support teams work closely with our customers to offer cost-effective solutions to complex measurement and process problems. Direct exports of our metrology systems to our foreign customers and shipments to our foreign subsidiaries international offices require general export licenses.

Net revenues from customers located in the United States and in foreign countries, as a percentage of total net revenues, for fiscal years 2013, 2012 and 2011, were as follows:

	2013		2012		2011	
United States	32.6	%	24.5	%	21.9	%
South Korea	24.2	%	43.5	%	38.1	%
Japan	8.1	%	9.2	%	15.1	%
All other countries	35.1	%	22.8	%	24.9	%

See Note 19 of our consolidated financial statements in Item 8, "Financial Statements and Supplementary Data," for segment and geographical financial information.

Customer Service and Support

We believe that customer service and technical support for our systems are important factors that distinguish us from our competitors and are essential to building and maintaining close, long-term relationships with our customers. We provide a standard one-year warranty on parts and labor for most of our products. We provide system support to our customers through factory technical support and globally deployed field service offices. The factory technical support operations provide both OEM and end-user customers with telephonic technical support access, direct training programs, operating manuals and other technical support information to enable effective use of our metrology and measurement instruments and systems. We coordinate warranty and post-warranty field service and spare parts support from our corporate headquarters in Milpitas, California. We also have field service operations based in various locations throughout the United States and Europe. In Asia, service is provided by direct offices in Japan, South Korea, Taiwan, China and Singapore.

Service revenue, including sales of replacement parts, represented 25.6%, 21.4%, and 15.3% of total net revenues in 2013, 2012 and 2011, respectively.

Backlog

As of December 28, 2013 and December 31, 2012, our backlog was $13.3 million and $10.0 million, respectively. Backlog includes orders for products, services and upgrades where written customer requests have been received and we expect to ship within 12 months. Orders are subject to cancellation or delay by the customer subject to possible penalties. However, historically, order cancellations have not been significant. Because orders presently in backlog could be canceled or rescheduled and some orders can be received and shipped within the same quarter, we do not believe that current backlog is an accurate indication of our future revenues or financial performance.

Competition

We offer different products for various sectors of semiconductor manufacturing, and several of our products extend across the same process flow. However, in each of these sectors, we have multiple competitors. In every market in which we participate, the global semiconductor equipment industry is intensely competitive, and driven by rapid technological adoption cycles. Our ability to effectively compete depends upon our ability to continually improve our products, applications and services, and our ability to develop new products, applications and services that meet constantly evolving customer requirements.

We believe that our competitive position in each of our markets is based on the ability of our products and services to address customer requirements related to numerous competitive factors. Competitive selections are based on many factors involving technological innovation, productivity, total cost of ownership of the system, including impact on

end of line yield, price, product performance and throughput capability, quality, reliability and customer support.

Table of Contents

In automated metrology, our principal competitors are KLA-Tencor Corporation (“KLA-Tencor”) and Nova Measuring Instruments Ltd. ("Nova") for thin film and critical dimension metrology. Our primary competitor in integrated metrology is Nova, while the HB-LED and solar PV markets are served by numerous competitors and no single competitor or group of competitors has established a majority position.

Manufacturing

Our manufacturing operations are in Milpitas, California facility and at various contract manufacturers. It is our strategy to outsource all assemblies that do not contain elements that we believe lead to a direct competitive advantage. The majority of our automated and integrated products are currently manufactured at our Milpitas facility. We also use contract manufacturers in China, Israel, Japan and other locations in the United States. During the manufacturing process, we combine proprietary measurement technology produced in our facilities with components and sub-assemblies obtained from outside suppliers. We currently do not expect our manufacturing operations to require additional major investments in capital equipment.

We produce key parts and components and make reasonable efforts to ensure that any externally purchased parts or raw materials are available from multiple suppliers, but this is not always possible. Certain components, sub-assemblies and services necessary for the manufacture of our systems are obtained either from a sole supplier or limited group of suppliers. In June 2009, we signed a supply agreement with Zygo Corporation to supply OEM interferometer sensors for incorporation into the UniFire™ line of products as well as our family of automated metrology systems. We also have an established long-term supply agreement with the JA Woollam Company for supply of our Spectroscopic Ellipsometers for use in our Atlas family of products. Although we seek to reduce our dependence on sole and limited source suppliers, partial or complete loss of these sources could disrupt production, delay scheduled deliveries to customers and have a material adverse effect on our results of operations.

Our production processes require raw materials that meet specific standards, including some that are customized for, or are unique to, us. We generally have multiple sources and sufficient availability of supply but only a limited number of suppliers are capable of providing certain raw materials that meet our standards. If our supply of raw materials is interrupted, production and results of operations or financial condition could be adversely affected.

Research and Development

We continue to invest in research and development ("R&D") to provide our customers with products that add value to their manufacturing processes and that provide a better and differentiated solution than our competitors, so that our products stay in the forefront of current and future market demands. Whether it is for an advancement of current technology yield and manufacturing improvement, enabling new end device technology, or the development of a new application in our core or emerging markets, we are committed to product excellence and longevity. We have several facilities located worldwide to support these objectives.

In 2013, our R&D investments were focused on new platforms and product upgrade programs, to improve both capability, and cost of ownership. These R&D efforts resulted in the successful product launch of the Atlas II 450mm product in the marketplace, in addition to the Atlas II+, our flagship product for optical critical dimension metrology (OCD). The Atlas II product line extension with the Atlas II+, provides enhanced OCD capability with a significantly lower cost of ownership model. In our integrated markets, the IMPULSE IM system has been further developed for inline lithography track configuration to extend our tool of record position for lithography OCD. We have further leveraged our IMPULSE product to augment our SPARK defect inspection technology capability and platform as a review system. The UniFire system development continued with new system configurations and applications development targeted at advanced packaging applications, including further extensions for advanced packaging applications. After the acquisition of Nanda, which was our macro defect inspection initiative, R&D investment continued on SPARK technology for multiple use cases including enhancements for advanced lithography cluster monitoring, CMP and end of line quality, and advanced packaging applications.

Our R&D spending is focused on appropriate products and technologies. The new products and capabilities that we introduced to the market in 2013 were adopted by customers in key applications Our R&D expenditures for each of the last three fiscal years were as follows:

9

Table of Contents

	Fiscal Year					
	2013		2012		2011	
Research and Development						
R&D Expenditures (in millions)	$32.7		$29.6		$23.3	
R&D Expenditures (as percentage of net revenues)	22.7	%	16.2	%	10.1	%

Patents and Intellectual Property

Our success depends in large part on the technical innovation of our products and protecting such innovations through a variety of methods. We actively pursue a program of filing patent applications to seek protection of technologically sensitive features of our metrology and inspection systems. As at December 28, 2013, we had 194 patents, including foreign patents, with expiration dates ranging from 2014 to 2032. We believe that our success will depend to a great degree upon innovation, technological expertise and our ability to adapt our products to new technology. While we attempt to establish our intellectual property rights through patents and trademarks and protect intellectual property rights through non-disclosure agreements, we may not be able to fully protect our technology, and competitors may be able to develop similar technology independently. Others may obtain patents and assert them against us. In addition, the laws of certain foreign countries may not protect our intellectual property to the same extent as do the laws of the United States. From time to time we receive communications from third parties asserting that our metrology systems may contain design features that the third parties claim, may infringe upon their proprietary rights. For more information, see Item 3, “Legal Proceedings.”

Employees

At December 28, 2013, we employed 536 persons worldwide with sales, applications and service support in key geographic areas aligned with our customer locations. None of our employees are represented by a union and we have never experienced a work stoppage as a result of union actions. Many of our employees have specialized skills that are of value to us. Our future success will depend in large part upon our ability to attract and retain highly skilled scientific, technical and managerial personnel, who are in great demand in our industry. We consider our employee relations to be good.

Environmental Matters

Our operations are subject to various federal, state and local environmental protection regulations governing the use, storage, handling and disposal of hazardous materials, chemicals, and certain waste products. We believe that compliance with federal, state and local environmental protection regulations will not have a material adverse effect on our capital expenditures, earnings and competitive and financial position.

In the event that we fail to comply with such laws and regulations, we could be liable for damages, penalties and fines. We further discuss the impact of environmental regulation under "Risk Factors- We are subject to various environmental laws and regulations that could impose substantial costs upon us and may harm our business, operating results and financial condition." in Item 1A.

Executive Officers of the Registrant

The names of our executive officers and their ages, titles and biographies as of March 11, 2014, are set forth below:

Name	Age	Position
Timothy J. Stultz, Ph.D.	66	President, Chief Executive Officer and Director
Bruce A. Crawford	61	Chief Operating Officer
Ronald W. Kisling	53	Chief Financial Officer
Nancy E. Egan	47	General Counsel

Dr. Timothy J. Stultz has served as President, Chief Executive Officer and director of Nanometrics Incorporated since August 2007. Dr. Stultz has more than 30 years of executive management experience. Prior to joining Nanometrics, Dr. Stultz was President and Chief Executive Officer of Imago Scientific Instruments Corporation, a supplier of proprietary 3-D atom probe microscopes to the research, materials and microelectronics industries; President and Chief Executive Officer for ThauMDx, a developer of diagnostic systems for the healthcare industry; and Vice

President and General Manager of Veeco

10

Table of Contents

Instruments' Metrology and Instrumentation Business. Dr. Stultz also serves on the Board of Directors of Tessera Technologies, Inc. Dr. Stultz received his B.S., M.S. and Ph.D. in Materials Science and Engineering from Stanford University.

Bruce A. Crawford has served as our Chief Operating Officer since July 2006. From July 2005 to July 2006, Mr. Crawford served as President and Chief Operating Officer of Accent Optical Technologies, Inc., a supplier of process control and metrology systems to the global semiconductor manufacturing industry, which we acquired in July 2006. From February 2003 to July 2005, Mr. Crawford served as Accent Optical's Chief Operating Officer and Executive Vice President and from October 2000 to February 2003, he served as Vice President of Worldwide Operations. Mr. Crawford holds an A.S. degree from De Anza College.

Ron Kisling joined Nanometrics as CFO in March 2011. Prior to Nanometrics, Mr. Kisling served as Vice President Finance and then CFO of PGP Corporation, a data encryption and security software company, from January, 2007 until its acquisition by Symantec in June, 2010. For the eight years prior, Mr. Kisling held CFO positions at Portal Software and SPL WorldGroup, both acquired by Oracle Corp., as well as Saba Software. Mr. Kisling holds a Bachelor's degree in Economics from Stanford University.

Nancy E. Egan joined us as General Counsel in October 2011. Ms. Egan was the Associate General Counsel of Varian, Inc., a global supplier of scientific instruments, from 2004 until its acquisition by Agilent Technologies in 2010. Prior to Varian, Ms. Egan held positions as the Senior Vice President of Legal Affairs for LivePlanet, and the Vice President and Associate General Counsel of Excite@Home. Ms. Egan holds a Bachelor's degree in political science from the University of Buffalo and a Juris Doctor from the Notre Dame Law School.

ITEM 1A. RISK FACTORS

In addition to the other information contained in this Annual Report on Form 10-K, we have identified the following risks and uncertainties that may have a material adverse effect on our business, financial condition or results of operations. Investors should carefully consider the risks described below before making an investment decision. The risks described below are not the only ones we face. Additional risks not presently known to us or that we currently believe are immaterial may also impair our business operations. Our business could be 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. This section should be read in conjunction with the Consolidated Financial Statements and Notes thereto, and Management’s Discussion and Analysis of Financial Condition and Results of Operations contained in this Annual Report on Form 10-K.

The Global economic conditions and the cyclical nature of the semiconductor industry have caused us losses in the past and reductions in available cash, and may, in the future, negatively impact our financial performance.

Global economic conditions, the gradual recovery of the global economy and the cyclical nature of the semiconductor industry have impacted and could impact future customer demand for our products and our financial performance. The degree of this impact will depend on a number of factors, including the timing and extent of recovery of the U.S. and global economy from the recession. Demand for our products is largely dependent on our customers' capital spending on semiconductor equipment, which depends, in large part, on consumer spending, required manufacturing capacity, and customer access to capital. Economic uncertainty, unemployment, higher interest rates, higher tax rates and other economic factors may lead to a decrease in consumer spending and may cause certain customers to cancel or delay placing orders. If we are unable to timely and appropriately adapt to changes resulting from difficult economic conditions, it may cause volatility in our operating results and our business, financial condition and results of operations may be adversely affected.

In addition, the semiconductor industry is highly cyclical and is characterized by constant and rapid technological change, price erosion, product obsolescence, evolving standards, short product life cycles and significant volatility in

supply and demand. Due to the cyclical nature of the industry, we may need to take actions to reduce costs in the future, which could reduce our ability to significantly invest in research and development at levels we believe are necessary. If we are unable to effectively align our cost structure with prevailing market conditions, our business, financial condition and results of operations may be materially and adversely affected.

We may also experience supplier or customer issues as a result of adverse macroeconomic conditions. If our customers have difficulties in obtaining capital or financing, this could result in lower sales. Customers with liquidity issues could also result in an increase in bad debt expense. These conditions could also affect our key suppliers, which could affect their ability to supply parts and result in delays of our customer shipments.

Table of Contents

Our largest customers account for a substantial portion of our revenue, and our revenue would materially decline if one or more of these customers were to purchase significantly fewer of our systems.

Historically, a significant portion of our revenues in each quarter and each year has been derived from sales to relatively few customers, and we expect this trend to continue. In fiscal year 2013, three customers represented 30.0%, 18.4% and 14.4%, respectively, or collectively 62.9%, of our total net revenues. There are only a limited number of large companies operating in the semiconductor manufacturing industry. Accordingly, we expect that we will continue to depend on a small number of large customers for a significant portion of our revenues for the foreseeable future. If our current relationships with our large customers are impaired, or if we are unable to develop similar collaborative relationships with important customers in the future, our revenues could decline significantly. In addition, because there are a limited number of customers, customers may seek concessions related to price, terms and conditions and intellectual property. Any of these changes could negatively impact our financial performance and results of operations.

We obtain some of the components and subassemblies included in our systems from a single source or a limited group of suppliers, and the partial or complete loss of one of these suppliers could cause production delays and significant loss of revenue.

We rely on outside vendors to manufacture many components and subassemblies. Some of the components, subassemblies and services necessary for the manufacture of our systems are obtained from a sole supplier or a limited group of suppliers. We do not maintain long-term supply agreements with most of our suppliers. We have entered into arrangements with J.A. Woollam Co., Inc. for the purchase of the spectroscopic ellipsometer component incorporated into our advanced measurement systems. We also have supply agreements with MPA and Spectral Systems, and subcontract manufacturing agreements with Fox Semiconductor, IFAT and Toho Technologies. Our reliance on a sole or a limited group of suppliers involves several risks, including the following:

- we may be unable to obtain an adequate supply of required components;
- we have reduced control over pricing and the timely delivery of components and subassemblies; and
- our suppliers may be unable to develop technologically advanced products to support our growth and development of new systems.

Some of our suppliers have relatively limited financial and other resources. Because the manufacturing of some of these components and subassemblies involves extremely complex processes and requires long lead times, we may experience delays or shortages caused by our suppliers. If we were forced to seek alternative sources of supply or to manufacture such components or subassemblies internally, we could be forced to redesign our systems, which could increase our cost structure, cause production delays and prevent us from shipping our systems to customers on a timely basis. Any inability to obtain adequate deliveries from our suppliers, or any other circumstance that would restrict our ability to ship our products, could damage relationships with current and prospective customers, harm our business and result in significant loss of revenue. Any inability to manage our manufacturing cost volatility from our suppliers could adversely impact our operating results. If we are successful in growing our sales, the risks to our business from dependence on a single source or a limited group of suppliers will become significantly greater.

Some of our current and potential competitors have significantly greater resources than we do, and increased competition could impair sales of our products.

We operate in the highly competitive semiconductor industry and face competition from a number of companies, many of which have greater financial, engineering, manufacturing, research and development, marketing and customer support resources than we do. As a result, our competitors may be able to respond more quickly to new or emerging technologies or market developments by devoting greater resources to the development, promotion and sale of products, which could impair sales of our products. Moreover, there has been merger and acquisition activity among our competitors and potential competitors. These transactions by our competitors and potential competitors may provide them with a competitive advantage over us by enabling them to rapidly expand their product offerings and service capabilities to meet a broader range of customer needs. Many of our customers and potential customers in the semiconductor industry are large companies that require global support and service for their metrology systems.

Some of our larger or more geographically diverse competitors might be better equipped to provide this global support.

Because of the high cost of switching equipment vendors in our markets, it may be difficult for us to attract customers from our competitors even if our metrology systems are superior to theirs.

We believe that once a semiconductor customer has selected one vendor's metrology system, the customer generally relies upon that system and, to the extent possible, subsequent generations of the same vendor's system, for the life of the application.

Table of Contents

Once a vendor's metrology system has been installed, a customer must often make substantial technical modifications and may experience downtime to switch to another vendor's metrology system. Accordingly, unless our systems offer performance or cost advantages that outweigh a customer's expense of switching to our systems; it will be difficult for us to achieve significant sales from that customer once it has selected another vendor's system for an application.

We depend on Original Equipment Manufacturers ("OEMs") for sales of our integrated metrology systems, and the loss of our OEMs as customers could harm our business.

We believe that sales of integrated metrology systems will continue to be an important source of our revenues. Sales of our integrated metrology systems depend upon the ability of OEMs to sell semiconductor manufacturing equipment products that include or are compatible with our metrology systems as components. If our OEM customers are unable to sell such products, or if they choose to focus their attention on products that do not integrate our systems, our business could suffer. If we were to lose our OEM customers for any reason, our ability to realize sales from integrated metrology systems would be diminished, which would harm our business.

We are subject to order and shipment uncertainties. Our profitability will decline if we fail to accurately forecast customer demand when managing inventory.

We generally sell our products on the basis of purchase orders rather than long-term purchase commitments from our customers. Our customers can typically cancel purchase orders or defer product shipments for some period without incurring liabilities to us. We typically plan production and inventory levels based on internal forecasts of customer demand, which can be highly unpredictable and can fluctuate substantially, which could lead to excess inventory write-downs and resulting negative impacts on gross margin and net income. We have limited visibility into our customers' inventories, future customer demand and the product mix that our customers will require, which could adversely affect our production forecasts and operating margins. In addition, innovation in our industry could render significant portions of our inventory obsolete. If we overestimate our customers' requirements, we may have excess inventory, which could lead to obsolete inventory and unexpected costs. Conversely, if we underestimate our customers' requirements, we may have inadequate inventory, which could lead to foregone revenue opportunities, loss of potential market share and damage to customer relationships as product deliveries may not be made on a timely basis, disrupting our customers' production schedules. In response to anticipated long lead times to obtain inventory and materials from outside suppliers and foundries, we periodically order materials in advance of customer demand. This advance ordering has in the past and may in the future result in excess inventory levels or unanticipated inventory write-downs if expected orders fail to materialize, or other factors make our products less saleable. In addition, any significant future cancellation or deferral of product orders could adversely affect our revenue and margins, increase inventory write-downs due to obsolete inventory, and adversely affect our operating results and stock price.

If we do not manage our supply chain effectively, our operating results may be adversely affected.

We need to continually evaluate our global supply chains and assess opportunities to reduce costs. We must also enhance quality, speed and flexibility to meet changing demand for our products and product mix and uncertain market conditions. Our success also depends in part on refining our cost structure and supply chains so that we have flexibility and are able to protect and improve profitability. To improve our margins on that product, we will need to establish high volume supply agreements with our vendors. We cannot be certain that we will be able to timely negotiate vendor supply agreements on improved terms and conditions, or at all. Failure to achieve the desired level of cost reductions could adversely affect our financial results. Despite our efforts to control costs and increase efficiency in our facilities, changes in demand could still cause us to realize lower operating margins and profitability.

If we choose to acquire new and complementary businesses, products or technologies instead of developing them ourselves, we may be unable to complete these acquisitions or may not be able to successfully integrate an acquired business in a cost-effective and non-disruptive manner.

Our success depends on our ability to continually enhance and broaden our product offerings in response to changing technologies, customer demands and competitive pressures. To achieve this, from time to time we have acquired complementary businesses, products, or technologies instead of developing them ourselves and may choose to do so

in the future. For example, in November 2011, we acquired Nanda Technologies GmbH, a supplier of high-throughput, high-sensitivity defect inspection technology for semiconductor manufacturing. In June 2009, we entered into a strategic partnership with Zygo under an exclusive OEM supply agreement to provide interferometer sensors to us for incorporation into our UniFire line of products as well as our family of automated metrology systems. However, we may not be able to identify suitable transactions in the future, or if we do identify such transactions, we may not be able to complete them on commercially acceptable terms, or at all. We also face intense competition for acquisitions from other acquirers in our industry. These

Table of Contents

competing acquirers may have significantly greater financial and other resources than us, which may prevent us from successfully pursuing a transaction.

Potential risks associated with acquisitions could include, among other things:

- our ability to realize the benefits or cost savings that we expect to realize as a result of the acquisition;
- diversion of management's attention;
- our ability to successfully integrate our businesses with the business of the acquired company;
- motivating, recruiting and retaining executives and key employees; conforming standards, controls, procedures and policies, business cultures and compensation structures among our company and the acquired company;
- consolidating and streamlining sales, marketing and corporate operations;
- potential exposure to unknown liabilities of acquired companies;
- loss of key employees and customers of the acquired business; and
- managing tax costs or inefficiencies associated with integrating our operations following completion of the acquisitions.

If an acquisition is not successfully completed or integrated into our existing operations, our business, financial condition and results of operations could be adversely impacted.

In addition, to finance any acquisitions:

- we may be required to raise additional funds through public or private equity or debt financings;
- we may be unable to obtain financing at all; or
- we may be forced to obtain financing on terms that are not favorable to us and, in the case of equity or convertible debt financing, which may result in dilution to our stockholders.

Our success depends on the performance of key personnel, including our senior management and on our ability to identify, hire and retain key management personnel.

We believe our continued ability to recruit, hire, retain and motivate highly-skilled engineering, operations, sales, administrative and managerial personnel is key to our future success. Competition for these employees is intense, particularly with respect to attracting and retaining qualified technical and senior management personnel. We have experienced turnover in our senior management team in the past. Our business may be harmed if we are unable to retain and effectively integrate our senior management into our business operations.

We do not have employment agreements with key members of our technical staff and our senior management team, and these individuals or other key employees may leave us. We do not have key person life insurance on any of our executives. In addition, to support our future growth, we will need to attract and retain additional qualified employees. If we fail to attract, motivate and retain qualified senior management personnel, our business could be harmed and our ability to implement our strategy could be compromised.

If we deliver systems with defects, our credibility will be harmed, revenue from, and market acceptance of, our systems will decrease and we could expend significant capital and resources as a result of such defects.

Our products are complex and frequently operate in high-performance, challenging environments. Notwithstanding our internal quality specifications, our systems have sometimes contained errors, defects and bugs when introduced. If we deliver systems with errors, defects or bugs, our credibility and the market acceptance and sales of our systems would be harmed. Further, if our systems contain errors, defects or bugs, we may be required to expend significant capital and resources to alleviate such problems and incur significant costs for product recalls and inventory write-offs. Defects could also lead to product liability lawsuits against us or against our customers. We have agreed to indemnify our customers in some circumstances against liability arising from defects in our systems. In the event of a successful product liability claim, we could be obligated to pay damages significantly in excess of our product liability insurance limits.

If we experience significant delays in shipping our products to our customers, our business and reputation may suffer.

Our products are complex and require technical expertise to design and manufacture properly. Various problems occasionally arise during the manufacturing process that may cause delays and/or impair product quality. Any significant delays stemming from the failure of our products to meet or exceed our internal quality specifications, or for any other reasons, would delay our shipments. Shipment delays could harm our business and reputation in the industry.

Table of Contents

The average selling prices of our products may decrease over time, which could have a material adverse effect on our revenue.

It is common in our industry for the average selling price of a given product to decrease over time as production volumes increase, competing products are developed or new technologies featuring higher performance or lower cost emerge. To combat the negative effects that erosion of average selling prices have had in the past and may in the future have on our revenue, we attempt to actively manage the prices of our existing products and regularly introduce new process technologies and products in the market that exhibit higher performance, new features that are in demand, or lower manufacturing cost. Failure to maintain our current prices or to successfully execute on our new product development strategy will cause our revenue and gross margin to decline, which could decrease the value of your investment in our common stock.

Third party infringement claims could be costly to defend, and successful infringement claims by third parties could result in substantial damages, lost product sales and the loss of important intellectual property rights by us.

The semiconductor industry is generally subject to frequent litigation regarding patents and other intellectual property rights. Our commercial success depends, in part, on our ability to avoid infringing or misappropriating patents or other proprietary rights owned by third parties. From time to time we may receive communications from third parties asserting that our metrology systems may contain design features which are claimed to infringe on their proprietary rights. Our new or current products may infringe valid intellectual property rights, but even if our products do not infringe, we may be required to expend significant sums of money to defend against infringement claims, or to actively protect our intellectual property rights through litigation. In the event that a claim is made and there is an adverse result of any intellectual property rights litigation, we could be required to pay substantial damages for infringement, expend significant resources to develop non-infringing technology, incur material liability for royalty payments or fees to obtain licenses to the technology covered by the litigation, or be subjected to an injunction, which could prevent us from selling our products and materially and adversely affect our revenue and results of operations. We cannot be sure that we will be successful in any such non-infringing development or that any such license would be available on commercially reasonable terms, if at all. Any claims relating to the infringement of third-party proprietary rights, even if not meritorious, could result in costly litigation, lost sales or damaged customer relationships, and diversion of management's attention and resources.

Our intellectual property may be infringed by third parties despite our efforts to protect it, which could threaten our future success and competitive position and harm our operating results.

Our future success and competitive position depend in part upon our ability to obtain and maintain proprietary technology for our principal product families, and we rely, in part, on patent, trade secret and trademark law to protect that technology. If we fail to adequately protect our intellectual property, it will be easier for our competitors to sell competing products. We own or may license patents relating to our systems, and have filed applications for additional patents. Any of our pending patent applications may be rejected, and we may not in the future be able to develop additional proprietary technology that is patentable. In addition, the patents we own, have been issued or licensed, may not provide us with competitive advantages and may be challenged by third parties. Third parties may also design around these patents.

In addition to patent protection, we rely upon trade secret protection for our confidential and proprietary information and technology. We routinely enter into confidentiality agreements with our employees. However, in the event that these agreements may be breached, we may not have adequate remedies. Our confidential and proprietary information and technology might also be independently developed by or become otherwise known to third parties.

We may be required to initiate litigation to enforce patents issued to or licensed by us, or to determine the scope or validity of a third party's patent or to enforce trade secret, confidentiality or other proprietary rights. Any such litigation, regardless of outcome, could be expensive and time consuming, and could subject us to significant liabilities or require us to re-engineer our product or obtain expensive licenses from third parties, any of which would adversely affect our business and operating results.

Despite our efforts to protect our proprietary rights, unauthorized parties may attempt to copy or otherwise obtain or use our products or technology. Our ability to enforce our patents and other intellectual property is limited by our financial resources and is subject to general litigation risks. If we seek to enforce our rights, we may be subject to claims that the intellectual property rights are invalid, are otherwise not enforceable or are licensed to the party against whom we assert a claim. In addition, our assertion of intellectual property rights could result in the other party seeking to assert alleged intellectual property rights of its own against us, which is a frequent occurrence in such litigations. Our efforts to protect our intellectual property may be less effective in some foreign countries where intellectual property rights are not as well protected as in the United States.

Table of Contents

In 2013, 2012, and 2011, 67.4%, 75.5% and 78.1%, respectively, of our total net revenues were derived from sales to customers in foreign countries, including certain countries in Asia, such as Japan, South Korea, China, Singapore and Taiwan. The laws of some foreign countries do not protect our proprietary rights to as great an extent as do the laws of the United States, and many U.S. companies have encountered substantial problems in protecting their proprietary rights against infringement in these countries. If we fail to adequately protect our intellectual property in these countries, it would be easier for our competitors to sell competing products and our business would suffer.

Variations in the amount of time it takes for us to sell our systems may cause volatility in our operating results, which could cause our stock price to decline.

Variations in the length of our sales and product acceptance cycles could cause our revenues to fluctuate widely from period to period. Our customers generally take long periods of time to evaluate our metrology systems. We expend significant resources educating and providing information to our prospective customers regarding the uses and benefits of our systems. The length of time that it takes for us to complete a sale depends upon many factors, including:

- the efforts of our sales force and our independent sales representatives;
- the complexity of the customer's metrology needs;
- the internal technical capabilities and sophistication of the customer;
- the customer's budgetary constraints; and
- the quality and sophistication of the customer's current processing equipment.

Because of the number of factors influencing the sales process, the period between our initial contact with a customer and the time at which we recognize revenue from that customer, if at all, varies widely. Our sales cycles, including the time it takes for us to build a product to customer specifications after receiving an order, typically range from three to nine months. Occasionally our sales cycles can be much longer, particularly with customers in Asia who may require longer evaluation and acceptance periods. During the sales cycles, we commit substantial resources to our sales efforts in advance of receiving any revenue, and we may never receive any revenue from a customer despite our sales efforts. If we do complete a sale, customers often purchase only one of our systems and then evaluate its performance for a lengthy period of time before purchasing additional systems. The purchases are generally made through purchase orders rather than through long-term contracts. The number of additional products that a customer purchases, if any, depends on many factors, including a customer's capacity requirements, and/or shifting to more and advanced manufacturing processes that require more or different products to control. If they change their rate of capacity or have technological change, we cannot compensate for this fluctuation in demand by adjusting the price of our products. The period between a customer's initial purchase and any subsequent purchases and acceptance is unpredictable and can vary from three months to a year or longer. Variations in the length of this period could cause fluctuations in our operating results, which could adversely affect our stock price.

Relatively small fluctuations in our system sales volume may cause our operating results to vary significantly each quarter.

During any quarter, a significant portion of our revenue is derived from the sale of a relatively small number of systems. Our automated metrology systems range in price from approximately $200,000 to over $1,700,000 per system, and our integrated metrology systems range in price from approximately $100,000 to $500,000 per system. Accordingly, a small change in the number or mix of systems that we sell could cause significant changes in our operating results.

Lack of market acceptance for our new products may affect our ability to generate revenue and may harm our business.

In 2012 we introduced our SPARK inspection solution. In 2012, we introduced the Atlas II +OCD system, a next-generation tool for high performance process control metrology. In 2010, the capability of our NanoCD suite was extended with launches of our new modeling and analysis software, NanoDiffract, and migration to the latest generation of cluster computers for fabrication wide analysis (NanoGen). In 2009, we introduced the Atlas XP+ system as the follow-on to our Atlas metrology system. We have invested substantial time and resources into the development of these products. However, we cannot accurately predict the future level of acceptance of our new

products by our customers. As a result, we may not be able to generate anticipated revenue from sales of these products or future new products or improvements.

We depend on new products and processes for our success. Consequently, we are subject to risks associated with rapid technological change.

Rapid technological changes in semiconductor manufacturing processes subject us to increased pressure to develop technological advances enabling such processes. We believe that our future success depends in part upon our ability to develop

Table of Contents

and offer new products with improved capabilities and to continue to enhance our existing products. We cannot make assurances if or when the products and solutions where we have focused our research and development expenditures will become commercially successful. If new products have reliability or quality problems, our performance could be impacted by reduced orders, higher manufacturing costs, and delays in acceptance or payment for new products, and additional service and warranty expenses. We might not be able to develop and manufacture new products successfully, or new products that we introduce may fail in the marketplace. Our failure to complete commercialization of these new products in a timely manner could result in unanticipated costs and inventory obsolescence, which would adversely affect our financial results. Any significant delay in releasing new systems could adversely affect our reputation, give a competitor a first-to-market advantage or allow a competitor to achieve greater market share.

To develop new products and processes, we expect to continue to make significant investments in research and development and to pursue joint development relationships with customers, suppliers or other members of the industry. We must manage product transitions and joint development relationships successfully, as introduction of new products could adversely affect our sale of existing products.

We are subject to risks associated with our competitors' strategic relationships and their introduction of new products and we may lack the financial resources or technological capabilities of certain of our competitors needed to capture increased market share.

We expect to face significant competition from multiple current and future competitors. We believe that other companies are developing systems and products that are competitive to our products and are planning to introduce new products, which may affect our ability to sell our existing products. We face a greater risk if our competitors enter into strategic relationships with leading semiconductor manufacturers covering products similar to those we sell or may develop, as this could adversely affect our ability to sell products to those manufacturers.

Some of our competitors have substantially greater financial resources and more extensive engineering, manufacturing, marketing and customer service and support resources than we do and therefore have the potential to increasingly dominate the semiconductor equipment industry. These competitors may deeply discount products similar to those that we sell, challenging or even exceeding our ability to make similar accommodations and threatening our ability to sell those products. As a result, we may fail to continue to compete successfully worldwide. In addition, our competitors may provide innovative technology that may have performance advantages over systems we currently offer or may offer in the future. They may be able to develop products comparable or superior to those that we offer or may adapt more quickly to new technologies or evolving customer requirements. In particular, while we currently are developing additional product enhancements that we believe will address future customer requirements, we may fail in a timely manner to complete the development or introduction of these additional product enhancements successfully, or these product enhancements may not achieve market acceptance or be competitive. Accordingly, we may be unable to continue to compete in our markets and competition may intensify, or future competition, operating results, financial condition, and/or cash flows could suffer.

If we are unable to adjust the scale of our business in response to rapid changes in demand in the semiconductor equipment industry, our operating results and our ability to compete successfully may be impaired.

The business cycle in the semiconductor equipment industry has historically been characterized by frequent periods of rapid change in demand that challenge our management to adjust spending and resources allocated to operating activities. During periods of growth or decline in demand for our products and services, we face significant challenges in maintaining adequate financial and business controls, management processes, information systems and procedures and in training, managing, and appropriately sizing our supply chain, our work force, and other components of our business on a timely basis. Our success will depend, to a significant extent, on the ability of our executive officers and other members of our senior management to identify and respond to these challenges, our gross margins and earnings may be impaired during periods of demand decline, and we may lack the infrastructure and resources to scale up our business to meet customer expectations and compete successfully during periods of demand growth.

We manufacture all of our systems at a limited number of facilities, and any prolonged disruption in the operations of those facilities could reduce our revenues.

We produce all of our systems in our manufacturing facilities located in Milpitas, California. We use contract manufacturers in China, Japan and the United States. Our manufacturing processes are highly complex and require sophisticated, costly equipment and specially designed facilities. As a result, any prolonged disruption in the operations of our manufacturing facilities, such as those resulting from acts of war, terrorism, political instability, health epidemics, fire, earthquake, flooding or other natural disaster could seriously harm our ability to satisfy our customer order deadlines.

Table of Contents

Our results of operations could vary as a result of the methods, estimates and judgments we use in applying our accounting policies.

The methods, estimates and judgments we use in applying our accounting policies have a significant impact on our results of operations. See “Note 1. Nature of Business, Basis of Presentation and Significant Accounting Policies” in Part II, Item 8, Note 1. These methods, estimates and judgments are, by their nature, subject to substantial risks, uncertainties and assumptions, and factors may arise over time that leads us to change our methods, estimates and judgments. Changes in these methods, estimates and judgments could significantly affect our results of operations. In particular, our operating results have been affected by the calculation of share-based compensation expense and by the testing and potential impairment of long-lived assets such as goodwill and other intangible assets. The process of evaluating potential impairments is highly subjective and requires significant judgment, and our results of operations could vary significantly from estimates.

Our operating results have varied in the past and probably will continue to vary significantly in the future, which will cause volatility in our stock price.

Our quarterly and annual operating results have varied significantly in the past and are likely to vary in the future, which volatility could cause our stock price to decline. Some of the factors that may influence our operating results and subject our stock to extreme price and volume fluctuations include:

- general economic growth or decline in the U.S. or foreign markets;
- changes in customer demand for our systems;
- the gain or loss of a key customer or significant changes in the financial condition or one or more key customers;
- economic conditions in the semiconductor industries;
- the timing, cancellation or delay of customer orders and shipments;
- market acceptance of our products and our customers' products;
- our ability to recover the higher costs associated with meeting our customers' increasing service demands;
- competitive pressures on product prices and changes in pricing by our customers or suppliers;
- the timing of new product announcements and product releases by us or our competitors and our ability to design, introduce and manufacture new products on a timely and cost-effective basis;
- the occurrence of potential impairments of long-lived assets;
- the timing of acquisitions of businesses, products or technologies;
- the effects of war, natural disasters, acts of terrorism or political unrest;
- the loss of key personnel;
- the levels of our fixed expenses, relative to our revenue levels; and
- fluctuations in foreign currency exchange rates, particularly the Japanese yen and the British pound sterling.

The foregoing factors are difficult to forecast, and these, as well as other factors, could materially and adversely affect our quarterly and annual operating results. If our operating results in any period fall below the expectations of securities analysts and investors, the market price of our common stock would likely decline.

We are highly dependent on international sales and operations, which exposes us to foreign political and economic risks.

A majority of our sales and operations are outside of the United States. As a result, we are subject to regulatory, geopolitical and other risks associated with doing business in foreign countries. We anticipate that international sales will continue to account for a significant portion of our revenues. International sales and operations carry inherent risks such as:

- regulatory limitations imposed by foreign governments;
- obstacles to the protection of our intellectual property, political, military and terrorism risks;
- foreign currency controls and currency exchange rate fluctuations;
- periodic local or international economic downturns;
- political instability, natural disasters, acts of war or terrorism in regions where we have operations;

- repatriation of cash earned in foreign countries;
- longer payment cycles and difficulties in collecting accounts receivable outside of the U.S.;
- disruptions or delays in shipments caused by customs brokers or other government agencies;
- uncertainty regarding liability under foreign laws;
- unexpected changes in regulatory requirements (including import and export requirements), tariffs, customs, duties and other trade barriers;
- difficulties in staffing and managing foreign operations;
- potentially adverse tax consequences resulting from changes in tax laws; and

Table of Contents

- other challenges caused by distance, language and cultural differences.

If any of these risks materialize and we are unable to manage them, our international sales and operations would suffer.

Changes in our effective income tax rate could affect our results of operations.

Fluctuations in our effective tax rate may affect operating results. Our effective tax rate is subject to fluctuation based on a variety of factors, such as:

- the jurisdictions in which our profits are determined to be earned and taxed;
- changes to tax laws, regulations and interpretations;
- our ability to obtain approval and the timing of receipt of approval from the Internal Revenue Service of tax elections;
- changes in the valuation of our deferred tax assets and liabilities;
- increases in expenses not deductible for tax purposes, including write-offs of acquired in-process research and development and impairment of goodwill in connection with acquisitions and
- changes in available tax credits.

Any material increase in our effective tax rate would adversely affect our operating results.

We are exposed to fluctuations in the foreign currency exchange rates.

As a global concern, we face exposure to adverse movements in foreign currency exchange rates. Our exposure to foreign currency exchange rate fluctuations arise in part from current intercompany accounts in which costs are charged between our U.S. headquarters and foreign subsidiaries. These exposures may change over time as business practices evolve and could have a material adverse impact on our financial results and cash flow.

Anti-takeover provisions in our charter documents and Delaware law could discourage, delay or prevent a change in control of our company and may affect the trading price of our common stock.

The anti-takeover provisions of the Delaware General Corporation Law may discourage, delay or prevent a change in control by limiting our ability to engage in a business combination with an interested stockholder, even if a change of control would be beneficial to our existing stockholders. In addition, our certificate of incorporation and bylaws may discourage, delay or prevent a change in our management or control over us that stockholders may consider favorable. Our certificate of incorporation and bylaws:

- authorize the issuance of “blank check” preferred stock that could be issued by our board of directors to thwart a takeover attempt;
- limit who may call special meetings of stockholders; and
- prohibit stockholder action by written consent, requiring all actions to be taken at a meeting of the stockholders.

We may experience periodic or prolonged disruption of our IT infrastructure, which may adversely affect our operations.

In 2013, we replaced our Enterprise Resource Planning (“ERP”) system used to manage our business and accurately and timely report key data with respect to our results of operations, financial position and cash flows. We are now relying on Oracle R12 for our ERP system. We may experience periodic or prolonged disruption of our IT infrastructure arising out of the conversion to a new ERP system, general use of such systems, periodic upgrades and updates, or external factors that are outside of our control. Any such disruption could adversely affect our ability to complete essential business processes, including our evaluation of our internal control over financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act of 2002. If we encounter unforeseen problems with regard to our ERP system or other IT systems, our business, operations and financial condition could be adversely affected.

Our cash and cash equivalents and short-term investments are managed through various banks around the world and volatility in the capital and credit market conditions could cause financial institutions to fail which could have an

adverse effect on our ability to timely access funds.

World capital and credit markets have been and may continue to experience volatility and disruption. Financial institutions, including banks, have failed or otherwise been largely taken over by governments. We maintain our cash, cash equivalents and short-term investments with a number of financial institutions around the world. Should some or all of these financial institutions fail, we would likely have a limited ability to timely access our cash deposited with such institutions, or, in extreme circumstances the failure of such institutions could cause us to be unable to access cash for the foreseeable future. If

Table of Contents

we are unable to quickly access our funds when we need them, we may need to increase the use of our existing credit lines or access more expensive credit, if available, which could have a negative impact on our operations, including our reported net income.

If our network security measures are breached and unauthorized access is obtained to a customer's data, to our data, or to our information technology systems, we may incur significant legal and financial exposure and liabilities.

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

We are subject to various environmental laws and regulations that could impose substantial costs upon us and may harm our business, operating results and financial condition.

Some of our operations use substances regulated under various federal, state, local, and international laws governing the environment, including those relating to the storage, use, discharge, disposal, labeling, and human exposure to hazardous and toxic materials. We could incur costs, fines and civil or criminal sanctions, third-party property damage or personal injury claims, or could be required to incur substantial investigation or remediation costs, if we were to violate or become liable under environmental laws. Liability under environmental laws can be joint and several and without regard to comparative fault. Compliance with current or future environmental laws and regulations could restrict our ability to expand our facilities or require us to acquire additional expensive equipment, modify our manufacturing processes, or incur other significant expenses. We may unintentionally violate environmental laws or regulations in the future as a result of human error, equipment failure or other causes.

Compliance with federal securities laws, rules and regulations, as well as NASDAQ requirements, is becoming increasingly complex, and the significant attention and expense we must devote to those areas may have an adverse impact on our business.

Federal securities laws, rules and regulations, as well as NASDAQ rules and regulations, require companies to maintain extensive corporate governance measures, impose comprehensive reporting and disclosure requirements, set strict independence and financial expertise standards for audit and other committee members and impose civil and criminal penalties for companies and their chief executive officers, chief financial officers and directors for securities law violations. These laws, rules and regulations have increased, and in the future are expected to continue to increase, the scope, complexity and cost of our corporate governance, reporting and disclosure practices, which could harm our results of operations and divert management's attention from business operations.

Recent regulations related to conflict minerals could adversely impact our business.

The Dodd-Frank Wall Street Reform and Consumer Protection Act contains provisions to improve transparency and accountability concerning the supply of tin, tantalum, tungsten and gold, known as conflict minerals, originating from the Democratic Republic of Congo, or DRC, and adjoining countries. As a result, in August 2012 the United States Securities and Exchange Commission, or SEC, adopted annual disclosure and reporting requirements for public companies that use conflict minerals mined from the DRC and adjoining countries in their products. We have

determined that we use at least one of these conflict minerals in the manufacture of our products, although we have not yet determined the source of the minerals that we use. These new disclosure requirements require us to use diligent efforts to determine which conflict minerals we use and the source of those conflict minerals, and disclose the results of our findings beginning in May 2014. There are and will be costs associated with complying with these disclosure requirements, including those costs incurred in conducting diligent efforts to determine which conflict minerals we use and the sources of conflict minerals used in our products. Further, the implementation of these rules could adversely affect the sourcing, supply and pricing of materials used in our products. As there may be only a limited number of suppliers offering conflict free minerals, we cannot be sure that we will be able to obtain necessary conflict free conflict minerals in sufficient quantities or at competitive prices. In addition, we may face reputational challenges if we determine

Table of Contents

that our products contain minerals not determined to be conflict free or if we are unable to sufficiently verify the origins for all conflict minerals used in our products through the procedures we may implement. If we determine it is necessary to redesign our products to not use conflict minerals, we would incur costs associated with doing so.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

At December 28, 2013, our owned or leased facilities included those described below:

Table of Contents

Type	Location	Square Footage	Use
Owned	Milpitas, California	133,000	Corporate headquarters and manufacturing
Owned	Milpitas, California	3,038	Corporate housing
Owned	Pyoungtack City, South Korea	1,139	Applications and service
Leased	United Kingdom	20,338	Sales, service, manufacturing and engineering
Leased	South Korea	21,341	Sales, service and corporate housing
Leased	Japan	12,286	Sales, service, application, logistics, corporate housing and administrations
Leased	United States	18,426	Engineering, sales and service
Leased	Taiwan	12,065	Sales and service
Leased	China	6,902	Sales and service
Leased	Germany	6,772	Sales and service
Leased	Singapore	4,529	Sales and service
Leased	France	828	Sales and service
Leased	Switzerland	387	Sales and service

We believe that our existing facilities are suitable and adequate for our current needs and anticipated growth. The lease in York, United Kingdom expires in October, 2017. The lease in Hwasung-City, South Korea expires in August, 2014.

ITEM 3. LEGAL PROCEEDINGS

Not Applicable.

ITEM 4 MINE SAFETY DISCLOSURES

Not Applicable.

PART II

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

Market Information for Common Stock

Our common stock is quoted on the NASDAQ Global Select Market under the symbol "NANO." The following table sets forth, for the fiscal periods indicated, the high and low closing sales prices per share of our common stock as reported on the NASDAQ Global Select Market.

Fiscal Year 2013	High	Low
First quarter	$16.10	$14.20
Second quarter	$15.73	$13.49
Third quarter	$16.25	$13.41
Fourth quarter	$18.88	$16.10
Fiscal Year 2012	High	Low
First quarter	$20.76	$16.64
Second quarter	$19.00	$14.10
Third quarter	$15.71	$13.71

Fourth quarter	$14.90	$12.65

Table of Contents

Stockholders

On February 28, 2014, there were approximately 227 holders of record of our common stock. Because brokers and the institutions on behalf of stockholders hold many of our shares of common stock, we are unable to estimate the total number of stockholders represented by these record holders.

Dividend Policy

We have never declared or paid any cash dividends on our capital stock. We currently expect to retain future earnings, if any, for use in the operation and expansion of our business and do not anticipate paying any cash dividends in the foreseeable future. Under our loan and security agreement with Comerica Bank, we are not permitted to pay dividends without the consent of Comerica Bank.

Stock Performance Graph

The following graph presentation compares cumulative five-year stockholder returns on an indexed basis, assuming a $100 initial investment and reinvestment of dividends, of (a) Nanometrics Incorporated, (b) a broad-based equity market index and (c) an industry-specific index. The broad-based equity market index used is the NASDAQ Composite Index and the industry-specific index used is the RDG Technology Composite Index.

This performance graph shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any of our filings under the Securities Act of 1933, as amended or the Exchange Act.

Table of Contents

Recent Sales of Unregistered Securities
None.

Issuer Purchases of Equity Securities

We did not repurchase any shares of our common stock in the fourth quarter of fiscal year 2013.

ITEM 6. SELECTED FINANCIAL DATA

The selected consolidated financial data set forth below should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. Over the last five fiscal years, we acquired Nanda Technologies GmbH in fiscal year 2011, and the UniFire™ product line from Zygo Corporation in fiscal year 2009. The results of these acquisitions have been included in our consolidated financial statements since the respective dates of these acquisitions.

	Fiscal Year				
	2013	2012	2011	2010	2009 (a)
	(in thousands, except per share data)				
Consolidated Statement of Operations Data:					
Net revenues:					
Products	$107,402	$143,827	$194,774	$154,548	$49,153
Service	36,905	39,054	35,287	33,517	27,554
Total net revenues	144,307	182,881	230,061	188,065	76,707
Costs of revenues:					
Cost of products	59,509	75,878	88,579	66,484	26,594
Cost of service	19,489	20,526	18,304	19,328	13,992
Amortization of intangible assets	2,633	2,549	1,077	861	827
Total cost of net revenues	81,631	98,953	107,960	86,673	41,413
Gross profit	62,676	83,928	122,101	101,392	35,294
Operating expenses:					
Research and development	32,714	29,585	23,290	18,973	14,672
Selling	27,129	26,457	27,019	21,320	15,072
General and administrative	22,101	21,632	22,901	18,617	15,168
Amortization of intangible assets	701	776	625	695	708
Restructuring charge	1,740	—	—	—	1,134
Legal settlement	—	—	2,500	—	—
Asset impairment and disposition	—	—	—	463	1,899
Total operating expenses	84,385	78,450	76,335	60,068	48,653
Income (loss) from operations	(21,709)	5,478	45,766	41,324	(13,359)
Other expense, net	(1,856)	(859)	(1,182)	(635)	(3,532)
Provision (benefit) for income taxes	(9,419)	154	15,899	(15,259)	(586)
Net income (loss)	$(14,146)	$4,465	$28,685	$55,948	$(16,305)
Basic net income (loss) per share	$(0.61)	$0.19	$1.26	$2.56	$(0.87)
Diluted net income (loss) per share	$(0.61)	$0.19	$1.22	$2.43	$(0.87)
Shares used in per share computation:					
Basic	23,290	23,358	22,743	21,855	18,639
Diluted	23,290	23,845	23,480	22,998	18,639

(a) Fiscal year 2009 included 53 weeks, whereas the other periods presented included 52 weeks.

	Fiscal Year Ended				
	2013	2012	2011	2010	2009
	(in thousands)				
Consolidated Balance Sheet Data:					
Cash, cash equivalents and marketable securities	$92,862	$109,908	$97,699	$66,460	$43,526
Working capital	141,797	158,587	160,629	135,770	76,771
Total assets	262,834	259,454	267,221	220,025	147,470
Long-term liabilities including current portion of debt obligation	6,504	13,884	17,213	17,142	15,963
Total stockholders' equity	$207,373	$215,771	$209,992	$170,849	$106,754

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

Overview

You should read the following discussion and analysis of our financial condition and results of operations together with "Selected Financial Data" and our consolidated financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K. This discussion and analysis contains forward-looking statements that involve risks, uncertainties and assumptions. The actual results may differ materially from those anticipated in these forward-looking statements as a result of certain factors, including, but not limited to, those presented under "Risk Factors" in Item 1A and elsewhere in this Annual Report on Form 10-K. Please see "Cautionary Information Regarding Forward-Looking Statements" at the beginning of this Form 10-K for additional information you should consider regarding forward-looking statements.

We are an innovator in the field of metrology and inspection systems for semiconductor manufacturing and other industries. Our systems are designed to precisely monitor film thickness and critical dimensions that are necessary to control the manufacturing process and to identify defects that can affect production yields and performance.

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, as are the adoption of optical critical dimension ("OCD") metrology across fabrication processes, immersion lithography and double patterning, new types of thin film materials, advanced packaging strategies and wafer backside inspection, and the need for improved process control to drive process efficiencies. Our strategy is to continue to innovate organically as well as to evaluate strategic acquisitions to address business challenges and opportunities.

Our revenues are primarily derived from product sales but are also derived from customer service and system upgrades for the installed base of our products. In 2013, we derived 74.4% of our total net revenues from product sales and 25.6% of our total net revenues from services.

Important Themes and Significant Trends

The semiconductor equipment industry is characterized by cyclical growth. Changing trends in the semiconductor industry continue to drive the need for metrology as a major component of manufacturing systems. These trends include:

- Proliferation of Optical Critical Dimension Metrology across Fabrication Processes. Our customers use photolithographic processes to create patterns on wafers. Critical dimensions must be carefully controlled during this process. In advanced node device definition, additional monitoring of thickness and profile dimensions on these patterned structures at CMP, Etch, and Thin Film processing is driving broader OCD adoption. Our proprietary OCD systems 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, HDD, and logic semiconductor manufacturing processes.

- Adoption of Advanced Packaging Processes. Our customers use photolithographic, etching, metallization and wafer thinning to enable next generation advanced packaging solutions for semiconductor devices. The new packaging leads to increased functionality in smaller, less expensive form factors. Advanced packages can be broken down into high density flip chip or bump packages that increase pin density allowing for more complex I/O on advanced CPU parts. Similar or different devices can be stacked at the wafer level using a Through Silicon Via ("TSV") process. The

Table of Contents

TSV process enables high density small form factor parts, being primarily driven by mobile consumer products (e.g. cellular telephones with integrated CMOS camera sensors). Increasingly advanced packaging technologies are being adopted by our end customers.

- 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 begin the replacement of the traditional aluminum etch back interconnect flows as well as conventional gate dielectric materials, all which drive a broader adoption of thin film and OCD metrology systems. To achieve greater semiconductor device speed, manufacturers have adopted copper in Logic/IDM and it is now proliferating in next generation DRAM and Flash nodes. Additionally, to achieve improved transistor performance in logic devices and higher cell densities in memory devices, new materials including high dielectric constant (or high-k) gate materials are increasingly being substituted for traditional silicon-oxide gate dielectric materials. High-k materials comprise complex thin films including layers of hafnium oxide and a bi-layer of thin film metals. Our advanced metrology and inspection solutions are required for control of process steps, which are critical to enable the device performance improvements that these new materials allow.
- Development 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 fin-fet transistors and 3D-NAND 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 for both OCD and our UniFire systems.
- Need for Improved Process Control to Drive Process Efficiencies. Competitive forces influencing semiconductor device manufacturers, such as price-cutting and shorter product life cycles, place pressure on manufacturers to rapidly achieve production efficiency. Device manufacturers are using our integrated and automated systems throughout the fabrication to ensure that manufacturing processes scale rapidly, are accurate and can be repeated on a consistent basis.
- Reduced Number of Customers. Our market is characterized by an ongoing oligopsonistic trend which drives customer concentration. The largest customer accounted for 17.6% of our total revenue in the fiscal year 2001, and the largest customer accounted for 30.0% and 27.8% of our total revenue in the fiscal year 2013 and 2012, respectively.

Critical Accounting Policies

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 on-going 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. We believe that the application of the following accounting policies requires significant judgments and estimates on the part of management. For a summary of all of our accounting policies, including those discussed below, see Note 1 to our consolidated financial statements.

Revenue Recognition - We recognize 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. We derive revenue from the sale of process control metrology and inspection systems (“product revenue”) as well as spare part sales, billable services, service contracts, and upgrades (together “service revenue”). Upgrades are a group of parts and/or software that change the existing configuration of a product and are included in service revenue. They are distinguished from product revenue, which consists of complete, automated process control metrology 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 often include defined customer-specified acceptance criteria.

For product sales to existing customers, revenue recognition occurs when title and risk of loss transfer to the customer, which usually occurs upon shipment from our 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 we have 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.

We warrant our 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 our standard warranty. In those instances where extended warranty services are separately quoted to the customer, the associated revenue is deferred and

Table of Contents

recognized as service revenue ratably over the term of the contract. 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.

As part of customer services, we also sell 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 upgrades is recognized when the upgrades are delivered to the customer, provided that all other recognition criteria have been met.

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, we deliver products and various services in a single transaction. Our deliverables consist of tools, installation, upgrades, billable services, spare parts, and service contracts. Our typical multi-element arrangements include a sale of one or multiple tools that include installation and standard warranty. Other arrangements may consist of a sale of tools bundled with service elements or delivery of different types of services. 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 estimated fair value and that revenue is recognized upon completion of the installation. 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 and such terms can be up to 12 months. We do not generally grant customers a general right of return or refund and may impose a penalty on orders canceled prior to the scheduled shipment date.

We regularly evaluate our revenue arrangements to identify deliverables and to determine whether these deliverables are separable into multiple units of accounting. We allocate the arrangement consideration among the deliverables based on relative best estimated selling price ("BESP"). We have established vendor specific objective evidence ("VSOE") for some of our products and services when a substantial majority of selling prices falls within a narrow range when sold separately. For deliverables with no established VSOE, we use BESP to determine standalone selling price for such deliverable. We do not use third party evidence ("TPE") to determine standalone selling price since this information is not widely available in the market as our products contain a significant element of proprietary technology and the solutions offered differ substantially from our competitors. We have established a process for developing BESP, which incorporates historical selling prices, the effect of market conditions, gross margin objectives, pricing practices, as well as entity-specific factors. We monitor and evaluate BESP 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.

Allowance for Doubtful Accounts – We maintain allowances for estimated losses resulting from the inability of our customers to make their required payments. Credit limits are established through a process of reviewing the financial history and stability of our customers. Where appropriate and available, we obtain credit rating reports and financial statements of customers when determining or modifying their credit limits. We regularly evaluate the collectability of our trade receivable balances based on a combination of factors such as the length of time the receivables are past due, customary payment practices in the respective geographies and our historical collection experience with customers. We believe that our allowance for doubtful accounts adequately reflects our risk associated with our receivables. If the

financial condition of a customer were to deteriorate, resulting in their inability to make payments, we would assess the necessity of recording additional allowances. This would result in additional general and administrative expenses being recorded for the period in which such determination was made.

Inventories – Inventories are stated at the lower of cost or market. We are exposed to a number of economic and industry-specific factors that could result in portions of our inventory becoming either obsolete or in excess of anticipated usage, or saleable only for amounts that are less than their carrying amounts. These factors include, but are not limited to, technological changes in our market, our ability to meet changing customer requirements, competitive pressures in products and prices, and the availability of key components from our suppliers. We have established inventory reserves when conditions exist that suggest that our inventory may be in excess of anticipated demand or is obsolete based upon our assumptions about future demand for our products and market conditions. Once a reserve has been established, it is maintained until the part to which it relates is sold or is otherwise disposed of. Therefore, a sale of reserved inventory has a higher gross profit margin. We

Table of Contents

regularly evaluate our ability to realize the value of our inventory based on a combination of factors including the following: historical usage rates, forecasted sales of usage, product end-of-life dates, estimated current and future market values and new product introductions. Inventory includes evaluation tools placed at customer sites. For demonstration inventory, we also consider the age of the inventory and potential cost to refurbish the inventory prior to sale. Demonstration inventory is amortized over its useful life and the amortization expense is included in total inventory write down on our statements of cash flows. When recorded, our reserves are intended to reduce the carrying value of our inventory to its net realizable value. If actual demand for our products deteriorates, or market conditions are less favorable than those that we project, additional reserves may be required, which would adversely affect gross margin and net income.

Product Warranties – We sell the majority of our products with a standard twelve month repair or replacement warranty from the date of acceptance or shipment date. We provide 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 reported 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 differ from our estimates, revisions to the estimated warranty obligations would be required. For new product introductions where limited or no historical information exists, we may use warranty information from other previous product introductions to guide us in estimating our warranty accrual. The warranty accrual represents the best estimate of the amount necessary to settle future and existing claims on products sold as of the balance sheet date. We periodically assess the adequacy of our recorded warranty reserve and adjust the amounts in accordance with changes in these factors.

Business Combinations - We allocate the purchase price of acquired companies to the tangible and intangible assets acquired and liabilities assumed based upon their estimated fair values at the acquisition date. The purchase price allocation process requires management to make significant estimates and assumptions, especially at the acquisition date with respect to intangible assets and inventory acquired. While we use our best estimates and assumptions as a part of the purchase price allocation process to accurately value assets acquired and liabilities assumed at the acquisition date, our estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, we record adjustments to the assets acquired and liabilities assumed, with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to our consolidated statements of operations.

We estimate the fair value of inventory acquired by utilizing the net realizable value method which is based on the estimated sales price of the product less appropriate costs to complete and selling costs. Examples of critical estimates in valuing certain of the intangible assets we have acquired or may acquire in the future include but are not limited to:

- future expected cash flows from sales of products, services and acquired developed technologies and patents;
- expected costs to develop the in-process research and development into commercially viable products and estimated cash flows from the projects when completed;
- the value of the acquired company's customer relationships, as well as assumptions about the estimated useful lives of the relationships; and
- discount rates.

Unanticipated events and circumstances may occur which may affect the accuracy or validity of assumptions, estimates or actual results associated with business combinations.

Goodwill and Intangible Assets - Intangible assets with finite lives are amortized over their useful lives and are subject to an impairment assessment, as well as an evaluation of the appropriateness of their estimated useful lives, whenever events or changes in circumstances indicate that the carrying amount(s) may not be recoverable. Goodwill and indefinite lived assets are not amortized but tested annually for impairment. The goodwill impairment assessment

involves three tests, Step 0, Step 1 and Step 2. The Step 0 test involves performing an initial qualitative assessment to determine whether it is more likely than not that the asset is impaired and thus whether it is necessary to proceed to Step 1 and calculate the fair value of the reporting unit. We may proceed directly to the Step 1 test without performing the Step 0 test. The Step 1 test involves measuring the recoverability of goodwill at the reporting unit level by comparing the reporting unit's carrying amount, including goodwill, to the fair value of the reporting unit.

We perform a Step 0 assessment of the goodwill during the fourth quarter of each fiscal year, or whenever events or circumstances occur which indicate that an impairment may have occurred. As part of this assessment, we consider the trading value of our stock, the industry trends, and our sales forecast and products plans to determine if it is more likely than not that the fair value is higher than the carrying values of our reporting unit. If, after assessing the qualitative factors, we determine that it is not likely that the fair value of a reporting unit is less than its carrying value, then performing the two-step impairment

Table of Contents

test is unnecessary. However, if we conclude otherwise, then we are required to perform the Step 1 of the two-step goodwill impairment test. The Step 1 test requires a comparison of the fair value of our reporting unit to its net book value. If the fair value of the reporting unit is greater than its net book value, then no impairment is deemed to have occurred. If the fair value is less, then the Step 2 must be performed to determine the amount, if any, of actual impairment.

The process of evaluating the potential impairment of goodwill is highly subjective and requires significant judgment. In estimating the fair value of goodwill at the reporting unit level, we make estimates and judgments about future revenues and cash flows for the reporting unit. To determine the fair value, our review process includes the income method and is based on a discounted future cash flow approach that uses estimates including the following for the reporting unit: estimated revenue, market segment growth rates and market share assumptions; estimated costs; and appropriate discount rates based on the particular reporting unit's weighted average cost of capital. Our estimates of market segment growth, our market segment share and costs are based on historical data, various internal estimates and certain external sources, and are based on assumptions that are consistent with the plans and estimates we are using to manage the underlying businesses. Our business consists of both established and emerging technologies and our forecasts for emerging technologies are based upon internal estimates and external sources rather than historical information. We also consider our market capitalization on the dates of our impairment tests in determining the fair value of the respective businesses. As part of this assessment, we consider the trading value of our stock and our implied value, as compared to our net assets, as well as the valuation of our acquired businesses. If the carrying amount of the reporting unit exceeds its fair value as determined by these assessments, goodwill is considered impaired, and the Step 2 test is performed to measure the amount of impairment loss. As part of the Step 2 test to determine the amount of goodwill impairment, if any, we allocate the fair value of the reporting unit to all of its assets and liabilities as if the reporting unit had been acquired in a business combination and the fair value of the reporting unit was the price paid to acquire the reporting unit. The excess of the fair value of the reporting unit over the amount assigned to its assets and liabilities is the implied fair value of goodwill. When impairment is deemed to have occurred, we will recognize an impairment charge to reduce the carrying amount of our goodwill to its implied fair value.

Income Tax Assets and Liabilities - We account for income taxes such that deferred tax assets and liabilities are recognized using enacted tax rates for the effect of temporary differences between the book and tax accounting for assets and liabilities. Also, deferred tax assets are reduced by a valuation allowance to the extent we cannot conclude that it is more likely than not that a portion of the deferred tax asset will be realized in the future. We evaluate the deferred tax assets on a continuous basis throughout the year to determine whether or not a valuation allowance is appropriate. Factors used in this determination include future expected income and the underlying asset or liability which generated the temporary tax difference. Our income tax provision is primarily impacted by federal statutory rates, state and foreign income taxes and changes in our valuation allowance.

Stock-Based Compensation –We estimate the value of employee stock options on the date of grant using the Black-Scholes model. The determination of fair value of share-based payment awards on the date of grant using an option-pricing model is affected by our stock price as well as assumptions regarding a number of highly complex and subjective variables. These variables include, but are not limited to, the expected stock price volatility over the term of the awards, and actual and projected employee stock option exercise behaviors. The expected term of options granted is calculated based on the simplified method. The expected volatility is based on the historical volatility of our stock price.

Recent Accounting Pronouncements

See Note 2 of our consolidated financial statements for a description of recent accounting pronouncements, including the respective dates of adoption and effects on our results of operations and financial condition.

Results of Operations

The following table presents our consolidated statements of operations data as a percentage of total net revenues for fiscal years ended December 28, 2013, December 29, 2012 and December 31, 2011.

28

Table of Contents

	Fiscal Year		
	2013	2012	2011
Net revenues:			
Products	74.4 %	78.6 %	84.7 %
Service	25.6	21.4	15.3
Total net revenues	100.0	100.0	100.0
Costs of net revenues:			
Cost of products	41.2	41.5	38.5
Cost of service	13.5	11.2	8.0
Amortization of intangible assets	1.8	1.4	0.4
Total costs of net revenues	56.5	54.1	46.9
Products gross margin	44.6	47.2	54.5
Service gross margin	47.2	47.4	48.1
Total gross margin	43.4	45.9	53.1
Operating expenses:			
Research and development	22.7	16.2	10.1
Selling	18.8	14.5	11.7
General and administrative	15.3	11.8	10.0
Amortization of intangibles	0.5	0.4	0.3
Legal settlement	—	—	1.1
Restructuring charge	1.2	—	—
Total operating expenses	58.5	42.9	33.2
Income (loss) from operations	(15.0)	3.0	19.9
Other income (expense):			
Interest income	—	0.1	0.1
Interest expense	(0.5)	(0.6)	(0.6)
Other, net	(0.9)	—	—
Total other expense, net	(1.4)	(0.5)	(0.5)
Income (loss) before income taxes	(16.4)	2.5	19.4
Provision (benefit) for income taxes	(6.5)	0.1	6.9
Net income (loss)	(9.9)%	2.4 %	12.5 %

Fiscal years 2013, 2012 and 2011 ended December 28, 2013, December 29, 2012 and December 31, 2011, respectively.

Total net revenues.

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

	Fiscal Year			
	2013	2012	Change	
Automated systems	$82,924	$119,451	$(36,527)	(30.6)%
Integrated systems	11,412	12,379	(967)	(7.8)%
Materials characterization systems	13,066	11,997	1,069	8.9 %
Total product revenue	107,402	143,827	(36,425)	(25.3)%
Service	36,905	39,054	(2,149)	(5.5)%
Total net revenues	$144,307	$182,881	$(38,574)	(21.1)%

Table of Contents

	Fiscal Year			
	2012	2011	Change	
Automated systems	$119,451	$139,261	$(19,810)	(14.2)%
Integrated systems	12,379	25,413	(13,034)	(51.3)%
Materials characterization systems	11,997	30,100	(18,103)	(60.1)%
Total product revenue	143,827	194,774	(50,947)	(26.2)%
Service	39,054	35,287	3,767	10.7 %
Total net revenues	$182,881	$230,061	$(47,180)	(20.5)%

In 2013, revenue from products decreased by $36.4 million from 2012, principally due to decreased demand from our customers associated with the industry-wide slowdown in memory-related semiconductor capital spending. Approximately $36.5 million of the decrease was attributable to sales of our Automated Systems (principally Atlas®). Integrated Systems accounted for $1.0 million of the decrease (principally IMPULSE®) while Materials Characterization sales increased by $1.1 million. Service revenue decreased by $2.1 million in 2013 principally due to lower upgrade sales.

In 2012, revenue from products decreased by $50.9 million from 2011, principally due to decreased demand from some of our largest customers, particularly in the second half of 2012. Sales of our Automated Systems (primarily Atlas®, Lynx™, NanoGen®, and Mosaic™) accounted for $19.8 million of the decrease. Integrated Systems accounted for approximately $13.0 million of decrease (primarily 9010 Series and IMPULSE®) and Materials Characterization (primarily QS1200, QS2200/3300, RPMBlue™ and VerteX™) decreased by $18.1 million. Service revenue increased by $3.8 million in 2012 compared to 2011 principally due to increased demand for upgrades and services provided under customer contracts during 2012.

Gross margin.

Our gross margin breakdown, which does not include amortization of intangible assets, was as follows:

	Fiscal Year		
	2013	2012	2011
Products	44.6 %	47.2 %	54.5 %
Service	47.2 %	47.4 %	48.1 %

The gross margin on product revenue decreased to 44.6% in 2013 from 47.2% in 2012. The decrease was due to a change in product mix, and from the 25.3% decrease in revenue during 2013, which resulted in increased fixed costs as a percentage of revenue. The gross margin on service revenue remained relatively flat from 2012 to 2013 with lower sales of the higher gross margin upgrades, partially offset by improved margins for services provided under customer contracts.

The gross margin on product revenue decreased to 47.2% in 2012 from 54.5% in 2011. The decrease was primarily due to lower margins in the first half of 2012 on the newly introduced Atlas II® and lower overall revenue volumes in the second half of 2012 which resulted in increased fixed costs as a percentage of revenue. The gross margin on service revenue in 2012 decreased to 47.4%, compared to 48.1% in 2011, primarily due to a decrease of higher margin upgrade sales in the mix of services revenue.

Operating expenses.

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

Table of Contents

	Fiscal Year				
	2013	2012	Change		
Research and development	$32,714	$29,585	$3,129	10.6	%
Selling	27,129	26,457	672	2.5	%
General and administrative	22,101	21,632	469	2.2	%
Amortization of intangible assets	701	776	(75)	(9.7)	%
Restructuring charge	1,740	—	1,740	NM *	
Total operating expenses	$84,385	$78,450	$5,935	7.6	%

*NM = not meaningful

	Fiscal Year				
	2012	2011	Change		
Research and development	$29,585	$23,290	$6,295	27.0	%
Selling	26,457	27,019	(562)	(2.1)	%
General and administrative	21,632	22,901	(1,269)	(5.5)	%
Amortization of intangible assets	776	625	151	24.2	%
Legal settlement	—	2,500	(2,500)	100.0	%
Total operating expenses	$78,450	$76,335	$2,115	2.8	%

Research and development.

Research and development costs increased by $3.1 million or 10.6% in 2013 compared to 2012 related primarily to investment in new platforms and product upgrade programs to improve capability and lower cost of ownership. This increase consisted primarily of a $1.1 million increase in design costs, a $1.0 million increase in engineering materials, a $0.8 million increase in labor costs, and a $0.1 million increase in travel expenses. Investments in research and development personnel and associated projects are part of our strategy to ensure our products remain competitive and meet customer's needs.

Research and development costs increased by $6.3 million or 27.0% in 2012 compared to 2011, primarily related to increased investment in new platforms and product upgrade programs, to improve capability, and lower cost of ownership. This increase consisted primarily of a $2.8 million increase in development projects and related activities, a $1.4 million increase due to labor costs associated with increased headcount largely as a result of the acquisition of Nanda, a $0.8 million increase in depreciation expense and a $0.7 million increase in consulting expense.

Selling.

Selling expenses increased by $0.7 million or 2.5% in fiscal year 2013 compared to fiscal year 2012. The increase in costs is a result of a $0.8 million increase in depreciation expense related to customer evaluation tools and a $0.3 million increase in recruiting expense, partially offset by a $0.4 million decrease in commissions and labor expense.

Selling expenses decreased by $0.6 million or 2.1% in fiscal year 2012 compared to 2011. The decrease was primarily due to a $1.8 million decrease in commission costs and consulting expenses due to overall lower revenue during 2012, partially offset by a $0.7 million increase in depreciation expense and a $0.5 million increase in stock-based compensation.

General and administrative.

General and administrative expenses increased by $0.5 million or 2.2% in fiscal year 2013 compared to 2012. The increase was a result of $0.8 million of higher labor costs, partially offset by $0.3 million in lower telecommunication expenses.

General and administrative expenses decreased by $1.3 million or 5.5% in fiscal year 2012 compared to 2011. The decrease was primarily due to $1.8 million of non-recurring legal and professional fees associated with the acquisition of Nanda in 2011 and a $0.5 million decrease in general legal expense, partially offset by a $0.6 million increase in labor costs and a $0.5 million increase in facilities and software license expense.

Table of Contents

Amortization of intangible assets.

Amortization of intangible assets included in operating expenses in fiscal year 2013 decreased by $0.08 million, compared to 2012, as a result of the reduction in amortization due to intangible assets that became fully amortized in 2013.

Amortization of intangibles assets included in operating expenses in fiscal year 2012 increased by $0.2 million or 24.2%, compared to 2011, primarily as a result of the amortization of intangible assets acquired from Nanda for the full year of 2012, partially offset by a reduction in amortization of other intangible assets that became fully amortized in 2012.

Restructuring charge.

We recorded a restructuring charge of $1.7 million during the third quarter of 2013 as a result of our decision to consolidate a portion of our European operations to improve operational efficiencies. This amount includes charges primarily related to employee severance and acceleration of RSUs in the amount of $0.8 million and $0.9 million, respectively. All cash payments related to the restructuring charge were paid in the fourth quarter of fiscal year 2013. We expect to complete this restructuring plan by May 2014, and expect to incur an additional $0.2 million in restructuring charges over the next five months.

Legal settlement.

On January 13, 2012, we entered into a settlement and limited patent cross license agreement with KLA-Tencor to resolve all existing patent litigation between the parties. Pursuant to the settlement agreement, we agreed to make a one-time payment of $2.5 million to KLA-Tencor and agreed to a cross license of the patents that were subject to the litigation. As a result, we recorded a $2.5 million charge to legal settlement in operating expense in the fourth quarter of fiscal year 2011, which was paid in the first quarter of fiscal year 2012.

Other expense, net.

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

	Fiscal Year			
	2013	2012	Change	
Interest income	$62	$133	$(71)	(53.4)%
Interest expense	(651)	(1,040)	389	(37.4)%
Other income (expense)	(1,267)	48	(1,315)	NM *
Total other expense, net	$(1,856)	$(859)	$(997)	116.1 %

*NM = not meaningful

	Fiscal Year			
	2012	2011	Change	
Interest income	$133	$220	$(87)	(39.5)%
Interest expense	(1,040)	(1,336)	296	(22.2)%
Other income (expense)	48	(66)	114	NM *
Total other expense, net	$(859)	$(1,182)	$323	(27.3)%

*NM = not meaningful

Interest income declined minimally in 2013 from 2012 as the total balances of cash, cash equivalents, and marketable securities remained relatively flat. Interest expense decreased by $0.4 million primarily due to a lower principal balance of the mortgage on our headquarters as a result of monthly payments and a prepayment of $1.4 million in July of 2012. On July 18, 2013, the entire outstanding principal balance of the mortgage and all accrued interest was repaid. Consequently, we expect interest expense to be lower in future periods. Other expense increased by $1.3 million principally due to a $0.4 million

Table of Contents

increase in foreign exchange loss, and from a $0.8 million increase in fair value of contingent consideration liability as a result of fluctuations in unobservable inputs.

During 2012, interest expense decreased $0.3 million compared to fiscal year 2011, due to $2.2 million of principal payments on the mortgage related to our headquarter facility while both interest income and other income changed minimally in 2012 compared to 2011.

Provision for (benefit from) income taxes.

Our provision (benefit) for income taxes was $(9.4) million, $0.2 million, and $15.9 million in 2013, 2012 and 2011, respectively. The decrease in the tax provision for 2013 from 2012 was primarily attributable to our lower pre-tax earnings as well as a one-time benefit associated with the reinstatement of the federal R&D credit for both fiscal years 2012 and 2013. The decrease in the tax provision for 2012 from 2011 was primarily due to lower pre-tax earnings as well as a one-time benefit associated with the recognition of deferred tax assets related to tax elections made in 2012 to include certain foreign subsidiaries as branches for US income tax purposes.

Our benefit from income taxes for 2013 of $(9.4) million reflects an effective tax rate of 40.0%. This rate differs from the Federal statutory rate of 35.0% was primarily due to the reinstatement of the Federal R&D tax credit, which represented a $1.4 million benefit, as well as the benefit from state income taxes, offset by foreign income being taxed at lower rates and equity compensation expenses for which no current tax deduction is available. Our provision for income taxes for 2012 of $0.2 million reflects an effective tax rate of 3.3%. This rate differs from the Federal statutory rate of 35.0% was primarily due to the benefit associated with the Internal Revenue Service approval of tax elections made in 2012 to treat certain foreign subsidiaries as branches for U.S. income tax purposes, as well as foreign income being taxed at lower rates, offset in part by state income taxes and equity compensation expenses for which no current tax deduction is available.

We maintain valuation allowances when it is likely that all or a portion of a deferred tax asset will not be realized. Changes in valuation allowances from period to period are included in our income tax provision in the period of change. In determining whether a valuation allowance is warranted, we take into account such factors as prior earnings history, expected future earnings, unsettled circumstances that, if unfavorably resolved, would adversely affect utilization of a deferred tax asset, carry-back and carry-forward periods, and tax strategies that could potentially enhance the likelihood of realization of a deferred tax asset.

On January 2, 2013, the President signed into law The American Taxpayer Relief Act of 2012 ("ATRA"). Under prior law, a taxpayer was entitled to a research tax credit for qualifying amounts incurred through December 31, 2011. ATRA extended the research credit for two years for qualified research expenditures incurred through the end of 2013. The extension of the research credit was retroactive and included amounts incurred after 2011. The benefit that we received relating to 2012 as a result of the credit extension was $0.6 million. The benefit was recognized in 2013, the year of enactment.

Liquidity and Capital Resources

At December 28, 2013, our cash and cash equivalents, and marketable securities totaled $92.9 million and working capital was $141.8 million, compared to cash and cash equivalents, and marketable securities of $109.9 million and working capital of $158.6 million as of December 29, 2012, and cash and cash equivalents of $97.7 million and working capital of $160.6 million as of December 31, 2011.

Cash flows from operating activities

During the year ended December 28, 2013, cash used by operations was $2.4 million which reflected a net loss of $14.1 million offset by non-cash transactions of $18.7 million and use of $7.0 million in non-cash working capital. Non-cash transactions consisted primarily of depreciation and amortization expense of $8.8 million, stock based compensation of $7.7 million, and inventory write downs of $7.6 million which were partially offset by a $6.9 million decrease in deferred income taxes. The reduction in working capital was primarily due to a $10.4 million increase in accounts receivable, a $11.7 million increase in inventories, and a $1.9 million increase in prepaid expenses, which were partially offset by a $12.7 million increase in deferred revenue and a $4.8 million increase in accounts payable.

During the year ended December 29, 2012, cash provided by operating activities was $24.0 million which reflected net income of $4.5 million and non-cash transactions of $19.8 million, offset by a $0.3 million reduction in non-cash

working capital. Non-cash transactions consisted primarily of depreciation and amortization expense of $8.1 million, stock based compensation of $5.9 million, inventory write down of $3.5 million, and a $2.8 million increase in deferred income taxes, offset by excess tax benefit from equity awards of $0.9 million. The reduction in working capital was primarily due to a $12.6 million decrease in accounts payable, accrued and other liabilities, including a $4.9 million reduction in customer deposits, a

Table of Contents

$2.5 million decrease in accrued legal settlement, and a $2.3 million decrease in notes payable, offset by a $7.7 million decrease in accounts receivable attributable to lower sales volume and increased efforts on collections, a $2.5 million increase in deferred revenue, a $1.1 million decrease in prepaid expenses and other, and a $0.6 million decrease in inventory.

During the year ended December 31, 2011, cash provided by operations was $54.0 million which reflected net income of $28.7 million, non-cash transactions of $13.3 million and a $12.1 million reduction in non-cash working capital. Non-cash transactions primarily consisted of depreciation and amortization expense of $5.0 million, stock based compensation of $4.5 million, excess tax benefit from equity awards of $3.9 million, inventory write down of $3.4 million, and $3.8 million increase in deferred income taxes. Changes in working capital were mostly due to a $16.1 million decrease in receivables resulting from timing of sales and collections, an increase in inventory of $12.2 million, a $12.4 million increase in accruals related to $4.9 million in customer deposits, $2.5 million in accrued legal settlement, and $5.0 million in accrued income taxes.

Cash flows from investing activities

During the year ended December 28, 2013, investing activities accounted for the use of $7.8 million of cash, of which $2.1 million was for the purchase of marketable securities net of sales and maturities and $5.7 million was for purchases of capital equipment.

During the year ended December 29, 2012, investing activities accounted for the use of $51.8 million of cash, of which $47.3 million was for the purchase of marketable securities net of sales and maturities and $5.0 million was for purchases of capital equipment, partially offset by $0.5 million of escrow payment received related to acquisition of Nanda.

During the year ended December 31, 2011, investing activities accounted for the use of $26.7 million of cash, of which $23.9 million was for the acquisition of Nanda, and $2.8 million was for purchases of capital equipment.

Cash flows from financing activities

During the year ended December 28, 2013, financing activities accounted for the use of $7.5 million of cash, of which $5.0 million was used for repurchases and retirements of our common stock, $1.0 million was paid to Zygo related to royalties and sustaining engineering payments, $1.2 million was used for taxes on net issuance of stock awards, and $5.2 million was paid on the mortgage on our corporate headquarters. These activities were partially offset by $5.0 million in proceeds from issuance of common stock from the employee stock purchase program and the exercise of stock options.

During the year ended December 29, 2012, financing activities accounted for the use of $6.8 million of cash, of which $8.5 million was used for repurchases and retirements of our common stock, $0.3 million was paid to Zygo related to royalties and sustaining engineering payments, $0.6 million was used for taxes on net issuance of stock awards, and $2.2 million was paid on the mortgage on our corporate headquarters. These activities were partially offset by proceeds from a $0.9 million excess tax benefit related to equity awards, and $3.9 million in proceeds from issuance of common stock from the employee stock purchase program and the exercise of stock options.

During the year ended December 31, 2011, financing activities contributed $3.7 million of cash that was primarily attributable to $7.2 million from issuance of common stock from the employee stock purchase program and the exercise of stock options and a $3.9 million excess tax benefit related to equity awards. These activities were partially offset by $4.3 million used for repurchases and retirements of our common stock, $2.6 million paid on the mortgage on our corporate headquarters, and $0.4 million paid to Zygo related to royalties and sustaining engineering payments.

Line of Credit - On April 13, 2010, we amended our existing revolving line of credit facility to (i) increase the maximum principal amount available from $15.0 million to $20.0 million, (ii) extend the maturity date of such facility by one year to April 30, 2012, and (iii) decrease the unused revolving line commitment fee from 0.25% per annum to 0.1875% per annum. On April 23, 2012, we amended our revolving line of credit facility to (i) extend the maturity date of such facility by two years to April 30, 2014, (ii) decrease the unused revolving line commitment fee from 0.1875% per annum to 0.10% per annum, and (iii) reduce the minimum interest rate on borrowings from 5.75% to 3.00% per annum.

The instrument governing the facility includes certain financial covenants regarding net tangible net worth. The revolving line of credit agreement includes a provision for the issuance of commercial or standby letters of credit by

the bank on our behalf. The value of all letters of credit outstanding reduces the total line of credit available. The revolving line of credit is collateralized by a blanket lien on all of our domestic assets excluding intellectual property and real estate. The minimum borrowing interest rate is 3.00% per annum. The maximum borrowing allowed on the line of credit is $20.0 million. Borrowing is limited to the lesser of (a) $7.5 million plus the borrowing base or (b) $20.0 million. The borrowing base available as of December 28, 2013 was $12.3 million. As of December 28, 2013, we were not in breach of any restrictive covenants in connection with our line of credit. There were no borrowings against the line of credit during 2013 or 2012 and there are no amounts outstanding on this facility as of December 28, 2013 or December 29, 2012. Although we have no current plans to request advances under this credit facility, we may use the proceeds of any future borrowing for general corporate purposes, acquisitions or expansion of our business.

Table of Contents

Mortgage Loan - In July 2008, we entered into a mortgage loan agreement with General Electric Commercial Finance ("GE") pursuant to which we borrowed $13.5 million secured, in part, by a lien on and security interest in the building and land comprising our principal offices in Milpitas, California. The loan initially bore interest at the rate of 7.18% per annum. Monthly principal and interest payments were based on a twenty year amortization for the first sixty months and fifteen year amortization thereafter. Any remaining principal balance of the loan and any accrued but unpaid interest will be due on August 1, 2018. According to the terms of the loan agreement, we could of made annual pre-payments of up to 20% of the outstanding principal balance without incurring any penalty. GE subsequently sold the mortgage on March 31, 2011 to Sterling Saving Bank; however, no changes were made to the terms of the original loan agreement as a result of the sale. In July 2012, we prepaid $1.4 million of the loan, representing 20% of the outstanding balance, and in July 2011, we prepaid $1.95 million of the loan, representing 20% of the then outstanding balance. On July 18, 2013, we repaid $4.8 million of the loan, representing the entire outstanding principal balance of the loan and all accrued interest. We did not incur any fees associated with the prepayment of the loan. At December 28, 2013 there was no outstanding balance compared to $5.3 million outstanding at December 29, 2012.

Repurchases of Common Stock - On November 29, 2010, our Board of Directors approved a program to repurchase up to $10.0 million of our common stock, referred to as the 2010 program. Stock repurchases under this program occurred as follows: fiscal year 2010, $0.8 million; fiscal year 2011, $4.3 million; and fiscal year 2012, $4.9 million. As of June 30, 2012, we repurchased and retired an aggregate of 667,406 shares of our common stock at a weighted average price of $14.97 per share under the 2010 program utilizing the entire $10.0 million approved by the Board on November 29, 2010, for the repurchase of shares of our common stock.
On May 29, 2012, our Board of Directors approved a program to repurchase up to $20.0 million of our common stock, referred to as the 2012 program. On February 22, 2013, an additional $5.0 million was approved for repurchases of our common stock under the 2012 program. Stock repurchases under this program may be made through open market and privately negotiated transactions, at times and in such amounts as management deems appropriate. The timing and actual number of shares repurchased is dependent on a variety of factors including price, corporate and regulatory requirements and other market conditions. During fiscal year 2012, we repurchased and retired 250,400 shares of our common stock under this approved program at the weighted average price of $14.15 per share.
During fiscal year of 2012, we repurchased and retired a total of 587,766 shares of our common stock at a weighted average price of $14.47 per share collectively under the 2010 and the 2012 programs.

During fiscal year 2013, we repurchased and retired 332,771 shares of our common stock under the 2012 program at the weighted average price of $15.03 per share. As of December 28, 2013, $16.5 million remained available for the future repurchase of shares of our common stock under the 2012 program.

Business Partnership - On June 17, 2009, we announced a strategic business partnership with Zygo Corporation whereby we have purchased inventory and certain other assets from Zygo Corporation, and the two companies entered into a supply agreement. We will make payments to Zygo Corporation (with an estimated present value of $2.8 million as of December 28, 2013) over a period of time as acquired inventory is sold and other aspects of the supply agreement are executed. We made royalty and sustaining engineering payments of $1.0 million and $0.3 million to Zygo in fiscal years 2013 and 2012, respectively. We have evaluated and will continue to evaluate the acquisitions of products, technologies or businesses that are complementary to our business. These activities may result in product and business investments, which may affect our cash position and working capital balances. Some of these activities might require significant cash outlays.
Our principal sources of liquidity are cash and cash equivalent, and marketable securities, cash flow generated from our operations, and, to a lesser extent, borrowings from a line of credit. 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 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 and borrowing availability, combined with cash currently projected to be generated from our operations, will be sufficient to meet our liquidity needs through at least the next twelve months.

Off-Balance Sheet Arrangements

We had no off-balance sheet arrangements or obligations as of December 28, 2013 and December 29, 2012, respectively.

Contractual Obligations

Table of Contents

The following table summarizes our contractual cash obligations as of December 28, 2013, and the effect of such obligations.

		Payments due by period			
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Purchase commitments - inventory [1]	$25,059	$25,059	$0	$0	$0
Fair value of deferred payments to Zygo Corporation related to acquisition [2]	3,492	153	2,339	400	600
Restructuring - severance	120	120	—	—	—
Other long-term liabilities	34	—	—	—	34
Operating lease obligations	3,314	1,382	1,565	360	7
Total	$32,019	$26,714	$3,904	$760	$641

(1) We maintain certain open inventory purchase agreements with our suppliers to ensure a smooth and continuous supply availability for key components. Our liability under these purchase commitments is generally restricted to a forecasted time-horizon as mutually agreed upon between the parties. This forecasted time-horizon can vary among different suppliers. We estimate our open inventory purchase commitment as of December 28, 2013 was approximately $25.1 million. Actual expenditures will vary based upon the volume of the transactions and length of contractual service provided. In addition, the amounts paid under these arrangements may be less in the event that the arrangements are renegotiated or canceled.

(2) On June 17, 2009, we announced a strategic business partnership with Zygo Corporation whereby we have purchased inventory and certain other assets from Zygo Corporation, and the two companies entered into a supply agreement. We will make payments to Zygo Corporation (with an estimated present value of $2.8 million and an estimated future value of $3.5 million as of December 28, 2013) over a period of time as acquired inventory is sold and other aspects of the supply agreement are executed.

Excluded from the contractual obligation table above are $1.3 million of future payments related to uncertain tax positions because we cannot reliably estimate the timing of the settlements with the respective tax authorities.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to financial market risks related to foreign currency exchange rates and interest rates. We do not use derivative financial instruments.

Foreign Currency Risk

A substantial part of our business consists of sales made to customers outside the United States: 67.4%, 75.5%, and 78.1% of sales in 2013, 2012, and 2011, respectively, and 15.6%, 13.9%, and 19.5% of net revenues in 2013, 2012, and 2011, respectively, were denominated in currencies other than the U.S. dollar. Additionally, portions of our costs of net revenues and our operating expenses are incurred by our international operations and denominated in local currencies.

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. The net intercompany balance, exposed to foreign currency risk, at December 28, 2013 was approximately $13.9 million. A hypothetical change of 10% in the relative value of the US

dollar versus local functional currencies could result in an increase or decrease of approximately $1.4 million in transaction gains or losses which would be included in our statement of operations.

For 2013, 2012 and 2011, foreign currency transactions resulted in a loss of $0.7 million, a loss of $0.3 million and a loss of $0.3 million, respectively.

Interest Rate Risk

Our exposure to market risk resulting from changes in interest rates relates primarily to our investment portfolio. At December 28, 2013, and December 29, 2012, we held $48.1 million and $47.0 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 December 28, 2013 and December 29, 2012, the average duration of our portfolio was less than nine months. We do not hold securities for trading purposes.

As of December 28, 2013 and December 29, 2012, there were no amounts borrowed against the line of credit and the interest rate on the GE loan is fixed, therefore, there exists no significant interest rate risks.

Table of Contents

In July 2008, we entered into a loan agreement pursuant to which we borrowed $13.5 million. The loan initially bore interest at the rate of 7.18% per annum, which rate was to reset after five years in 2013 to 3.03% over the then weekly average yield of five-year U.S. Dollar Interest Rate Swaps as published by the Federal Reserve. Monthly principal and interest payments are based on a twenty year amortization for the first sixty months and fifteen year amortization thereafter. The remaining principal balance of the loan and any accrued but unpaid interest was due on August 1, 2018. The loan was secured, in part, by a lien on and security interest in the building and land comprising our principal offices in Milpitas, California. On July 18, 2013, we repaid $4.8 million representing the outstanding balance of the loan. As of December 28, 2013, there was no outstanding balance on the loan. At December 29, 2012, our total debt obligation was $5.3 million, with a long-term portion of $4.4 million.

Table of Contents

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The information required by Item 8 of Form 10-K is presented here in the following order:
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

	Page
Financial Statements:	
Report of Independent Registered Public Accounting Firm (PricewaterhouseCoopers LLP)	39
Consolidated Balance Sheets	40
Consolidated Statements of Operations	41
Consolidated Statements of Comprehensive Income (Loss)	42
Consolidated Statements of Stockholders' Equity	43
Consolidated Statements of Cash Flows	44
Notes to Consolidated Financial Statements	45
Supplementary Data:	
Selected Quarterly Financial Results (Unaudited)	72

Table of Contents

Report of Independent Registered Public Accounting Firm
To the Board of Directors and Stockholders of
Nanometrics Incorporated

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations, comprehensive income (loss), stockholders' equity, and of cash flows present fairly, in all material respects, the financial position of Nanometrics Incorporated and its subsidiaries at December 28, 2013 and December 29, 2012, and the results of their operations and their cash flows for each of the three years in the period ended December 28, 2013, in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedules listed in the accompanying index appearing under Item 15(a)2 present fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 28, 2013, based on criteria established in Internal Control - Integrated Framework 1992 issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express opinions on these financial statements and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/PricewaterhouseCoopers LLP
San Jose, California
March 7, 2014

Table of Contents

NANOMETRICS INCORPORATED
CONSOLIDATED BALANCE SHEETS
(In thousands except per share amounts)

	December 28, 2013	December 29, 2012
ASSETS		
Current assets:		
Cash and cash equivalents	$44,765	$62,915
Marketable securities	48,097	46,993
Accounts receivable, net of allowances of $293 and $82, respectively	31,436	21,388
Inventories	34,520	39,659
Inventories-delivered systems	6,901	2,274
Prepaid expenses and other	10,519	7,492
Deferred income tax assets	14,516	8,593
Total current assets	190,754	189,314
Property, plant and equipment, net	47,439	43,213
Goodwill	11,743	11,352
Intangible assets, net	7,864	10,980
Deferred income tax assets	4,338	3,671
Other assets	696	924
Total assets	$262,834	$259,454
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$10,661	$6,398
Accrued payroll and related expenses	7,853	6,670
Deferred revenue	21,749	8,485
Other current liabilities	7,936	7,822
Income taxes payable	758	424
Current portion of debt obligations	—	928
Total current liabilities	48,957	30,727
Deferred revenue	3,718	4,307
Income taxes payable	1,171	2,135
Other long-term liabilities	1,615	2,140
Debt obligations	—	4,374
Total liabilities	55,461	43,683
Commitments and contingencies (Note 13)		
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; 23,537,275 and 23,250,429, respectively, issued and outstanding	24	23
Additional paid-in capital	244,733	238,326
Accumulated deficit	(37,996)	(23,850)
Accumulated other comprehensive income	612	1,272
Total stockholders' equity	207,373	215,771
Total liabilities and stockholders' equity	$262,834	$259,454

See Notes to Consolidated Financial Statements

40

Table of Contents

NANOMETRICS INCORPORATED
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands except per share amounts)

	Years Ended		
	December 28, 2013	December 29, 2012	December 31, 2011
Net revenues:			
Products	$107,402	$143,827	$194,774
Service	36,905	39,054	35,287
Total net revenues	144,307	182,881	230,061
Costs of net revenues:			
Cost of products	59,509	75,878	88,579
Cost of service	19,489	20,526	18,304
Amortization of intangible assets	2,633	2,549	1,077
Total costs of net revenues	81,631	98,953	107,960
Gross profit	62,676	83,928	122,101
Operating expenses:			
Research and development	32,714	29,585	23,290
Selling	27,129	26,457	27,019
General and administrative	22,101	21,632	22,901
Amortization of intangible assets	701	776	625
Legal settlement	—	—	2,500
Restructuring charge	1,740	—	—
Total operating expenses	84,385	78,450	76,335
Income (loss) from operations	(21,709)	5,478	45,766
Other (income) expense			
Interest income	62	133	220
Interest expense	(651)	(1,040)	(1,336)
Other income (expense), net	(1,267)	48	(66)
Total other expense, net	(1,856)	(859)	(1,182)
Income (loss) before income taxes	(23,565)	4,619	44,584
Provision for (benefit from) income taxes	(9,419)	154	15,899
Net income (loss)	$(14,146)	$4,465	$28,685
Net income (loss) per share:			
Basic	$(0.61)	$0.19	$1.26
Diluted	$(0.61)	$0.19	$1.22
Weighted average shares used in per share calculation:			
Basic	23,290	23,358	22,743
Diluted	23,290	23,845	23,480

See Notes to Consolidated Financial Statements

Table of Contents

NANOMETRICS INCORPORATED
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(In thousands)
(Unaudited)

	Year Ended		
	December 28, 2013	December 29, 2012	December 31, 2011
Net income (loss)	$(14,146)	$4,465	$28,685
Other comprehensive income (loss):			
Change in foreign currency translation adjustment	(818)	(264)	(484)
Employee benefit plan adjustment	151	(11)	(39)
Net change on unrealized gains (losses) on available-for-sale investments	7	(2)	—
Other comprehensive loss	(660)	(277)	(523)
Comprehensive income (loss)	$(14,806)	$4,188	$28,162

See Notes to Consolidated Financial Statements

Table of Contents

NANOMETRICS INCORPORATED
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In thousands, except share amounts)

	Common Stock		Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Income	Total Stockholders' Equity
	Shares	Amount				
Balance, January 1, 2011	22,314,783	$22	$225,755	$ (57,000)	$ 2,072	$ 170,849
Net income				28,685	—	28,685
Employee benefit plan adjustment				—	(39)	(39)
Foreign currency translation adjustments				—	(484)	(484)
Issuance of common stock under stock-based compensation plans	1,133,028	1	10,764	—	—	10,765
Stock-based compensation expense	—	—	4,473	—	—	4,473
Repurchases and retirement of common stock	(265,040)	—	(4,257)			(4,257)
Balance, December 31, 2011	23,182,771	23	236,735	(28,315)	1,549	209,992
Net income				4,465	—	4,465
Employee benefit plan adjustment				—	(11)	(11)
Foreign currency translation adjustments				—	(264)	(264)
Unrealized loss on investments, net of tax					(2)	(2)
Issuance of common stock under stock-based compensation plans	655,424	—	4,205	—	—	4,205
Stock-based compensation expense	—	—	5,890	—	—	5,890
Repurchases and retirement of common stock	(587,766)	—	(8,504)			(8,504)
Balance, December 29, 2012	23,250,429	23	238,326	(23,850)	1,272	215,771
Net loss				(14,146)	—	(14,146)
Employee benefit plan adjustment				—	151	151
Foreign currency translation adjustments				—	(818)	(818)
Unrealized gain on investments, net of tax				—	7	7
Issuance of common stock under stock-based compensation plans	619,617	1	3,733	—	—	3,734
Stock-based compensation expense	—	—	7,674	—	—	7,674
Repurchases and retirement of common stock	(332,771)	—	(5,000)	—	—	(5,000)
Balance, December 28, 2013	23,537,275	$24	$244,733	$ (37,996)	$ 612	$ 207,373

See Notes to Consolidated Financial Statements

Table of Contents

NANOMETRICS INCORPORATED
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Years Ended		
	December 28, 2013	December 29, 2012	December 31, 2011
Cash flows from operating activities:			
Net income (loss)	$(14,146)	$4,465	$28,685
Reconciliation of net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	8,787	8,137	4,983
Stock-based compensation	7,674	5,890	4,473
Excess tax benefit from equity awards	53	(910)	(3,915)
Loss on disposal of fixed assets	177	303	113
Inventory write down	7,579	3,519	3,421
Deferred income taxes	(6,889)	2,752	3,770
Changes in fair value of contingent payments to Zygo Corporation	1,325	129	413
Changes in assets and liabilities:			
Accounts receivable	(10,376)	7,733	16,172
Inventories	(7,024)	1,383	(12,169)
Inventories-delivered systems	(4,627)	(758)	446
Prepaid expenses and other	(1,855)	1,114	(4,747)
Accounts payable, accrued and other liabilities	4,840	(12,567)	4,241
Deferred revenue	12,717	2,472	3,088
Income taxes payable	(666)	346	5,054
Net cash provided by (used in) operating activities	(2,431)	24,008	54,028
Cash flows from investing activities:			
Escrow payment received related to Nanda acquisition	—	508	—
Purchase of Nanda's net assets, net of cash received	—	—	(23,912)
Sales of marketable securities	—	3,000	—
Maturities of marketable securities	47,089	8,336	—
Purchases of marketable securities	(49,182)	(58,647)	—
Purchases of property, plant and equipment	(5,689)	(4,990)	(2,755)
Net cash used in investing activities	(7,782)	(51,793)	(26,667)
Cash flows from financing activities:			
Payments to Zygo Corporation related to acquisition	(1,004)	(300)	(432)
Repayments of debt obligations	(5,224)	(2,210)	(2,571)
Proceeds from sale of shares under employee stock option plans and purchase plan	4,967	3,913	7,186
Excess tax benefit from equity awards	(53)	910	3,915
Taxes paid on net issuance of stock awards	(1,181)	(618)	(126)
Repurchases of common stock	(5,000)	(8,504)	(4,257)
Net cash provided by (used in) financing activities	(7,495)	(6,809)	3,715
Effect of exchange rate changes on cash and cash equivalents	(442)	(190)	163
Net increase (decrease) in cash and cash equivalents	(18,150)	(34,784)	31,239
Cash and cash equivalents, beginning of period	62,915	97,699	66,460
Cash and cash equivalents, end of period	$44,765	$62,915	$97,699
Supplemental disclosure of cash flow information:			
Cash paid for interest	$232	$522	$757

Cash paid for income taxes	$313	$5,113	$11,149

See Notes to Consolidated Financial Statements

NANOMETRICS INCORPORATED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1. Nature of Business, Basis of Presentation and Significant Accounting Policies

Description of Business – Nanometrics Incorporated (“Nanometrics” or the “Company”) and its wholly owned subsidiaries design, manufacture, market, sell and support thin film, optical critical dimension 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 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 Company’s optical critical dimension 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 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 consolidated financial statements include Nanometrics Incorporated and its wholly-owned subsidiaries. All intercompany accounts and transactions have been eliminated in consolidation.

Fiscal Year – The Company uses a 52/53 week fiscal year ending on the Saturday nearest to December 31. Accordingly, 2013 consisted of 52 weeks ending December 28, 2013 (fiscal year 2013), 2012 consisted of 52 weeks ending December 29, 2012 (fiscal year 2012), and 2011 consisted of 52 weeks ending December 31, 2011 (fiscal year 2011).

Use of Estimates – The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America 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 assets and long-lived assets, warranty accruals, income taxes, valuation of stock-based compensation, and contingencies.

Foreign Currency Translation – The assets and liabilities of foreign subsidiaries are translated from their respective local functional currencies at exchange rates in effect at the balance sheet date and income and expense accounts are translated at average exchange rates during the reporting period. Resulting translation adjustments are reflected in “Accumulated other
comprehensive income,” a component of stockholders’ equity. Foreign currency transaction gains and losses are reflected in
“Other income (expense)” in the consolidated statements of operations in the period incurred, and consists of a $0.7 million million loss, $0.3 million loss and $0.3 million loss for the years ended December 28, 2013, December 29, 2012, and December 31, 2011, respectively.

Revenue Recognition – The Company derives revenue from the sale of process control metrology and inspection systems (“product revenue”) as well as spare part sales, billable service, service contracts, and upgrades (together “service revenue”). Upgrades are a group of parts and/or software that change the existing configuration of a product

and are included in service revenue. They are distinguished from product revenue, which consists of complete, automated process control metrology 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 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.

For 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 contract. 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.

As part of its customer services, 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 upgrades is recognized when the upgrades are delivered to the customer, provided that all other recognition criteria have been met.

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 it includes 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 estimated fair value and that revenue is recognized upon completion of the installation. Billable services are billed on a time and materials basis and performed as requested by customers. 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 generally grant its customers a general right of return or any refund terms and imposes a penalty on orders canceled prior to the scheduled shipment date.

The Company regularly evaluates its revenue arrangements to identify deliverables and to determine whether these deliverables are separable into multiple units of accounting. In accordance with the new guidance, the Company allocates the arrangement consideration among the deliverables based on relative selling prices. The Company has established vendor specific objective evidence ("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 ("BESP") to determine standalone selling price for such deliverable. The Company does not use third party evidence ("TPE") 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 BESP, 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 BESP 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.

Business Combinations - The Company allocates the purchase price of acquired companies to the tangible and intangible assets acquired and liabilities assumed based upon their estimated fair values at the acquisition date. The purchase price allocation process requires management to make significant estimates and assumptions, especially at the acquisition date with respect to intangible assets and inventory acquired. While best estimates and assumptions as a part of the purchase price allocation process are used to accurately value assets acquired and liabilities assumed at the acquisition date, estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from

the acquisition date, the Company may record adjustments to the assets acquired and liabilities assumed, with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded in the consolidated statements of operations.

The Company estimates the fair value of inventory acquired by utilizing the net realizable value method which is based on the estimated sales price of the product less appropriate costs to complete and selling costs. Examples of critical estimates in valuing certain intangible assets that were acquired or may be acquired in the future include but are not limited to:

- future expected cash flows from sales of products, services and acquired developed technologies and patents;
- expected costs to develop the in-process research and development into commercially viable products and estimated cash flows from the projects when completed;
- the acquired company's customer relationships, as well as assumptions about the estimated useful lives of the relationships; and
- discount rates.

Unanticipated events and circumstances may occur that may affect the accuracy or validity of assumptions, estimates or actual results associated with business combinations.

Cash, Cash Equivalents and Marketable Securities – The Company considers all highly liquid investments with original maturities of three months or less, when purchased, to be cash equivalents. Marketable securities are classified as “available-for-sale” and are reported at fair value with unrealized gains and losses reported in stockholders' equity as a component of other comprehensive income. The cost of securities sold is based on the specific identification method. The Company classifies its investments as current based on the nature of the investment and their availability for use in current operations. The Company reviews its investment portfolio quarterly to determine if any securities may be other-than-temporarily impaired due to increased credit risk, changes in industry or sector of a certain instrument or ratings downgrades.

Fair Value of Financial Instruments – Financial instruments include cash and cash equivalents, accounts receivable, accounts payable and debt obligations. Cash equivalents are stated at fair market value based on quoted market prices. The carrying values of accounts receivable and accounts payable approximate their fair values because of the short-term maturity of these financial instruments. The estimated fair market value of debt is based on the discounted cash flow with inputs that are observable in the market or that could be derived from or corroborated with observable market data including interest rates based on yield curves of similar debt issued by parties with credit ratings similar to the Company's level.

Allowance for Doubtful Accounts – The Company maintains allowances for estimated losses resulting from the inability of its customers to make required payments. Credit limits are established through a process of reviewing the financial history and stability of its customers. Where appropriate and available, the Company obtains credit rating reports and financial statements of customers when determining or modifying their credit limits. The Company regularly evaluates the collectability of its trade receivable balances based on a combination of factors such as the length of time the receivables are past due, customary payment practices in the respective geographies and historical collection experience with customers. The Company believes that its allowance for doubtful accounts adequately reflects the risk associated with its receivables. If the financial conditions of a customer were to deteriorate, resulting in their inability to make payments, the Company may need to record additional allowances, which would result in additional general and administrative expenses being recorded for the period in which such determination was made.

Inventories – Inventories are stated at the lower of cost or market. The Company is exposed to a number of economic and industry factors that could result in portions of inventory becoming either obsolete or in excess of anticipated usage, or saleable only for amounts that are less than their carrying amounts. These factors include, but are not limited to, technological changes in the market, the Company’s ability to meet changing customer requirements, competitive

pressures in products and prices, and the availability of key components from suppliers. The Company has established inventory reserves when conditions exist that suggest that inventory may be in excess of anticipated demand or is obsolete based upon assumptions about future demand for the Company's products and market conditions. Once a reserve has been established, it is maintained until the part to which it relates is sold or is otherwise disposed of. The Company regularly evaluates its ability to realize the value of inventory based on a combination of factors including the following: historical usage rates, forecasted sales of usage, product end-of-life dates, estimated current and future market values and new product introductions. For demonstration inventory, the Company also considers the age of the inventory and potential cost to refurbish the inventory prior to sale. Demonstration inventory is amortized over its useful life and the amortization expense is included in total inventory write down on the statements of cash flows. When recorded, reserves are intended to reduce the carrying value of the Company's inventory

to its net realizable value. If actual demand for the Company's products deteriorates, or market conditions are less favorable than those that the Company projects, additional reserves may be required.

Inventories – delivered systems – The Company reflects the cost of systems that were invoiced upon shipment but deferred for revenue recognition purposes separate from its inventory held for sale as "Inventories – delivered systems."

Property, Plant and Equipment – Property, plant and equipment are stated at cost. Depreciation is computed using the straight–line method over the following estimated useful lives of the assets:

Building and Improvements	5 - 40 years
Machinery and equipment	3 - 10 years
Furniture and fixtures	3 - 10 years

Goodwill and Intangible Assets – Goodwill is initially recorded when the purchase price paid for an acquisition exceeds the estimated fair value of the net identified tangible and intangible assets acquired. Intangible assets with finite lives are amortized over their respective useful lives on a straight-line basis and are also evaluated annually for impairment or whenever events or circumstances occur which indicate that those assets might be impaired. Goodwill and indefinite lived assets are not amortized but tested annually for impairment. The Company's impairment review process is completed during the fourth quarter of each year or whenever events, or circumstances occur which indicate that an impairment may have occurred. The Company assesses qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying value. If, after assessing the qualitative factors, the Company determines that it is not likely that the fair value of a reporting unit is less than its carrying value, then performing the two-step impairment test is unnecessary. However, if the Company concludes otherwise, then it is required to perform the first step of the two-step goodwill impairment test. The first step requires a comparison of the fair value of Nanometrics' reporting unit to its net book value. If the fair value of the reporting unit is greater than its carrying value, then no impairment is deemed to have occurred. If the fair value is less, then the second step must be performed to determine the amount, if any, of actual impairment. Amortization of intangible assets with finite lives are computed using the straight-line method over the following estimated useful lives of the assets:

Developed technology	5 -10 years
Customer relationships	2 -10 years
Brand name	5 -10 years
Patented technology	7 -10 years
Trademark	5 years

Long-Lived Assets – The Company evaluates its long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. When the sum of the undiscounted future net cash flows expected to result from the use of the asset and its eventual disposition is less than its carrying amount, impairment may exist. To determine the amount of impairment, the Company compares the fair value of the asset to its carrying value. If the carrying value of the asset exceeds its fair value, an impairment loss equal to the difference is recognized. See Note 3, "Acquisition, Goodwill Impairment and Long-lived Asset Impairment," for further details.

Income Tax Assets and Liabilities – The Company accounts for income taxes such that deferred tax assets and liabilities must be recognized using enacted tax rates for the effect of temporary differences between the book and tax accounting for assets and liabilities. Also, deferred tax assets are reduced by a valuation allowance to the extent that management cannot conclude that it is more likely than not that a portion of the deferred tax asset will be realized in the future. The Company evaluates the deferred tax assets on a continuous basis throughout the year to determine whether or not a valuation allowance is appropriate. Factors used in this determination include future expected income

and the underlying asset or liability which generated the temporary tax difference. The income tax provision is primarily impacted by federal statutory rates, state and foreign income taxes and changes in the valuation allowance.

Accumulated Other Comprehensive Income – The composition of accumulated other comprehensive income (loss) was as follows (in thousands):

Table of Contents
NANOMETRICS INCORPORATED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

	Years Ended			
	Foreign Currency Translations	Defined Benefit Pension Plans	Unrealized Income (Loss) on Investment	Accumulated Other Comprehensive Income
Balance as of December 31, 2011	$1,717	$(168)	$—	$1,549
Current period change	(264)	(11)	(2)	(277)
Balance as of December 29, 2012	1,453	(179)	(2)	1,272
Current period change	(818)	151	7	(660)
Balance as of December 28, 2013	$635	$(28)	$5	$612

The items above, except for unrealized income (loss) on investment, did not impact the Company's income tax provision.

Product Warranties – The Company sells the majority of its products with a twelve months repair or replacement warranty from the date of acceptance, which generally represents the date of shipment. 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 reported 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 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 us in estimating the warranty accrual. The warranty accrual represents the best estimate of the amount necessary to settle future and existing claims on products sold as of the balance sheet date. The Company periodically assesses the adequacy of its recorded warranty reserve and adjusts the amounts in accordance with changes in these factors.

Guarantees – In addition to product warranties, from time to time, in the normal course of business, the Company indemnifies certain customers with whom it enters into a contractual relationship. The Company has agreed to hold the other party harmless against third party claims that its products, when used for their intended purpose(s), infringe the intellectual property rights of such third party or other claims made against certain parties. 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 the estimated fair value of these agreements is minimal. Accordingly, no liabilities have been recorded for these obligations as of December 28, 2013 and December 29, 2012.

Shipping and Handling Costs – Shipping and handling costs are included as a component of cost of revenues.

Advertising Costs – The Company expenses advertising costs as incurred. Advertising costs were $0.2 million in 2013, $0.1 million in 2012, and $0.2 million in 2011.

Stock-Based Compensation – The Company estimates the value of employee stock options on the date of grant using the Black-Scholes model. The determination of fair value of share-based payment awards on the date of grant using an option-pricing model is affected by the Company's stock price as well as assumptions regarding a number of highly complex and subjective variables. These variables include, but are not limited to, the expected stock price volatility over the term of the awards, and actual and projected employee stock option exercise behaviors. The expected term of options granted is calculated based on the simplified method allowed under SEC Staff Accounting Bulletin 107 ("SAB 107"). The expected volatility is based on the historical volatility of the Company's stock price.

Defined Employee Benefit Plans – The Company maintains a defined benefit pension plan in Taiwan for which current service costs are charged to operations as they accrue based on services rendered by employees during the year.

Pension benefit obligations are determined by using management's actuarial assumptions, including discount rates, assumed asset rates of return, compensation increases and employee turnover rates.

Net Income (Loss) Per Share - Basic net income (loss) per share excludes dilution and is computed by dividing net income (loss) by the number of weighted average common shares outstanding for the period. Diluted net income (loss) per share reflects the potential dilution from outstanding dilutive stock options (using the treasury stock method) and shares

issuable under the employee stock purchase plan. The Company had net income in fiscal years 2012 and 2011, therefore, the potential dilutive effect of stock options was considered to calculate the diluted income per share. In applying the treasury stock method, 0.9 million and 0.5 million of stock option shares for fiscal years 2012 and 2011, respectively, were excluded because their effect was anti-dilutive.

Certain Significant Risks and Uncertainties – Financial instruments that potentially subject us to a concentration of credit risk consist of cash, cash equivalents, marketable securities, and accounts receivable. The Company's cash and cash equivalents are primarily invested in deposit accounts and money market accounts with large financial institutions. At times, these deposits and securities may exceed federally insured limits; however, the Company has not experienced any losses on such accounts. The Company invests its cash not required for use in operations in high credit quality securities based on the Company's investment policy. The Company's investment policy provides guidelines and limits regarding credit quality, investment concentration, investment type, and maturity that the Company believes will provide liquidity while reducing risk of loss of capital. Investments are of a short-term nature and include investments in commercial paper, corporate debt securities, U.S. Treasury, U.S. Government, and U.S. Agency debt.

The Company sells its products primarily to end users in the United States, Asia and Europe and, generally, does not require its customers to provide collateral or other security to support accounts receivable. Management performs ongoing credit evaluations of its customers' financial condition and maintains an allowance for estimated potential bad debt losses. The Company's customer base is highly concentrated and historically, a relatively small number of customers have accounted for a significant portion of its revenues. Aggregate revenue from the Company's top five largest customers in 2013, 2012 and 2011 consisted of 71%, 74% and 67%, respectively, of its total net revenues. The Company participates in a dynamic high technology industry and believes that changes in any of the following areas could have a material adverse effect on its future financial position, results of operations or cash flows. Advances and trends in new technologies and industry standards; competitive pressures in the form of new products or price reductions on current products; changes in product mix; changes in the overall demand for products offered; changes in third-party manufacturers; changes in key suppliers; changes in certain strategic relationships or customer relationships; litigation or claims against the Company based on intellectual property, patent, product, regulatory or other factors; fluctuations in foreign currency exchange rates; risk associated with changes in domestic and international economic and/or political regulations; availability of necessary components or sub-assemblies; disruption of manufacturing facilities; and its ability to attract and retain employees necessary to support its growth.

Certain components and sub-assemblies used in the Company's products are purchased from a sole supplier or a limited group of suppliers. In particular, the Company currently purchases its spectroscopic ellipsometer and robotics used in its advanced measurement systems from a sole supplier or a limited group of suppliers located in the United States. Any shortage or interruption in the supply of any of the components or sub-assemblies used in its products or its inability to procure these components or sub-assemblies from alternate sources on acceptable terms could have a material adverse effect on its business, financial condition and results of operations.

Note 2. Recent Accounting Pronouncements

Recently Issued Accounting Pronouncements

In July 2013, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update No. 2013-11, Income Taxes (Topic 740): Presentation of an Unrecognized Tax Benefit When a Net Operating Loss Carryforward, a Similar Tax Loss, or a Tax Credit Carryforward Exists (a consensus of the FASB Emerging Issues Task Force) ("ASU 2013-11"), which provides that a liability related to an unrecognized tax benefit would be offset against a deferred tax asset for a net operating loss carryforward, a similar tax loss or a tax credit carryforward if such settlement is required or expected in the event the uncertain tax position is disallowed. In situations in which a net operating loss

carryforward, a similar tax loss or a tax credit carryforward is not available at the reporting date under the tax law of the jurisdiction or the tax law of the jurisdiction does not require, and the entity does not intend to use, the deferred tax asset for such purpose, the unrecognized tax benefit will be presented in the financial statements as a liability and will not be combined with deferred tax assets. The amendments should be applied prospectively to all unrecognized tax benefits that exist at the effective date. Retrospective application is permitted. ASU 2013-11 is effective for fiscal years and interim periods beginning after December 15, 2013. The Company expects adoption of this standard to cause a balance sheet reclassification reducing long-term liability and deferred tax assets.

Table of Contents
NANOMETRICS INCORPORATED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

In February 2013, the FASB issued ASU No. 2013-02, Comprehensive Income (Topic 220) - Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income ("ASU 2013-02") to require reclassification adjustments from other comprehensive income to be presented either in the financial statements or in the notes to the financial statements, which we have done within Note 13 - "Equity and Stock Based Compensation Plans". ASU 2013-02 does not change the current requirements for reporting net income or other comprehensive income in the financial statements. ASU 2013-02 was effective for the period ending March 30, 2013, and is applied prospectively.

Note 3. Acquisition, Goodwill Impairment and Long-lived Asset Impairment

The Company did not complete any acquisitions in 2013. As described below, the Company acquired Nanda Technologies GmbH in 2011. While the Company uses best estimates and assumptions as part of the purchase price allocation process to value assets acquired and liabilities assumed at the business combination date, estimates and assumptions are subject to refinement. As a result, during the preliminary purchase price allocation period, which may be up to one year from the business combination date, the Company records adjustments to the assets acquired and liabilities assumed, with the corresponding offset to goodwill. The Company records adjustments to assets acquired or liabilities assumed subsequent to the purchase price allocation period in the operating results in the period in which the adjustments were determined. In the twelve month period ended December 29, 2012, the Company recorded a $0.6 million reduction in the fair value of royalty payments to Real Time Metrology Inc. ("RTM") with a corresponding decrease of $0.4 million in goodwill and $0.2 million decrease in intangible assets. In the twelve month period ended December 29, 2012, the Company received $0.5 million in cash from the escrow and recorded a corresponding decrease of $0.5 million to goodwill.

The total purchase price allocated to the tangible assets acquired was assigned based on the fair values as of the date of the acquisition. The fair value assigned to identifiable intangible assets acquired was determined using the income approach which discounts expected future cash flows to present value using estimated assumptions determined by management. The Company believes that these identified intangible assets will have no residual value after their estimated economic useful lives.

Acquisition of Nanda Technologies GmbH in 2011

On November 21, 2011, the Company acquired 100% of the outstanding shares of Nanda Technologies GmbH (“Nanda”), a privately-held company with headquarters near Munich, Germany. The total purchase price consisted of approximately $24.6 million in net cash after an adjustment of $0.5 million that was formerly held in escrow and paid to the Company during the twelve month period December 29, 2012, and subject to certain post-closing adjustments associated with Nanda's working capital as of the acquisition date. As a result of the acquisition, the Company obtained a new technology and product line that enables the capture of full-wafer surface inspection images at high-volume production speeds. The transaction met the conditions of a business combination under ASC 805 and was accounted for under this guidance. The goodwill balance related to the acquisition of Nanda at December 28, 2013 was $11.7 million. In addition to the transactions above, the difference in the goodwill balance between at the time of acquisition, $11.6 million, and at December 28, 2013, $11.7 million, was due to foreign currency exchange rate fluctuations.
Recognized amounts of identifiable assets acquired and liabilities assumed (in thousands):

Table of Contents
NANOMETRICS INCORPORATED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

	Amount
Cash and equivalents	$1,239
Account receivables	724
Inventories	1,440
Property, plant and equipment – machinery and equipment	616
Other assets	227
Developed technology (included in intangibles)	9,042
Customer relationships (included in intangibles)	1,040
In-process research and development (included in intangibles)	308
Liabilities	(1,603)
Total identifiable net assets	13,033
Goodwill	11,610
Total purchase consideration	$24,643

Inventories were measured at fair value as of the date of the acquisition. In estimating the fair value of finished goods and work-in-process inventory, the Company made assumptions about the selling price and selling costs associated with inventory.

This acquisition resulted in the Company recording intangible assets of $9.0 million of developed technology, $1.0 million of customer relationships, and $0.3 million of in-process research and development. The developed technology represents Nanda's full wafer, high volume inspection technology and was valued by discounting the estimated future net cash flows of this technology to their net present value utilizing the income approach. The value of the developed technology will be amortized over its estimated useful life of five years. The value of the customer relationship asset was determined based on management's estimates of the costs that would have been incurred to replicate Nanda's existing customer relationships. Based on industry experience, management estimates the useful life of the customer relationship asset to be three years, and the value of this asset will be amortized over this period. The in-process research and development asset was valued by discounting the estimated future net cash flows of the asset to their net present value utilizing the income approach. During fiscal year 2012, the $0.3 million of intangible assets related to in-process research and development as of December 31, 2011 was completed and incorporated in products sold during 2012 and the asset was reclassified to developed technology as of December 29, 2012.

The purchase price for this transaction exceeded the fair value allocated to tangible and identifiable intangible assets. The excess purchase price over the fair value of identifiable assets and liabilities of approximately $11.6 million was recorded as goodwill. The Company establishes reporting units based on its reporting structure. The acquisition of Nanda did not trigger any significant changes to the existing reporting structure of the Company. Therefore, the Company continues to operate as a single reporting unit.

The Company expects to benefit from the goodwill through utilization of Nanda's technology in existing Nanometrics products, estimated future sales of existing Nanometrics products to Nanda's established customer base, incremental sales of Nanda's products through Nanometrics worldwide sales and service channels, and efficiencies expected to be achieved from the manufacturing of Nanda's products using Nanometrics operational facilities and processes.

The following table summarizes the identifiable intangible assets acquired as part of the acquisition, and adjustments to carrying value include foreign currency translation adjustments and adjustments to preliminary purchase price allocation during the fiscal years 2013, 2012 and 2011 (in thousands):

Table of Contents
NANOMETRICS INCORPORATED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

	Net carrying value as of December 29, 2012	Adjustments to carrying value during 2013	Amortization expense during 2013	Net carrying amount as of December 28, 2013
Developed technology	$7,130	$315	$(1,961)	$5,484
Customer relationships	639	35	(364)	310
In-process research and development	—	—	—	—
Total identifiable intangible assets acquired	$7,769	$350	$(2,325)	$5,794

	Net carrying value as of December 31, 2011	Adjustments to carrying value during 2012	Amortization expense during 2012	Net carrying amount as of December 29, 2012
Developed technology	$8,603	$279	$(1,752)	$7,130
Customer relationships	957	12	(330)	639
In-process research and development	316	(316)	—	—
Total identifiable intangible assets acquired	$9,876	$(25)	$(2,082)	$7,769

	Fair Value as of acquisition date, November 21, 2011	Adjustments to carrying value during 2011	Amortization expense during 2011	Net carrying amount as of December 31, 2011
Developed technology	$9,200	$(393)	$(204)	$8,603
Customer relationships	1,040	(45)	(38)	957
In-process research and development	330	(14)	—	316
Total identifiable intangible assets acquired	$10,570	$(452)	$(242)	$9,876

Prior to the acquisition, the Company had a pre-existing relationship with Nanda. In December 2010, the Company acquired certain patents from RTM under an asset purchase agreement. As part of the asset purchase, the Company assumed an existing license agreement between Nanda and RTM. Under the license agreement, Nanda is obligated to pay Nanometrics an annual royalty based on the number of tools sold with a minimum royalty payment. Under the asset purchase agreement with RTM, Nanometrics is required to remit to RTM 100% of the royalty payments received from Nanda for the first three years subsequent to the acquisition of the patents, and 50% of the royalty payments received subsequently until March 2018. In 2013, the amount of minimum royalty payments received by Nanometrics and remitted to RTM was immaterial.

As a result of the acquisition of Nanda in November 2011, a contingent liability of $0.6 million has been recognized for the estimated royalty payments due to the existing license agreement between Nanda and RTM that Nanometrics assumed. The fair value of the contingent liability was estimated based on the projected system sales and the related estimated royalty obligations. The contingent liability was reduced to zero in the first quarter of 2012 and was zero as of December 28, 2013.

The unaudited pro forma financial information in the table below summarizes the combined results of operations for Nanometrics and Nanda as though the acquisition of Nanda occurred as of the beginning of fiscal 2011. The pro forma

financial information for all periods presented also includes the business combination accounting effects resulting from the acquisition including additional amortization charges of $2.4 million in fiscal year 2011 relating to acquired intangible assets. Additional adjustments were made to account for additional stock-based compensation charges for restricted stock units awarded of $0.8 million in fiscal year 2011, and there were no related tax effects in fiscal year 2011 of the pro forma adjustments. The pro forma financial information presented below is for informational purposes only and is not indicative of the results of operations that would have been achieved had Nanda been combined with the Company as of the beginning of fiscal year 2011.

Table of Contents
NANOMETRICS INCORPORATED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The unaudited pro forma financial information combines the historical results of Nanometrics for fiscal year 2011, the historical results of Nanda for the twelve months ended December 31, 2011, and the effects of the pro forma adjustments described above.

(In thousands, except per share amounts)	Fiscal Year Ended December 31, 2011
Total revenues	$232,418
Net income	24,939
Net income per share:	
Basic	1.10
Diluted	1.06

There were no business acquisitions made by the Company during fiscal years 2013 and 2012.

Goodwill Impairment and Long-lived Asset Impairment

The Company’s impairment review process is completed during the fourth quarter of each year, or whenever events or circumstances occur that indicate that an impairment may have occurred. The goodwill impairment assessment involves three tests, Step 0, Step 1 and Step 2. The Company performs a Step 0 test, which involves an initial qualitative assessment to
determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying value. If, after assessing the qualitative factors, the Company determines that it is more likely than not that the fair value of a reporting unit is less than its carrying value, then performing the two-step impairment test is necessary. Otherwise, no further testing is necessary.

The Company completed its annual goodwill impairment assessment during the fourth quarter of 2013 by first performing a Step 0 qualitative assessment. As part of this assessment, the Company considered the trading value of the Company's stock, the industry trends, and the Company's sales forecast and products plans. The Company concluded that it was more likely than not that the fair value was more than the carrying values of the Company's reporting unit and therefore did not proceed to the Step 1 goodwill impairment test.

The process of evaluating the potential impairment of long-lived assets is highly subjective and requires significant judgment. In estimating the fair value of these assets, the Company made estimates and judgments about future revenues and cash flows. The Company’s forecasts were based on assumptions that are consistent with the plans and estimates the Company is using to manage its business. Changes in these estimates could change the Company’s conclusion regarding impairment of the long-lived assets and potentially result in future impairment charges for all or a portion of their balance at December 28, 2013. The Company did not record any impairment charges in fiscal year 2013.

The Company assesses if there have been triggers that may require it to evaluate the reasonableness of the remaining estimated useful lives of its intangible assets. No such triggers were identified during fiscal year 2013.

Note 4. Fair Value Measurements and Disclosures
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 Company determines the fair values of its financial instruments based on the fair value hierarchy established in ASC 820, 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 three levels that may be used to measure fair value:

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

Table of Contents
NANOMETRICS INCORPORATED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

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.

The following table presents 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):

	December 28, 2013 Fair Value Measurements Using Input Types				December 29, 2012 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	$876	$—	$—	$876	$110	$—	$—	$110
Commercial paper and corporate debt securities	—	750	—	750	—	2,600	—	$2,600
Cash and Cash Equivalents	876	750	—	1,626	110	2,600	—	2,710
Marketable Securities:								
U.S. Treasury, U.S. Government and U.S. Government agency debt securities	5,036	11,980	—	17,016	4,997	19,130	—	24,127
Commercial paper and corporate debt securities	—	31,081	—	31,081	—	22,866	—	22,866
Total	5,036	43,061	—	48,097	4,997	41,996	—	46,993
Total assets:	$5,912	$43,811	$—	$49,723	$5,107	$44,596	$—	$49,703
Liabilities:								
Contingent consideration payable	$—	$—	$2,783	$2,783	$—	$—	$2,462	$2,462

(1) Excludes $43.1 million and $60.2 million held in operating accounts as of December 28, 2013 and December 29, 2012, respectively.

Changes in Level 3 liabilities	
Fair value at December 31, 2011	$3,194
Payments made to Zygo Corporation	(300)
Addition: Fair value of royalty payment to RTM related to acquisition of Nanda	(561)
Change in fair value included in earnings, Zygo	129
Fair value at December 29, 2012	2,462

Payments made to Zygo Corporation	(1,004)
Change in fair value included in earnings, Zygo	1,325
Fair Value at December 28, 2013	$2,783

Table of Contents
NANOMETRICS INCORPORATED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

As of December 28, 2013, the Company had liabilities of $ 2.8 million resulting from the acquisition of certain assets from Zygo Corporation (“Zygo”), which are measured at fair value on a recurring basis, and changes in fair value recorded in Other income (expense), net. Of the $2.8 million of Zygo liability at December 28, 2013, $1.3 million was a current liability and $1.5 million was a long-term liability. The fair values of these liabilities were determined using Level 3 inputs using a discounted cash flow model incorporating assumptions that market participants would use in their estimates of fair value. Some of these assumptions included estimates for discount rate, timing and amount of cash flows.

As of December 29, 2012, the Company had liabilities of $2.5 million resulting from the acquisition of certain assets from Zygo which are measured at fair value on a recurring basis. Of the $2.5 million of Zygo liability at December 29, 2012, $0.7 million was a current liability and $1.8 million was a long-term liability.

In the twelve month period ended December 29, 2012, the Company recorded a $0.6 million reduction in the fair value of royalty payments to RTM with a corresponding decrease of $0.4 million to goodwill and $0.2 million to intangible assets. See Note 4 for further details.

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 marketable securities as of December 28, 2013 were available-for-sale and reported at fair value based on the estimated or quoted market prices as of the balance sheet date. Unrealized gains or losses are recorded in accumulated other comprehensive income (loss) within stockholders' equity.

The gross unrealized gains and gross unrealized losses for the year ended December 28, 2013 were insignificant and no marketable securities had other than temporary losses as of December 28, 2013. All marketable securities as of December 28, 2013 had maturity dates of less than two years and were not invested in foreign entities.

The fair values of the marketable securities that are classified as Level 1 in the table above were derived from quoted market prices as substantially all of these instruments have maturity dates, if any, within one year from the date of purchase and active markets for these instruments exist. 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 or quoted market prices for similar instruments. The fair value of the acquisition-related liabilities were determined using Level 3 inputs as described above.

Refer to Note 12, "Line of Credit and Debt Obligations," for the carrying value and fair value of the Company's debt obligations.

Note 5. Accounts Receivable

The Company maintains arrangements under which eligible accounts receivables in Japan are sold without recourse to unrelated third-party financial institutions. These receivables were not included in the consolidated balance sheet as the criteria for sale treatment had been met. After a transfer of financial assets, an entity stops recognizing the financial assets when control has been surrendered. The agreement met the criteria of a true sale of these assets since the acquiring party retained the title to these receivables and had assumed the risk that the receivables will be collectible. The Company pays administrative fees as well as interest ranging from 1.21% 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 $6.3 million and $6.7 million of receivables during fiscal years ended December 28, 2013 and December 29, 2012. respectively. There were no material gains or losses on the sale of such receivables. There were zero amounts due from such third party financial institutions at December 28, 2013 and December 29, 2012.

Note 6. Inventories

Inventories are stated at the lower of cost (which approximates actual cost on a first-in, first-out basis), or market. Inventories consist of the following (in thousands):

Table of Contents
NANOMETRICS INCORPORATED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

	At December 28, 2013	December 29, 2012
Raw materials and sub-assemblies	$19,655	$22,477
Work in process	7,597	5,812
Finished goods	7,268	11,370
Inventories	34,520	39,659
Inventories-delivered systems	6,901	2,274
Total inventories	$41,421	$41,933

The Company reflects the cost of systems that were invoiced upon shipment but deferred for revenue recognition purposes separate from its inventory held for sale as "Inventories-delivered systems."

Note 7. Property, Plant and Equipment
Property, plant and equipment consist of the following (in thousands):

	At December 28, 2013	December 29, 2012
Land	$15,569	$15,573
Building and improvements	19,403	19,231
Machinery and equipment	29,671	21,523
Furniture and fixtures	2,308	2,228
Capital in progress	5,833	4,377
Total property, plant and equipment, gross	72,784	62,932
Accumulated depreciation	(25,345)	(19,719)
Total property, plant and equipment, net	$47,439	$43,213

Total depreciation expense for the years ended December 28, 2013, December 29, 2012, and December 31, 2011 was $5.4 million, $4.8 million, and 3.3 million, respectively.

Note 8. Intangible Assets
In November 2011, the Company acquired 100% of the outstanding shares of Nanda. In accounting for the transaction, the Company recorded $10.6 million of specifically identified intangible assets. See Note 3, "Acquisition, Goodwill Impairment and Long-lived Asset Impairment," for further details.
On December 9, 2010, the Company purchased three patents from RTM for $0.4 million cash. The Company also incurred approximately $0.1 million of legal expenses, which were capitalized and included with the cost of the patents acquired. The primary patent expires on March 31, 2018. The Company is amortizing the patents on a straight line basis over a period of 7 years and 3 months (from January 2011 through March 2018).
Finite-lived intangible assets are recorded at cost, less accumulated amortization. Finite-lived intangible assets as of December 28, 2013 and December 29, 2012 consist of the following (in thousands):

Table of Contents
NANOMETRICS INCORPORATED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

	Adjusted cost as of December 28, 2013	Accumulated amortization as of December 28, 2013	Net carrying amount as of December 28, 2013
Developed technology	$18,095	$(11,032)	$7,063
Customer relationships	9,573	(9,263)	310
Brand names	1,927	(1,700)	227
Patented technology	2,252	(1,988)	264
Trademark	80	(80)	—
Total	$31,927	$(24,063)	$7,864

	Adjusted cost as of December 29, 2012	Accumulated amortization as of December 29, 2012	Net carrying amount as of December 29, 2012
Developed technology	$17,700	$(8,277)	$9,423
Customer relationships	9,538	(8,643)	895
Brand names	1,927	(1,599)	328
Patented technology	2,252	(1,922)	330
Trademark	80	(76)	4
Total	$31,497	$(20,517)	$10,980

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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. During fiscal year 2012, the $0.3 million of intangible assets related to in-process research and development as of December 31, 2011 was completed and incorporated in products sold during 2012 and the asset was reclassified to developed technology as of December 29, 2012.

Total amortization expense for the fiscal years ended December 28, 2013, December 29, 2012 and December 31, 2011 was $3.3 million, $3.3 million and 1.7 million, respectively.

In the three month period ended March 31, 2012, the Company recorded a $0.6 million reduction in the fair value of royalty payments to RTM with a corresponding decrease of $0.4 million to goodwill and $0.2 million to intangible assets. There were no other adjustment to intangible assets recorded during the year ended December 28, 2013. See Note 3 for a summary of the acquisition and goodwill impairment analysis.

The estimated future amortization expense as of December 28, 2013 is as follows (in thousands):

Fiscal Years	Amounts
2014	$3,097
2015	2,405
2016	1,924
2017	232
2018	140
Thereafter	66
Total amortization	$7,864

Note 9. Other Current Liabilities

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

58

Table of Contents
NANOMETRICS INCORPORATED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

	At December 28, 2013	December 29, 2012
Accrued warranty	$3,426	$4,203
Accrued professional services	545	584
Customer deposits	867	27
Fair value of current portion of contingent payments to Zygo Corporation related to acquisition	1,344	649
Other	1,754	2,359
Total other current liabilities	$7,936	$7,822

Note 10. Warranties

Product Warranty – The Company sells the majority of its products with a twelve 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. The warranty accrual represents the best estimate of the amount necessary to settle future and existing claims on products sold as of the balance sheet date. The Company periodically assesses the adequacy of its reported warranty reserve and adjusts such amounts in accordance with changes in these factors. Components of the warranty accrual, which were included in the accompanying consolidated balance sheets with other current liabilities, were as follows (in thousands):

	Years Ended December 28, 2013	December 29, 2012
Balance as of beginning of period	$4,203	$4,797
Accruals for warranties issued during period	2,889	4,156
Aggregate changes in liabilities related to preexisting warranties	1,287	2,403
Settlements during the period	(4,953)	(7,153)
Balance as of end of period	$3,426	$4,203

Note. 11. Restructuring

The Company recorded a restructuring charge of $1.7 million during the three month period ended September 28, 2013 as a result of its decision to consolidate a portion of its European operations to maximize efficiencies. This amount includes charges primarily related to employee severance and non-cash acceleration of vesting of RSUs in the amount of $0.8 million and $0.9 million, respectively. All cash payments related to employee severance have been made as of December 28, 2013. The Company expects to complete this restructuring plan by May 2014, and to incur an additional $0.2 million in restructuring charges over the next five months.

Table of Contents
NANOMETRICS INCORPORATED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

	Employee severance and benefits
Balance as of December 29, 2012	$—
Charges	1,740
Cash Payments	(844)
Non-cash acceleration of vesting of RSUs	(896)
Balance as of December 28, 2013	$—

Note 12. Line of Credit and Debt Obligations
Debt obligations consist of the following (in thousands):

	At December 28, 2013	December 29, 2012
Line of Credit		
Balance on line of credit	$—	$—
Debt Obligations		
Milpitas building mortgage	—	5,302
Total debt obligations	—	5,302
Current portion of debt obligations	—	(928)
Long-term debt obligations	$—	$4,374

Line of Credit - On April 23, 2012, the Company amended its revolving line of credit facility to (i) extend the maturity date of such facility by two years to April 30, 2014, (ii) decrease the unused revolving line commitment fee from 0.1875% per annum to 0.10% per annum, and (iii) reduce the minimum interest rate on borrowings from 5.75% to 3.00% per annum.
The instrument governing the line of credit facility includes certain financial covenants regarding tangible net worth. The revolving line of credit agreement includes a provision for the issuance of commercial or standby letters of credit by the bank on behalf of the Company. The value of all letters of credit outstanding reduces the total line of credit available. The revolving line of credit is collateralized by a blanket lien on all of the Company’s domestic assets excluding intellectual property and real estate. The minimum borrowing interest rate is 3.00% per annum. Borrowing is limited to the lesser of (a) $7.5 million plus the borrowing base, or (b) $20.0 million. The borrowing base available as of December 28, 2013 was $12.3 million. As of December 28, 2013, the Company was not in breach of any restrictive covenants in connection with this line of credit. There were no outstanding amounts drawn on this facility as of December 28, 2013. Although management has no current plans to request advances under this credit facility, the Company may use the proceeds of any future borrowing for general corporate purposes, future acquisitions or expansion of the Company's business.
Mortgage Loan - In July 2008, the Company entered into a mortgage loan agreement with General Electric Commercial Finance ("GE") pursuant to which it borrowed $13.5 million. The mortgage initially bore interest at the rate of 7.18% per annum, which rate was scheduled to reset after five years to 3.03% over the then weekly average yield of five-year U.S. Dollar Interest Rate Swaps as published by the Federal Reserve. Monthly principal and interest payments were based on a twenty year amortization for the first sixty months and fifteen year amortization thereafter.

The remaining principal balance of the mortgage and any accrued but unpaid interest will be due on August 1, 2018. The mortgage was secured, in part, by a lien on and security interest in the building and land comprising the Company's principal offices in Milpitas, California. GE subsequently sold the mortgage on March 31, 2011 to Sterling Savings Bank; however, no changes were made to the terms of the original loan agreement with GE as a result of the sale.

According to the terms of the loan agreement, the Company could make annual prepayments of up to 20% of the outstanding principal balance without incurring any penalty. In July 2011, the Company prepaid $1.95 million, representing 20% of the outstanding balance. In July 2012, the Company prepaid $1.4 million, representing 20% of the outstanding balance. On July 18, 2013, the Company repaid $4.8 million of the loan, representing the entire outstanding principal balance of the loan and all accrued interest. The Company did not incur any fees associated with the prepayment of the loan. At December 28, 2013, there was no outstanding balance on the loan.

Table of Contents
NANOMETRICS INCORPORATED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Note 13. 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 Nanometrics' 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 consolidated balance sheets as of December 28, 2013 and December 29, 2012.

On January 13, 2012, the Company entered into a settlement and limited patent cross license agreement with KLA to resolve all existing patent litigation between the parties. Pursuant to the settlement agreement, the Company agreed to make a one-time payment of $2.5 million to KLA. The settlement additionally included other features including limited cross-licenses of the patents that were subject to the litigation. The Company determined the principal benefit of the settlement was the economic benefit of avoiding litigation expenses and that the value attributable to the other settlement features was de minimus. As a result, the Company recorded a $2.5 million charge to legal settlement in operating expense in the fourth quarter of fiscal 2011. The payment was made in the three month period ended March 31, 2012.

The Company maintains certain open inventory purchase agreements with its suppliers to ensure a smooth and continuous supply availability for key components. The Company's liability under these purchase commitments is generally restricted to a forecasted time-horizon as mutually agreed upon between the parties. This forecasted time-horizon can vary among different suppliers. The Company estimates its open inventory purchase commitment as of December 28, 2013 was approximately $25.1 million. Actual expenditures will vary based upon the volume of the transactions and length of contractual service provided. In addition, the amounts paid under these arrangements may be less in the event that the arrangements are renegotiated or canceled.

The Company leases facilities and certain equipment under non-cancelable operating leases. Rent expense, which is recorded on a straight-line basis over the term of the respective lease, for 2013, 2012 and 2011, was approximately $2.0 million, $2.2 million and $1.8 million, respectively. Future minimum lease payments under its operating leases are as follows (in thousands):

	Operating Leases
2014	$1,382
2015	890
2016	675
2017	312
2018	48
Thereafter	7
Total	$3,314

On June 17, 2009, the Company announced a strategic business partnership with Zygo Corporation whereby it has purchased inventory and certain other assets from Zygo Corporation, and the two companies entered into a supply agreement. The Company will make payments to Zygo Corporation (with an estimated present value of $2.8 million and an estimated future value of $3.5 million as of December 28, 2013) over a period of time as acquired inventory is

sold and other aspects of the supply agreement are executed.

Note 14. Net Income (Loss) Per Share

Basic net income (loss) per share excludes dilution and is computed by dividing net income by the number of weighted average common shares outstanding for the period. Diluted net income (loss) per share gives effect to all potentially dilutive common shares outstanding during the period, including contingently issuable shares and certain stock options,

Table of Contents
NANOMETRICS INCORPORATED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

calculated using the treasury stock method. A reconciliation of the share denominator of the basic and diluted net income (loss) per share computations is as follows (in thousands):

	Years Ended		
	December 28, 2013	December 29, 2012	December 31, 2011
Weighted average common shares outstanding used in basic net income (loss) per share calculation	23,290	23,358	22,743
Potential dilutive common stock equivalents, using treasury stock method	—	487	737
Weighted average shares used in diluted net income (loss) per share calculation	23,290	23,845	23,480

For the years ended December 28, 2013, December 29, 2012 and December 31, 2011, the Company had securities outstanding which could potentially dilute basic earnings per share in the future. For the years ended December 29, 2012 and December 31, 2011, weighted average common share equivalents consisting of stock options included in the calculation of diluted net income per share were 0.5 million and 0.7 million, respectively. For the year ended December 28, 2013, however, potential dilutive common stock equivalents were anti-dilutive and were excluded from the calculation due to the net loss position.

Note 15. Stockholders’ Equity

Preferred and Common Stock

The authorized capital stock of Nanometrics consists of 47,000,000 shares of common stock, par value $0.001 per share, and 3,000,000 shares of preferred stock, par value $0.001 per share.

Stock Repurchase

On November 29, 2010, the Company's Board of Directors approved a program to repurchase up to $10.0 million of our common stock, referred to as the 2010 program. Stock repurchases under this program occurred as follows: fiscal year 2010, $0.8 million; fiscal year 2011, $4.3 million; and fiscal year 2012, $4.9 million. As of June 30, 2012, the Company repurchased and retired an aggregate of 667,406 shares of its common stock at a weighted average price of $14.97 per share under the 2010 program utilizing the entire $10.0 million approved by the Board on November 29, 2010, for the repurchase of shares of its common stock.

On May 29, 2012, the Company's Board of Directors approved a program to repurchase up to $20.0 million of its common stock, referred to as the 2012 program. On February 22, 2013, an additional $5.0 million was approved for repurchases of its common stock under the 2012 program. Stock repurchases under this program may be made through open market and privately negotiated transactions, at times and in such amounts as management deems appropriate. The timing and actual number of shares repurchased is dependent on a variety of factors including price, corporate and regulatory requirements and other market conditions. During fiscal year 2012, the Company repurchased and retired 250,400 shares of its common stock under this approved program at the weighted average price of