NANOMETRICS INC
Form 10-K/A
February 23, 2006
Table of Contents

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K/A

(Amendment No. 2)

(Mark One)

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

For the fiscal year ended January 1, 2005

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)

California	**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) 435-9600

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

None

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

Common Stock, no par value

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 x 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 the 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 shell company (as defined in Rule 12b-2 of the Exchange Act.): Yes ¨ No x

Indicate by check mark whether the registrant is an accelerated filer (as defined in Rule 12b-2 of the Act). Yes ¨ No x

As of July 2, 2004, the last business day of our most recently completed second fiscal quarter, the aggregate market value of the Common Stock of the registrant held by non-affiliates was approximately $73,351,027. Shares of voting stock held by each officer and director and by each person who owns 5% or more of the outstanding voting 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 Securities Exchange Act of 1934, as amended. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of February 24, 2005, 12,576,644 shares of the registrant s Common Stock were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Certain portions of the registrant s definitive proxy statement, to be filed with the Securities and Exchange Commission in connection with the registrant s upcoming annual meeting of shareholders for the fiscal year ended January 1, 2005, are incorporated by reference in Part III of this Form 10-K.

Table of Contents

NANOMETRICS INCORPORATED

FORM 10-K/A

YEAR ENDED JANUARY 1, 2005

TABLE OF CONTENTS

Table of Contents

EXPLANATORY NOTE

On October 26, 2005, the Company s Audit Committee, acting on a recommendation from the Company s management, determined that the Company s audited financial statements for the fiscal year ended January 1, 2005, and its unaudited quarterly financial statements for the periods ended April 2, 2005 and July 2, 2005, respectively, should be restated to revise the accounting for certain post-sale warranty services and other items. The restatement impacts the year ended January 1, 2005 presented herein and is further discussed in Note 2 to the condensed consolidated financial statements included herein.

This amendment to the Company s Annual Report on Form 10-K/A is being filed solely for the purpose of amending and restating Items 1, 6, 7 and 8 of the Form 10-K originally filed solely to the extent necessary (i) to reflect the restatement of the Company s condensed consolidated financial statements as of and for the year ended January 1, 2005 as described in Note 2 to the condensed consolidated financial statements and (ii) to make revisions to Management s Discussion and Analysis of Financial Condition and Results of Operations as warranted by the restatement, (iii) to make revisions to Item 9A of Part II to reflect our evaluation of controls and procedures as of the date of filing this amended Annual Report on Form 10-K/A, (iv) to include the certifications required by the Sarbanes-Oxley Act of 2002 and (v) to update the exhibits. The Company has made no further changes to the originally filed Form 10-K. All other information in this amended Annual Report on Form 10-K/A is as of the date the Annual Report on Form 10-K was originally filed and does not reflect any subsequent information or events other than those described above.

Subsequent to the filing of this Form 10-K/A, the Company will file an Amendment No. 1 to its Quarterly Report on Form 10-Q/A for the periods ended April 2, 2005 and July 2, 2005, respectively, to reflect restatements of the Company s consolidated balance sheet as of each respective quarter end and the Company s consolidated statements of operations and cash flows for the three-month periods ended April 2, 2005 and April 3, 2004 and the six-month periods ended July 2, 2005 and July 3, 2004.

As stated above, the Company is filing this Amendment No. 2 to its Annual Report on Form 10-K/A for the year ended January 1, 2005 and as such, the unaudited quarterly financial statements in the Quarterly Reports on Form 10-Q for the periods ended April 3, 2004, July 3, 2004 and October 2, 2004, should no longer be relied upon. The Company has not amended and does not intend to amend its previously filed Quarterly Reports on Form 10-Q for the periods affected by the restatement prior to January 1, 2005 as the 2004 restatement information will be reflected in the Quarterly Reports on Form 10-Q/A for the three-month periods ended April 2, 2005 and July 2, 2005 and in the Quarterly Report on Form 10-Q for the three-month period ended October 1, 2005 with the statement of operations information also included in this Form 10-K/A.

Forward-Looking Statements

This Annual Report on Form 10-K/A contains forward-looking statements that involve risks and uncertainties. These forward-looking statements include, but are not limited to, statements regarding trends in demand in our industry, the increased use of metrology in manufacturing, the drive toward integrated metrology and the broadening of our technology portfolio. Words such as believe, expect, anticipate or similar expressions, are indicative of forward-looking statements.

Our actual results may differ materially from the results discussed in the forward-looking statements. Factors that might cause such a difference include, but are not limited to, those outlined in Item 7, Management s Discussion and Analysis of Financial Condition and Results of Operations Risks Related to Our Business and Management s Discussion and Analysis of Financial Condition and Results of Operations Risks Relating to

the Merger with August Technology Corporation, below. The forward-looking statements contained herein are made as of the date hereof, and we assume no obligation to update such forward-looking statements or to update reasons actual results could differ materially from those anticipated in such forward-looking statements.

Table of Contents

PART I

ITEM 1. BUSINESS

Overview

We are a leader in the design, manufacture, and marketing of high-performance process control metrology systems used in the manufacture of semiconductors/integrated circuits and flat panel displays. Our metrology systems (i) measure various thin film properties, critical circuit dimensions and layer-to-layer circuit alignment (overlay) and (ii) inspect for surface defects during various steps of the manufacturing process, enabling semiconductor and integrated circuit manufacturers to improve yields, increase productivity and lower their manufacturing costs. The relative alignment of sequentially patterned thin film layers is critical to device production.

We have been a pioneer and innovator in the field of metrology for nearly three decades. We have been selling metrology systems since 1977 and have an extensive installed base with industry leading customers worldwide, including Applied Materials Inc., Samsung, Hynix Semiconductor Inc., IBM, Intel Corporation, Micron Technology, Inc., TSMC Ltd., Renesas, Powerchip, UMC, Ebara, Chi Mei, AU Optronics and Hannstar.

On January 21, 2005, we announced a definitive agreement to merge our business with August Technology Corporation, a leading provider of defect inspection technology headquartered in Bloomington, Minnesota. Upon consummation of the merger, Nanometrics will be renamed August Nanometrics Inc. and reincorporated into Delaware. Additionally, August Technology will become a wholly owned subsidiary of August Nanometrics. Each share of August Technology common stock will be converted into the right to receive 0.6401 of a share of August Nanometrics common stock upon consummation of the merger. The merger is expected to close during the second quarter of 2005, and is subject to customary closing conditions, including receipt of shareholder approval from the shareholders of Nanometrics and August Technology. See Management s Discussion and Analysis of Financial Condition and Results of Operations Risks Relating to the Merger with August Technology Corporation for more information concerning this announcement.

We intend to file a joint proxy statement/prospectus in connection with the proposed merger as well as other documents related to the merger. Investors and security holders are urged to read these filings when they become available because they will contain important information about the proposed merger. Investors and security holders may obtain free copies of these documents (when they are available) and other documents filed with the Securities and Exchange Commission at the Securities and Exchange Commission s web site at *www.sec.gov.* Investors and security holders may obtain free copies of the documents filed by Nanometrics with the Securities and Exchange Commission by contacting Investor Relations at 1550 Buckeye Drive, Milpitas, California 95035, 408.435.9600. In addition, investors and security holders may read and copy any reports, statements and other information filed by Nanometrics at the SEC public reference room at 450 Fifth Street, N.W., Washington, D.C. 20549. Please call the SEC at 800.SEC.0330 for further information on the public reference room. Nanometrics and August Technology and their respective directors and executive officers may be deemed to be participants in the solicitation of proxies from the shareholders of Nanometrics and August Technology in connection with the proposed merger. Certain officers and directors of Nanometrics have interests in the proposed merger, including their ownership of Nanometrics common stock, and their interests will be described in the joint proxy statement/prospectus when it becomes available.

Our Business

We offer a complete line of systems to address the metrology requirements of our customers. Our metrology systems can be categorized as follows:

Standalone, fully automated systems for high-volume manufacturing operations;

Integrated systems for integration into semiconductor processing equipment that provide real-time measurements and feedback to improve process control and increase throughput; and

Table of Contents

Tabletop systems used to provide manual or semi-automatic measurements for engineering and low-volume production environments.

We also provide systems that are used to measure the overlay accuracy of successive layers of semiconductor patterns on wafers in the photolithography process. The accurate alignment, or overlay, of successive film layers, relative to each other, across the wafer is critical for device performance and favorable production yields.

We believe that process control metrology is growing at a greater rate than other segments of the semiconductor equipment market. As films become thinner, film materials more exotic, and circuit dimensions and overlay requirements more demanding, metrology and inspection continue to grow in importance, especially as wafers become larger and more expensive to manufacture. We expect these factors will drive the demand for our high-end, standalone metrology and integrated products.

Additional demands on process tool manufacturers for better film uniformity, tighter dimensional control, tool-to-tool matching and within-tool chamber uniformity is driving the need for integrated process control metrology. These new tool requirements will drive the need to place metrology inside the process tool for real-time, integrated, process control metrology, using both feed forward and feedback of the collected metrology data to control the process equipment.

We have made several strategic changes in our business model to enable us to further address these metrology trends. These changes include:

The separation of our business in Japan into two facilities to better serve the semiconductor and flat panel display (FPD) metrology markets.

The building of our position as a leading supplier of integrated metrology systems;

The introduction of several new 300 millimeter wafer platforms for both advanced standalone and integrated metrology;

The continued outsourcing of certain system components, such as robotics, enabling us to leverage our technical resources;

The maximum utilization of an in-house manufacturing strategy for our products; and

The development of new measurement technologies for advanced lithography and ultra-thin film deposition.

Demand for our products is driven by the increasing use of multiple thin film technology by manufacturers of electronic products and, more recently, by the increased adoption of both integrated metrology and advanced process control (APC) by semiconductor manufacturers. With feature sizes shrinking below 90 nanometers, well below the wavelength of light, the need for very tight process tolerances as well as productivity improvements in semiconductor fabrication, or fabs, are driving the need for integrated metrology and APC. Our innovative Optical Critical Dimension (OCD®) measurement system is being increasingly viewed not only as an enabling technology for APC, but also as a solution for critical dimension measurement.

We combined our deep ultraviolet (DUV) reflectometry technology with the OCD technology in a single, integrated metrology module, the NanoOCD/DUV 9010. The compact size and speed of this OCD/DUV technology enables the measurement system to be fully integrated into the customer s process tool, thus providing a complete, feed forward and feedback APC solution for wafer-to-wafer closed loop control. By measuring the critical dimensions of developed photoresist and then adjusting the final etched dimensions of a silicon gate-etch process by feeding this information back into the process and trimming the resist, the device manufacturer is able to achieve the maximum possible microprocessor speed. In addition, new semiconductor process technologies, such as copper interconnects, require that new measurement technologies be developed in order to keep pace with the latest metrology demands. Our new, combined integrated metrology module represents a unique solution to the problem of measuring the remaining oxide film thickness as well as the loss of material over arrays of copper lines during the chemical mechanical planarization (CMP) process.

Table of Contents

Our OCD technology has also proven to be applicable to the emerging requirements for advanced lithography measurements such as the characterization of critical dimensions and film thicknesses on masks and reticles which are comprised of square glass substrates. We introduced the Nanometrics Atlas-M, the first fully automated, standalone metrology system to use OCD technology for these square glass substrates. This system is crucial to the suppliers of masks and reticles by providing the means for accurately determining line widths and analyzing complex profiles for a variety of structures found in today s mask fabrication process.

We successfully beta tested the Nanometrics Orion Overlay Control System at a leading semiconductor memory device manufacturer. The Orion is an advanced overlay metrology and analysis system for monitoring microlithography stepper performance. Orion provides exceptional throughput and measurement performance required by today s demanding 200mm and 300mm overlay control applications.

We have continued the development the Universal Defect Inspection (UDI) system following the successful beta site testing at a leading integrated device manufacturer (IDM). The NanoUDI technology can be configured as either a standalone, fully automated 300-millimeter system or an integrated module for defect and contamination detection on a wide variety of films and surfaces. The system combines high efficiency illumination and high-resolution optics with sophisticated image processing to detect and classify particles and defects in the sub-micron range.

Many types of thin films are used in the manufacture of products, such as semiconductor integrated circuits and flat panel displays. These products require the precise electronic, optical and surface properties enabled by thin film metrology. The need for tighter process control and improved productivity has created increased demand for our advanced standalone and integrated metrology systems.

Industry Characteristics

Growth

Moore s Law which, simply stated, predicts a doubling of integrated circuit performance with a 50% reduction in manufacturing costs every 18 months, is an important factor in determining factory investment in the semiconductor industry. Two important industry drivers are: (i) the increasing complexity of chip designs as users of semiconductor chips demand increasingly higher performance and require more complicated manufacturing processes and (ii) the market pressure for lower cost chips. The semiconductor equipment industry has experienced cyclical growth with a compounded annual growth rate of approximately 15-17% over the past 20 years. The semiconductor industry recently emerged from an exceptionally long, cyclical downturn, and 2004 saw a growth in semiconductor equipment revenues of approximately 60% over 2003. We believe that the convergence of 300-millimeter wafer size, copper interconnects and fast, sub-100 nanometer architecture will continue to drive the demand for new metrology solutions, such as those that we offer, and that the process control market segment will continue to outpace overall equipment growth.

In the past, demand for Internet access, personal computers, telecommunications, and new consumer electronic products and services has fueled growth of the semiconductor, data storage and flat panel display industries. New display technologies, consumer electronics, automotive electronics and personal computers will likely continue as the primary drivers in the near-term for the semiconductor industry. We believe that consumer desire for high performance electronics drives technology advancement in semiconductor design and manufacturing and, in turn, promotes the purchasing of capital equipment featuring the latest advances in technology.

Table of Contents

The two significant factors affecting demand for our measurement systems are: (i) new construction or refurbishment of manufacturing facilities, which, in turn, depends on the current and anticipated market demand for semiconductors, disk drives, flat panel displays, and products that use such components, and (ii) the increasing complexity of the manufacturing process as a result of the demand for higher performance semiconductors and flat panel displays.

Semiconductor Manufacturing Process

Semiconductors are fabricated by a series of process steps on a wafer substrate made of silicon or other material. Our thin film, critical dimension, overlay metrology and defect inspection systems can be used at many points during the fabrication process to monitor and measure circuit dimensions, layer-to-layer registration and film uniformity as well as material properties in order to maximize the yield of acceptable semiconductors. Each wafer typically goes through a series of 100 to 500 process and metrology steps in generally repetitive cycles.

The four primary wafer film processing steps are:

Deposition;

Chemical Mechanical Planarization;

Photolithography imaging and overlay; and

Etching of circuit elements.

Deposition. Deposition refers to placing layers of insulating or conducting materials on a wafer surface in thin films that make up the circuit elements of semiconductor devices. Common methods of deposition include chemical vapor deposition (CVD), plasma-enhanced chemical vapor deposition (PECVD) and physical vapor deposition (PVD). Diffusion and oxidation are also used to create or define thin films. The control of uniformity and thickness during the formation of these films is critical to the performance of the semiconductor circuit.

Chemical Mechanical Planarization. CMP flattens, or planarizes, the topography of the film surface to permit the multiple patterns of small features on the resulting smoothed surface by the photolithography process. The CMP process is a combination of chemical etching and mechanical polishing and commonly uses an abrasive liquid and polishing pad. Semiconductor manufacturers need metrology systems to control the CMP process by measuring the thin film layer to determine precisely when the appropriate thickness has been achieved.

Photolithography. Photolithography is the process step that projects the patterns of the circuits on the chip. A wafer is pre-coated with photoresist, a light sensitive film, that must have an accurate thickness and uniformity for exposure. Photolithography involves the optical projection of integrated circuit patterns onto the photoresist after which, the photoresist is developed, leaving unexposed areas available for etching. In order to precisely control the photolithography process, it is necessary to verify reflectivity, film thickness, critical dimensions and overlay registration.

Etch. Etch is a dry or wet process for selectively removing unwanted areas that have been deposited on the surface of a wafer. A film of developed photoresist protects material that needs to be left untouched by the etch to make up the circuits. Thin film metrology systems are required to verify precision of material removal and critical dimension achievement.

Before and after deposition, CMP, photolithography and etch, the wafer surface is measured to determine the quality of the film or pattern and to find defects. Measurements taken to ensure process uniformity include thickness, width, height, roughness and other characteristics. Process control helps avoid costly rework or misprocessing and results in higher yields for semiconductor manufacturers.

Table of Contents

These processing steps are typically repeated multiple times during the fabrication process, with alternating layers of insulating and conducting films. Depending on the specific design of a given integrated circuit, a variety of film types and thicknesses and a number of layers can be used to achieve desired electronic performance characteristics. The semiconductors are then tested, separated into individual circuits, assembled and packaged into an integrated circuit.

Flat Panel Display Manufacturing Processes

Flat panel displays are manufactured in clean rooms using thin film measurement systems that are similar to those used in semiconductor manufacturing. Most flat panel displays are constructed on large glass substrates that currently range in size up to 1,870 x 2,200 millimeters and should increase to up to 2,160 x 2,400 millimeters by the end of 2005.

Increased Use of Metrology in Manufacturing

We believe that continually rising wafer costs are forcing semiconductor manufacturers to re-evaluate their manufacturing strategies at all levels, from individual process steps to fabwide process optimization. Many major semiconductor manufacturers are adopting feed-forward and feedback of film thickness and critical dimensions, or CDs, based on real-time data from metrology systems. Major benefits of these new metrology strategies are higher manufacturing efficiencies from reduced rework, reduced headcount to perform at the same quality level and increased device performance. Additional benefits include process tool matching and more precise control of the overall manufacturing process.

Drive Toward Integrated Metrology

For many years, semiconductor manufacturers have sought to improve fab efficiency by choosing systems that integrate more than one process step into a single tool. Integrated metrology solutions increase productivity with higher throughput, smaller overall product footprints, reduced wafer handling and faster process development. This trend began in the mid-1980s, as leading manufacturers introduced a cluster process tool architecture that combined multiple processes in separate chambers around a central wafer-handling platform.

Today, although there is continued focus on increased productivity driving the adoption of integrated metrology, there is an additional requirement for tighter process tolerances with advanced, sub-90nm technologies. This new requirement is driving integrated process control metrology as necessary for many processes, such as planarization, deposition, lithography and etch. As a result, we continue to see the emergence of integrated metrology using both feed-forward and feedback process tool control in real time. Integrated metrology has already shown its ability to control key process parameters during the manufacturing process. Additional benefits include extended tool availability and improved utilization. Tighter control of the process means lower material and processing costs. Integrated metrology also provides rapid fault detection, improved excursion control and loss prevention, which can be elusive with only open-loop standalone metrology.

Before we introduced integrated metrology, semiconductor manufacturers were required to physically transport wafers from a process tool to a separate metrology system in order to make critical measurements such as film thickness and uniformity. Manufacturers of process equipment are increasingly seeking to offer their customers integrated metrology in their tools to lower costs and improve overall fab efficiency. Integrated metrology provides semiconductor manufacturers with several additional benefits, including a reduction in the number of test wafers, increased overall process throughput, faster detection of process excursions and faults, reduced wafer handling, faster process development and ultimately an improvement in overall equipment effectiveness.

5

Table of Contents

Nanometrics Offerings

We offer a complete line of systems to address the broad range of metrology requirements of our customers.

Our metrology systems can be categorized as follows:

Standalone, fully automated systems used for the characterization and measurement of thin films in high-volume manufacturing operations. We offer a broad line of fully automated thin film thickness, critical dimension, defect inspection and overlay measurement systems. These systems remove the dependence on human operators by incorporating reliable wafer handling robots and are designed to meet the speed, measurement, performance and reliability requirements that are essential for today s semiconductor and flat panel display manufacturing facilities. Each of these measurement systems uses non-destructive, optical techniques to analyze and measure films. Our fully automated metrology product line also includes systems that are used to measure the critical dimensions and overlay registration accuracy of successive layers of semiconductor patterns on wafers in the photolithography process.

Integrated systems used to measure in-process wafers automatically and quickly without having to leave the enclosed wafer processing system. In 1998, we introduced our high-speed integrated metrology system. Our integrated metrology systems are compact and monitor a multitude of small test points on the wafer using sophisticated pattern recognition. Our integrated systems can be attached to film deposition, planarization, lithography, etch and other process tools to provide rapid monitoring of films on each wafer immediately before or after processing. Integrated systems can offer customers significantly increased operating efficiency and equipment utilization, lower manufacturing costs and higher throughput. We anticipate continuing to ship integrated systems to many original equipment manufacturers for installation on their planarization, deposition, litho and etch tools.

Tabletop systems used to manually or semi-automatically measure thin films in engineering and low-volume production environments. We have been a pioneer and leading supplier of tabletop thin film thickness measurement systems, which are mainly used in low-volume production environments such as failure analysis and engineering labs. Our tabletop models have multiple capabilities and several available configurations, depending on wafer handling, range of films to be measured, uniformity mapping and other customer needs.

Each of our measurement systems provides for the measurement, visualization and control of film uniformity and thickness, critical dimensions and profiles, and layer-to-layer registration/overlay. In addition, we have developed new automated systems and tabletop products for emerging technologies using larger substrates such as 300-millimeter silicon wafers and larger flat panel displays. We were one of the first companies to ship fully automated thin film thickness measurement systems for 300-millimeter wafers. We have also introduced new technology for the precise thin film measurements that are dictated by sub-100nm design rules and have developed products with mini-environments that meet the latest standards for clean, particle-free manufacturing.

Strategy

Our strategy is to offer and support, on a worldwide basis, technologically advanced metrology solutions that meet the changing manufacturing requirements of the semiconductor and flat panel display industries, as well as other industries that use metrology systems. Our proposed merger with August Technology may enable us to expand our strategy into the macro defect inspection space. Key elements of our strategy include:

Maintaining Organically Developed Technology Leadership. We are committed to developing advanced metrology systems that meet the requirements of advanced semiconductor and flat panel display manufacturing technology. We have an extensive array of proprietary technology and expertise in optics, software and systems integration. We have chosen to reduce our dependence on outside suppliers by taking control of the technology and development of the critical components of our metrology systems. These technologies include polarized reflectometry, precision motion control, extreme dark field imaging, low distortion imaging and advanced algorithms.

Table of Contents

Continuing to Offer Advanced Integrated Metrology Systems. We were one of the first suppliers to offer products that integrate process metrology systems into wafer processing equipment. We supply integrated metrology systems for Applied Materials Mirra Mesa and 300mm Reflexion CMP systems and the Producer QA and SE CVD systems. Our optical critical dimension (OCD) metrology system is incorporated in the Applied Materials Transforma 300mm etch system for controlling critical dimensions. The introduction of the first combined OCD/DUV integrated metrology product has allowed us to penetrate additional OEM suppliers of etch processing and CMP equipment, including Hitachi High Tech (HHT), Dainippon Screen (DNS) and Ebara. The introduction of the NanoOCD/DUV 9010T enhanced integrated metrology product has led to additional design wins at TEL/Timbre. Our integrated metrology sales group continues to focus on sales of integrated metrology products to both original equipment manufacturers (OEMs) and end-users.

Broadening Our Product Portfolio. We intend to continue to add a wide range of new measurement technologies to our expanding base of intellectual property. Our highly successful integrated platform offers a single integrated module that combines OCD and DUV technologies, and enables us to perform critical erosion and film thickness/array measurements for the oxide and copper/metal CMP processes. In addition, our copper/metal profiler for CMP process control combines optical profile measurement or profilometry with our highly successful reflectometry technology to monitor metal removal during the CMP process. These metrologies are key requirements for the copper damascene process, which replaces the current subtractive aluminum process on newer semiconductor devices.

We also participate in the particle and defect inspection market with our Universal Defect Inspection (UDI) technology. This technology has applications not only for inspection of semiconductor wafers but also for flat panel displays for the purpose of detecting defects early in the process before they cause catastrophic yield loss.

Our OCD technology has also been applied to advanced photolithography processes with the introduction of the Nanometrics Atlas-M fully automated metrology system for mask and reticle measurement and characterization. This new product has already successfully correlated the interrelationships between film thickness and critical dimension parameters. The OCD technology has also been successfully extended to perform overlay/registration measurements. Our new diffraction-based overlay (DBO) technology can provide lithographers with wafer overlay control well beyond the requirements of the 65-nanometer node of the International Technology Roadmap for Semiconductors (ITRS) through the year 2010.

Leveraging Existing Customer and Industry Relationships. We expect to continue to strengthen our existing customer relationships and foster working partnerships with semiconductor equipment manufacturers by providing technologically superior systems and high levels of customer support. Our strong industry relationships have allowed close customer collaboration which, in return, facilitates our ability to introduce new products and applications in response to customer needs. We believe that our large customer base will continue to be an important source of new product development ideas. Our large customer base also provides us with the opportunity for increased sales of additional metrology systems to our current customers.

Providing Worldwide Sales and Customer Support. We believe that a direct sales and support capability is beneficial for developing and maintaining close customer relationships and for rapidly responding to changing customer requirements. Because a majority of our revenues come from sources outside of the United States, we have expanded our direct sales force in Japan, South Korea, Taiwan and China, and will continue to expand into additional territories as customer requirements dictate. We use selected sales representatives in non-key territories. We intend to monitor our network by evaluating our existing and new offices, as well as developing additional relationships as needed. We believe that enhancing our sales and customer support network will improve our competitive position.

Addressing Multiple Markets. There are broad applications of our technology beyond the semiconductor industry. We currently offer a comprehensive family of metrology systems that accurately measure thin films, critical dimensions and overlay registration used in manufacturing process. Newer products inspect for particles and defects and monitor critical metal loss during the copper removal process. We

intend to continue developing and marketing products to address metrology requirements in the manufacture of flat panel displays and any other industries that might apply our technology in the future. We believe that diversification of our technology through applications across multiple industries increases the total available market for our products and reduces, to an extent, our exposure to the cyclicality of any particular market.

Table of Contents

Broadening of our OEM Customer Base. We believe that our OEM customer base will become an increasingly important aspect of our business. In 2004, we began shipping to Ebara, Hitachi, Dainippon Screen and Tokyo Electron Limited (TEL). These OEM design wins, together with our strong OEM position with Applied Materials, is expected to allow us to capitalize on this rapidly growing market segment. Our new, OEM integrated metrology sales group provides additional focus on this market opportunity, which is expected to result in continued increasing acceptance of our products in this sector.

Technology

We believe that our engineering expertise, technology acquisitions, supplier alliances and short-cycle production strategies enable us to develop and offer advanced solutions that address industry trends. By offering common metrology platforms that can be configured with a variety of measurement technologies, our customers can (i) specify high performance systems not easily offered by other suppliers and (ii) narrowly configure a system for a specific application as a cost saving measure.

Spectroscopic Reflectometry. We pioneered the use of micro-spot spectroscopic reflectometry for semiconductor film metrology in the late 1970s. Spectroscopic reflectometry uses multiple wavelengths (colors) of light to obtain an array of data for analysis of film thickness and other film parameters. Today s semiconductor manufacturers still depend on spectroscopic reflectometry for most film metrology applications. Reflectometry is the measurement of reflected light. For film metrology, a wavelength spectrum in the visible region is commonly used. Light reflected from the surfaces of the film and the substrate is analyzed using computers and measurement algorithms. The analysis yields thickness information and other parameters without contacting or destroying the film.

In the mid-1980s, we introduced a DUV reflectometer for material analysis. In 1991, we were awarded a patent for the determination of absolute reflectance in the ultraviolet region. This technology provides enhanced measurement performance for thinner films and for films stacked on top of one another.

Spectroscopic Ellipsometry. Like reflectometry, ellipsometry is a non-contact and non-destructive technique used to analyze and measure films. An ellipsometer analyzes the change in a polarized beam of light after reflection from a film s surface and interface. Our systems are spectroscopic, providing ellipsometric data at many different wavelengths. Spectroscopic ellipsometry provides a wealth of information about a film, yielding very accurate and reliable measurements. In general, ellipsometers are used for thin films and complex film stacks, whereas reflectometers are used for thicker films and stacks.

Optical Critical Dimension Technology. Our OCD technology is a 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. Our non-destructive, OCD measurement technology is compatible with the current 90nm manufacturing technology and can be extended below 90nm for future requirements in both photo-lithography and etch applications. OCD combines non-contact optical technology with extremely powerful data analysis software to provide highly accurate measurement results for line width, height and sidewall angles. This technology is available in both standalone and integrated platforms.

Overlay Registration. Overlay registration refers to the relative alignment of two layers in the thin film photolithographic process. Our microscope-based, measurement technology utilizes a high magnification, low distortion imaging system combined with proprietary software algorithms to numerically quantify the alignment.

8

Table of Contents

Diffraction-Based Overlay Registration. We developed diffraction-based overlay as an alternative solution for overlay technology nodes below 90 nanometers. This novel technique extracts overlay alignment error from our broadband OCD technology using specially designed diffraction targets in real-time. The technique is based on spectroscopy rather than imaging, is much more robust than aerial imaging methods, and the total measurement uncertainty is about six times smaller than traditional techniques. This new technology is capable of meeting the advanced design requirements of the 45nm process. A major advantage of the diffraction technique is that the measurement targets can be produced that match the dimensions of the circuits being manufactured, thus providing the immediate benefit of looking at the overlay performance of features that closely resemble the circuit features.

Optical Profilometry. We developed the optical profiler for the measurement of copper metal loss during the chemical mechanical planarization process. This technology uses the combination of an optical interferometer and our reflectometer technology to accurately determine metal loss, even over multiple layers during the final steps of metallization. Our technology is a unique method for precisely and accurately controlling this semiconductor manufacturing process step.

Extreme Dark Field (EDF) Imaging Technology. Our new, dark field inspection technology is used to detect and accurately locate particles and defects on the front and back sides of wafer surfaces, which could potentially lead to device failures and critical yield loss during the semiconductor manufacturing process. The technology combines a high efficiency, broadband light source with a high-resolution detection system and proprietary digital image processing for defect and contamination detection on a wide variety of films and surfaces. We believe that this technology can be readily extended to other manufacturing processes.

Table of Contents

Products

Our thin film thickness measurement systems use microscope-based, non-contact spectroscopic reflectometry (SR). Some of our systems provide complementary spectroscopic ellipsometry (SE) to measure the thickness and optical characteristics of films on a variety of substrates. In addition, we offer both integrated and standalone optical critical metrology systems to measure critical dimensions of patterns on semiconductor wafers. We also manufacture a line of optical overlay registration systems that are used to determine the alignment accuracy of successive layers of semiconductor patterns on wafers in the photolithography process. Our products can be divided into three groups: automated standalone systems, integrated systems and tabletop systems.

Platform	Market	Substrate Size	Applications	Technology
Automated/				
Standalone Systems				
9100	Semiconductor	75-200mm	CVD, CMP, Etch, Litho, Film Thickness	SR, SE
9200	Semiconductor	150mm 200mm	CVD, CMP, Etch, Litho, Film Thickness	SR
FLX	Semiconductor	200mm 300mm	CVD, CMP, Etch, Litho, Film Thickness, CD	SR, OCD/SR, UDI
Atlas/Atlas-M	Semiconductor	200mm 300mm 6-inch masks/reticles	CVD, CMP, Etch, Litho, Film Thickness, Film Stress, CD	SR, SE, OCD/SE, DBO
6500 Series	Flat Panel Display	Generations 5, 6 and 7	Film Thickness	SR, SE
Orion	Semiconductor	200mm 300mm	Overlay	Imaging
Integrated Systems				
9000	Semiconductor	200mm	CVD, CMP, Film Thickness	SR
9000i	Semiconductor	200mm 300mm	CVD, CMP, Etch, Film Thickness, CD	SR, OCD
9000b	Semiconductor	300mm	CVD, CMP, Etch, Film Thickness	SR
9010/9010b	Semiconductor	300mm	CMP, CVD, Etch, Litho Film Thickness, CD	OCD/SR, CLP, UDI
9010T/9010T/b	Semiconductor	200mm 300mm	CMP, Etch	OCD/SR
Table Top Systems				
3000	Semiconductor	75mm 150mm	Film Thickness	SR
6100	Semiconductor	75mm 150mm 200mm	Film Thickness	SR

Automated/Standalone Systems

Our standalone, fully automated metrology systems are employed in high-volume production environments. These systems incorporate automated material handling interface options for a variety of fab automation environments and implement multiple measurement technologies for a broad range of substrate sizes. Our automated systems range in price from approximately $200,000 to over $1,000,000, depending on substrate sizes, measurement technologies, material handling interfaces and other options.

Table of Contents

Nanometrics Atlas and Atlas-M

The Nanometrics Atlas high-performance metrology system combines up to five metrology technologies on a single platform, providing increased measurement capabilities in a small footprint design for reduced cost of ownership. The Atlas-M further extends the versatility of this 300mm platform to provide fully automated mask and reticle measurements. The system is capable of housing up to five metrology technologies including polarized, normal incidence spectroscopic ellipsometry for linewidth profile and critical dimensions, spectroscopic reflectometry for films and film stacks, UV and deep UV spectroscopic ellipsometry for ultra-thin films and film characterization, diffraction-based overlay technology for layer-to-layer registration measurement, and film stress/wafer bow measurements. The Atlas offers high accuracy, high precision metrology for wafer characterization and can be configured for 200mm and 300mm wafer sizes or 6-inch masks and reticles. The system is also compatible with NanoNet, an optional software package that enables users to synchronize standalone and integrated metrology systems for remote process setup and monitoring.

Nanometrics FLX

The Nanometrics FLX flexible metrology system is based on the Atlas automation platform, and is designed to support up to four integrated metrology modules simultaneously the tool can mix-and-match any combination of modules to form a complete metrology solution for lithography, planarization, etch and deposition processes. This capability accelerates process development through parallel development of integrated metrology solutions. The Nanometrics FLX is a flexible, cost-efficient, high-throughput 300-mm standalone metrology system based on Nanometrics proven integrated metrology solutions. The system offers industry-leading throughput of 250-500 wafers per hour fueled by dual multi-axis wafer-handling robots.

NanoSpec 9100

The NanoSpec 9100 standalone, automated thin film measurement system is capable of handling wafers ranging in size from 75 to 200 millimeters in diameter. The 9100 can be configured with a deep ultraviolet (DUV) to near infrared (NIR) spectroscopic ellipsometer for ultra-thin, multiple film stack and DUV lithography measurement applications. Other 9100 options include a standard mechanical interface with mini-environment enclosures for use in ultra-clean manufacturing facilities. The system also features a Windows NT software platform that conforms to the newly establish SEMI user interface standard. The 9100 can also be configured to handle the substrates. We developed the 9100 using technologies from the integrated film thickness systems to allow easy transfer of measurement recipes between the integrated and standalone film metrology systems.

NanoSpec 9200

The NanoSpec 9200 standalone, automated thin film measurement system is capable of handling wafers of 150 and 200 millimeters in diameter. We developed this system, using technologies from the NanoSpec 9000 integrated film thickness system, to be compact and to provide high wafer throughput.

NanoSpec 6500

The NanoSpec 6500 measures optically transparent films that are used in the manufacture of flat panel displays. The NanoSpec 6500 is an advanced version of our flat panel measurement system with additional proprietary software and hardware enhancements and is capable of handling generation 5, 6 and 7 substrates. Product enhancements include the integration of ultra-violet (UV) spectroscopic reflectometry for the measurement of low temperature, deposited poly-silicon films and UV to near infra-red (NIR) spectroscopic ellipsometry (SE) for the measurement of multilayer film stacks and improved measurement precision.

Table of Contents

Nanometrics Orion

The recently introduced Nanometrics Orion, Advanced Overlay Control System provides enhanced measurement performance and higher wafer throughput and replaces the original Metra line of products. The system is based on the highly successful Atlas platform and offers high throughput in excess of 180 wafers per hour. Orion utilizes a proprietary optical system to provide low total measurement uncertainty (TMU), enabling 1 nanometer, 3-sigma precision in overlay control applications. Orion s aerial image metrology with proprietary digital image folding tolerates wide process variations and reduces the possibility of erroneous data. Both attributes are crucial elements in attaining high yields in 200mm and 300mm volume production.

Integrated Systems

Our integrated metrology systems are installed inside wafer processing equipment to provide near real-time measurements for improving process control and increasing throughput. Our integrated systems are available for wafer sizes up to 300 millimeters and offer DUV spectroscopic reflectometry and/or critical dimension measurement technologies. Our integrated metrology systems range in price from approximately $80,000 to $300,000 depending on features and technology.

NanoSpec 9000

The NanoSpec 9000 is an ultra-compact measurement system designed for integration into semiconductor wafer processing equipment. The system can be used in several wafer film process steps, including metal deposition, planarization, chemical vapor photolithography and etch. In its basic configuration, the NanoSpec 9000 is equipped with visible wavelength spectroscopic reflectometry.

NanoSpec 9000i

The NanoSpec 9000i is a 300mm version of the NanoSpec 9000. This metrology platform can be integrated into multiple wafer film process steps including metal deposition, planarization, chemical vapor deposition, photolithography and etch. The NanoSpec 9000i is also equipped with visible wavelength spectroscopic reflectometry and can be extended into deep ultraviolet wavelengths. The NanoSpec 9000i will also support the newly developed optical critical dimension (OCD) technology for the measurement of critical dimensions on semiconductor wafers. The system is designed for integration into semiconductor wafer processing equipment and used in several critical processing steps including photolithography and etch.

NanoOCD 9010M

The NanoOCD 9010M utilizes our production-proven OCD metrology, and enables non-destructive, real-time measurement and profiling of critical features on photomasks and reticles without the limitations and drawbacks associated with CD-SEM metrology. Current CD-SEM technology appears to be reaching its theoretical limits for making critical dimension measurements on these substrates. Photoresist-on-chrome-on-glass features found on reticles and masks suffer severe charging during CD-SEM metrology making critical

dimension measurements impossible. OCD is a non-destructive technology that provides information not available from CD-SEM measurements.

NanoOCD/DUV 9010

The NanoOCD/DUV 9010 is the first integrated metrology tool to combine two measurement technologies on a single platform. The NanoOCD/DUV 9010 incorporates both ultra violet optical critical dimension (OCD) spectroscopic ellipsometry and deep ultra violet (DUV) spectroscopic reflectometry. The NanoOCD/DUV 9010 provides thin film and film stack thickness measurements on pads as well as oxide, nitride and trench profile measurements on arrays in a single tool. The combined technologies provide a complete measurement solution over the entire range of measurement requirements for each process step. This complete metrology capability can be utilized across a number of lithography, deposition, copper planarization, dielectric planarization, poly-Si etch and dielectric etch applications.

Table of Contents

NanoOCD/DUV 9010b

The NanoOCD/DUV 9010b is a SEMI BOLTS compatible, 300 millimeter based system that incorporates all the features of the NanoOCD/DUV 9010. By conforming to the industry standard BOLTS mounting system, the NanoOCD/DUV 9010b is interchangeable with industry conforming load ports for simplified mechanical integration.

Nano 9010T Integrated Metrology Platform

The 9010T is an advanced, integrated metrology platform for optical CD measurement and profiling. The 9010T system is designed to be incorporated into semiconductor equipment requiring leading-edge CD metrology for semiconductor applications. The 9010T offers an extended wavelength range down to 210nm, extending the CD measurement capabilities for line width structures down to 65nm. The system also incorporates the UV film thickness function, and its improved design offers a faster, more cost effective integrated CD measurement solution with increased throughput. The system is also offered as the 9010T/b, in the SEMI BOLTS configuration for easy installation directly onto the OEM process equipment s standard 300mm loadport.

Tabletop Systems

Our tabletop systems are used primarily in low-volume production environments and in engineering labs for which automated handling and high throughput are not required. Our tabletop product line encompasses both manual and semi automated models for film thickness measurements. Our tabletop system prices range from approximately $50,000 to $200,000.

NanoSpec 3000 and 6100

The NanoSpec tabletop systems provide a broad range of thin film measurement solutions at a lower entry price point. The NanoSpec 3000 is a basic, manual system while the 6100 models feature semiautomatic wafer handling or staging.

Customers

We sell our metrology systems worldwide to many of the major semiconductor and flat panel display manufacturers and equipment suppliers, as well as to producers of silicon wafers and photomasks. The majority of our systems are sold to customers located in Asia and the United States. Two customers, Applied Materials and Samsung, represented 21.4% and 14.7% of our total net revenues in 2004, respectively.

The following is a list of our top ten customers (categorized by type of customer), based on revenues, during 2004:

Original Equipment Manufacturers (OEMs)	Integrated Device Manufacturers (IDMs) and Flat Panel Display (FPD)
Applied Materials, Inc.	Samsung
Ebara Technologies, Incorporated (ETI)	Hynix Semiconductor Inc.
Tokyo Electron Limited (TEL)	Tricenti Technology Inc. (TTI)
	Semiconductor Manufacturing International Corporation (SMIC)
	Taiwan Semiconductor Manufacturing Corporation (TSMC)
	United Microelectronics Corporation (UMC)
	Innolux Display Corporation

Table of Contents

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 direct sales and support from our corporate office in California. We also have a direct sales presence in South Korea, Taiwan, China and Japan. We use selected sales representatives in the United States and other countries. We intend to continue monitoring our network, our existing and new offices as well as developing additional distribution relationships when needed. We believe that growing our international distribution network can enhance our competitive position. We maintain a direct sales force of highly trained, technically sophisticated sales engineers who are knowledgeable in the use of metrology systems generally and with the features and advantages of our specific products. Our sales engineers are supported by applications scientists. Together, these highly trained individuals work closely with our customers to solve complex measurement and process problems.

Direct exports of our metrology systems to our foreign customers and shipments to our subsidiaries require general export licenses. See Note 13 of the Notes to Consolidated Financial Statements for information regarding total net revenues and long-lived assets of our foreign operations. See Item 7, Management s Discussion and Analysis of Financial Condition and Results of Operations-Risks Related to Our Business, for information regarding risks related to our foreign operations.

Revenue from customers located in the United States and in foreign countries, as a percentage of total net revenues, were as follows:

	2002	2003	2004
United States	31.0%	25.2%	28.2%
Japan	23.9%	24.8%	29.6%
Taiwan	22.7%	21.5%	11.6%
South Korea	10.5%	21.8%	19.3%
All other countries	11.9%	6.7%	11.3%

In order to raise market awareness of our products, we advertise in trade publications, distribute promotional materials, publish technical articles, conduct marketing programs, issue press releases regarding new products, work with a public relations firm and participate in industry trade shows and conferences. We also maintain a website at www.nanometrics.com.

Customer Service and Support

We believe that customer service and technical support are important factors to distinguish us from our competitors and are essential to building and maintaining close, long-term relationships with our customers. We provide support to our customers with 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 and operating manuals and other technical support information. We use our demonstration equipment for training programs, as well as for our sales and marketing efforts. Our technical training department has metrology systems that are used for customer training. We coordinate warranty and post-warranty field service and spare parts support from our corporate headquarters in Milpitas, California. We also have North America field service operations based in Vermont, Arizona, Texas and Idaho. In Asia, service is provided by direct offices in Japan, South Korea, Taiwan and China.

We provide a standard one-year warranty on parts and labor for products sold domestically and in foreign markets and in certain instances, we will provide warranty periods in excess of one year but only upon customer request. Service revenue, including sales of replacement parts, represented approximately 17.4%, 16.9% and 11.1% of total net revenues in 2002, 2003 and 2004, respectively.

Table of Contents

Backlog

As of January 1, 2005, our backlog was approximately $16.6 million. As of January 3, 2004, our backlog was approximately $9.1 million. Backlog includes orders for products that we expect to ship within 12 months. Orders from our customers are subject to cancellation or delay by the customer without penalty. Historically, order cancellations and order rescheduling have not been significant. However, orders presently in backlog could be canceled or rescheduled. As only a portion of our revenues for any fiscal quarter represent systems in backlog, we do not believe that backlog is necessarily an accurate indication of our future revenues or financial performance.

Competition

The market for our metrology systems is intensely competitive. We compete on a global basis with both larger and smaller companies. Our products compete primarily with: standalone metrology products from KLA-Tencor Corporation, Therma-Wave, Inc. and Rudolph Technologies; integrated metrology products from Nova Measuring Instruments Ltd., KLA-Tencor and Therma-Wave; and overlay metrology products from KLA-Tencor and Accent Optical Technologies. Many of our competitors have substantially greater financial, engineering, manufacturing and marketing resources than we do. Significant competitive factors in our industry include: performance of proprietary measurement technology; system performance, including automation and software capability; ease of use; reliability; established customer bases; cost of ownership; price; and global customer service. We believe that we compete favorably with respect to these factors. Nevertheless, we must continue to develop and design new and improved products and evaluate the attractiveness of strategic transactions, including mergers and asset acquisitions, in order to maintain our competitive position, especially in light of the competitive advantage our larger competitors, such as KLA-Tencor Corporation may be able to exert in the marketplace.

Manufacturing

We manufacture our products in the United States, Japan and South Korea. We combine proprietary measurement technology produced in our facilities with components and subassemblies obtained from outside suppliers. We currently do not expect our manufacturing operations to require us to make any additional major investments in capital equipment.

Certain components, subassemblies and services necessary for the manufacture of our systems are obtained from a sole supplier or limited group of suppliers. We do not maintain long-term supply agreements with any of our suppliers.

Research and Development

Our research and development is directed towards enhancing existing products and developing and introducing new products to maintain technological leadership and to meet current and evolving customer needs. Our process, engineering, marketing, operations and management personnel have developed close collaborative relationships with many of our customers and have used these relationships to identify market demands and target our research and development to meet those demands. We are working to develop potential applications of new and emerging technologies, including improved metrology methods. We conduct research and development at our facilities in California, South Korea and Japan.

In the United States, our research and development efforts are focused on semiconductor metrology. In South Korea, our research and development efforts are focused on the overlay metrology market. In Japan, our research and development efforts are focused on tabletop and flat panel display metrology.

Table of Contents

Our research and development expenditures in 2004 in the United States, Japan and South Korea were as follows:

United States (semiconductor metrology)	$ 11.1 million
Japan (tabletop and flat panel display metrology)	$ 1.2 million
South Korea (overlay metrology)	$ 0.5 million
Total	$ 12.8 million

We have extensive proprietary technology and expertise in such areas as spectroscopic reflectometry using our patented absolute reflectivity, robust pattern recognition and complex measurement software algorithms. We continue to add to our intellectual property portfolio, most recently in the areas of critical dimension measurement and integrated metrology. We also have extensive experience in systems integration engineering required to design compact, highly automated systems for advanced clean room environments. Expenditures for research and development during fiscal years 2002, 2003 and 2004 were $13.8 million, $13.4 million and $12.8 million, respectively, and represented 39.6%, 32.2% and 18.3% of total net revenues, respectively.

Intellectual Property

Our success depends in large part on the technical innovation of our products. We actively pursue a program of filing patent applications to seek protection of technologically sensitive features of our metrology systems. As of January 1, 2005, we held 30 United States patents with 35 patent applications pending, four of which were filed during 2004. The United States patents, issued during the period 1988 to 2004, will expire between 2005 and 2023. While we attempt to establish our intellectual property rights through patents and trademarks and protect intellectual property rights through non-disclosure agreements, we believe that our success will depend to a greater degree upon innovation, technological expertise and our ability to adapt our products to new technology. We may not be able to 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 are claimed to infringe their proprietary rights. We typically refer such matters to our legal counsel.

We have registered the following trademarks with the U.S. Patent and Trademark Office: Nanometrics®, NanoSpec®, Integrated Metrology®, NanoOCD®, Metra®, NanoNet®, OCD® and others. Additionally, we use a variety of other trademarks and trade names such as Atlas, NanoCLP and the Nanometrics logo. All other brand names, trade names and trademarks mentioned herein are the property of their respective holders. The effect of registering our trademarks is to further protect Nanometrics brand and corporate identity.

Employees

At January 1, 2005, we employed approximately 311 persons worldwide: 78 in research and development, 59 in manufacturing and manufacturing support, 70 in customer service, 72 in sales and marketing, and 32 in general administration and finance. None of our employees is 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.

16

Table of Contents

Executive Officers of the Registrant

The following are our current executive officers and their ages as of January 1, 2005:

Name	Age	Position
Vincent J. Coates	79	Chairman of the Board, Secretary
John D. Heaton	44	President, Chief Executive Officer and Director
Paul B. Nolan	49	Vice President and Chief Financial Officer
Roger Ingalls Jr.	43	Senior Vice President of Standalone Sales

Mr. Vincent J. Coates has been Chairman of the Board since Nanometrics was founded in 1975. He has been our Secretary since February 1989. He has also served as our Chief Executive Officer through April 1998 and President from our founding through May 1996, except for the period of January 1986 through February 1987 when he served exclusively as Chief Executive Officer. Mr. Coates has also served as Chairman of the Board of Nanometrics Japan Ltd., a subsidiary of the Company, since June 1998. Prior to his employment at Nanometrics, Mr. Coates co-founded Coates and Welter Instrument Corporation, a designer of electron microscopes, which company was subsequently acquired by Nanometrics. Mr. Coates also spent over twenty years working in engineering, sales and international operations for the Perkin-Elmer Corporation, a manufacturer of analytical instruments. In 1995, he received an award that recognized his contribution to the industry from Semiconductor and Equipment and Materials International, an industry trade organization.

Mr. John D. Heaton has served as a director of Nanometrics since July 1995. Since May 1996, he has served as our President. Since April 1998, he has also served as our Chief Executive Officer. From May 1996 to April 1998, he served as our Chief Operating Officer. Mr. Heaton has also served as President of Nanometrics Japan Ltd., a subsidiary of the Company, since January 1998. Beginning in 1978, Mr. Heaton served in various technical positions at National Semiconductor, a semiconductor manufacturer, prior to joining the Company in 1990.

Mr. Paul B. Nolan has served as Vice President and Chief Financial Officer of Nanometrics since March 1994. Mr. Nolan joined us as a Financial Analyst in March 1989, and served as Director of Finance from March 1993 to March 1994. Mr. Nolan served as Financial Analyst at Harris Corporation, a communications equipment company, prior to joining the Company.

Mr. Roger Ingalls Jr. has served as our Senior Vice President of Standalone Sales since January 2002. Mr. Ingalls joined Nanometrics in March 1995, serving as Vice President and Director of Sales and Marketing from October 1997 to February 1998, and as Vice President and Director of Marketing from February 1998 to January 2002. Prior to joining Nanometrics, he served as a sales engineer for Nikon Inc., a precision optical company, from March 1993 to March 1995.

ITEM 2. PROPERTIES

At January 1, 2005, our owned or leased facilities included those described below:

Type	Location	Use

		Square Footage	
Owned	Milpitas, California	133,000	Corporate headquarters and manufacturing
Owned(1)	Pyongtaek-city, South Korea	39,000	Sales, service, engineering and manufacturing
Owned	Chiba Ken, Japan	50,000	Sales, service, engineering and manufacturing
Owned	Milpitas, California	4,602	Corporate housing
Leased	Hsinchu, Taiwan	3,250	Sales and service
Leased	Austin, Texas	1,130	Sales and service
Leased	Shanghai, China	1,400	Sales and service

(1) Certain real estate improvements on this property are owned; the underlying land, however, is leased.

Table of Contents

We believe that our existing facilities, which are currently utilized at or near capacity, are suitable and adequate for our current needs and anticipated growth.

ITEM 3. LEGAL PROCEEDINGS

None.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

No matters were submitted to a vote of security holders during the quarter ended January 1, 2005.

Table of Contents

PART II

ITEM 5. MARKET FOR REGISTRANT S COMMON EQUITY AND RELATED SHAREHOLDER MATTERS

Our common stock is quoted on the Nasdaq National Market under the symbol NANO. The following table sets forth, for the periods indicated, the high and low bid prices per share of our common stock as reported on the Nasdaq National Market. These quotations represent prices between dealers and do not include retail markups, markdowns or commissions and may not necessarily represent actual transactions.

	High	Low
2003		
First Quarter	$ 6.11	$ 2.85
Second Quarter	$ 7.49	$ 3.88
Third Quarter	$ 15.89	$ 6.15
Fourth Quarter	$ 17.41	$ 10.63
2004		
First Quarter	$ 23.50	$ 13.86
Second Quarter	$ 18.94	$ 10.60
Third Quarter	$ 12.20	$ 7.50
Fourth Quarter	$ 17.72	$ 11.14

On February 24, 2005, the last reported sale price of our common stock on the Nasdaq National Market was $12.31 per share, and there were approximately 141 holders of record of our common stock.

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.

Equity Compensation Plan Information

The following table gives information about the common stock that may be issued under all of our existing equity compensation plans as of January 1, 2005.

Plan category	Number of securities to be issued upon exercise of	Weighted-average	Number of securities remaining available for future issuance

	outstanding options, warrants and rights	exercise price of outstanding options, warrants and rights	under equity compensation plans (excluding securities reflected in column (a))
	(a)	(b)	(c)
Equity compensation plans approved by security holders	1,555,629	$ 11.94	1,136,990
Equity compensation plans not approved by security holders	1,076,646	$ 8.13	35,359
Total	2,632,275	$ 10.38	1,172,349

Table of Contents

ITEM 6. SELECTED CONSOLIDATED 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/A.

	Years Ended				
	December 30, 2000(a)	December 29, 2001(a)	December 28, 2002	January 3, 2004(b)	January 1, 2005
	(in thousands, except per share data)				*As restated(d)*
Consolidated Statement of Operations Data:					
Net revenues:					
Product	$ 63,468	$ 42,653	$ 28,669	$ 34,592	$ 62,147
Service	6,023	4,931	6,054	7,010	7,784
Total net revenues	69,491	47,584	34,723	41,602	69,931
Costs and expenses:					
Cost of product sales	25,082	17,949	13,237	17,691	27,812
Cost of service	6,022	5,406	5,765	6,620	8,404
Research and development	9,238	10,760	13,765	13,399	12,827
Selling	10,313	9,523	10,862	11,496	11,748
General and administrative	4,258	4,177	5,104	4,689	5,137
Goodwill impairment			1,077		
Total costs and expenses	54,913	47,815	49,810	53,895	65,928
Income (loss) from operations	14,578	(231)	(15,087)	(12,293)	4,003
Other income, net	3,903	1,973	589	686	122
Provision (benefit) for income taxes	5,942	782	(6,230)	5,860(c)	426
Income (loss) before cumulative effect of change in accounting principle	12,539	960	(8,268)	(17,467)	3,699
Cumulative effect of change in revenue recognition principle (SAB 101)	(1,364)				
Net income (loss)	$ 11,175	$ 960	$ (8,268)	$ (17,467)	$ 3,699
Basic net income (loss) per share:					
Income (loss) before cumulative effect of change in accounting principle	$ 1.14	$ 0.08	$ (0.70)	$ (1.45)	$ 0.30
Cumulative effect of change in revenue recognition principle (SAB 101)	(0.12)				
Net income (loss)	$ 1.02	$ 0.08	$ (0.70)	$ (1.45)	$ 0.30
Diluted net income (loss) per share:					
	$ 1.06	$ 0.08	$ (0.70)	$ (1.45)	$ 0.28

Income (loss) before cumulative effect of change in accounting principle					
Cumulative effect of change in revenue recognition principle (SAB 101)	(0.12)				
Net income (loss)	$ 0.94	$ 0.08	$ (0.70)	$ (1.45)	$ 0.28
Shares used in per share computation:					
Basic	10,986	11,691	11,878	12,043	12,320
Diluted	11,845	12,161	11,878	12,043	13,364

(a) We adopted Statement of Financial Accounting Standards No. 142 Goodwill and Other Intangible Assets (SFAS 142), effective January 1, 2002. The effect of not amortizing goodwill and other intangible assets in periods prior to the adoption of SFAS 142 would have resulted in net income of $1,028 and $11,956 for the years ended December 29, 2001 and December 30, 2000, respectively; basic earnings per common share of $0.09 and $1.09 for the years ended December 29, 2001 and December 30, 2000, respectively; and diluted earnings per common share of $0.09 and $1.01 for the years ended December 29, 2001 and December 30, 2000, respectively.

(b) The fiscal year ended January 3, 2004 included 53 weeks, whereas the other periods presented included 52 weeks.

(c) The income tax provision for the fiscal year ended January 3, 2004 primarily represents a charge of $6,020 to record a valuation allowance against deferred income tax assets.

(d) The restatement impacts the year ended January 1, 2005 presented herein and is further discussed in Note 2 to the condensed consolidated financial statements included herein.

Table of Contents

	At				
	December 30, 2000	December 29, 2001	December 28, 2002	January 3, 2004	January 1, 2005
			(in thousands)		
					As restated
Consolidated Balance Sheet Data:					
Cash, cash equivalents and short-term investments	$ 69,788	$ 47,227	$ 36,866	$ 29,892	$ 33,868
Working capital	92,420	80,171	74,776	59,587	68,588
Total assets	144,796	142,355	134,688	121,740	133,769
Debt obligations, less current portion	4,236	3,314	3,123	2,648	2,070
Total shareholders equity	127,009	129,845	124,106	108,441	116,829

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

The following Management s Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with our consolidated financial statements and the notes thereto included elsewhere in this Annual Report on Form 10-K/A. Our discussion contains forward-looking statements based upon current expectations that involve risks and uncertainties, such as our plans, objectives and intentions. In some cases, forward-looking statements can be identified by words such as believe, expect, anticipate, plan, potential, continue or similar expressions. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain risk factors, including those set forth in Factors That May Affect Future Operating Results and elsewhere in this Annual Report on Form 10-K/A. We believe it is important to communicate our expectations to our investors. However, there may be events in the future that we are not able to predict accurately or over which we have no control. You should be aware that the occurrence of the events described in these risk factors and elsewhere in this Annual Report on Form 10-K/A could materially and adversely affect our business, operating results and financial condition. We disclaim any obligation to update information contained in any forward-looking statement.

Restatement of Consolidated Financial Results of Operations

On October 26, 2005, our Audit Committee, acting on a recommendation from our management, determined that our audited financial statements for the fiscal year ended January 1, 2005, and our unaudited quarterly financial statements for the periods ended April 2, 2005 and July 2, 2005, respectively, should be restated to revise the accounting for certain post-sale warranty services and other items. The restatement impacts the year ended January 1, 2005 presented herein and is further discussed in Note 2 to the condensed consolidated financial statements included herein.

Subsequent to the filing of this Form 10-K/A, we will file an Amendment No. 1 on Form 10-Q/A for the periods ended April 2, 2005 and July 2, 2005, respectively, to reflect restatements of our consolidated balance sheet as of each respective quarter end and our consolidated statements of operations and cash flows for the three-month periods ended April 2, 2005 and July 2, 2005 and the six-month period ended July 2, 2005 and the comparable prior year periods.

The restatement affects the financial statements for the year ended January 1, 2005 and as such, the unaudited quarterly financial statements in the Quarterly Reports on Form 10-Q for the periods ended April 3, 2004, July 3, 2004 and October 2, 2004, should no longer be relied upon. We have not amended and do not intend to amend our previously filed Quarterly Reports on Form 10-Q for the periods affected by the restatement prior to January 1, 2005 as the 2004 restatement information will be reflected in the Quarterly Reports on Form 10-Q/A for the three-month periods ended April 2, 2005 and July 2, 2005 and in the Quarterly Report on Form 10-Q for the three-month period ended October 1, 2005 with the statement of operations information included in this Form 10-K/A.

This Form 10-K/A reflects adjustments to net revenues and operating expenses related to the restatement of our financial results. Below is a description of the significant adjustments impacting the financial results for the periods presented and relates to our (i) deferral of revenue associated with extended warranty contracts purchased by certain customers at the time of equipment sale, (ii) the alignment of the warranty accrual with the actual warranty periods for certain customers and (iii) accrual of certain foreign sales commission expenses into the appropriate period.

Table of Contents

Revenue Deferral Associated with Extended Warranty

The effect of the restatement is to defer revenue associated with extended warranty provisions of certain customer supply arrangements. We generally sell the majority of our products with a twelve month repair or replacement warranty. We identified certain transactions in each quarter of fiscal 2004 whereby the terms of the product sale included a separately priced extended warranty provision beyond the standard twelve-month warranty. In accordance with Financial Accounting Standards Board Technical Bulletin 90-1, *Accounting for Separately Priced Extended Warranty and Product Maintenance Contracts,* revenue for separately priced extended warranty contracts should be deferred and recognized ratably over the term of the extended warranty contract. We are restating our financial statements to recognize such deferred revenue on a straight-line basis over the contract period. The restatement adjustments resulted in a decrease to product sales previously reported in our Form 10-K for the year ended January 1, 2005 of $0.8 million.

Alignment of Warranty Accrual with Actual Warranty Periods

We provide a warranty accrual at the time of revenue recognition. As a result of the additional procedures we performed, we discovered that, in certain instances, the warranty periods used in determining the warranty accrual did not coincide with the actual warranty periods for products under warranty coverage. Accordingly, adjustments were recorded to the warranty accrual and related costs of product sales for the fiscal years 2005 and 2004. The restatement adjustments resulted in an increase to the warranty expense, previously reported in our Form 10-K, for the year ended January 1, 2005 of $0.3 million.

Accrual of Unpaid Sales Commission

As part of our overall compensation strategy, we pay a commission to our field sales personnel for their services in selling our products and obtaining customer orders. The sales commissions are paid to the field sales personnel only after the customer has fully paid for the equipment or services received. Customer payment is often received a number of months after revenue is recognized. At one of our foreign locations, we erroneously recorded the expense upon payment of the sales commissions to our field sales personnel rather than when the related revenue and other associated costs of revenues were recognized. Accordingly, adjustments were recorded to reflect the sales commission expense in the periods in which we recognized the related revenue. The restatement adjustments resulted in an increase to selling expense previously reported in our Form 10-K for the year ended January 1, 2005 of $0.3 million.

Effect of Restatement Upon Previously Reported Balances

The restatement affected each three-month period beginning with the first quarter of fiscal 2004 through the second quarter of 2005. We will file an Amendment No. 1 on Form 10-Q/A for each of the quarters ended April 2, 2005 and July 2, 2005 to reflect restatements of our consolidated balance sheet as of each respective quarter end and our consolidated statements of operations and cash flows for the three-month periods ended April 2, 2005 and July 2, 2005 as well as the six-month period ended July 2, 2005 and the comparable prior year periods.

The condensed consolidated financial statements as of January 1, 2005 contained herein have been restated to incorporate all these adjustments and the related tax effects as described herein. The restatement adjustments described herein required us to make a number of significant accounting judgments. The following table sets forth selected consolidated financial data, showing our previously reported and restated amounts at January 1, 2005 (in thousands, except per share amounts):

	As Previously Reported	As Restated	Inc (Dec)
Accrued payroll and related expenses	$ 2,206	$ 2,512	$ 306[C]
Deferred revenue	$ 2,742	$ 3,506	$ 764[A]
Other current liabilities	$ 1,840	$ 2,097	$ 257[B]
Total current liabilities	$ 12,613	$ 13,940	$ 1,327
Retained earnings	$ 12,034	$ 10,707	$ (1,327)

[A] Adjustment relates to revenue deferral associated with extended warranty contracts

[B] Adjustment relates to the alignment of warranty accrual with actual warranty periods

[C] Adjustment relates to accrual of unpaid sales commission

Table of Contents

The impact of all adjustments discussed herein to the condensed consolidated statement of operations was to decrease our previously reported net income per diluted share for the year ended January 1, 2005 by $0.10. The following table sets forth selected consolidated financial data, showing our previously reported and restated amounts for the year ended January 1, 2005 (in thousands, except per share amounts):

	Year Ended January 1, 2005		
	As Previously Reported	As Restated	Inc (Dec)
Net revenues			
Product sales	$ 62,911	$ 62,147	$ (764)[A]
Service	$ 7,784	$ 7,784	$
Cost of product sales	$ 27,555	$ 27,812	$ 257 [B]
Selling expenses	$ 11,442	$ 11,748	$ 306 [C]
Income from operations	$ 5,330	$ 4,003	$ (1,327)
Provision for income taxes	$ 426	$ 426	$
Net income	$ 5,026	$ 3,699	$ (1,327)
Net income per share:			
Basic	$ 0.41	$ 0.30	$ (0.11)
Diluted	$ 0.38	$ 0.28	$ (0.10)

[A] Adjustment relates to revenue deferral associated with extended warranty contracts

[B] Adjustment relates to the alignment of warranty accrual with actual warranty periods

[C] Adjustment relates to accrual of unpaid sales commission

We have determined the cumulative effect of these errors was approximately $0.4 million as of January 3, 2004. The effect was not material to any relevant prior period and had the amounts been recorded correctly in the prior periods, there would have been no significant effect on reported net loss, comprehensive loss or total stockholder s equity. To correct this misstatement, we recorded the cumulative $0.4 million in the condensed consolidated statement of operations in the three-month period ended April 3, 2004.

Overview

We are an innovator in the field of metrology systems for the semiconductor and flat panel display manufacturing industries. Our systems are designed to precisely monitor film thickness and critical dimensions that are necessary to control the manufacturing process and provide increased production yields and performance.

Capital expenditures by manufacturers of semiconductors and flat panel displays, especially in Asia, and their suppliers are critical to our success. The demand by these manufacturers and suppliers is driven by the expected market demand for new products and new applications. The increasing complexity of the 300mm manufacturing processes for semiconductors and larger flat panel displays is an important factor in the demand for our innovative metrology systems. The incorporation of smaller features sizes, copper interconnect technology and optical critical

dimension technology are expected to result in increased demand. Our strategy is to continue to innovate organically as well to evaluate strategic acquisitions in order to address business challenges and opportunities.

Our revenues are derived from product sales and customer service, which include sales of accessories and service for the installed base of our products. For the year ended January 1, 2005, we derived 88.9% of our total net revenues from product sales and 11.1% of our total net revenues from services.

Table of Contents

Important Themes and Significant Trends

The semiconductor equipment industry is characterized by cyclical growth. Recently, the industry emerged from an exceptionally long, cyclical downturn. Changing trends in the semiconductor and flat panel display manufacturing industries are increasing the need for metrology as a major component of manufacturing systems. These trends include:

Conversion to 300mm Wafer Size. Semiconductor manufacturers are converting to 300mm wafers to achieve better production efficiencies. Most facilities are incorporating this wafer size, and our newest products are well-positioned to serve these facilities. It is important that we are successful in product evaluations with these new 300mm facilities in order to continue to gain market share.

Incorporation of Optical Critical Dimension Metrology in the Patterning Process. Our customers use photolithographic processes to create patterns on wafers. Critical dimensions must be carefully controlled during this process. Our proprietary optical critical dimension systems can provide the critical process control of these circuit dimensions that is necessary for successful manufacturing of these state of the art devices.

Copper Interconnect Technology. The need for ever increasing device circuit speed coupled with lower power consumption has pushed semiconductor device manufacturers to begin the replacement of the subtractive aluminum interconnect process with copper damascene technology. This new copper processing technology has driven the need for new metrology techniques such as non-destructive laser profiling and the use of optical critical dimension (OCD) technology for control of the copper process.

Incorporation of 65nm and 45nm Feature Sizes. In an effort to reduce costs and increase device performance, semiconductor manufacturers are decreasing both the dye size and feature size. Monitoring the increased tolerance requirements on smaller features sizes requires increased use of metrology systems. Our thin film and critical dimension metrology systems are well suited and are being adopted for these next generation processes.

Reduced Number of Customers. Because of the escalating cost of 300mm manufacturing facilities, fewer semiconductor manufacturers can afford the significant investment in these next generation facilities. Therefore, fewer opportunities for semiconductors equipment companies exist. Given that the available number of potential customers is decreasing, previous customer relationships, product positioning and critical mass take on greater importance.

Adoption of New Types of Thin Film Materials. Manufacturers are adopting new processes and technologies that increase the importance and utilization of thin film metrology systems. To achieve greater semiconductor device speed, manufacturers are utilizing copper and new, low dielectric constant (low k) insulating materials. Our advanced metrology solutions are required in the manufacturing process to characterize these materials.

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 standalone metrology systems throughout the fab to ensure that manufacturing processes scale rapidly, are accurate and can be repeated on a consistent basis.

Critical Accounting Policies

The preparation of our financial statements conforms with 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 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 The Consolidated Financial Statements.

Table of Contents

Revenue Recognition Nanometrics 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 collectibility is reasonably assured. Product revenue includes hardware and software that is incidental to the products. For product sales to existing customers, revenue recognition generally occurs at the time of shipment, as our terms are FOB shipping point, if we have met defined customer acceptance experience levels with both the customer and the specific type of equipment. All other product revenues are recognized upon customer acceptance. In Japan, where risk of loss and title transfers to the customer upon customer acceptance, revenue is recognized upon customer acceptance.

All of our products are assembled prior to shipment to our customers. We often perform limited installation for our customers, however such installation is inconsequential and perfunctory as it is also performed by third parties. Revenue related to spare parts sales is recognized on shipment and is included as part of service revenue. Service revenue also includes service contracts and non-warranty repairs of systems. On occasion, customers request a warranty period longer than our standard 12 month warranty. In those instances where extended warranty services are separately quoted to the customer, we follow the guidance of Financial Accounting Standards Board Technical Bulletin 90-1, *Accounting for Separately Priced Extended Warranty and Product Maintenance Contracts,* associated revenue is deferred and recognized to income ratably over the term of the contract. Whereas service revenue related to service contracts is recognized ratably over the period under contract, service revenue related to repairs of systems is recognized as services are performed. Unearned maintenance and service contract revenue is included in deferred revenue. Furthermore, we do not provide our customers with any return rights. Service contracts may be purchased by the customer when the warranty period expires.

In limited situations we have multiple deliverables in our customer arrangements. Those situations include the sale of repair services and parts together where revenues are recognized when both the services and parts have been delivered. We also provide technical support to our customers as part of our warranty program. Upon recognition of product revenue, a liability is recorded for anticipated warranty costs.

Allowance for Doubtful Accounts We maintain allowances for estimated losses resulting from the inability of our customers to make 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 collectibility 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 doubtful accounts allowance reflects our risk associated with smaller rather than larger customers and that our reported allowances are adequate. If however, the financial conditions of customers were to deteriorate, resulting in their inability to make payments, we 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 We are exposed to a number of economic and industry 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. We 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. For demonstration inventory, we also consider the potential cost to refurbish the inventory prior to sale. 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. Inventories are stated at the lower of cost, using the first-in, first-out method, or market value.

Table of Contents

Product Warranties Nanometrics sells the majority of its products with a twelve month repair or replacement warranty from the date of shipment. The Company provides an accrual for estimated future warranty costs based upon the historical relationship of warranty costs to revenues. 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, 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 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 recorded warranty reserve and adjusts the amounts in accordance with changes in these factors.

Income Tax Assets and Liabilities We account for income taxes based on Statement of Financial Accounting Standards (SFAS) No. 109 *Accounting for Income Taxes*, whereby 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 must be reduced by a valuation allowance if it is more likely than not that a portion of the deferred tax asset will not be realized in the future. We evaluate the deferred tax assets on a quarterly basis 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 currently account for stock-based compensation issued to employees using the intrinsic value method in accordance with the provisions of Accounting Principles Board Opinion No. 25, *Accounting for Stock Issued to Employees*, as allowed by SFAS No. 123, *Accounting for Stock Based Compensation* as amended by SFAS No. 148, *Accounting for Stock Based Compensation Transition and Disclosures, an Amendment of FASB Statement No. 123*. Under the intrinsic value method, we do not recognize any compensation expense, as the exercise price of all stock options is equal to the fair market value at the time the options are granted. We disclose the pro forma effect of recognizing compensation expense on stock options granted to employees in the footnotes to the consolidated financial statements. These pro forma effects are based on the fair value of the options using the Black-Scholes valuation model using assumptions which are based on our historical experience.

Our accounting treatment of stock options will significantly change during 2005 due to our planned adoption of SFAS No. 123R (SFAS 123(R)), *Share-Based Payment,* which is effective for periods beginning after June 15, 2005. See Recent Accounting Pronouncements.

Table of Contents

Results of Operations

The following table presents our consolidated statements of operations data as a percentage of total net revenues for the years ended December 28, 2002, January 3, 2004 and January 1, 2005:

	Years Ended		
	December 28, 2002	January 3, 2004	January 1, 2005
Net revenues:			
Products	82.6%	83.1%	88.9%
Service	17.4	16.9	11.1
Total net revenues	100.0	100.0	100.0
Cost and expenses:			
Cost of products	38.1	42.5	39.8
Cost of service	16.6	15.9	12.0
Research and development	39.6	32.2	18.3
Selling	31.3	27.6	16.8
General and administrative	14.7	11.3	7.4
Goodwill impairment	3.1		
Total cost and expenses	143.4	129.5	94.3
Loss from operations	(43.4)	(29.5)	5.7
Other income (expense):			
Interest income	1.6	1.0	0.4
Interest expense	(0.2)	(0.2)	(0.1)
Other, net	0.3	0.9	(0.1)
Total other income, net	1.7	1.6	0.2
Income (loss) before provision (benefit) for income taxes	(41.7)	(27.9)	5.9
Provision (benefit) for income taxes	(17.9)	14.1	0.6
Net income (loss)	(23.8)%	(42.0)%	5.3%

Table of Contents

Years ended December 28, 2002, January 3, 2004 and January 1, 2005

Total net revenues. Our net revenues were comprised of the following categories:

	Years Ended		
	January 3, 2004	January 1, 2005	Percentage Change
Automated systems	$ 25,620	$ 38,100	48.7%
Integrated systems	6,106	21,602	253.8
Tabletop systems	2,866	2,445	(14.7)
Service	7,010	7,784	11.0
Total net revenues	$ 41,602	$ 69,931	68.1

	Years Ended		
	December 28, 2002	January 3, 2004	Percentage Change
Automated systems	$ 19,969	$ 25,620	28.3%
Integrated systems	4,155	6,106	47.0
Tabletop systems	4,545	2,866	(36.9)
Service	6,054	7,010	15.8
Total net revenues	$ 34,723	$ 41,602	19.8

In 2004, revenue from automated systems increased by 48.7% and integrated system revenue increased by 253.8% from their 2003 levels, primarily due to higher volume sales for each product group. The higher volume sales for each product group is primarily due to our new 300 mm products, such as the Atlas automated metrology product and 9010 integrated metrology system. The increase in product revenue resulted from greater demand for semiconductor process control metrology equipment and flat panel display equipment, particularly in the U.S. and Asia. We believe that this increased demand was attributable primarily to customers adding capacity in semiconductor production facilities as demand for semiconductors increased as a result of the continuing economic recoveries in the U.S. and Japan in 2004. Service revenue increased 11.0% from $7.0 million in 2003 to $7.8 million in 2004. The increase in service revenue is primarily attributable to higher sales of parts and services in the U.S. and Asia in 2004, which we believe is due to a growing installed base of systems that have passed their warranty periods. The strengthening of the Japanese yen accounted for approximately 2.0% of total net revenues in 2004.

Total net revenues increased 19.8% from $34.7 million in 2002 to $41.6 million in 2003. Product revenue increased 20.7% from $28.7 million in 2002 to $34.6 million in 2003. Unit sales of existing automated and integrated systems increased from their 2002 levels. Additionally, our new products, such as the NanoOCD 9010 integrated product also contributed to our revenues. The increase in product revenue resulted from greater demand for semiconductor process control metrology equipment and flat panel display equipment, particularly in Asia. We believe that this increased demand was attributable primarily to customers adding capacity in semiconductor production facilities as demand for semiconductors increased as a result of the economic recoveries in the U.S. and Japan in 2003. Service revenue increased 15.8% from $6.1 million in 2002 to $7.0 million in 2003. The increase in service revenue was primarily attributable to higher sales of parts and services in the U.S. and Asia in

2003, which we believe was due in part to increased demand for semiconductors at a time when capital expenditures by equipment manufacturers had been reduced, resulting in increased utilization of older systems by customers. Although fiscal 2003 included 53 weeks, the length of this accounting period did not materially impact our comparative sales trends.

Table of Contents

Cost of products. Cost of products as a percentage of product revenue decreased from 51.1% in 2003 to 44.8% in 2004 due primarily to increased product sales volume in 2004 resulting in lower per unit manufacturing costs. The lower product revenue in 2004 was partially offset by a write down of $0.8 million in slower moving inventory in 2004 based on our estimate that future forecasted sales for certain product lines had permanently declined. Cost of product sales as a percentage of product sales increased from 46.2% in 2002 to 51.1% in 2003 due in part to lower sales prices on older products and higher costs associated with an increase in manufacturing capacity added to our U.S. facility. The increased manufacturing capacity is part of a continuing strategic plan to internalize the production of key parts and components, allowing us to have greater control over their development, delivery, quality and cost. The warranty accrual at January 1, 2005 was $1.1 million, an increase of 106% compared to the same period in 2003. This increase resulted primarily from increased sales volume and the associated warranty costs.

Cost of service. Cost of service as a percentage of service revenue increased from 94.4% in 2003 to 108.0% in 2004 primarily as a result of higher service costs from an increase in headcount and related overhead to provide additional support for our growing customer base, particularly in Asia. We could not fully recoup these costs due to higher service demands from our customer base. Cost of service as a percentage of service revenue decreased from 95.2% in 2002 to 94.4% in 2003 primarily as a result of higher service sales that exceeded the increase in the associated variable cost of service sales in 2003 while fixed costs at the time remained relatively stable.

Research and development. Research and development expenses decreased 4.3% from $13.4 million in 2003 to $12.8 million in 2004 primarily from lower materials expenses in 2004 resulting from cost cutting measures in the first half of the year. Research and development expenses decreased 2.7% from $13.8 million in 2002 to $13.4 million in 2003 as a result of lower expenses associated with lower usage of materials used in the development of new products in 2003. In the United States, our research and development efforts are focused on semiconductor metrology. In South Korea, our research and development efforts are focused on the overlay metrology market. In Japan, our research and development efforts are focused on tabletop and flat panel display metrology. We are committed to the development of new and enhanced products and believe that new product introductions are required for us to maintain our competitive position. We expect research and development expenses to remain at current levels for the immediate future.

Selling. Selling expenses increased slightly to $11.7 million in 2004 as compared to $11.5 million in 2003. The increase in selling expenses was due to higher sales commissions in 2004 over 2003 levels as a result of higher sales volume in 2004. This increase in 2004 was partially offset by the redeployment of some resources into service support, which resulted in a decrease of about 49.0% of our selling expenses in Japan. Selling expenses increased 5.8% from $10.9 million in 2002 to $11.5 million in 2003 primarily due to increased headcount of sales and support employees and related expenses particularly in Asia in an effort to fully participate in the growth opportunities in that region.

General and administrative. General and administrative expenses increased 9.6% from $4.7 million in 2003 to $5.1 million in 2004 due in part to higher regulatory expenses. We expect our general and administrative expenses to continue to increase in the immediate future due to regulatory requirements. In addition, salary expenses were lower in 2003 resulting from shutdown days taken during that time as a cost cutting measure. General and administrative expenses decreased 8.1% from $5.1 million in 2002 to $4.7 million in 2003. This decrease resulted primarily from lower accounting software implementation costs in 2003.

Goodwill impairment. On January 1, 2002, we adopted SFAS No. 142, *Goodwill and Other Intangible Assets*. Upon implementation of this Statement, the transition impairment test was performed as of January 1, 2002, and no impairment loss was recorded. SFAS No. 142 requires that goodwill be reviewed at least annually for impairment. We elected to test our goodwill for possible impairment in the fourth quarter of 2002. Based upon the results of the annual impairment test, we recognized a goodwill impairment loss of $1,077,000 in the fourth quarter of 2002, representing the full value of goodwill. The fair value of the segment was estimated using a discounted cash flow methodology.

Table of Contents

Total other income, net. Total other income, net, which primarily consists of interest income, interest expense and foreign currency transaction gains/losses, decreased 82.2% from $686,000 in 2003 to $122,000 in 2004 primarily due to foreign currency transaction losses as well as lower interest income in 2004.

Provision for income taxes. Our effective tax rate was an expense of 10.3% in 2004. The tax expense in 2004 was primarily a result of foreign income taxes as the federal statutory income taxes were offset by a reduction in the valuation allowance. Our effective tax rate was an expense of 50.5% in 2003, versus a benefit of 43.0% in 2002. The tax expense in 2003 resulted from a provision for income taxes of approximately $6.0 million which primarily represents a charge to record a valuation allowance against deferred income tax assets. The charge was taken as a result of pretax losses incurred over the past several quarters coupled with uncertainty about future expected income in the then-existing market environment, making it more likely than not at that time that the deferred tax asset would not be realized. In the future, we will continue to review our expectations for future taxable income to determine the amount of valuation allowance necessary to reserve against deferred tax assets.

Liquidity and Capital Resources

At January 1, 2005, our cash, cash equivalents and short-term investments totaled $33.9 million compared to $29.9 million at January 3, 2004. The short-term investments consist of U.S. Treasury Bills. Our working capital of $68.6 million at January 1, 2005 increased from $59.6 million at January 3, 2004.

Operating activities provided net cash of $2.3 million in 2004. This source of cash in 2004 resulted primarily from net income and non-cash charges for depreciation and amortization and higher levels of current liabilities. These sources of cash were offset to a large extent by higher accounts receivable resulting from our revenue increase of 68.1% in 2004. The increase in accounts receivable was due to the higher concentration of revenue in the third and fourth quarters of 2004. We would expect this trend in operating cash flow and working capital to continue. Operating activities used $8.3 million in 2002 and $6.2 million in 2003. The cash usage in 2002 and 2003 resulted primarily from the net loss in those years offset by the effect of non-cash expenses. We also experienced higher levels of accounts receivable in 2003 resulting from increased sales towards the end of 2003.

Investing activities provided net cash of $3.1 million in 2004, provided $6.0 million of cash in 2003 and used $31.7 million of cash in 2002. The timing of the purchase and initial maturities of U.S. Treasury Bills in 2002 resulted in their classification as cash and cash equivalents instead of as short-term investments. Our capital expenditures were $871,000 in 2004, $990,000 in 2003 and $2.8 million in 2002. These expenditures were used primarily to continue the process of internalizing our manufacturing capacity in the United States through, for example, the purchase of a machine shop, machining equipment and improvements to our building. This internalization process was completed in the first quarter of 2004 and as a result we expect capital expenditures to decrease in the immediate future.

Financing activities provided net cash of $2.3 million in 2004, $655,000 of cash in 2003 and $998,000 in 2002 primarily resulting from the sale of shares under our stock option plans, offset to some extent by the net repayment of debt obligations by our Japanese subsidiary.

We have evaluated and will continue to evaluate the acquisition 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. However, we believe that our working capital, including cash, cash equivalents and short term investments, will be sufficient to meet our needs at least through the next twelve months.

Due to the cyclical nature of our business, we may seek outside financing opportunistically in the future. We believe our existing working capital, together with expected cash flows from operations and available sources of bank, equity and equipment financing, will be sufficient to support our operations in the future. On January 21, 2005, we entered into a definitive merger agreement with August Technology Corporation. If the merger is consummated, it may result in cash outflows related to integration activities. Estimates of these outflows are not currently known. Management of Nanometrics and August Technology are in the process of making these assessments. Notwithstanding the cash outflows that may result from integrating the two companies, we believe the merger, if consummated, may enhance the Company s liquidity and capital resources.

Table of Contents

Contractual obligations

The following table summarizes our contractual cash obligations as of January 1, 2005, and the effect such obligations are expected to have on liquidity and cash flow in future periods (in thousands):

	Total	Less than 1 Year	1-3 Years	3-5 Years	More than 5 Years
Debt obligations(1)	$ 3,234	$ 1,164	$ 852	$ 812	$ 406
Operating leases	908	530	348	30	
Other long-term liabilities	255		255		

(1) Our debt obligations primarily relate to the expansion of our Japanese facilities to accommodate the production of larger flat panel display systems, and do not include interest, which we are obligated to pay.

We have no off-balance sheet financing arrangements.

Recent Accounting Pronouncements

In December 2004, the FASB issued SFAS 123(R), *Share-Based Payment,* which replaces SFAS 123 and supersedes APB Opinion No. 25. SFAS 123(R) requires that compensation costs relating to share-based payment transactions be recognized in financial statements. The pro forma disclosure previously permitted under SFAS 123 will no longer be an acceptable alternative to recognition of expenses in the financial statements. SFAS 123(R) is effective as of the beginning of the first reporting period that begins after June 15, 2005, with early adoption encouraged. We currently measure compensation costs related to share-based payments under APB 25, as allowed by SFAS 123, and provide disclosure in notes to financial statements as required by SFAS 123. We are required to adopt SFAS 123(R) starting in the third fiscal quarter of 2005. We expect the adoption of SFAS 123(R) will have a material adverse impact on our net income and net income per share. We are currently in the process of evaluating the extent of such impact. We have also not yet determined our method of adoption of FAS 123(R). Please see our disclosure under Footnote 1 to our Consolidated Financial Statements addressing stock-based compensation.

In November 2004, Statement of Financial Accounting Standards (SFAS) No. 151, Inventory Costs An Amendment of ARB No. 43, Chapter 4 , was issued which amends the guidance in Accounting Research Bulletin (ARB) No. 43, Chapter 4, Inventory Pricing, to clarify the accounting for abnormal amounts of idle facility expense, freight, handling costs, and wasted material. Among other provisions, the new rule requires that items such as idle facility expense, excessive spoilage, double freight, and rehandling costs be recognized as current-period charges regardless of whether they meet the criterion of so abnormal as stated in ARB No. 43. Additionally, SFAS 151 requires that the allocation of fixed production overheads to the costs of conversion be based on the normal capacity of the production facilities. SFAS 151 is effective for fiscal years beginning after June 15, 2005. We are currently evaluating the effect that the adoption of SFAS 151 will have on our consolidated results of operations and financial condition.

In December 2004, the FASB issued SFAS No. 153 (SFAS 153), *Exchanges of Nonmonetary Assets an amendment to APB Opinion No. 29.* This statement amends APB 29 to eliminate the exception for nonmonetary exchanges of similar productive assets and replaces it with a general exception for exchanges of nonmonetary assets that do not have commercial substance. A nonmonetary exchange has commercial substance if the future cash flows of the entity are expected to change significantly as a result of the exchange. SFAS 153 is effective for the first fiscal period beginning after June 15, 2005. Adoption of this statement is not expected to have a material impact on our results of operations or

financial condition.

Table of Contents

In December 2004, FASB Staff Position No. FAS 109-2, *Accounting and Disclosure Guidance for the Foreign Earnings Repatriation Provision within the American Jobs Creation Act of 2004* (FSP FAS 109-2) was issued, providing guidance under SFAS 109, Accounting for Income Taxes for recording the potential impact of the repatriation provisions of the American Jobs Creation Act of 2004, enacted on October 22, 2004. FSP FAS 109-2 allows time beyond the financial reporting period of enactment to evaluate the effects of the Jobs Act before applying the requirements of FSP FAS 109-2. Accordingly, we are evaluating the potential effects of the Jobs Act and have not adjusted our tax expense or deferred tax liability for the effect of any decision we might make to repatriate earnings.

In March 2004, the FASB issued EITF 03-1, *The Meaning of Other-Than-Temporary Impairment and Its Application to Certain Investments* (EITF 03-1), which provided new guidance for assessing impairment losses on investments. Additionally, EITF 03-1 includes new disclosure requirements for investments that are deemed to be temporarily impaired. In September 2004, the FASB delayed the accounting provisions of EITF 03-1; however the disclosure requirements remain effective for annual periods ending after June 15, 2004. We will evaluate the accounting impact of EITF 03-1 once final guidance is issued. We are following the disclosure requirements of this EITF.

Factors That May Affect Future Operating Results

You should carefully consider the risks described below together with all of the other information included in this Annual Report on Form 10-K/A before making an investment decision. The risks and uncertainties described below are not the only ones that we face. If any of the following risks actually occurs, our business, financial condition or operating results could be harmed. In such case, the trading price of our common stock could decline, and you could lose all or part of your investment.

Risks Related to Our Business

Cyclicality in the semiconductor and flat panel display industries has led to substantial fluctuations in demand for our systems and may, from time to time, continue to do so.

Our operating results have varied significantly from period to period due to the cyclical nature of the semiconductor and flat panel display industries. The majority of our business depends upon the capital expenditures of semiconductor device and equipment manufacturers. These manufacturers capital expenditures, in turn, depend upon the current and anticipated market demand for semiconductors and products using semiconductors. The semiconductor industry is cyclical and has historically experienced periodic downturns. These downturns have often resulted in substantial decreases in the demand for semiconductor manufacturing equipment, including metrology systems. We have found that the resulting decrease in capital expenditures has typically been more pronounced than the downturn in semiconductor device industry revenues. We expect the cyclical nature of the semiconductor industry, and therefore, our business, to continue in the foreseeable future. Recently, the semiconductor industry emerged from a sustained downturn, which had existed for the past few years. Should this trend reverse and the downturn resume, our business and results of operations would suffer.

Because we derive a significant portion of our revenues from sales in Asia, our revenues and results of operations could be adversely affected by the instability of Asian economies.

Revenues from customers in Asian markets represented approximately 63.3%, 72.7% and 68.8% of our total net revenues in 2002, 2003 and 2004, respectively. Countries in the Asia Pacific region, including Japan, South Korea and Taiwan, each of which accounted for a significant

portion of our business in that region, had experienced general economic weaknesses in 2002 and 2003, which adversely affected our revenues at that time.

Table of Contents

We depend on Applied Materials and other OEM suppliers for sales of our integrated metrology systems, and the loss of Applied Materials or any of our other OEM suppliers as a customer 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 Applied Materials to sell semiconductor equipment products that include our metrology systems as components. If Applied Materials is unable to sell such products, or if Applied Materials chooses to focus its attention on products that do not integrate our systems, our business could suffer. If we were to lose Applied Materials as a customer for any reason, our ability to realize sales from integrated metrology systems would be significantly diminished, which would harm our business.

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 or if they delayed or cancelled a large order.

Historically, a significant portion of our revenues in each quarter and each year has been derived from sales to a relatively few number of customers, and we expect this trend to continue. There are only a limited number of large companies operating in the semiconductor and flat panel display industries. Accordingly, we expect that we will continue to depend on a small number of large customers for a significant portion of our revenues for at least the next several years. If any of our key customers were to purchase significantly fewer systems, or if a large order were delayed or cancelled, our revenues would significantly decline. In 2004, sales to Applied Materials accounted for 21.4% and sales to Samsung accounted for 14.7% of our total net revenues, respectively. In 2003, sales to Applied Materials accounted for 15.4% and sales to Hynix accounted for 12.0% of our total net revenues, respectively. In 2002, sales to Applied Materials accounted for 13.8% and sales to TSMC accounted for 10.9% of our total net revenues, respectively.

The success of our product development efforts depends on our ability to anticipate market trends and the price, performance and functionality requirements of semiconductor device manufacturers. In order to anticipate these trends and ensure that critical development projects proceed in a coordinated manner, we must continue to collaborate closely with our customers. Our relationships with our customers provide us with access to valuable information regarding industry trends, which enables us to better plan our product development activities. 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 long-term ability to produce commercially successful systems could be adversely affected.

We may have difficulty meeting the requirements described in Section 404 of the Sarbanes-Oxley Act of 2002, including addressing certain significant deficiencies in our internal controls identified in connection with our fiscal 2004 year-end audit, and failure to meet such requirements could materially affect our stock price.

We may be required to file a report on internal accounting controls, in accordance with Section 404 of the Sarbanes-Oxley Act, with our Annual Report on Form 10-K for the year ending December 31, 2005. Accordingly, we would be required to increase the amount of documentation surrounding our internal control systems and provide evidence that our systems have been properly tested to support our management s conclusions. While we continue to improve our internal control systems, including through the companywide implementation of a new Enterprise Resource Planning System or ERP System, there can be no assurance that our report will not disclose a material weakness. Even if we do not identify such a material weakness, our auditors may identify a material weakness in their attestation. In the event that a material weakness is identified, our stock price may be adversely affected.

Table of Contents

In connection with the audit conducted by the independent registered public accounting firm BDO Seidman, LLP (BDO Seidman) of our 2004 consolidated financial statements, BDO Seidman advised our management and our Audit Committee of certain significant deficiencies in our internal controls and made certain recommendations. Under the auditing standards of the PCAOB, a significant deficiency represents a deficiency in the design or operation of internal controls in which there is a more than remote likelihood that a misstatement that is more than inconsequential but less than material could occur. Please refer to Item 9A, Management Report on Internal Control Over Financial Reporting, for details.

We are currently in the process of implementing the recommendations of BDO Seidman. Additionally, we are also in the process of augmenting our current control processes, repositioning current finance and accounting personnel and recruiting additional personnel to ensure consistently complete and accurate reporting of financial information. We believe we will satisfactorily address most of the significant deficiencies referenced above by the end of the third fiscal quarter of 2005, although there can be no assurance that we will do so, as the proposed merger with August Technology will require significant integration efforts by management. Furthermore, remediation of the Company s internal controls, required to fully comply with the Section 404 internal control assessment, may require more significant efforts by management than initially anticipated.

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 and flat panel display industries and face competition from a number of companies, many of which have greater financial, engineering, manufacturing, 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 and flat panel display industries 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.

If any of our systems fail to meet or exceed our internal quality specifications, we cannot ship them until such time as they have met such specifications. If we experience significant delays or are unable to ship our products to our customers as a result of our internal processes, or for any other reason, 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. We must actively monitor our manufacturing processes to ensure that our products meet our internal quality specifications. 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.

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.

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. Defects could also lead to product liability as a result of 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.

Table of Contents

Successful infringement claims by third parties could result in substantial damages, lost product sales and the loss of important intellectual property rights by us.

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. For example, we announced on March 14, 2005 that we had received notice of a patent infringement lawsuit brought by Nova Measuring Instruments, Ltd., alleging infringement of United States Patent No. 6,752,689, or the 689 Patent. There can be no assurance that Nanometrics new or current products do not infringe any valid intellectual property rights. Even if our products do not infringe, we may be required to expend significant sums of money to defend against infringement claims, as in the Nova Measuring Instruments, Ltd. lawsuit described above, or to actively protect our intellectual property rights through litigation.

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. Certain components, subassemblies and services necessary for the manufacture of our systems are obtained from a sole supplier or limited group of suppliers. We do not maintain any long-term supply agreements with any of our suppliers. We have entered into arrangements with J.A. Woollam Company for the purchase of the spectroscopic ellipsometer component incorporated in our advanced measurement systems. 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 certain 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 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.

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

Variations in the length of our sales 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;

Table of Contents

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 six months. Occasionally our sales cycles can be much longer, particularly with customers in Asia who may require longer evaluation 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. The period between a customer s initial purchase and any subsequent purchases 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 $1,000,000 per system, our integrated metrology systems range in price from approximately $80,000 to $300,000 per system and our tabletop metrology systems range in price from approximately $50,000 to $200,000 per system. Accordingly, a small change in the number or types of systems that we sell could cause significant changes in our operating results.

We may experience material payment delays as a result of customer acceptance issues and such delays could negatively affect our results of operations.

As a result of customer acceptance issues, we may, from time to time, experience payment delays on some of our systems. Because a significant portion of our revenue is derived from the sale of a relatively small number of our systems, substantial payment delays by our customers could materially and adverse affect our results of operations.

We depend on orders that are received and shipped in the same quarter, and therefore our results of operations may be subject to significant variability from quarter to quarter.

Our net sales in any given quarter depend upon a combination of orders received in that quarter for shipment in that quarter and shipments from backlog. Our backlog at the beginning of each quarter does not include all systems sales needed to achieve expected revenues for that quarter. Consequently, we are dependent on obtaining orders for systems to be shipped in the same quarter that the order is received. Moreover,

customers may reschedule shipments, and production difficulties could delay shipments. Accordingly, we have limited visibility into future product shipments, and our results of operations may be subject to significant variability from quarter to quarter.

Table of Contents

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

We believe that once a semiconductor or flat panel display 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. Once a vendor s metrology system has been installed, a customer must often make substantial technical modifications and may experience downtime in order 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.

If we are not successful in developing new and enhanced metrology systems we will likely lose market share to our competitors.

We operate in an industry that is subject to technological changes, changes in customer demands and the introduction of new, higher performance systems with short product life cycles. To be competitive, we must continually design, develop and introduce in a timely manner new metrology systems that meet the performance and price demands of semiconductor and flat panel display manufacturers and suppliers. We must also continue to refine our current systems so that they remain competitive. We may experience difficulties or delays in our development efforts with respect to new systems, and we may not ultimately be successful in developing them. Any significant delay in releasing new systems could adversely affect our reputation, give a competitor a first-to-market advantage or cause a competitor to achieve greater market share.

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

We have recently introduced several new products to market including the Nano OCD/DUV 9010, the Nanometrics Atlas, Atlas-M, Orion and the Nano OCD 9010M. We have invested substantial time and resources into the development of the 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. While we anticipate that our new products will become an increasingly larger component of our business, their failure to gain acceptance with our customers could materially harm our business. Additionally, if our new products do gain market acceptance, our ability to sell our existing products may be impeded. As a result, there can be no assurance that the introduction of these products will be commercially successful or that these products will result in significant additional revenues or improved operating margins in future periods.

Our intellectual property may be infringed upon by third parties despite our efforts to protect it, which could threaten our future success and competitive position and adversely affect 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 have licensed a number of patents relating to our metrology 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 do own or that have been issued or licensed to us 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 in order to enforce any patents issued to or licensed by us, or to determine the scope or validity of a third party s patent 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.

Table of Contents

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, we recently announced our intent to merge with August Technology, a leader in macro defect inspection. We do not know if we will be able to complete any acquisitions, or whether we will be able to successfully integrate any acquired business, operate them profitably or retain their key employees. Integrating any business, product or technology that we acquire could be expensive and time consuming, disrupt our ongoing business and distract our management. In addition, in order to finance any acquisitions, we may be required to raise additional funds through public or private equity or debt financings. In that event, we could be forced to obtain financing on terms that are not favorable to us and, in the case of an equity financing, that result in dilution to our shareholders. If we are unable to integrate any acquired entities, products or technologies effectively, our business will suffer. Our ability to integrate other businesses, including August Technology, will be challenged further by our newly implemented ERP system.

We must attract and retain key personnel with relevant industry knowledge to help support our future growth.

Our success depends to a significant degree upon the continued contributions of our key management, engineering, sales and marketing, customer support, finance and manufacturing personnel. We generally do not enter into employment contracts with any of our key personnel. The loss of any of these key personnel, who would be difficult to replace, could harm our business and operating results. To support our future growth, we will need to attract and retain additional qualified employees. Competition for such personnel in our industry is ongoing, and we may not be successful in attracting and retaining qualified employees.

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 and through our subsidiaries in Japan and South Korea. 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 a fire or severe earthquake, could seriously harm our ability to satisfy our customer order deadlines. A significant portion of our operations is located in Japan and South Korea, which may be subject to regional political and economic instability.

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.

In 2002, 2003 and 2004, 69.0%, 74.8% and 71.8%, respectively, of our total net revenues were derived from sales to customers in foreign countries, including certain countries in Asia, such as Taiwan, South Korea and Japan. 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 such countries. If we fail to adequately protect our intellectual property in these countries, it would be easier for our competitors to sell competing products.

38

Table of Contents

Continuing economic and political instability could affect our business and results of operations.

The ongoing threat of terrorism targeted at the United States or other regions where we conduct business increases the uncertainty in our markets and the economy in general. This uncertainty is likely to result in economic stagnation, which would harm our business. In addition, increased international political instability may hinder our ability to do business by increasing our costs of operations. For example, our transportation costs, insurance costs and sales efforts may become more expensive as a result of geopolitical tension. These tensions may also negatively affect our suppliers and customers. If this international economic and political instability continues or increases, our business and results of operations could be harmed.

We will incur increased costs as a result of recent changes in laws and regulations affecting public companies.

Compliance with recent changes in laws and regulations affecting public companies, including the provisions of the Sarbanes-Oxley Act, may result in increased accounting, legal and administrative costs. In particular, Section 404 of the Sarbanes-Oxley Act of 2002 and the rules of the Securities and Exchange Commission and the Public Company Accounting Oversight Board impose new requirements with respect to the evaluation of the effectiveness of the Company s internal controls. The cost of complying with these new requirements could be substantial.

Our quarterly 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 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:

- changes in customer demand for our systems;
- economic conditions in the semiconductor and flat panel display industries;
- the timing, cancellation or delay of customer orders and shipments;
- market acceptance of our products and our customers products;
- 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 timing of acquisitions of businesses, products or technologies;

the levels of our fixed expenses, including research and development costs associated with product development, relative to our revenue levels; and

fluctuations in foreign currency exchange rates, particularly the Japanese yen.

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.

Sales to customers in foreign countries accounted for approximately 69.0%, 74.8% and 71.8% of our total net revenues in 2002, 2003 and 2004, respectively. We maintain facilities in Japan and South Korea. 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, disruptions or delays in shipments caused by customs brokers or other government agencies, unexpected changes in regulatory requirements, tariffs, customs, duties and other trade barriers, difficulties in staffing and managing foreign operations, and potentially adverse tax consequences resulting from changes in tax laws.

Table of Contents

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

We are subject to various environmental laws and regulations that could impose substantial costs upon us and may adversely affect 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. There can be no assurance that violations of environmental laws or regulations will not occur in the future as a result of the inability to obtain permits, human error, equipment failure or other causes.

Risks Relating to the Merger with August Technology Corporation

The issuance of shares of Nanometrics common stock to August Technology stockholders in the merger will substantially reduce the percentage interests of Nanometrics shareholders.

If we complete the merger, August Technology shareholders will receive 0.6401 of a share of Nanometrics common stock for each share of August Technology common stock they own at the completion of the merger. Based on the number of shares of Nanometrics and August Technology outstanding on January 21, 2005, August Technology shareholders would hold approximately 46.5% of the fully-diluted shares of common stock of the combined entity immediately after the merger, and Nanometrics shareholders would hold approximately 53.5% of the fully-diluted shares of common stock of the combined entity immediately after the merger. This would cause a significant reduction in the relative percentage interest of current Nanometrics shareholders in earnings, voting, liquidation value and book and market value.

Even though Nanometrics and August Technology have obtained the regulatory approvals required to complete the merger, governmental authorities could still seek to block or challenge the merger.

The merger is subject to review by the Department of Justice and the United States Federal Trade Commission, or the FTC, under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, or the HSR Act. Under the HSR Act, Nanometrics and August Technology are required to make pre-merger notification filings and to await the expiration or early termination of the statutory waiting period prior to completing the merger. All required regulatory filings have been made and we have been notified by the FTC that early termination of the waiting period associated with these filings has been granted and we have therefore obtained all regulatory clearances, consents and approvals required to complete the merger. However, after the statutory waiting periods have expired, and even after completion of the merger, governmental authorities could seek to block or challenge the merger as they deem necessary or desirable in the public interest. In addition, in some jurisdictions, a competitor, customer or other third party could initiate a private action under the antitrust laws challenging or seeking to enjoin the merger, before or after it is completed. Nanometrics may not prevail, or may incur significant costs, in defending or settling any action under the antitrust laws.

40

Table of Contents

Provisions of the merger agreement may deter alternative business combinations and could negatively impact the stock price of Nanometrics if the merger agreement is terminated in certain circumstances.

Restrictions in the merger agreement on solicitation generally prohibit Nanometrics from soliciting any acquisition proposal or offer for a merger of business combination with any other party, including a proposal that might be advantageous to the shareholders of Nanometrics when compared to the terms and conditions of the proposed merger. In addition, if the merger is not completed under certain circumstances specified in the merger agreement, Nanometrics may be required to pay August Technology s expenses in the amount of a break-up fee of $8.3 million. These provisions may deter third parties from proposing or pursuing alternative business combinations that might result in greater value to Nanometrics shareholders than the merger. In the event the merger is terminated under circumstances that require Nanometrics to pay the break-up fee, our stock price may decline.

If the announced merger with August Technology is not completed, our business, reputation and stock price may suffer.

The definitive agreement we entered into with August Technology on January 21, 2005 contains customary closing conditions to closing, including the approval by the shareholders of both Nanometrics and August Technology, as well as regulatory approvals. If the transaction is not consummated as a result of a failure of one of these conditions to be met, our customers, prospective customers and investors in general may view this failure as a poor reflection on our business or prospects. As a result, if the transaction is not consummated as anticipated, we may experience adverse results in our business and the market price for our common stock may fall.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

During the preceding fiscal year, we were exposed to financial market risks related to foreign currency exchange rates and interest rates. We do not use derivative financial instruments. A hypothetical 10% change in the foreign currency exchange rates at January 3, 2004 and January 1, 2005 would not have a material impact on our net results of operations, as the income and expenses of our foreign operations would fluctuate at the same rate, and cash inflows and outflows would fluctuate at the same rate, since the currencies our foreign operations operate in are the same for each foreign country and there are no significant cash inflows or outflows for each respective foreign operation. However, the Company has approximately $8.0 million of net assets in foreign locations and, as a result, a hypothetical 10% change in the foreign currency exchange rate at January 1, 2005 would result in an $0.8 million increase or decrease in the net assets and a corresponding increase or decrease in other comprehensive income. Our investments in marketable securities are subject to interest rate risk. However, due to the short-term nature of these investments, interest rate changes would not have a material impact on their value at January 3, 2004 and January 1, 2005. We also have fixed rate yen denominated debt obligations in Japan that have no interest rate risk. At January 3, 2004 and January 1, 2005, our total debt obligation was $3.8 million and $3.2 million, respectively, with a long-term portion of $2.6 million and $2.1 million, respectively. A hypothetical 10% change in interest rates at January 1, 2005 would not have a material impact on our results of operations.

Table of Contents

ITEM 8. CONSOLIDATED 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

Table of Contents

REPORT OF BDO SEIDMAN, LLP, INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of Nanometrics Incorporated:

We have audited the accompanying consolidated balance sheet of Nanometrics Incorporated as of January 1, 2005 and the related consolidated statements of operations, shareholders equity and comprehensive income (loss), and cash flows for the year then ended, as restated (see Note 2). Our audit also included the consolidated financial statement schedule listed in Item 15. These financial statements and the schedule are the responsibility of the Company s management. Our responsibility is to express an opinion on these financial statements and the schedule based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company s internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes 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, as well as evaluating the overall presentation of the financial statements and the schedule. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Nanometrics Incorporated at January 1, 2005, and the results of its operations and its cash flows for the year then ended**,** in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, such financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

(Signed BDO Seidman, LLP)

San Francisco, California

February 21, 2005, except as to Note 2 to the consolidated financial statements, which is as of November 21, 2005

Table of Contents

REPORT OF DELOITTE & TOUCHE LLP, INDEPENDENT REGISTERED

PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of Nanometrics Incorporated:

We have audited the accompanying consolidated balance sheet of Nanometrics Incorporated and subsidiaries (the Company) as of January 3, 2004, and the related consolidated statements of operations, shareholders equity and comprehensive income (loss), and cash flows for the years ended January 3, 2004 and December 28, 2002. Our audits also included the consolidated financial statement schedule for the years ended January 3, 2004 and December 28, 2002 listed in Item 15. These financial statements and the financial statement schedule are the responsibility of the Company s management. Our responsibility is to express an opinion on these financial statements and financial statement schedule based on our audits.

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

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of Nanometrics Incorporated and subsidiaries at January 3, 2004, and the results of their operations and their cash flows for the years ended January 3, 2004 and December 28, 2002, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, such financial statement schedule for the years ended January 3, 2004 and December 28, 2002, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

Deloitte & Touche LLP

San Jose, California

March 29, 2004

Table of Contents

NANOMETRICS INCORPORATED

CONSOLIDATED BALANCE SHEETS

(In thousands, except share amounts)

	January 3, 2004	January 1, 2005
		As restated
ASSETS		
Current assets:		
Cash and cash equivalents	$ 7,949	$ 15,949
Short-term investments	21,943	17,919
Accounts receivable, net of allowances of $576 and $603, as of January 3, 2004 and January 1, 2005, respectively	14,522	22,222
Inventories	24,264	25,494
Prepaid expenses and other	1,015	944
Total current assets	69,693	82,528
Property, plant and equipment, net	49,738	49,035
Intangible assets	1,322	924
Other assets	987	1,282
Total assets	$ 121,740	$ 133,769
LIABILITIES AND SHAREHOLDERS EQUITY		
Current liabilities:		
Accounts payable	$ 2,047	$ 3,146
Accrued payroll and related expenses	1,593	2,512
Deferred revenue	2,345	3,506
Other current liabilities	1,436	2,097
Income taxes payable	1,528	1,515
Current portion of debt obligations	1,157	1,164
Total current liabilities	10,106	13,940
Deferred income taxes and other long-term liabilities	545	930
Debt obligations	2,648	2,070
Total liabilities	13,299	16,940
Commitments and contingencies (See Note 8)		
Shareholders equity:		
Common stock, no par value; 50,000,000 shares authorized; 12,166,016 and 12,566,636 outstanding as of January 3, 2004 and January 1, 2005, respectively	101,099	104,191
Retained earnings	7,008	10,707
Accumulated other comprehensive income	334	1,931
Total shareholders equity	108,441	116,829

Total liabilities and shareholders equity	$ 121,740	$ 133,769

See notes to consolidated financial statements.

Table of Contents

NANOMETRICS INCORPORATED

CONSOLIDATED STATEMENTS OF OPERATIONS

(In thousands, except per share amounts)

	Years Ended		
	December 28, 2002	January 3, 2004	January 1, 2005
			As restated
Net revenues:			
Products	$ 28,669	$ 34,592	$ 62,147
Service	6,054	7,010	7,784
Total net revenues	34,723	41,602	69,931
Costs and expenses:			
Cost of products	13,237	17,691	27,812
Cost of service	5,765	6,620	8,404
Research and development	13,765	13,399	12,827
Selling	10,862	11,496	11,748
General and administrative	5,104	4,689	5,137
Goodwill impairment	1,077		
Total costs and expenses	49,810	53,895	65,928
Income (loss) from operations	(15,087)	(12,293)	4,003
Other income (expense):			
Interest income	583	397	276
Interest expense	(94)	(96)	(110)
Other, net	100	385	(44)
Total other income, net	589	686	122
Income (loss) before provision (benefit) for income taxes	(14,498)	(11,607)	4,125
Provision (benefit) for income taxes	(6,230)	5,860	426
Net income (loss)	$ (8,268)	$ (17,467)	$ 3,699
Basic net income (loss) per share	$ (0.70)	$ (1.45)	$ 0.30
Diluted net income (loss) per share	$ (0.70)	$ (1.45)	$ 0.28

Shares used in per share computation:			
Basic	11,878	12,043	12,320
Diluted	11,878	12,043	13,364

See notes to consolidated financial statements.

Table of Contents

NANOMETRICS INCORPORATED

CONSOLIDATED STATEMENTS OF SHAREHOLDERS EQUITY AND COMPREHENSIVE INCOME (LOSS)

(In thousands, except share amounts)

	Common Stock		Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total Shareholders Equity	Comprehensive Income (Loss)
	Shares	Amount				
Balances, December 29, 2001	11,787,033	98,531	32,743	(1,429)	129,845	
Comprehensive loss:						
Net loss			(8,268)		(8,268)	$ (8,268)
Other comprehensive income, net of tax:						
Foreign currency translation adjustments				1,148	1,148	1,148
Unrealized gain on investments				1	1	1
Comprehensive loss						$ (7,119)
Issuance of common stock under employee stock purchase plan	125,403	568			568	
Issuance of common stock under stock option plan	94,205	578			578	
Tax benefit of employee stock transactions		234			234	
Balances, December 28, 2002	12,006,641	99,911	24,475	(280)	124,106	
Comprehensive loss:						
Net loss			(17,467)		(17,467)	$ (17,467)
Other comprehensive income, net of tax:						
Foreign currency translation adjustments				614	614	614
Comprehensive loss						$ (16,853)
Issuance of common stock under stock option plan	159,375	1,188			1,188	
Balances, January 3, 2004	12,166,016	101,099	7,008	334	108,441	
Comprehensive income:						
Net income ***(as restated)***			3,699		3,699	$ 3,699
Other comprehensive income, net of tax:						
Foreign currency translation adjustments				1,597	1,597	1,597
Comprehensive income ***(as restated)***						$ 5,296
Issuance of common stock under employee stock purchase plan	59,332	620			620	
Issuance of common stock under stock option plan	341,288	2,432			2,432	
Tax benefit of employee stock transactions		40			40	
Balances, January 1, 2005	12,566,636	$ 104,191	$ 10,707	$ 1,931	$ 116,829	

See notes to consolidated financial statements.

Table of Contents

NANOMETRICS INCORPORATED

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In thousands)

	Years Ended		
	December 28, 2002	January 3, 2004	January 1, 2005
			(As restated)
Cash flows from operating activities:			
Net income (loss)	$ (8,268)	$ (17,467)	$ 3,699
Reconciliation of net income (loss) to net cash used in operating activities:			
Depreciation and amortization	2,405	2,506	2,667
Goodwill impairment	1,077		
Deferred income taxes	(1,945)	6,007	
Changes in assets and liabilities:			
Accounts receivable	558	(4,630)	(7,124)
Inventories	1,006	2,042	(598)
Prepaid income taxes	(37)	2,195	
Prepaid expenses and other	(378)	155	(48)
Accounts payable, accrued and other current liabilities	(1,813)	794	2,399
Deferred revenue	(961)	778	1,089
Income taxes payable	86	1,374	6
Net cash provided by (used in) operating activities	(8,270)	(6,246)	2,090
Cash flows from investing activities:			
Purchases of short-term investments	(65,899)	(71,044)	(35,976)
Sales/maturities of short-term investments	37,000	78,000	40,000
Purchases of property, plant and equipment	(2,767)	(990)	(871)
Other assets		28	
Net cash provided by (used in) investing activities	(31,666)	5,994	3,153
Cash flows from financing activities:			
Proceeds from issuance of debt obligations	268	285	2,473
Repayments of debt obligations	(416)	(818)	(3,177)
Proceeds from issuance of common stock under employee stock purchase and stock option plans	1,146	1,188	3,052
Net cash provided by financing activities	998	655	2,348
Effect of exchange rate changes on cash	(322)	(421)	409
Net change in cash and cash equivalents	(39,260)	(18)	8,000
Cash and cash equivalents, beginning of year	47,227	7,967	7,949

Cash and cash equivalents, end of year	$ 7,967	$ 7,949	$ 15,949
Supplemental disclosure of cash flow information:			
Cash paid for interest	$ 96	$ 96	$ 102
Cash paid (received) for income taxes, net	$ (4,634)	$ (3,955)	$ 327

See notes to consolidated financial statements.

Table of Contents

NANOMETRICS INCORPORATED

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years Ended December 28, 2002, January 3, 2004 and January 1, 2005

1. Significant Accounting Policies

Description of Business Nanometrics Incorporated (Nanometrics) and its wholly-owned subsidiaries design, manufacture, market, sell and support thin film, optical critical dimension and overlay dimension metrology systems for customers in the semiconductor and flat panel display industries. These metrology systems precisely measure a wide range of film types deposited on substrates during manufacturing in order to control manufacturing processes and increase production yields in the fabrication of integrated circuits and flat panel displays. 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 has its corporate headquarters in Milpitas, California.

Basis of Presentation The consolidated financial statements include Nanometrics Incorporated and its wholly-owned subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation.

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 reporting period. Actual results could differ from those estimates.

Foreign Currency The assets and liabilities of foreign subsidiaries are translated from their respective 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 shareholders equity. Foreign currency transaction gains and losses are reflected in Other income in the consolidated statement of operations in the period incurred and consist of gains of $154,000 and $424,000 in 2002 and 2003, respectively, and a loss of $61,000 in 2004.

Revenue Recognition 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 collectibility is reasonably assured. Product revenue includes hardware and software that is incidental to the products. For product sales to existing customers, revenue recognition generally occurs at the time of shipment, as the Company s terms are FOB shipping point, if defined customer acceptance experience levels have previously been met with both the customer and the specific type of equipment. All other product revenues are recognized upon customer acceptance. In Japan, where risk of loss and title transfers to the customer upon customer acceptance, revenue is recognized upon customer acceptance.

All products are assembled prior to shipment to customers. The Company often performs limited installation for its customers, however such installation is inconsequential and perfunctory as it is also performed by third parties. Revenue related to spare parts sales is recognized on shipment and is included as part of service revenue. Service revenue also includes service contracts and non-warranty repairs of systems. On occasion, customers request a warranty period longer than the Company s standard 12 month warranty. In those instances where extended warranty services are separately quoted to the customer, the Company follows the guidance of Financial Accounting Standards Board Technical Bulletin 90-1, *Accounting for Separately Priced Extended Warranty and Product Maintenance Contracts,* associated revenue is deferred and recognized to income ratably over the term of the contract. Whereas service revenue related to service contracts is recognized ratably over the period under contract, service revenue related to repairs of systems is recognized as services are performed. Unearned maintenance and service contract revenue is included in deferred revenue. Furthermore, the Company does not provide its customers with any return rights. Service contracts may be purchased by the customer when the warranty period expires.

Table of Contents

In limited situations, multiple deliverables may be included in customer arrangements. Those situations include the sale of repair services and parts together where revenues are recognized when both the services and parts have been delivered. The Company also provides technical support to its customers as part of its warranty program. Upon recognition of product revenue, a liability is recorded for anticipated warranty costs.

Fiscal Year The Company uses a 52/53 week fiscal year ending on the Saturday nearest to December 31. Accordingly, fiscal year 2002 consisted of 52 weeks and ended on December 28, 2002, fiscal year 2003 consisted of 53 weeks and ended on January 3, 2004 and fiscal year 2004 consisted of 52 weeks and ended on January 1, 2005.

Cash and Cash Equivalents Cash and cash equivalents include cash and highly liquid debt instruments with original maturities of three months or less when purchased.

Short-Term Investments Short-term investments consist of United States Treasury Bills which are stated at fair value based on quoted market prices. Short-term investments are classified as available-for-sale based on Nanometrics intended use. The unrealized gains and losses from short-term investments are included in other comprehensive income (loss). Realized gains and losses and declines in value judged to be other than temporary are included in other income or expense. Such amounts have not been material during any of the periods presented. All of the short-term investments have a contractual maturity of one year or less.

Fair Value of Financial Instruments Financial instruments include cash and cash equivalents, short-term investments, accounts receivable, accounts payable and debt obligations. Cash equivalents and short-term investments are stated at fair market value based on quoted market prices. The carrying values of accounts receivable, accounts payable and short-term debt obligations approximate their fair values because of the short-term maturity of these financial instruments. For long-term debt obligations, because the interest rates on such debt are fixed and the interest rates for long-term rates have not fluctuated significantly, the carrying values of long-term debt obligations approximate their fair values.

Allowance for Doubtful Accounts The Company maintains an allowance for estimated losses resulting from the inability of its customers to make required payments. Customer credit limits are established through a process of reviewing their financial history and stability. 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 collectibility 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 the allowance for doubtful accounts reflects the risk associated with smaller rather than larger customers and that reported allowances are adequate. If however, the financial conditions of customers 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, using the first-in, first-out method, or market. The Company is exposed to a number of economic and industry factors that could result in portions of its 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, Nanometrics ability to meet changing customer requirements, competitive pressures in products and prices, and the availability of key components from its suppliers. The Company has established inventory reserves when conditions exist that suggest that its inventory may be in excess of anticipated demand or is obsolete based upon assumptions about future demand for its products and market conditions. The Company regularly evaluates its ability to realize the value of its 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 potential cost to refurbish the inventory prior to sale is also considered. When recorded, reserves are intended to reduce the carrying value of the inventory to its net realizable value. If actual demand for specified products deteriorates, or market conditions

are less favorable than those projected, additional reserves may be required.

Table of Contents

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

Building and improvements	6 40 years
Machinery and equipment	3 17 years
Furniture and fixtures	5 20 years

Fixed assets are depreciated using the straight line method except for machinery and equipment and furniture and fixtures located in Japan, which are depreciated using an accelerated method.

Intangible Assets Intangible assets consist primarily of purchased technology (a license) from a third-party. This technology is used in the manufacturing of current products. Costs related to internally developed intangible assets are expensed as incurred. Acquired intangible assets are amortized using the straight-line method over estimated useful lives of five to seven years.

Goodwill On January 1, 2002, Nanometrics adopted Statement of Financial Accounting Standards (SFAS) No. 142, *Goodwill and Other Intangible Assets*. This Statement eliminates the amortization of goodwill and requires that goodwill be reviewed at least annually for impairment. Upon implementation of this Statement, the transition impairment test for goodwill was performed as of January 1, 2002, and no impairment loss was recorded. SFAS No. 142 requires that goodwill be reviewed at least annually for impairment. Nanometrics elected to test its goodwill for possible impairment in the fourth quarter of 2002. Based upon the results of the annual impairment test, Nanometrics recognized a goodwill impairment loss of $1,077,000 in the fourth quarter of 2002. The fair value of the segment was estimated using a discounted cash flow methodology. Nanometrics had no goodwill on its balance sheet at January 3, 2004 or January 1, 2005.

Impairment of Long-Lived Assets Long-lived assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable such as a significant industry or economic downturn, significant changes in the manner of use of the acquired assets or changes to the overall business strategies are made. If indicators of impairment exist, recoverability is assessed by comparing the estimated undiscounted cash flows resulting from the use of the asset, or asset group, and their eventual disposition against their carrying amounts. If the aggregate undiscounted cash flows are less than the carrying amount of the assets, the resulting impairment charge to be recorded is calculated based on the excess of the carrying value of the assets over the fair value of such assets, with fair value generally determined based on an estimate of discounted future cash flows.

Income Tax Assets and Liabilities The Company accounts for income taxes based on SFAS No. 109 *Accounting for Income Taxes*, whereby 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 must be reduced by a valuation allowance if it is more likely than not that a portion of the deferred tax asset will not be realized in the future. The Company evaluates the deferred tax assets on a quarterly basis 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 Accumulated other comprehensive income consists of the following (in thousands):

Years Ended

	January 3, 2004	January 1, 2005
Accumulated unrealized gains on available-for-sale securities, net	$ 1	$
Accumulated translation adjustments, net	333	1,931
Accumulated other comprehensive income	$ 334	$ 1,931

Product Warranties Nanometrics sells the majority of its products with a twelve month repair or replacement warranty from the date of shipment. The Company provides an accrual for estimated future warranty costs based upon the historical relationship of warranty costs to sales. 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, 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

Table of Contents

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 the amounts in accordance with changes in these factors.

A reconciliation of the changes to the Company s warranty accrual for fiscal 2003 and 2004 was as follows (in thousands):

	Years Ended	
	January 3, 2004	January 1, 2005
		As restated
Balance as of beginning of period	$ 261	$ 513
Actual warranty costs	(160)	(1,031)
Revision to existing warranty	(303)	162
Provision for warranty	715	1,411
Balance as of end of period	$ 513	$ 1,055

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 on the balance sheets as of January 3, 2004 and January 1, 2005.

Advertising Costs The Company expenses advertising costs as incurred.

Stock-Based Compensation The Company currently accounts for stock-based employee compensation arrangements using the intrinsic value method in accordance with the provisions of Accounting Principles Board Opinion No. 25 (APB 25), *Accounting for Stock Issued to Employees,* and Financial Accounting Standards Board (FASB) Interpretation (FIN) No. 44, *Accounting for Certain Transactions Involving Stock Compensation*, and comply with the disclosure provisions of SFAS No. 123, *Accounting for Stock-Based Compensation* and SFAS No. 148, *Accounting for Stock-based Compensation Transition and Disclosure*. Under APB 25 and related interpretations, compensation is based on the difference, if any, on the date of the grant, between the fair value of the Company s common stock and the exercise price.

The Company s accounting treatment of stock options will significantly change during 2005 due to its planned adoption of SFAS No. 123R (SFAS 123(R)), *Share-Based Payment,* which is effective for periods beginning after June 15, 2005. *See Recently Issued Accounting Pronouncements* below. The following table illustrates the effect on net income (loss) and net income (loss) per share if the fair value recognition provisions of SFAS No. 123 had been applied to employee stock benefits, including shares issued under the stock option plans and under the Employee Stock Purchase Plan (collectively options). For purposes of pro forma disclosures, the estimated fair value of the options is

assumed to be amortized to expense over the options vesting periods. Pro forma information follows (in thousands, except per share amounts):

	Years Ended		
	December 28, 2002	January 3, 2004	January 1, 2005
			As restated
Net income (loss):			
As reported	$ (8,268)	$ (17,467)	$ 3,699
Deduct: Total stock-based employee compensation expense determined under fair value based method for all awards, net of related tax effects	(4,692)	(8,521)	(5,304)
Pro forma net loss	$ (12,960)	$ (25,988)	$ (1,605)
Basic net income (loss) per share:			
As reported	$ (0.70)	$ (1.45)	$ 0.30
Pro forma	(1.09)	(2.16)	(0.13)
Diluted net income (loss) per share:			
As reported	(0.70)	(1.45)	0.28
Pro forma	(1.09)	(2.16)	(0.13)
Basic Shares	11,878	12,043	12,320
Diluted Shares	11,878	12,043	13,364

Table of Contents

Under SFAS No. 123, the fair value of stock-based awards to employees is calculated through the use of option pricing models, even though such models were developed to estimate the fair value of freely tradable, fully transferable options without vesting restrictions, which differ significantly from our stock option awards. These models also require subjective assumptions, including future stock price volatility and expected time to exercise, which greatly affect the calculated values. The fair value calculations on stock-based awards under the 1991 and 2000 Stock Option Plans, the 2002 Nonstatutory Stock Option Plan and the 1991 and 2000 Directors Plans were made using the Black-Scholes option pricing model with the following weighted average assumptions:

	2002	2003	2004
Stock Options:			
Expected life	3 years	3 years	3.4 years
Volatility	80%	90%	90%
Risk free interest rate	3.40%	2.40%	2.87%
Dividends			

The Company s fair value calculations on stock-based awards under the Purchase Plan were also made using the Black-Scholes option pricing model with the following weighted average assumptions for 2004: expected life, six months, volatility, 90%, risk free rate, 1.1%, and no dividends expected during the term. There were no options outstanding under the Purchase Plan in 2003 and 2002.

Net Income 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. During the years ended December 28, 2002 and January 3, 2004, diluted net loss per share excludes common equivalent shares outstanding, as their effect is antidilutive. For the year ended January 1, 2005, stock options with exercise prices in excess of the fair market value of common stock were excluded from the diluted weighted average shares outstanding, as their effect is anti-dilutive. The reconciliation of the share denominator used in the basic and diluted net income per share computations is as follows (in thousands):

	Years Ended		
	December 28, 2002	January 3, 2004	January 1, 2005
Weighted average shares outstanding shares used in basic net income per share computation	11,878	12,043	12,320
Dilutive effect of stock options, using the treasury stock method			1,044
Shares used in diluted net income per share computation	11,878	12,043	13,364

For the years ended December 28, 2002, January 3, 2004 and January 1, 2005, diluted net income (loss) per share excluded common equivalent shares outstanding of 1,410,594, 2,915,196 and 1,601,275, respectively, as their effect was antidilutive.

Certain Significant Risks and Uncertainties Financial instruments which potentially subject the Company to concentration of credit risk consist of cash and cash equivalents, short-term investments and accounts receivable (see Note 11). All cash equivalents at January 1, 2005 and January 3, 2004 were deposited with two financial institutions which the Company believes are of high credit quality. Cash equivalent deposits

with financial institutions may, at times, exceed federally insured limits, however, the Company has not experienced any losses on such accounts.

Table of Contents

For short-term investments, credit risk is limited by placing all investments with high credit quality issuers and limits the amount of investment with any one issuer. The Company only invests in United States Treasury Bills with maturities of less than 180 days. As of January 1, 2005, the fair value of those investments approximated cost.

The Company sells its products primarily to end users in the United States and Asia, 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 a relatively small number of customers have accounted for a significant portion of its revenues. Aggregate revenue from the Company s top ten largest customers in fiscal 2004 and 2003 consisted of 65.9% and 51.8%, 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 us 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 subassemblies; disruption of manufacturing facilities; and its ability to attract and retain employees necessary to support its growth.

Certain components and subassemblies 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 subassemblies used in its products or its inability to procure these components or subassemblies from alternate sources on acceptable terms could have a material adverse effect on its business, financial condition and results of operations.

Recently Issued Accounting Pronouncements

In December 2004, the FASB issued SFAS 123(R), *Share-Based Payment,* which replaces SFAS 123 and supersedes APB Opinion No. 25. SFAS 123(R) requires that compensation costs relating to share-based payment transactions be recognized in financial statements. The pro forma disclosure previously permitted under SFAS 123 will no longer be an acceptable alternative to recognition of expenses in the financial statements. SFAS 123(R) is effective as of the beginning of the first reporting period that begins after June 15, 2005, with early adoption encouraged. The Company currently measures compensation costs related to share-based payments under APB 25, as allowed by SFAS 123, and provides disclosure in notes to financial statements as required by SFAS 123. The Company is required to adopt SFAS 123(R) starting in the third fiscal quarter of 2005. The Company expects the adoption of SFAS 123(R) will have a material adverse impact on its net income and net income per share. The Company is currently in the process of evaluating the extent of such impact. The Company has also not yet determined its method of adoption of FAS 123(R). Please see the disclosure above addressing stock-based compensation.

In November 2004, the FASB issued Statement of Financial Accounting Standards (SFAS) No. 151, *Inventory Costs* An Amendment of ARB No. 43, Chapter 4 , was issued which amends the guidance in Accounting Research Bulletin (ARB) No. 43, Chapter 4, *Inventory Pricing*, to clarify the accounting for abnormal amounts of idle facility expense, freight, handling costs, and wasted material. Among other provisions, the new rule requires that items such as idle facility expense, excessive spoilage, double freight, and rehandling costs be recognized as current-period charges regardless of whether they meet the criterion of so abnormal as stated in ARB No. 43. Additionally, SFAS 151 requires the allocation of fixed production overheads to the costs of conversion be based on the normal capacity of the production facilities. SFAS 151 is effective for fiscal years beginning after June 15, 2005. The Company is currently evaluating the effect that the adoption of SFAS 151 will have

on its consolidated results of operations and financial condition.

In December 2004, the FASB issued SFAS No. 153 (SFAS 153), *Exchanges of Nonmonetary Assets an amendment to APB Opinion No. 29*. This statement amends APB 29 to eliminate the exception for nonmonetary exchanges of similar productive assets and replaces it with a general exception for exchanges of nonmonetary assets that do not have commercial substance. A nonmonetary exchange has commercial substance if the future cash flows of the entity are expected to change significantly as a result of the exchange. SFAS 153 is effective for the first fiscal period beginning after June 15, 2005. Adoption of this statement is not expected to have a material impact on the Company s results of operations or financial condition.

Table of Contents

In December 2004, FASB Staff Position No. FAS 109-2, *Accounting and Disclosure Guidance for the Foreign Earnings Repatriation Provision within the American Jobs Creation Act of 2004* (FSP FAS 109-2) was issued, providing guidance under SFAS 109, Accounting for Income Taxes for recording the potential impact of the repatriation provisions of the American Jobs Creation Act of 2004, enacted on October 22, 2004. FSP FAS 109-2 allows time beyond the financial reporting period of enactment to evaluate the effects of the Jobs Act before applying the requirements of FSP FAS 109-2. Accordingly, the Company is evaluating the potential effects of the Jobs Act and has not adjusted its tax expense or deferred tax liability for the effect of any decision it might make to repatriate earnings.

In March 2004, the Emerging Issues Task Force (EITF) issued EITF 03-1, *The Meaning of Other-Than-Temporary Impairment and Its Application to Certain Investments* (EITF 03-1), which provided new guidance for assessing impairment losses on investments. Additionally, EITF 03-1 includes new disclosure requirements for investments that are deemed to be temporarily impaired. In September 2004, the FASB delayed the accounting provisions of EITF 03-1; however the disclosure requirements remain effective for annual periods ending after June 15, 2004. The Company will evaluate the accounting impact of EITF 03-1 once final guidance is issued. The Company is following the disclosure requirements of this EITF.

Note 2. Restatement of Condensed Consolidated Financial Results

On October 26, 2005, the Company s Audit Committee, acting on a recommendation from the Company s management, determined that the Company s audited financial statements for the fiscal year ended January 1, 2005, and its unaudited quarterly financial statements for the periods ended April 2, 2005 and July 2, 2005, respectively, should be restated to revise the accounting for certain post-sale warranty services and other items. Accordingly, the Company is restating its consolidated financial statements for its fiscal year 2004 and the first two quarters of 2005. This Form 10-K/A includes restated audited results for the year ended January 1, 2005.

This Form 10-K/A reflects adjustments to net revenues and operating expenses related to the restatement of the Company s financial results. Below is a description of the significant adjustments impacting the financial results for the periods presented and relates to the Company s (i) deferral of revenue associated with extended warranty contracts purchased by certain customers at the time of equipment sale, (ii) alignment of the warranty accrual with the actual warranty periods for certain customers and (iii) accrual of certain foreign sales commission expenses into the appropriate period.

Revenue Deferral Associated with Extended Warranty

The effect of the restatement is to defer revenue associated with extended warranty provisions of certain customer supply arrangements. Nanometrics generally sells the majority of its products with a twelve month repair or replacement warranty. The Company identified certain transactions in each quarter of fiscal 2004 whereby the terms of the product sale included a separately priced extended warranty provision beyond the standard twelve-month warranty. In accordance with Financial Accounting Standards Board Technical Bulletin 90-1, *Accounting for Separately Priced Extended Warranty and Product Maintenance Contracts,* revenue for separately priced extended warranty contracts should be deferred and recognized ratably over the term of the extended warranty contract. The Company is restating its financial statements to recognize such deferred revenue on a straight-line basis over the contract period. The restatement adjustments resulted in a decrease to product sales previously reported in the Company s Form 10-K for the year ended January 1, 2005 of $0.8 million.

The following table sets forth the expected increase in service revenue for future periods related to the revenue deferred as a result of this restatement (in thousands):

Three Months Ending:	
April 2, 2005	$ 15
July 2, 2005	59
October 1, 2005	115
December 31, 2005	155
Fiscal 2005	$ 344
April 1, 2006	$ 176
July 1, 2006	131
September 30, 2006	76
December 30, 2006	37
Fiscal 2006	$ 420

Table of Contents

Alignment of Warranty Accrual with Actual Warranty Periods

The Company provides a warranty accrual at the time of revenue recognition. As a result of the additional procedures performed by management, the Company discovered that, in certain instances, the warranty periods used in determining the warranty accrual did not coincide with the actual warranty periods for products under warranty coverage. Accordingly, adjustments were recorded to the warranty accrual and related costs of product sales for the fiscal years 2005 and 2004. The restatement adjustments resulted in an increase to the warranty expense, previously reported in the Company s Form 10-K, for the year ended January 1, 2005 of $0.3 million.

Accrual of Unpaid Sales Commission

As part of its overall compensation strategy, the Company pays a commission to its field sales personnel for their services in selling its products and obtaining customer orders. The sales commissions are paid to the field sales personnel only after the customer has fully paid for the equipment or services received. Customer payment is often received a number of months after revenue is recognized. At one of its foreign locations, the Company erroneously recorded the expense upon payment of the sales commissions to its field sales personnel rather than when the related revenue and other associated costs of revenues were recognized. Accordingly, adjustments were recorded to reflect the sales commission expense in the periods in which the Company recognized the related revenue. The restatement adjustments resulted in an increase to selling expense previously reported in the Company s Form 10-K for the year ended January 1, 2005 of $0.3 million.

Effect of Restatement Upon Previously Reported Balances

The restatement affected each three-month period beginning with the first quarter of fiscal 2004 through the second quarter of 2005. The Company will file an Amendment No. 1 on Form 10-Q/A for each of the quarters ended April 2, 2005 and July 2, 2005 to reflect restatements of the Company s consolidated balance sheet as of each respective quarter end and the Company s consolidated statements of operations and cash flows for the three-month periods ended April 2, 2005 and July 2, 2005 as well as the six-month period ended July 2, 2005 and the comparable prior year periods.

The condensed consolidated financial statements as of January 1, 2005 contained herein have been restated to incorporate all these adjustments and the related tax effects as described herein. The restatement adjustments described herein required a number of significant accounting judgments by the Company. The following table sets forth selected consolidated financial data for the Company, showing previously reported and restated amounts at January 1, 2005 (in thousands, except per share amounts):

	As Previously Reported	As Restated	Inc (Dec)	
Accrued payroll and related expenses	$ 2,206	$ 2,512	$ 306	C
Deferred revenue	$ 2,742	$ 3,506	$ 764	A
Other current liabilities	$ 1,840	$ 2,097	$ 257	B
Total current liabilities	$ 12,613	$ 13,940	$ 1,327	
Retained earnings	$ 12,034	$ 10,707	$ (1,327)	

A Adjustment relates to revenue deferral associated with extended warranty contracts
B Adjustment relates to the alignment of warranty accrual with actual warranty periods
C Adjustment relates to accrual of unpaid sales commission

The impact of all adjustments discussed herein to the condensed consolidated statement of operations was to decrease the Company s previously reported net income per diluted share for the year ended January 1, 2005 by $0.10. The following table sets forth selected consolidated financial data for the Company, showing previously reported and restated amounts for the year ended January 1, 2005 (in thousands, except per share amounts):

	Year Ended January 1, 2005		
	As Previously Reported	As Restated	Inc (Dec)
Net revenues			
Product sales	$ 62,911	$ 62,147	$ (764)[A]
Service	$ 7,784	$ 7,784	$
Cost of product sales	$ 27,555	$ 27,812	$ 257 [B]
Selling expenses	$ 11,442	$ 11,748	$ 306 [C]
Income from operations	$ 5,330	$ 4,003	$ (1,327)
Provision for income taxes	$ 426	$ 426	$
Net income	$ 5,026	$ 3,699	$ (1,327)
Net income per share:			
Basic	$ 0.41	$ 0.30	$ (0.11)
Diluted	$ 0.38	$ 0.28	$ (0.10)

A Adjustment relates to revenue deferral associated with extended warranty contracts

Table of Contents

B Adjustment relates to the alignment of warranty accrual with actual warranty periods

C Adjustment relates to accrual of unpaid sales commission

The Company has determined the cumulative effect of these errors was approximately $0.4 million as of January 3, 2004. The effect was not material to any relevant prior period and had the amounts been recorded correctly in the prior periods, there would have been no significant effect on reported net loss, comprehensive loss or total stockholder s equity. To correct this misstatement, the Company recorded the cumulative $0.4 million in the condensed consolidated statement of operations in the three-month period ended April 3, 2004.

3. Inventories

Inventories consist of the following (in thousands):

	At	
	January 3, 2004	January 1, 2005
Raw materials and subassemblies	$ 15,450	$ 14,391
Work in process	4,506	4,330
Finished goods	4,308	6,773
Total inventories	$ 24,264	$ 25,494

4. Property, Plant and Equipment

Property, plant and equipment consists of the following (in thousands):

	At	
	January 3, 2004	January 1, 2005
Land	$ 16,856	$ 16,934
Building and improvements	32,217	33,149
Machinery and equipment	6,625	7,332
Furniture and fixtures	1,681	1,918
Construction in progress	200	
	57,579	59,333

Accumulated depreciation and amortization	(7,841)	(10,298)
Total property, plant and equipment, net	$ 49,738	$ 49,035

Depreciation expenses of $1,945,000, $2,081,000 and $2,270,000 for the years ended December 28, 2002, January 31, 2004 and January 1, 2005 were incurred.

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