AUGUST TECHNOLOGY CORP
Form 10-K
March 16, 2005

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

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

For the fiscal year ended December 31, 2004 **Commission File Number 000-30637**

AUGUST TECHNOLOGY CORPORATION

(Exact name of Registrant as specified in its charter)

Minnesota	**41-1729485**
(State of incorporation)	(I.R.S. Employer Identification No.)
4900 West 78th Street **Bloomington, MN**	**55435**
(Address of principal executive offices)	(Zip Code)

(952) 820-0080

(Registrant s telephone number, including area code)

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

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

Title of each class:
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 o

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. o

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

The aggregate market value of voting stock held by nonaffiliates of the Registrant was $208,386,572 as of June 30, 2004.

The number of shares of Common Stock, no par value, outstanding as of February 28, 2005 was 17,878,237.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive Proxy Statement to be delivered to shareholders in connection with the 2005 Annual Meeting of Shareholders are incorporated by reference into Part III.

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PART I

Item 1. Business

Company Overview

Since our founding in 1992, we have become recognized as a world-class provider of automated defect detection and product characterization systems for microelectronic device manufacturers. Our systems provide these manufacturers with information that enables process-enhancing decisions, ultimately lowering manufacturing costs, improving time-to-market and enhancing the performance of their products. We combine our core competencies in machine vision technology, optics, lighting and precision motion control with our proprietary software and extensive microelectronic-specific applications experience to deliver scalable, modular systems that excel at the automated detection of advanced macro defects, which we define to be defects greater in size than 0.5 micron. We sell our systems to many of the leading microelectronic device manufacturers throughout the world within the markets of semiconductors, advanced packaging applications, optoelectronics, MEMS, data storage and other emerging markets.

We have traditionally provided systems to address the automated inspection needs of the early stages of the final manufacturing or back-end of the microelectronic device manufacturing process. These needs were met primarily with our NSX Series and 3Di Series of products. In 2003, we introduced the AXi Series for frontside advanced macro detection in the front-end of the wafer manufacturing process and within one year, we added the E20 for wafer edge inspection and the B20 for wafer backside inspection. When used in combination the AXi/E20/B20 is the industry s first true all-surface advanced macro inspection solution allowing device manufacturers to inspect the top, edge and bottom of a wafer s surface. We complement this broad inspection capability with an expanding suite of software tools designed to enhance the speed and effectiveness of the process by which device manufacturers analyze defects and make decisions regarding their manufacturing process to reduce or eliminate such defects. We refer to this process as the detection-to-decision process.

In addition to internal development, we look to expand through strategic acquisitions of complementary products and technologies. In July of 2004 we completed the acquisition of DMSVision, a third generation defect data management solution developed and commercialized by Inspex, a U.S. company owned by Photonics Management Company, a U.S. subsidiary of Hamamatsu Photonics KK of Japan. DMSVision s easy-to-use fab-wide defect data management solution provides the basis for our next generation decision tools including Automated Defect Classification (ADC), all-surface review and analysis.

On January 21, 2005, we entered into an Agreement and Plan of Merger and Reorganization (the Merger Agreement) with Nanometrics, Incorporated (Nanometrics), Major League Merger Corporation (Merger Sub 1) and Minor League Merger Corporation (Merger Sub 2). Pursuant to the Merger Agreement (a) Nanometrics will effect a reincorporation under Delaware law by merging with and into Merger Sub 2, a Delaware corporation, with the surviving entity to be renamed August Nanometrics Inc. (August Nanometrics) and (b) Merger Sub 1 will be merged with and into August Technology, with the surviving entity to be a wholly-owned subsidiary of August Nanometrics. Each share of our common stock will be converted into the right to receive 0.6401 of a share of August Nanometrics common stock. August Nanometrics will make a cash payment to our shareholders for any fractional shares of August Nanometrics common stock they would otherwise be entitled to receive instead of issuing fractional shares.

On January 27, 2005, we received a letter from Paul F. McLaughlin, Chairman and Chief Executive Officer of Rudolph Technologies, Inc. (Rudolph), stating that Rudolph is prepared to enter into a merger with us based on a share exchange ratio of 0.6239 share of Rudolph stock for each share of our common stock (equivalent to $10.50 per share of our common stock based on the closing price of Rudolph

stock on January 27, 2005). The letter stated that each of our shareholders may elect to receive all cash, stock or a combination of cash and stock, subject to proration based on total cash consideration of $40 million.

Also on January 27, 2005, Rudolph issued a press release with proposed terms slightly different from those described in the letter. The press release stated that Rudolph is prepared to enter into a merger with us whereby each of our shareholders will receive the value of $2.16 per share in cash and 0.4955 per share in Rudolph common stock (equivalent to $10.50 per share of our Common Stock, based on the closing price of Rudolph stock on January 27, 2005). The press release stated that each of our shareholders would have the option to elect to receive all cash, stock or a combination of cash and stock, subject to proration based on total cash consideration of $40 million.

Our Board of Directors has agreed, based on the advice of its financial advisors and legal counsel, to further examine the Rudolph offer provided that Rudolph first executes a confidentiality agreement in the form required by the Merger Agreement with Nanometrics. As of the date of this filing, we have not reached agreement on the form of confidentiality agreement and no discussions regarding Rudolph s offer have taken place.

On February 9, 2005, we received a letter from Kenneth Schroeder, President and Chief Executive Officer of KLA-Tencor Corporation (KLA), regarding KLA s interest in pursuing a merger with us. The letter stated that KLA proposed to acquire us in a transaction in which our shareholders would receive $11.50 per share. KLA also stated that it would be willing to consider using stock as consideration.

Our Board of Directors has agreed, based on the advice of its financial advisors and legal counsel, to further examine the KLA offer provided that KLA first executes a confidentiality agreement in the form required by the Merger Agreement with Nanometrics. As of the date of this filing, we have not reached agreement on the form of confidentiality agreement and no discussions regarding KLA s offer have taken place.

Our Market

Rapid advances in semiconductor and other microelectronic device technology, including miniaturization, increasing complexity and advanced packaging and interconnect solutions, allow manufacturers to enhance the quality and capabilities of their devices. These advances often increase the complexity of the processes required to produce the devices as well as the associated production costs. Because of these increased costs and the need to ensure that performance and reliability are not sacrificed, the role of inspection and rapid detection of defects during multiple stages of the microelectronic production process is becoming increasingly critical. Defects can occur throughout the manufacturing process as a result of such things as equipment misalignment, contamination, residue, corrosion, or the misapplication of various films. Defects such as scratches, cracks and chip-outs also can be generated by mechanical handling in the manufacturing process.

Historically, manufacturers generally have relied on engineers and technicians using microscopes to manually inspect sample batches of wafers to detect defects during the various stages of the manufacturing process. Studies have shown that fatigue and boredom result in typical efficacy of human inspectors at about 50% compared with in excess of 90% consistency for automated machine vision systems. As a result, it has been ineffective and cost-prohibitive for manufacturers to capture critical process data by inspecting manually every wafer and die after each process step. These manual inspection limitations result in the following:

Yield loss due to a lack of process data. The inability to capture adequate data throughout the manufacturing process prevents microelectronic device manufacturers from locating problems on a timely

basis and taking corrective action. Timely corrective action could minimize the scrapping of valuable wafers and improve the process and yield for future products.

Productivity constraints. As microelectronic devices have become more complex, the need for more extensive inspection and defect data has increased significantly. Given these requirements, manufacturers must either add more technicians, significantly impacting productivity of the microelectronic fabrication facility, or assume a greater risk of defects remaining undetected until later in the process.

Defective product shipments. By inspecting less than 100% of their products, manual inspection requires manufacturers to assume a greater risk of shipping defective products to their customers.

Slower time-to-market. As microelectronic device and end-product life cycles decrease, the speed at which manufacturers must reach optimal production yields has become increasingly critical. This pressure to minimize time-to-market requires manufacturers to reduce the amount of time spent training technicians, qualifying new production equipment and managing the logistics of a manual inspection process.

Increased labor and facility requirements. The large number of technicians and microscopes needed to manually inspect microelectronic devices requires valuable floor space and significant capital commitments. In addition, attracting and retaining qualified technicians has become increasingly difficult.

Automated inspection systems and data management and analysis software enable manufacturers to overcome these limitations by allowing them to inspect 100% of their products and consistently identify and resolve defects at various stages of the manufacturing process, helping to drive down production costs, increase throughput and decrease time-to-market.

Our Solutions

We deliver automated advanced macro defect inspection, metrology, and analysis systems for microelectronic industries. Our systems provide device manufacturers with valuable information about their products and processes, at speeds that make it practical to inspect each device rather than a small sample. We accomplish this by combining our core competencies in machine vision technology, optics, lighting and precision motion control with our proprietary software and extensive microelectronic-specific applications experience to provide cost-effective solutions. We offer our systems at several price performance levels to satisfy our customers diverse requirements. Specifically, we provide:

Fast, automated, 100% wafer inspection. Our systems are specifically designed to address our customers need for fast, automated inspection tools. Our systems are able to inspect up to 110 wafers per hour depending upon the application and wafer size, enabling our customers to inspect 100% of their production without decreasing throughput. In comparison, depending on the application, our systems can inspect a complex die approximately 100 times faster than a human operator.

Data collection to enable higher productivity and yields. Our systems enable microelectronic device manufacturers to cost-effectively collect and process defect data at multiple key points throughout the production process and provide manufacturers with the information required to improve their production processes and yields. Integrated reporting and analysis tools allow manufacturers to extract critical information about product defects, including location, size and other important defect characteristics.

Scalable, modular inspection platforms. Our systems are designed on common platforms that allow us to configure flexible systems to meet our customers application and throughput requirements. This flexibility provides an easy upgrade path for customers to respond to changes in process technologies, substrate sizes or materials.

Access to expert application development resources. Our advanced application engineers and design experts work collaboratively with our customers to optimize the use of inspection in their manufacturing

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process. This reduces their process development time and costs. We have field application engineers in strategic locations throughout the world to work with our customers on-site and provide the knowledge and expertise to deliver a total inspection solution.

Focus on advanced macro inspection. We focus on serving various advanced macro inspection applications rather than attempting to pursue the entire range of possible inspection and metrology applications. This allows us to most effectively concentrate our resources on delivering leading solutions to these 0.5 micron and larger applications. As our business continues to grow we will expand our focus to include other areas of inspection and metrology that are complimentary to our existing advanced macro inspection business.

Our Strategy

Our strategy is built around achieving our vision to dominate the automated inspection market and generate complete product characterization solutions for evolving microelectronic markets in order to drive down costs and time-to-market for our customers. We have identified five strategic initiatives that are critical to successfully implementing our vision:

Market diversification. We leverage our core competencies across a variety of microelectronic industries using similar manufacturing processes and within multiple applications. While our customers include the suppliers of semiconductor devices used in a wide range of electronic products such as cellular phones, personal digital assistants, cable modems, network switches and personal computers, they also include suppliers of microelectronic devices within markets such as advanced packaging applications, MEMS, optoelectronics, data storage and other emerging markets. By maintaining our diversification initiatives, we strive to maximize our market opportunity.

The following table represents our net revenues for the years ended December 31, 2004 and 2003 from each of the microelectronic markets we serve.

	2004		2003		
Microelectronic Market	**Net Revenues (in thousands)**	**Percent of total net revenues**	**Net Revenues (in thousands)**	**Percent of total net revenues**	**Year-over-year change**
Semiconductor	$ 51,779	76 %	$ 17,595	44 %	194 %
Advanced packaging applications	8,430	12 %	15,772	39 %	-47 %
Optoelectronics	5,846	8 %	2,581	6 %	127 %
MEMS	1,830	3 %	2,775	7 %	-34 %
Data Storage & other	558	1 %	1,600	4 %	-65 %
Total	$ 68,443		$ 40,323		70 %

Technology leadership. Through our technology leadership we deliver customer-driven product innovations focused on price, performance and flexibility. Technology leadership is critical to increasing our competitive win rate, maintaining strong gross margins and building market dominance. Our recent product development efforts resulted in several new product enhancements within our NSX Series, AXi Series, and Yield*Pilot* product lines as well as new capabilities that expanded our front-end fab and all-surface applications. We shipped the first AXi/E20/B20 all-surface advanced macro defect inspection system during the fourth quarter of 2004. These products continue to propel us into the front-end of the microelectronic device manufacturing process by addressing advanced macro inspection needs.

In 2004, 43% of our revenues were derived from products and solutions introduced during the prior two years. We plan to continue making significant investments in research and development to maintain and extend our technology leadership.

Customer application partnerships. Our customer application partnership program is designed to meet specific customer requirements with solutions that are engineered to their unique specifications. Through this process, we are able to forge stronger and more strategic relationships with existing and new customers. In 2004, we continued our joint development program, which was critical in the commercialization of our AXi Series, with one of the top ten semiconductor manufacturers in the world. This program is continuing to aid in our penetration into front-end wafer processing applications.

Global presence. We continually maintain and enhance our global presence in order to provide the infrastructure necessary to support our global customer base. In 2004, we enhanced our presence in Asia by doubling our Taiwan applications and support operations center to better support our customers in Southeast Asia. We believe our direct presence in Southeast Asia and our relationships with large Taiwanese foundries will be a catalyst for expansion in mainland China. In March 2004 we opened a direct sales and service office in South Korea. We also have direct sales and service personnel and independent distributors located strategically in Singapore, Europe and Japan. Our support services include web-based service capability and 24-hour global support.

External growth. We increase and enhance our growth opportunities through external sources, including acquisitions, collaborations, licensing and joint ventures. We completed the acquisition of DMSVision in July 2004. We continue to examine potential acquisitions that will provide us with additional products, technological expertise, or sales and service capabilities. The acquisition of DMSVision expands our data analysis capabilities and brings access to key customers and technology. We are also active in industry collaborations, such as the Advanced Packaging and Interconnect Alliance (APiA) and the Die Products Consortium (DPC). The APiA is focused on enhancing productivity and process solutions for advanced packaging. The DPC is a collaboration of leading chip manufacturers and equipment suppliers promoting improved die product quality and manufacturing processes. We believe that organizations such as these will enable us to build stronger relationships with industry leaders and increase our market opportunity by driving the need for advanced automated inspection products.

Our Products

We strive to be early to market with innovative defect inspection and review solutions to emerging microelectronic device manufacturing needs. In 1997, we introduced the NSX Series, our first automated defect inspection system for final manufacturing, and since then have maintained leadership of that market segment. In 2003, we introduced inspection technology to address the front-end of the microelectronic device manufacturing process with the introduction of the AXi Series. We also introduced the E20 for edge inspection and the B20 for backside inspection allowing inspection of the entire surface of a wafer. Also in 2003, we introduced the VersaScope, a semi-automated, microscope-based, defect review system. In 2004 we added enhancements to our NSX Series, AXi Series and all-surface capabilities. The following table summarizes the primary attributes of our products:

			Applications		
			Front-End		
Product	**Introduced**	**Functionality**	**Fab**	**Outgoing Quality Control**	**Final Manufacturing**
AXi Series	2003	• Advanced detection of defects >0.5 micron • Inspection of patterned and unpatterned wafers • In line, high-speed, 100% inspection • Full color review	X	X	
E20	2003	• 2D defect detection of the wafer s edge • Metrology of edge features	X	X	X
B20	2003	• 2D defect detection of the wafer s backside	X	X	X
NSX Series	1997	• Fully automated defect detection >0.5 micron • 2D wafer, die & bump inspection • In line, high-speed, 100% inspection		X	X
3Di Series	2001	• 2D & 3D wafer bump inspection & metrology system • In line, high-speed, 100% inspection		X	X
VersaScope(1)	2003	• Advanced imaging microscope-based system • Harmony review and classification system	X		
Yield*Pilot*	2000	• Tool-centric defect and metrology review and analysis software used with the NSX, 3Di, and AXi Series • Reduces defect review time • Allows offline defect review	X	X	X
DMSVision(2)	1994	• Fabwide software for archival and retrieval of process related data • Facilitates root cause analysis, yield enhancement and yield learning	X	X	
CV Series	1993	• Verification of critical wafer carrier dimensions	X		

(1) Acquired with the acquisition of Counterpoint Solutions, Inc. in July 2003.

(2) Acquired with the acquisition of DMSVision in July 2004.

AXi Series Automated defect inspection systems. In January 2003, we introduced our AXi Series, designed specifically as an advanced macro defect inspection tool to be used throughout the fab process. The ability to inspect 100% of wafers for defects between 5 and 10 microns at high throughputs offers device manufacturers new insight into their complex manufacturing process. In 2004, we introduced the AXi-935 for higher throughput at higher resolutions. We believe other macro defect solutions currently are unable to achieve this combination of resolution and throughput. The AXi Series has been deployed on multiple production lines at one of the world s leading integrated device manufacturers and has also been installed at several other chip makers around the world.

Our first all-surfaces inspection system, including an AXi, E20 and B20 shipped in December 2004 for evaluation and testing by one of the world s leading device manufacturers. We have several additional all-surface systems scheduled for shipment and installation at various customers during the first half of 2005.

Revenues from all surface inspection systems represented 20%, 12% and 0% of our net revenues during 2004, 2003 and 2002, respectively.

E20 Automated wafer edge inspection and metrology systems. In July 2003, we introduced the E20 for wafer edge inspection and metrology, which inspects for chip-outs, cracks, delamination, residual resist, particles and other defects that occur along the edge of the wafer. The E20 also automatically performs metrology of key edge features and is designed for deployment at several locations throughout the fab. For example, automated edge inspection, implemented during the lithography process, will identify wafer edge variations and particles early and allow for possible wafer rework that can increase yields and reduce manufacturing costs. Due to the increase in edge area and wafer stress levels in 300mm wafer processing, the value of wafer edge inspection is magnified. The E20 also incorporates our latest user-interface platform, making the system easy to set up and run in production.

We began to recognize revenue from the E20 in the second half of 2004.

B20 Automated wafer backside inspection and metrology system. In December 2003 we introduced the B20 or wafer backside inspection, completing the all-surface inspection portfolio of products. The B20 detects backside defects such as cracks and particles which may negatively impact further processing of the wafer and cause wafer breakage later in the process. The B20, built on the same flexible and easy to set up platform as the E20, can be combined with our front-side inspection systems (NSX, AXi or 3Di) and edge inspection systems (E20) to provide an all-surface wafer inspection solution.

We expect to begin to recognize revenue from the B20 in the second half of 2005.

NSX Series Automated defect inspection systems. We became pioneers of automated macro defect inspection in 1997 with the introduction of our NSX Series. These flexible automated wafer and die defect inspection systems deliver high-speed, consistent, reliable defect detection to microelectronic device manufacturers. As a replacement for the human eye in the inspection process, the NSX Series significantly improves the quality and throughput of the inspection process, leading to lower overall manufacturing costs.

The NSX Series is driven by proprietary software and includes integrated yield enhancement tools such as automated data collection and reporting, extensive communication options and fast setup using Windows®-based menus. The NSX Series handles all wafer sizes, 50mm up to 300mm, with both whole wafer and film frame capabilities. The NSX-115 is the highest performance model in the series, demonstrating industry-leading inspection throughput and capabilities, and delivering the best price/performance ratio of all NSX models. With five models available in the NSX Series, customers may tailor systems toward their specific application, process or budget by choosing from a range of system capabilities. The NSX systems are installed in a broad array of processing steps from front end wafer process applications to final manufacturing steps.

In 2004 the WAV Series probe mark inspection and metrology capabilities were incorporated into the NSX Series. This resulted in a comprehensive wafer and die inspection solution for use throughout the final manufacturing processes, including following the electrical probing process.

Revenues from the NSX Series represented 54%, 50% and 45% of our net revenues in 2004, 2003 and 2002, respectively.

3Di Series Automated wafer bump inspection and metrology systems. Our 3Di automated inspection and metrology systems provide two-dimensional (2D) and three-dimensional (3D) inspection and metrology capabilities designed for the latest and most advanced microelectronic device packaging processes, including flip-chip wafer bumping. In 2002, we enhanced this product family with the introduction of entry level and higher performance models of the 3Di Series.

The 3Di Series incorporates the 2D defect inspection capabilities of the NSX Series and features our proprietary Rapid Confocal Sensor (RCS) 3D inspection technology. This patent-pending technology, conceived by merging the proven concepts of confocal microscopy with innovative optical design and proprietary software, has established its high speed, high accuracy 3D inspection capabilities in the production lines of leading microelectronic device manufacturers. The 3Di Series is available with up to 300mm wafer handling in addition to film frame handling and may be tailored toward specific customer applications with various options and features.

Revenues from the 3Di Series represented 6%, 15% and 37% of our net revenues during 2004, 2003 and 2002, respectively.

VersaScope Advanced microscope-based imaging system. As part of our acquisition of Counterpoint Solutions, Inc. (CSI) in July 2003, we acquired the VersaScope, a product that was in design at CSI. The VersaScope operates with the Harmony software system developed by CSI to automate the control of advanced microscope-based inspection equipment and facilitate the processing of defect images. The VersaScope is designed to offer a unique combination of ease of use, flexibility and advanced microscope imaging, enabling technicians to more quickly review, classify and annotate defects. When the VersaScope is coupled with our broad array of high performance defect detection systems, the combination provides customers with a unique, efficient and complete inspection and review solution.

YieldPilot Defect review and process analysis software. Yield*Pilot*, which provides a means for efficient defect review and classification, continues to play a pivotal role in enabling our customers to make process-enhancing decisions. By filtering, classifying and then presenting only the relevant data, Yield*Pilot* assists process engineers in quickly and effectively making the decisions that lead to yield enhancements. Currently, over 60% of our systems are delivered with the optional Yield*Pilot* package.

DMSVision Fab-wide data management software. In July 2004 we acquired DMSVision software division of Inspex, Inc (DMSVision), a fab-wide data management system installed at over 25 customer sites worldwide, which enables device manufacturers to find the source of killer defects and manufacturing problems by centralizing all inspection, electrical test and manufacturing information. DMSVision adds another dimension to our detection-to-decision process, providing the fab wide information to enable process enhancing decisions. DMSVision is also the platform for our next generation of tool-centric defect and process data management solutions to help review and classify topside, edge, and backside defects now being found with our advanced macro inspection systems.

CV Series Cassette verification and metrology. The CV Series is designed to automatically verify critical wafer carrier dimensions. Using advanced machine vision technology and proprietary software, our CV Series systems identify out-of-tolerance cassettes and up to 300mm Front Opening Unified Pods (FOUPs), allowing microelectronic device manufacturers to remove dimensionally defective carriers and thereby decrease wafer damage and improve yield.

Research and Development

Our success depends on our ability to effectively develop and commercialize new technologies and products. Our research and development activities emphasize application development and new product introductions in collaboration with our customers. Our engineering teams support these efforts with software development, machine vision technology, optics, lighting and precision motion control expertise. Our recent product development efforts resulted in several new product enhancements within our NSX Series, AXi Series, and Yield*Pilot* product lines as well as new capabilities that expanded our front-end fab and all-surface applications. New product introductions in 2004 include the AXi-935 for front-end advanced macro defect inspection and the NSX-115 for post-fab advanced macro defect inspection. We also placed significant effort into leveraging our core automated inspection technologies into other applications within the microelectronic device manufacturing process and anticipate announcing new products related to this effort in 2005. We spent 20%, 26% and 39% of our net revenues on research and development during 2004, 2003 and 2002, respectively.

To maintain technology leadership and pursue customer driven opportunities for the application of our core technologies, we plan to continue to invest in research and development to bring new products to market and add additional capabilities to extend our market leadership and meet our customers product characterization needs.

Customers

We have sold our systems to many of the leading microelectronic device manufacturers throughout the world. Customers accounting for more than 10% of net revenues during 2004 included Samsung Electronics Corporation, STMicroelectronics, and Taiwan Semiconductor Manufacturing Co. Customers accounting for more than 10% of net revenues during 2003 included Samsung Electronics Corporation, Texas Instruments Incorporated, Intel Corporation, and Advanced Semiconductor Engineering, Inc. Customers accounting for more than 10% of net revenues during 2002 included Intel Corporation and Silicon Precision Industries Co., Ltd. There were no other customers, which accounted for greater than 10% of net revenues during 2004, 2003, or 2002.

Net revenues by geographic region were as follows:

	Years Ended December 31,		
	2004	2003	2002
United States	27 %	24 %	48 %
Taiwan	35 %	38 %	37 %
South Korea	17 %	14 %	
Japan	4 %	7 %	4 %
Rest of Asia	12 %	5 %	4 %
Europe and other	5 %	12 %	7 %
	100 %	100 %	100 %

Sales, Service and Marketing

We provide direct sales, service and field application support through strategically placed offices in key regions throughout the world. In the United States, these include our offices in New York, Texas, Massachusetts, and our corporate headquarters in Minnesota, and internationally through our offices in Taiwan and South Korea. In addition, we have key service and support personnel based locally near key semiconductor production facilities around the world.

We market all of our products in Japan through Marubeni Solutions Corporation (Marubeni). We have an international distributor agreement with Marubeni that grants them an exclusive territory,

provides for price and payment procedures, specifies the applicable warranty procedures and contains a confidentiality provision. In conjunction with the March 2004 opening of our office in South Korea we terminated the remainder of our distributor agreement with Metron Technology B.V. Previously, we had sales and service personnel in South Korea supporting Metron Technology B.V. With respect to our European distributors, we terminated our informal agreement with High Tech Trade, Gmbh, effective September 2004, our distributor agreements with Quasys AG effective April 2004, and Firfax Systems effective January 2003.

Backlog

Our backlog was $28.4 million as of December 31, 2004, as compared to $19.1 million as of December 31, 2003. Our backlog consists of orders for which we have accepted purchase orders and have either assigned shipment dates within the next twelve months or under which systems have shipped but have not yet met customer specifications. These orders are subject to cancellation or delay by the customer without penalty. In addition, since only a portion of our revenues for any quarter represents systems that were in backlog as of the beginning of that quarter, we do not believe that backlog is necessarily an accurate indication of our future revenues and performance.

Competition

While we believe that we are currently the leader in the commercialization of solutions for the inspection of advanced macro defects of 0.5 micron and larger, several other firms also manufacture similar products. Our primary competitors in final manufacturing, testing and solutions are Camtek Ltd., Hitachi, Ltd., ICOS Vision Systems, Robotic Vision Systems, Inc., and Toray Industries, Inc. In the front-end market, we compete with larger competitors, such as KLA-Tencor Corporation and Rudolph Technologies, Inc., for certain macro applications.

Significant competitive factors in our market include performance, ease of use, development of new technologies, established customer base, application support, customer service, product flexibility, price and ability to deliver products on a timely basis. We believe we compete favorably with respect to these factors, but must continue to develop and design new and improved products in order to maintain our competitive position.

Manufacturing

We perform system design, assembly and testing at our headquarters in Bloomington, Minnesota. We utilize an outsourcing strategy for the manufacture of many of our components and major subassemblies. Our manufacturing activities are considered horizontal in nature and consist primarily of testing and assembling parts, components and subassemblies acquired from our vendors, and integrating these parts into our products. Our engineering and manufacturing teams work together to continually improve the modularity of our systems and reduce the number of discrete components and subassemblies required to serve our various product families. To meet specific customer requirements, we often manufacture products that include custom system engineering and software development. Our manufacturing operations do not require a major investment in capital equipment.

We use numerous domestic and international vendors to supply parts for the manufacture and support of our products. Although we make reasonable efforts to ensure that parts are available from multiple qualified suppliers, this is not always possible. Accordingly, some key parts are obtained only from a single supplier or a limited group of suppliers. We endeavor to minimize the risk of product interruption by selecting and qualifying alternative suppliers for key parts, monitoring the financial condition of key suppliers and maintaining appropriate inventories of key parts. We continually strive to reduce our component lead time and build cycles to maximize the efficiency of our manufacturing operations. We

continue to work with our key suppliers to significantly reduce lead times and to implement supplier stocking programs. If we do not receive a sufficient quantity of parts in a timely and cost-effective manner to meet production requirements, our results of operations may be materially and adversely affected. We do not maintain long-term supply contracts with any of our suppliers. We do enter into blanket purchase orders with key suppliers for parts with long lead times. These purchase orders are generally to lock-in prices and provide the supplier with visibility of future requirements.

Intellectual Property

Proprietary information plays a significant role in the development of our products. We rely upon a combination of contract provisions and copyright, trademark, patent and trade secret laws to protect our proprietary know-how, ideas, inventions, goodwill and rights in our solutions and products. We also have a policy of seeking U.S. and foreign patents on technology considered of particular strategic or competitive importance. As of January 1, 2005, we had 14 issued U.S. patents and 53 pending U.S. patent applications on our key inventions including those associated with our key product lines. We have also applied for foreign patent rights covering our solutions and products in strategic markets. The technological focus of the issued patents and pending applications includes general microelectronic 2D and 3D inspection techniques as well as devices, systems and processes in the following areas: lighting, focusing, sensing, viewing, material handling, imaging, inspecting and data manipulating. We also license non-exclusive software programs from a third party developer and incorporate them into our products.

Although we believe that the copyrights, trademarks and patents we own are of value, we do not believe that they will determine our success, which depends principally upon our engineering, manufacturing, marketing and service skills.

Employees

As of February 28, 2005, we employed 254 people, including 101 in research and development, 51 in service, technical support and training, 40 in sales and marketing, 40 in manufacturing, and 22 in administration. We also utilize independent contractors and temporary employees. None of our employees is represented by a labor union and we consider our employee relations to be good.

Available Information

Our website is *http://www.augusttech.com.* We make available free of charge, on or through our website, our annual, quarterly and current reports, and any amendments to those reports, as soon as reasonably practicable after electronically filing such reports with the Securities and Exchange Commission. Information contained on our website is not part of this report.

Item 2. Properties

Location	Type	Principal Use	Square Footage	Ownership
Bloomington, MN	Office, plant, warehouse	Headquarters, Research and Development, Sales and Service, Manufacturing, Marketing and Administration	95,437	Leased
Plano, TX	Office	Research and Development, Sales and Service	10,600	Leased
Billerica, MA	Office	Research and Development and Sales	7,456	Leased
Thornwood, NY	Office	Research and Development	1,974	Leased
Hsinchu, Taiwan	Office	Sales and Service	5,383	Leased
Kaohsiung, Taiwan	Office	Sales and Service	1,669	Leased
Gyeonggi-do, South Korea	Office	Sales and Service	3,189	Leased

We currently occupy 84% of our available space at the Bloomington office. We believe the facilities listed above are adequate to meet our customer requirements, and that additional or substitute space is available on commercially reasonable terms if needed. We also believe that our production facilities have capacity adequate for our current need.

Item 3. Legal Proceedings

From time to time in the ordinary course of business, we are subject to claims, asserted or unasserted, or named as a party to lawsuits or investigations. Litigation, in general, and intellectual property and securities litigation in particular, can be expensive and disruptive to normal business operations. Moreover, the results of legal proceedings cannot be predicted with any certainty and in the case of more complex legal proceedings such as intellectual property and securities litigation, the results are difficult to predict at all.

We have fully settled the commercial litigation between us and Rudolph. On September 23, 2003, we and our subsidiary, Semiconductor Technologies & Instruments, Inc. (STI), filed a complaint against Rudolph and its subsidiary ISOA, Inc. (ISOA). In the complaint, we and STI sought a declaratory judgment that we and STI were not using ISOA technology in our products. STI also asserted a claim for breach of contract to recover amounts STI paid to ISOA in connection with a joint development agreement between STI and ISOA. Rudolph and ISOA filed an answer and counterclaim, denying the allegations set forth in the complaint and claiming that ISOA was entitled to damages for STI s alleged breach of the joint development agreement. ISOA also sought a declaratory judgment that STI and/or we were wrongfully using ISOA s technology without compensating ISOA and that ISOA was entitled to royalty payments for use of its technology.

We acquired STI from ASTI Holdings, Ltd. (ASTI) in April 2003. In connection with the acquisition, ASTI agreed to indemnify us for claims relating to STI s dispute with Rudolph and ISOA, up to a maximum value of $670,000. To secure ASTI s performance of ASTI s indemnification obligations, an escrow was created by ASTI and us.

On July 22, 2004, we, STI, Rudolph, and ISOA agreed to settle all claims between the parties. On August 6, 2004 we entered into a final settlement agreement with Rudolph. Under the terms of the confidential settlement, ASTI made a one-time payment out of the escrow to Rudolph in the amount of

$503,000. We, STI, Rudolph, and ISOA agreed to release any and all claims against each other relating to the joint development agreement and to dismiss all claims asserted in the litigation with prejudice.

August Technology Corporation and each of its directors, Jeff O Dell, James Bernards, Roger Gower, Michael Wright and Linda Hall Whitman, have been named as defendants in two separate lawsuits that purport to be class actions claims on behalf of our shareholders. We received a summons and complaint with respect to the first of these proceedings on February 4, 2005 and the second on February 14, 2005. Both lawsuits are brought in Minnesota State Court and claim that the directors have breached their fiduciary duties to our shareholders in connection with their actions in agreeing to the proposed merger with Nanometrics Incorporated. The plaintiffs in both actions seek various forms of injunctive relief including an order enjoining us and our directors from consummating the merger with Nanometrics. August Technology and its directors believe the lawsuits are without merit and plan to vigorously defend against the claims.

Item 4. Submission of Matters to a Vote of Security Holders

There were no matters submitted to a vote of our shareholders during the quarter ended December 31, 2004.

Executive Officers of the Registrant

The following sets forth the names and ages of our current executive officers in addition to information regarding their positions, their periods of service in such positions and their business experience for the past five years. Executive officers generally serve in office for terms of approximately one year.

Name	Age	Position
Jeff L. O Dell	43	Chief Executive Officer and Director
Stanley D. Piekos	57	Chief Financial Officer, Treasurer and Secretary
David L. Klenk	40	President, Chief Operating Officer and Assistant Secretary
Scott A. Gabbard	38	Chief Accounting Officer, Assistant Secretary and Vice President, Finance
Cory M. Watkins	32	Chief Technology Officer
D. Mayson Brooks	46	Vice President, Global Sales and Field Operations
Jeffrey T. Nelson	49	Vice President, Manufacturing

Jeff L. O Dell was one of our co-founders and has served as our Chief Executive Officer since 1992 and Chairman of the Board since 1994. From 1992 to July 2001, Mr. O Dell also served as President. From August 1987 to August 1992, Mr. O Dell was Director of Sales and Marketing for MicroVision Corporation, which develops and manufactures robotic and inspection systems. From February 1985 to August 1987, Mr. O Dell was a Field Applications Engineer for Cognex Corporation, which designs, develops and markets machine vision systems that are used to automate a wide range of manufacturing processes. From March 1984 to February 1985, Mr. O Dell served as a Systems Analyst for Control Data Corporation.

Stanley D. Piekos joined us in April 2003 as Chief Financial Officer and Treasurer. From February 1998 until March 2003, Mr. Piekos served as Senior Vice President, Finance and Corporate Development and Chief Financial Officer at American Superconductor, a developer and manufacturer of products using superconductor technology for the electric power industry. From May 1994 to February 1998, Mr. Piekos was the Chief Financial Officer for Brooks Automation, a supplier of

automation solutions for the semiconductor industry. From June 1985 to May 1994, Mr. Piekos worked for Helix Technology Corporation, a manufacturer of products based on cryogenic and vacuum technology, serving as Vice President and Chief Financial Officer since 1991. He also held financial and general management positions with W.R. Grace & Co.

David L. Klenk joined us in April 1993 and has served as our President since July 2001 and Chief Operating Officer since April 1999. Mr. Klenk served on our Board of Directors from 1994 to March 2000. Mr. Klenk oversees the engineering, manufacturing, sales, customer service and employee services groups. Prior to becoming our Chief Operating Officer, Mr. Klenk served as our Director of Operations.

Scott A. Gabbard became our Vice President of Finance in July 2002. Mr. Gabbard also currently serves as our Chief Accounting Officer. Prior to becoming Chief Accounting Officer and Vice President of Finance, Mr. Gabbard served as our Corporate Controller since joining us in February 2000 and as Acting Chief Financial Officer from May 2002 to April 2003. From September 1995 through January 2000, Mr. Gabbard was Assistant Controller with U.S. Office Products, an international supplier of office products and business services. From August 1993 to September 1995, Mr. Gabbard was an auditor with Price Waterhouse, LLP.

Cory M. Watkins became our Chief Technology Officer in February 2004. Mr. Watkins joined us in October 1997 and served as Director of Advanced Technology Development from January 2002 until February 2004. Mr. Watkins has been responsible for the development of automated wafer inspection including the NSX, 3Di and AXi product lines, and is the primary or secondary inventor on numerous patent filings. From June 1990 to October 1997, Mr. Watkins was employed by Loram Maintenance of Way, a railroad maintenance company. He served in various capacities with Loram Maintenance of Way, most recently as Chief Engineer of the Advanced Technology Group, developing rail and wheel inspection technologies.

D. Mayson Brooks became our Vice President of Global Sales and Field Operations in February 2002. Prior to becoming Vice President of Global Sales and Field Operations, Mr. Brooks served as our Vice President of Sales and Marketing since July 1999. Prior to joining us, from June 1987 through June 1999, Mr. Brooks worked in various managerial capacities for Air Products and Chemicals, Inc., most recently as Commercial Manager, European electronics division. Mr. Brooks served from June 1981 to May 1987 in the United States Navy and was awarded two achievement medals.

Jeffrey T. Nelson became our Vice President of Manufacturing in November of 2004. From September 1998 through March 2004, Mr. Nelson was Director of Operations for Medallion, a subsidiary of the Elkay Corporation, a producer of various household products. From April 1996 to September 1998, Mr. Nelson was Director of Operations for FSI, a manufacturer of semi conductor capital equipment. From March 1978 to April 1996 Mr. Nelson held a variety of manufacturing management positions with Unisys Corporation.

PART II

Item 5. Market for Registrant s Equity, Related Shareholder Matters and Issuer Purchases of Equity Securities

Market Information

Our common stock, no par value (the Common Stock), has traded under the symbol AUGT on the NASDAQ National Market since our initial public offering on June 14, 2000. There was no market for our Common Stock prior to that date.

The following table sets forth the reported high and low closing sale prices for shares of our Common Stock on the NASDAQ National Market during the indicated quarters. Our closing market price on February 28, 2005 was $12.23.

	2004		2003	
	High	Low	High	Low
First Quarter	$ 23.45	$ 12.47	$ 5.38	$ 2.20
Second Quarter	17.24	11.25	6.23	3.45
Third Quarter	12.51	6.87	14.40	6.73
Fourth Quarter	10.53	6.14	20.69	13.82

Holders

As of February 28, 2005, there were approximately 200 holders of record of our Common Stock.

Dividends

We have not declared or paid cash dividends on our Common Stock to date and do not anticipate paying cash dividends for the foreseeable future. We currently intend to retain earnings, if any, to support the development of our business. Payment of future dividends, if any, will be at the discretion of our board of directors after taking into account various factors, including our financial condition, operating results and current and anticipated cash needs.

Item 6. Selected Financial Data

The consolidated statement of operations data set forth below for each of the years ended December 31, 2004, 2003 and 2002 and the consolidated balance sheet data as of December 31, 2004 and 2003 are derived from the audited consolidated financial statements, included elsewhere in this Form 10-K. The consolidated statement of operations data set forth below for the years ended December 31, 2001 and 2000 and the balance sheet data as of December 31, 2002, 2001 and 2000 are derived from audited consolidated financial statements, which are not included in this Form 10-K. You should read the data set forth below in conjunction with the audited consolidated financial statements and notes thereto and Management s Discussion and Analysis of Financial Condition and Results of Operations appearing elsewhere in this Form 10-K.

	Years Ended December 31,				
	2004(1)	2003(2)	2002	2001	2000
	(In thousands, except per share amounts)				
Consolidated Statements of Operations Data:					
Net revenues	$ 68,443	$ 40,323	$ 25,058	$ 29,784	$ 31,666
Cost of revenues	31,925	18,290	11,068	12,039	12,594
Gross profit	36,518	22,033	13,990	17,745	19,072
Selling, general and administrative expenses	22,798	14,359	13,013	12,379	10,426
Research and development expenses	13,561	10,430	9,847	7,940	6,945
Operating income (loss)	159	(2,756)	(8,870)	(2,574)	1,701
Interest income	847	407	624	1,427	978
Other income (expense)	73			(17)	
Income (loss) before provision for (benefit from) income taxes	1,079	(2,349)	(8,246)	(1,164)	2,679
Provision for (benefit from) income taxes(3)	277		687	(813)	807
Net income (loss)	$ 802	$ (2,349)	$ (8,933)	$ (351)	$ 1,872
Net income (loss) per share:					
Basic	$ 0.05	$ (0.16)	$ (0.69)	$ (0.03)	$ 0.17
Diluted	$ 0.04	$ (0.16)	$ (0.69)	$ (0.03)	$ 0.16
Weighted average common shares:					
Basic	17,755	14,381	13,033	12,723	11,049
Diluted	18,211	14,381	13,033	12,723	11,770

	December 31,				
	2004	2003	2002	2001	2000
	(In thousands)				
Consolidated Balance Sheets Data:					
Cash, cash equivalents and marketable debt securities	$ 50,422	$ 63,850	$ 18,777	$ 25,857	$ 29,193
Working capital	54,962	62,819	29,376	37,171	36,872
Total assets	95,800	88,947	39,510	47,155	47,897
Total debt					
Total shareholders equity	81,465	78,477	34,867	42,523	41,685

(1) On July 27, 2004 we acquired substantially all of the assets of DMSVision. DMSVision s results of operations have been included with our results of operations since the date of acquisition.

(2) On April 15, 2003 we acquired all of the outstanding capital stock of STI. On July 3, 2003 we acquired substantially all of the assets of CSI. STI and CSI s results of operations have been included with our results of operations since the date of acquisition.

(3) We recorded a full valuation allowance against our deferred tax assets in the second quarter of 2002. The recording of the valuation allowance resulted in a provision for income taxes, rather than the recording of a tax benefit on the pre-tax loss. We have subsequently continued to record a full valuation allowance against our deferred tax assets. The Company has recorded a provision for income taxes of $277 in 2004 primarily to provide for foreign and alternative minimum taxes.

Item 7. Management s Discussion and Analysis of Financial Condition and Results of Operations

The following discussion of our financial condition and results of operations should be read in conjunction with the audited consolidated financial statements and the notes thereto and with the Cautionary Statements section included elsewhere in this Form 10-K.

In preparing the consolidated financial statements in conformity with accounting principles generally accepted in the United States of America, we must make decisions which impact the reported amounts and the related disclosures. Such decisions include the selection of the appropriate accounting principles to be applied and the assumptions on which to base accounting estimates. In reaching such decisions, we apply judgment based on our understanding and analysis of the relevant circumstances. Note 1 to the consolidated financial statements provides a summary of the significant accounting policies followed in the preparation of the consolidated financial statements.

Overview

We are a world-class provider of automated defect detection and product characterization systems for microelectronic device manufacturers. Our systems provide manufacturers with information that enables process-enhancing decisions, ultimately lowering manufacturing costs and decreasing time-to-market. We have traditionally provided systems to address the automated inspection needs of the early stages of the final manufacturing or back-end of the microelectronic device manufacturing process. These needs were met primarily with our NSX Series and 3Di Series of products. We have introduced the AXi Series and the E20 for edge and B20 for backside inspection systems (collectively, the All Surface Inspection System) for advanced macro defect detection primarily in the front-end of the wafer manufacturing process. When used in conjunction with one another these systems allow a manufacturer to inspect the top, edge and back of a wafer s surface. We believe we are the first to offer all surface wafer inspection. During 2004, we made a significant investment supporting front-end system demonstrations at many large semiconductor manufacturers, which allows these customers to evaluate the benefits these systems provide. We expect these demonstrations will lead to increased revenues six to nine months after shipment.

We complement this broad inspection capability with an expanding suite of software tools designed to enhance the speed and effectiveness of the process by which device manufacturers analyze defects, and make decisions regarding their manufacturing process to reduce or eliminate such defects. We refer to this process as the detection-to-decision process.

In addition to internal development, we look to expand through strategic mergers and acquisitions of complementary products and technologies. In April 2003 we completed the acquisition of Semiconductor Technologies & Instruments, Inc. (STI), enhancing our probe mark inspection and metrology capabilities. In July 2003 we acquired the assets of Counterpoint Solutions, Inc. (CSI), including the design for the VersaScope a defect review system for advanced microscope-based imaging and analysis. In July 2004 we acquired certain assets of the DMSVision software division of Inspex, Inc (DMSVision). We plan to use the DMSVision software to further expand and enhance our current defect analysis software offerings.

Our business is subject to the highly cyclical nature of the microelectronic device manufacturing markets we serve. These cycles are caused by significant, and often rapid, fluctuations in the supply and demand of microelectronic devices driven by such factors as changes in technology and global economic conditions. As a result of these fluctuations, our quarterly orders and revenues have fluctuated dramatically. After a three year industry downturn we began to experience an industry recovery during the second half of 2003, which resulted in a significant increase in revenues and orders during each quarter until the third quarter of 2004. In the third quarter of 2004 we encountered yet another slowdown resulting in a decrease in the rate of orders being received, and a delay in shipments of certain systems under previously received orders. This resulted in a sequential decrease in quarterly revenues and a lower level of

orders in backlog, as compared to the end of the second quarter. In response to this slowdown, we implemented certain cost cutting initiatives during the fourth quarter of 2004. These initiatives included staffing reductions, reductions in management compensation, cuts in discretionary spending and mandatory time-off for employees (the Cost Cutting Initiatives). We estimate that these actions resulted in cost savings of approximately $475,000 during the fourth quarter. Despite the slowdown in the third quarter of 2004, we experienced a 58.4% and 69.7% overall increase in the level of orders and revenues, respectively, during 2004, and have a record level of backlog at December 31, 2004 of $28.4 million, as compared to $19.1 million at December 31, 2003.

Management focuses on several key financial metrics in evaluating our financial condition and operating performance. Although we do not believe backlog is always an accurate indication of future revenues and performance, since only a portion of our revenues for any quarter include systems that were in backlog as of the beginning of that quarter, we do closely monitor the level of orders both geographically and by product line and in relation to the level of revenues, referred to as the book-to-bill ratio. During the fourth quarter of 2004 our book-to-bill ratio was above parity. A book-to-bill ratio greater than parity indicates a growing level of backlog. In addition to monitoring our level of orders and backlog, we focus on revenues by product family compared to prior-period and current-year plans, year-over-year revenue growth compared to the overall semiconductor equipment industry, operating profit or loss performance compared with prior-period and current-year plans and the level of operating cash flow.

Future quarterly and annual results will continue to be impacted by fluctuations in supply and demand of microelectronic devices, the timing of new product announcements and releases by us or our competitors, market acceptance of new or enhanced versions of our products, changes in the pricing of our products and the timing and level of our research and development expenditures. We cannot predict the sustainability or depth of these fluctuations and their impact on our business, and/or the overall industry s rate of growth. If we are unable to effectively manage our resources and production capacity during an industry cycle, there could be a material adverse effect on our business, financial condition and results of operations.

Merger Activities

On January 21, 2005, we entered into a Merger Agreement with Nanometrics, Incorporated (Nanometrics), pursuant to which Nanometrics will reincorporate under Delaware law and August Technology Corporation will become a wholly-owned subsidiary of Nanometrics. In connection with this transaction, Nanometric s name will be changed to August Nanometrics. Each share of our common stock will be converted into the right to receive 0.6401 of a share of August Nanometrics common stock. August Nanometrics will make a cash payment to our shareholders for any fractional shares of August Nanometrics common stock they would otherwise be entitled to receive instead of issuing fractional shares.

On January 27, 2005, we received a letter from Paul F. McLaughlin, Chairman and Chief Executive Officer of Rudolph Technologies, Inc. (Rudolph), stating that Rudolph is prepared to enter into a merger with us based on a share exchange ratio of 0.6239 share of Rudolph stock for each share of our common stock (equivalent to $10.50 per share of our common stock based on the closing price of Rudolph stock on January 27, 2005). The letter stated that each of our shareholders may elect to receive all cash, stock or a combination of cash and stock, subject to proration based on total cash consideration of $40 million.

Also on January 27, 2005, Rudolph issued a press release with proposed terms slightly different from those described in the letter. The press release stated that Rudolph is prepared to enter into a merger with us whereby each of our shareholders will receive the value of $2.16 per share in cash and 0.4955 per share in Rudolph common stock (equivalent to $10.50 per share of our Common Stock, based on the closing

price of Rudolph stock on January 27, 2005). The press release stated that each of our shareholders would have the option to elect to receive all cash, stock or a combination of cash and stock, subject to proration based on total cash consideration of $40 million.

Our Board of Directors has agreed, based on the advice of its financial advisors and legal counsel, to further examine the Rudolph offer provided that Rudolph first executes a confidentiality agreement in the form required by the Merger Agreement with Nanometrics. As of the date of this filing, we have not reached agreement on the form of confidentiality agreement and no discussions regarding Rudolph s offer have taken place.

On February 9, 2005, we received a letter from Kenneth Schroeder, President and Chief Executive Officer of KLA-Tencor Corporation (KLA), regarding KLA s interest in pursuing a merger with us. The letter stated that KLA proposed to acquire us in a transaction in which our shareholders would receive $11.50 per share. KLA also stated that it would be willing to consider using stock as consideration.

Our Board of Directors has agreed, based on the advice of its financial advisors and legal counsel, to further examine the KLA offer provided that KLA first executes a confidentiality agreement in the form required by the Merger Agreement with Nanometrics. As of the date of this filing, we have not reached agreement on the form of confidentiality agreement and no discussions regarding KLA s offer have taken place.

Results of Operations

The following table presents the consolidated statements of operations as a percentage of net revenues.

	Years Ended December 31,		
	2004	**2003**	**2002**
Net revenues	100.0 %	100.0 %	100.0 %
Cost of revenues	46.6	45.4	44.2
Gross profit	53.4	54.6	55.8
Selling, general and administrative expenses	33.3	35.6	52.0
Research and development expenses	19.8	25.8	39.3
Operating income (loss)	0.3	(6.8)	(35.5)
Interest income	1.2	1.0	2.5
Other income	0.1		
Income (loss) before provision for income taxes	1.6	(5.8)	(33.0)
Provision for income taxes	0.4		2.7
Net income (loss)	1.2 %	(5.8)%	(35.7)%

Year ended December 31, 2004 compared to the year ended December 31, 2003

Net Revenues. Net revenues increased $28.1 million, or 69.7%, to $68.4 million in 2004, from $40.3 million in 2003. The increase in net revenues was primarily due to increased sales of higher throughput NSX Series systems and all surface inspection systems. Revenues from these product lines increased primarily as a result of higher sales into the front end of the wafer fabrication process, and an overall increase in demand due to the industry recovery that began in the second half of 2003 and continued through the first half of 2004. Revenues derived from systems sold for front end wafer fab applications accounted for 44% of total revenues in 2004, as compared to 21% in 2003. Revenues from the NSX Series and all surface inspection systems were 54% and 20% of total net revenues in 2004, respectively, as compared to 50% and 12%, respectively, in 2003. Net revenues derived from international sales represented 73% and 76% of total net revenues in 2004 and 2003, respectively. International net revenues

were primarily the result of sales to Taiwan and the rest of Asia, which comprised 68% and 64% of total net revenues in 2004 and 2003, respectively.

Gross Margin. Gross margin decreased to 53.4% of net revenues in 2004 as compared to 54.6% of net revenues in 2003. Gross margins decreased 1.3 percentage points as a result of the write-off of $870,000 of inventory related to the WAV Series product line, as the WAV s functionality has been integrated into the NSX Series product line. In addition, we have experienced pricing pressure primarily related to our inspection systems sold into final manufacturing applications as competitors have continued to enter this market. These decreases were partially offset by increased revenue from our Yield*Pilot* software. We expect gross margins in the next year to be between 53% and 57%.

Selling, General and Administrative. Selling, general and administrative expenses increased $8.4 million, or 58.8%, to $22.8 million, or 33.3% of net revenues, in 2004, from $14.4 million, or 35.6% of net revenues, in 2003. The increase in expense dollars was primarily the result of costs associated with (i) new hires and contractors in our field service and sales groups to support increased revenues, customer demonstrations in front-end wafer processing applications and our direct sales and service office in South Korea, which opened in March 2004; (ii) the ongoing operations of three acquisitions completed subsequent to the first quarter of 2003; (iii) higher variable costs associated with increased revenues; and (iv) compliance with the Sarbanes Oxley Act. The increase was partially offset by the Cost Cutting Initiatives. We expect selling, general and administrative expense dollars to increase in future quarters, primarily as a result of variable expenses associated with an expected higher level of revenues and higher recruiting, relocation and compensation costs related to the retention and hiring of employees. However, selling, general and administrative expenses as a percentage of revenues are expected to decrease, as revenues are expected to increase at a higher rate than the increase in selling, general and administrative expenses.

Research and Development. Research and development expenses increased $3.2 million, or 30.0%, to $13.6 million, or 19.8% of net revenues, in 2004, from $10.4 million, or 25.8% of net revenues, in 2003. The increase in expense dollars was primarily due to employee compensation and related benefits associated with the hiring of additional staff and an increase in the use of outside contractors to complete certain stages of development of the E20 for edge and B20 for backside inspection systems and VersaScope, and further enhancements to both the NSX Series and AXi Series. In addition, expenses increased due to three acquisitions completed subsequent to the first quarter of 2003. The increase was partially offset by savings from the Cost Cutting Initiatives. We plan to maintain our commitment to invest in the continued expansion of our business in the front-end of the wafer manufacturing process and expansion of our suite of software solutions. As a result, we currently anticipate that research and development expense dollars will increase in future quarters. However, research and development expenses as a percentage of revenues are expected to decrease, as revenues are expected to increase at a higher rate than the increase in research and development expenses.

Interest income, net. Net interest income increased $440,000 to $847,000 in 2004 from $407,000 in 2003. The increase in interest income was primarily due to an increase in overall investment balances, as a result of the proceeds received from a follow-on public offering of our Common Stock that was completed on September 23, 2003 and the underwriters exercise of the over-allotment option on October 21, 2003 (the Offering).

Income Taxes. As a result of historical operating losses and uncertainty as to the extent of profitability in future periods, we began to record a valuation allowance against our deferred tax assets in the second quarter of 2002 and continue to do so at December 31, 2004. As a result, we did not reflect a provision for income taxes during 2003, and have recorded a provision for income taxes of $277,000 for 2004, primarily to reflect foreign income tax owed. Statement of Financial Accounting Standards (SFAS) No. 109 Accounting for Income Taxes, requires the establishment of a valuation allowance to reflect the likelihood of the realization of deferred tax assets. We currently expect to have an effective income tax rate of between ten and fifteen percent in 2005, primarily to recognize alternative minimum taxes and foreign income tax owed. As of December 31, 2004 we had recorded a valuation allowance of $8.5 million.

Year ended December 31, 2003 compared to the year ended December 31, 2002

Net Revenues. Net revenues increased $15.2 million, or 60.9%, to $40.3 million in 2003, from $25.1 million in 2002. The increase in net revenues was primarily the result of higher sales of new models within the NSX Series which were introduced in the middle of 2002 and revenues from the AXi Series, which was introduced in the first quarter of 2003. Although the AXi Series initially shipped in the first quarter of 2003, we did not begin to recognize revenue until the second half of 2003. Revenues in 2003 from the NSX Series and AXi Series were $20.0 million and $4.7 million, of total revenues, respectively, as compared to $11.2 million and none, respectively, in 2002. Overall, revenues from products introduced in the last two years increased to $19.0 million, or 47%, in 2003 as compared to $12.1 million, or 48%, in 2002. Revenues also increased due to sales of products acquired in the STI and CSI acquisitions. The increase was partially offset by lower revenues from the 3Di Series. Net revenues derived from international sales represented 76% and 52% of total net revenues in 2003 and 2002, respectively. International net revenues were primarily the result of sales to Taiwan and the rest of Asia, which comprised 64% and 45% of total net revenues in 2003 and 2002, respectively.

Gross Profit. Gross margin decreased to 54.6% of net revenues in 2003 as compared to 55.8% of net revenues in 2002. The decrease in gross margin percentage was primarily due to (i) a higher level of write-offs of obsolete and excess inventory; (ii) an increase in the number of NSX Series systems that included subsystem options manufactured by third parties, which have lower gross margins than our core inspection systems; and (iii) lower margins on the AXi Series systems sold under our joint development program with a leading device manufacturer.

Selling, General and Administrative. Selling, general and administrative expenses increased $1.4 million, or 10.3%, to $14.4 million, or 35.6% of net revenues, in 2003, from $13.0 million, or 52.0% of net revenues in 2002. The expense dollars in 2003 increased due to higher variable costs, such as sales commissions and variable employee compensation costs associated with the increased level of revenues, recruiting and relocation costs associated with hiring new employees, costs associated with the ongoing operations and amortization of purchased technology from the STI and CSI acquisitions, and costs associated with an increase in the number of systems being evaluated by customers. The increase was partially offset by the fact that the prior year included the write-off of costs related to potential acquisitions, the modification of our distributor agreement with Metron Technology B.V and higher employee severance costs.

Research and Development. Research and development expenses increased $583,000, or 5.9%, to $10.4 million, or 25.8% of net revenues, in 2003, from $9.8 million, or 39.3% of net revenues, in 2002. The expense dollars increased primarily due to depreciation and amortization expense related to assets and software capitalized subsequent to the beginning of 2002, employee salaries and related benefits associated with the employees of STI and CSI and higher travel costs related to visiting customer locations. These increases were partially offset by a decrease in the use of outside services and contractors in the development of new and existing products. We believe our future operating results will depend significantly on our ability to produce products and provide services that have a competitive advantage in

our marketplace. To do this, we believe that we must continue to make substantial investments in our research and development efforts. Our investments in new technology and existing product enhancements are intended to enable our customers to achieve a higher return on their capital investments and higher productivity through cost-effective, leading edge technology solutions.

Interest income, net. Net interest income decreased $217,000 to $407,000 in 2003 from $624,000 in 2002. The decrease in interest income was due to lower rates of return earned on investment balances in 2003 as compared to 2002 and lower average investment balances in 2003.

Income Taxes. There was no benefit for income taxes in 2003 compared to a provision for income taxes of $687,000, or an effective tax rate of 8.3%, in 2002. The provision for income taxes in 2002, rather than a benefit from income taxes related to the pretax loss, is due to the recording of a full valuation allowance against deferred tax assets, in the second quarter of 2002.

Liquidity and Capital Resources

At December 31, 2004 our principal sources of liquidity consisted of cash, cash equivalents and investments in marketable debt securities of $50.4 million, compared to $63.9 million at December 31, 2003, a decrease of $13.5 million. During 2004, working capital decreased to $55.0 million as compared to $62.8 million at December 31, 2003. The decrease was primarily due to a decrease in cash and equivalents and short-term investments to fund operations and capital expenditures and increased customer deposits and deferred revenues, partially offset by increased accounts receivable and inventories. During the next twelve months, and beyond, we intend to utilize our current sources of liquidity to fund operations, specifically to enhance our position in the front-end wafer fabrication process. We have no outstanding debt at December 31, 2004. Our liquidity is affected by many factors, some of which are based on the normal ongoing operations of our business, the most significant of which includes the timing of the collection of receivables, the level of inventories, capital expenditures and acquisitions.

Accounts Receivable. Our accounts receivable increased $4.5 million from December 31, 2003 to December 31, 2004. Our days sales outstanding (DSO) during 2004 was 34 days. This compares to a DSO of 50 days in 2003. The decrease in DSO is primarily due to the timely collection of our accounts receivable in 2004. The increase in accounts receivable resulted in a use of cash of $4.5 million during 2004, as we have funded shipments for increased revenues prior to receiving payments from customers. Due to the high mix of international revenues during current and prior quarters, which generally require a longer time for collection, we believe our DSO will be between 55 and 65 days in future quarters.

Inventories. Inventories increased $8.5 million from December 31, 2003 to December 31, 2004. The increase is primarily due to the need to support new product introductions, increased backlog and increased demonstration equipment at customers under evaluation, primarily in front-end wafer processing applications.

Inventories at Customers under Purchase Orders. Inventories at customers under purchase orders increased $1.7 million from December 31, 2003 to December 31, 2004, primarily due to shipments of models within our NSX Series that have not yet qualified for revenue recognition. We anticipate that a portion of this inventory will be recognized as revenue during the first quarter of 2005. We also expect that this inventory will increase as shipments of newly introduced products increase.

Capital Expenditures. Our capital expenditures during 2004 were $5.0 million, consisting primarily of the capitalization of finished goods that have been transferred to engineering for test and characterization, to customer service for training and to sales for customer application studies. This equipment is expected to be utilized for these purposes for its estimated life, generally three years. Our total capital expenditures, including the capitalization of finished goods, are expected to be between $3.0 million and $4.0 million in

2005, as we continue to expand the use of internal test and development equipment and enhance our facilities to better serve our customers.

Acquisitions. As a result of the acquisition of DMSVision in July 2004, we lease 7,456 square feet of space in Billerica, Massachusetts.

Our liquidity is also affected by factors beyond our control related to the uncertainties of global economies and the cyclical nature of the semiconductor and microelectronic industries. Although liquidity requirements will fluctuate based on the timing and extent of all of these factors and others, management believes that existing cash and investment balances will be adequate to satisfy our existing liquidity requirements for at least the next twelve months.

The following table summarizes our future cash payments due under contractual obligations as of December 31, 2004:

	Operating Leases (In thousands)	Purchase Obligations	Open Purchase Orders	Total
2005	$ 794	$ 4,424	$ 3,435	$ 8,653
2006	670			670
2007	621			621
2008	621			621
2009	628			628
Thereafter	1,503			1,503
Total	$ 4,837	$ 4,424	$ 3,435	$ 12,696

The purchase obligations are for the purchase of goods and services. Although we are primarily liable for payments on the above operating leases and purchase obligations, based on historic operating performance and forecasted future cash flows, management believes the exposure to losses, if any, under these arrangements is not material.

The open purchase orders displayed in the table represent amounts we anticipate will become payable within the next year for goods and services we have negotiated for delivery.

Cash Flows. During 2004, net cash used in operating activities was $7.8 million, which resulted primarily from the increases in inventories and accounts receivable, and a decrease in accounts payable, partially offset by a reduction in customer deposits and deferred revenues, and an increase in depreciation and amortization. Net cash provided by investing activities was $1.2 million, due to $8.8 million of net proceeds from maturities of marketable debt securities, $2.3 million paid to acquire DMSVision and $5.3 million of additions to property and equipment and other assets. Net cash provided by financing activities was $2.2 million, primarily from the net proceeds received from the exercises of stock options.

During 2003, net cash provided by operating activities was $3.8 million, which resulted primarily from the decrease in accounts receivable and increases in accounts payable and depreciation and amortization, partially offset by the increase in inventories. Net cash used in investing activities was $39.5 million, due to $37.0 million of net purchases of marketable securities, $1.5 million paid to acquire STI and CSI and $981,000 of additions to property and equipment and other assets. Net cash provided by financing activities was $43.8 million, including $42.0 million of net proceeds received from the Offering and underwriters exercise of their over-allotment option.

During 2002, net cash used in operating activities was $6.5 million, which resulted primarily from our net loss and an increase in accounts receivable, partially offset by non-cash charges, decreased prepaid expenses and other current assets and inventories. Net cash provided by investing activities was $5.7 million, due to $7.5 million of net proceeds from the redemption and purchases of securities, partially

offset by $1.8 million of additions to property and equipment and other assets. Net cash provided by financing activities was $1.2 million from the proceeds of issuances of common stock in conjunction with the exercise of stock options by employees and purchases under our employee stock purchase plan.

Critical Accounting Policies, Significant Judgments and Estimates

The preparation of consolidated financial statements and related disclosures in conformity with accounting principles generally accepted in the United States of America requires management to make judgments, assumptions and estimates that affect the amounts reported. Note 1 of Notes to Consolidated Financial Statements describes the significant accounting policies used in the preparation of the consolidated financial statements. Certain of these significant accounting policies are considered to be critical accounting policies, as defined below.

A critical accounting policy is defined as one that is material to the presentation of our consolidated financial statements and/or requires management to make estimates and assumptions that could have a material effect on our financial condition and results of operations. Specifically, critical accounting estimates have the following attributes: 1) we are required to make assumptions about matters that are highly uncertain at the time of the estimate; and 2) different estimates we could reasonably have used, or changes in the estimate that are reasonably likely to occur, would have a material effect on our financial condition or results of operations.

Estimates and assumptions about future events and their effects cannot be determined with certainty. We base our estimates on historical experience and on various other assumptions believed to be applicable and reasonable under the circumstances. These estimates may change as new events occur, as additional information is obtained and as our operating environment changes. These changes have historically been minor and have been included in the consolidated financial statements as soon as they became known. In addition, management is periodically faced with uncertainties, the outcomes of which are not within its control and will not be known for prolonged periods of time. These uncertainties are discussed in the section below entitled Cautionary Statements.

Management believes that the following are critical accounting policies:

Revenue Recognition. We derive revenues from the sale of systems, spare parts, software and services.

System sales: We require customers, excluding our distributors, that have new inspection applications to complete pre-shipment authorization testing of purchased systems at our facility, prior to shipment. During this testing, the customer verifies that the system meets their specifications and authorizes shipment. For systems that have completed pre-shipment authorization testing, revenue is recognized as follows:

- Revenue from systems that have been demonstrated to meet customer specifications during pre-shipment authorization testing is recognized when the product has shipped, title and risk of loss have transferred to the customer and collection of the resulting receivable is probable.

- Revenue from systems that have not been demonstrated to meet customer specifications during pre-shipment authorization testing is recognized when title and risk of loss have transferred to the customer, installation has occurred and collection of the resulting receivable is probable.

When a customer with a new inspection application declines pre-shipment authorization testing of a purchased system, revenue is deferred until, title and risk of loss have transferred to the customer, installation has occurred and collection of the resulting receivable is probable.

When the customer has already accepted previous systems with the same specifications, for the same application, we do not require pre-shipment authorization testing. Revenue is recognized when the

product has shipped, title and risk of loss have transferred to the customer and collection of the resulting receivable is probable.

System sales are accounted for as multiple-element arrangements. In transactions that include multiple products and/or services, we allocate the revenue to each element based on their relative fair value (or in the absence of fair value, the residual method) and recognize the associated revenue when all revenue recognition criteria have been met for each element.

Spare parts revenue: Spare parts revenue is recognized when the parts have been shipped, title and risk of loss have transferred to the customer and collection of the resulting receivable is probable.

Software revenue: Revenue from software license fees is recognized upon shipment if collection of the resulting receivable is probable, the fee is fixed or determinable, and vendor-specific objective evidence exists to allocate a portion of the total fee to any undelivered elements of the arrangement. Such undelivered elements in these arrangements typically consist of follow-on support. If vendor-specific objective evidence does not exist for the undelivered elements of the arrangement, all revenue is deferred and recognized ratably over the support period.

Service revenue: Service revenue is recognized after the services are performed and collection of the resulting receivable is probable. Revenue from maintenance contracts is recognized ratably over the period of the contract. Service revenues were less than 10% of total revenues during the years ended December 31, 2004, 2003 and 2002.

The Company s distributors are not granted price protection or a right of return.

The Company includes amounts billed to customers for shipping and handling as revenues, and the related expenses in cost of revenues.

Valuation of Accounts Receivable. We review accounts receivable to determine which are doubtful of collection. In making the determination of the appropriate allowance for doubtful accounts, we consider our history of write-offs, relationships with our customers and the overall credit worthiness of our customers. For the three years ended December 31, 2004, we have had accounts receivable write-offs totaling $190,000, which included the write-off of one receivable totaling $164,000. Changes in the credit worthiness of customers, general economic conditions and other factors may impact the level of future write-offs. Changes in these factors could have a material adverse effect on our business, financial condition and results of operations.

Valuation of Inventory. We review inventory for obsolescence and excess quantities to determine that items deemed obsolete or excess are appropriately reserved. In making the determination, we consider the quantity of inventory at the balance sheet date assessed against each part s historical and future usage rates. In addition, inventories are evaluated for potential obsolescence due to the effect of known and anticipated engineering change orders and new products. For the three years ended December 31, 2004, we have written-off inventory totaling $1.1 million, including $870,000 related to the discontinuance of the WAV Series. We have an allowance for obsolete and excess inventory of $1.6 million at December 31, 2004, which represents our estimate of obsolete and excess inventory. Changes in factors such as technology, customer demand, competitor product introductions and other matters could affect the level of obsolete and excess inventory in the future and have a material adverse effect on our business, financial condition and results of operations.

Warranty. We provide warranty coverage on our systems for a period of one year, including parts and labor necessary to repair the systems during the warranty period. We account for the estimated warranty cost as a charge to cost of revenues when revenue is recognized. The estimated warranty cost is based on our historical experience rate of incurred expenses to corresponding system revenues. We update these estimated charges every quarter.

Accounting for Income Taxes. The preparation of our consolidated financial statements requires us to estimate our actual current tax exposure together with our temporary differences resulting from differing treatment of tax items for tax and accounting. These temporary differences result in the recognition of deferred tax assets and liabilities, which are included within our consolidated balance sheet. SFAS No. 109 Accounting for Income Taxes, requires the establishment of a valuation allowance to reflect the likelihood of the realization of deferred tax assets. Significant management judgment is required in determining our provision for income taxes, our deferred tax assets and liabilities and any valuation allowance recorded against our net deferred tax assets. We evaluate the weight of all available evidence to determine whether it is more likely than not that some portion or all of the deferred income tax assets will not be realized. During the second quarter of 2002 we recorded a valuation allowance for the full amount of our deferred tax assets due to uncertainties surrounding our ability to utilize some or all of our deferred tax assets, primarily consisting of certain net operating losses, as well as other temporary differences between book and tax accounting. If the realization of deferred tax assets in the future is considered more likely than not, an adjustment to the deferred tax assets would increase net income in the period such determination is made. In the event that actual results differ from these estimates or we adjust these estimates in future periods, we may need to adjust our valuation allowance, which could materially affect our financial position and results of operations.

Off-Balance Sheet Arrangements. We have not created, and are not party to, any special-purpose or off-balance sheet entities for the purpose of raising capital, incurring debt or operating parts of our business that are not consolidated into our financial statements. We do not have any arrangements or relationships with entities that are not consolidated into our consolidated financial statements that are reasonably likely to materially affect our liquidity or the availability of our capital resources.

Impact of Accounting Standards

In December 2004, the Financial Accounting Standards Board (FASB) issued SFAS No. 123 (Revised 2004), *Share-Based Payment.* SFAS No. 123R is a revision of SFAS No. 123, Accounting for Stock-Based Compensation and supersedes Accounting Principles Board (APB) Opinion No. 25, Accounting for Stock Issued to Employees and its related implementation guidance. SFAS No. 123R focuses primarily on accounting for transactions in which an entity obtains employee services through share-based payment transactions. SFAS No. 123R requires a public entity to measure the cost of employee services received in exchange for the award of equity instruments based on the fair value of the award at the date of grant. The cost will be recognized over the period during which an employee is required to provide services in exchange for the award. SFAS No. 123R is effective as of the beginning of the first interim or annual reporting period that begins after June 15, 2005. While we cannot precisely determine the impact on net earnings as a result of the adoption of SFAS No. 123R, estimated compensation expense related to prior periods can be found in Note 1 in the Notes to Consolidated Financial Statements included in this Form 10-K. The ultimate amount of increased compensation expense will be dependent on whether we adopt SFAS No. 123R using the modified prospective or retrospective method, the number of option shares granted during the year, their timing and vesting period, and the method used to calculate the fair value of the awards, among other factors we are currently assessing.

In November 2003 and March 2004, the Emerging Issues Task Force (EITF) reached a consensus on EITF Issue No. 03-1, *The Meaning of Other-Than-Temporary Impairment and Its Application to Certain Investments*. The consensus requires companies to apply new guidance for evaluating whether an investment is other-than-temporarily impaired and also requires quantitative and qualitative disclosure of debt and equity securities, classified as available-for-sale or held-to-maturity, that are determined to be only temporarily impaired at the balance sheet date. The Company incorporated the required disclosures for investments accounted for under SFAS No. 115, Accounting for Certain Investments in Debt and Equity Securities, as required in fiscal year 2004. In September 2004, the consensus was indefinitely delayed as it relates to the measurement and recognition of impairment losses for all securities in the scope of paragraphs 10-20 of EITF No. 03-1. The disclosures prescribed by EITF No. 03-1 and guidance related to impairment measurement prior to the issuance of this consensus continue to remain in effect. Adoption is not expected to have a material impact on the Company s consolidated financial statements.

In November 2004, the FASB issued SFAS No. 151, *Inventory Costs an amendment of ARB No. 43, Chapter 4*. SFAS No. 151 clarifies the accounting for abnormal amounts of idle facility expenses, freight, handling costs, and spoilage. It also requires that allocation of fixed production overheads to inventory be based on the normal capacity of production facilities. SFAS No. 151 is effective for inventory costs incurred during fiscal years beginning after June 15, 2005. Adoption of SFAS No. 151 is not expected to have a material effect on the Company s financial position, results of operations or cash flows.

Cautionary Statements

Certain statements contained in this Form 10-K and other written and oral statements made from time to time by us do not relate strictly to historical or current facts. As such, they are considered forward-looking statements which provide current expectations or forecasts of future events. Such statements can be identified by the use of terminology such as anticipate, believe, estimate, expect, intend, may, could, plan, project, should, will, forecast and similar words or expressions. Our forward-looking statements generally relate to our growth strategie financial results, product development and sales efforts. One must carefully consider forward-looking statements and understand that such statements involve a variety of risks and uncertainties, known and unknown, and may be affected by inaccurate assumptions, including, among others, those discussed below. Consequently, no forward-looking statement can be guaranteed and actual results may vary materially. We undertake no obligation to update any forward-looking statement, but investors are advised to consult any further disclosures by us on this subject in our filings with the Securities and Exchange Commission, especially on Forms 10-K, 10-Q and 8-K (if any), in which we discuss in more detail various important factors that could cause actual results to differ from expected or historic results. We note these factors as permitted by the Private Securities Litigation Reform Act of 1995. It is not possible to foresee or identify all such factors. As such, investors should not consider any list of such factors to be an exhaustive statement of all risks, uncertainties or potentially inaccurate assumptions.

Although we expect that the merger with Nanometrics will result in benefits to August Nanometrics, August Nanometrics may not realize those benefits because of integration and other challenges.

The failure of August Nanometrics to meet the challenges involved in integrating the global operations of Nanometrics and August Technology successfully or otherwise to realize any of the anticipated benefits of the proposed merger, could seriously harm the results of operations of August Nanometrics. Realizing the benefits of the proposed merger will depend in part on the successful integration of technology, operations and personnel. The integration of the companies is a complex, time-consuming and expensive process that, without proper planning and implementation, could significantly disrupt the respective businesses of Nanometrics, August Technology and/or August Nanometrics.

The challenges involved in this integration include, but are not limited to, the following:

- communicating and executing a strategic vision to the market regarding August Nanometrics;
- consolidating operations, including rationalizing corporate information technology and administrative infrastructures;
- combining diverse product and service offerings;
- coordinating sales and marketing efforts to effectively communicate the capabilities of August Nanometrics;
- overcoming any perceived adverse changes in business focus, including demonstrating to existing customers of both Nanometrics and August Technology that the merger will not result in adverse changes in customer service standards or business focus and helping customers conduct business easily with August Nanometrics;
- coordinating and harmonizing research and development activities to accelerate introduction of new products and technologies with reduced cost;
- preserving customer, distribution, reseller, manufacturing, supplier, marketing and other important relationships of both Nanometrics and August Technology and resolving any potential conflicts that may arise;
- minimizing the diversion of management attention from ongoing business concerns;
- retaining key employees and maintaining employee morale;
- addressing differences in the business cultures of Nanometrics and August Technology;
- addressing the effects of August Technology s employment contracts and the differences between Nanometrics and August Technology s employee bonus plans on August Nanometrics employees;
- overcoming challenges involved with managing two large groups of employees in geographically disparate areas;
- coordinating and combining international operations, relationships and facilities, which may be subject to additional constraints imposed by geographic distance, local laws and regulations;
- overcoming any potential challenges involved with August Nanometrics ability to comply with the Sarbanes-Oxley Act of 2002, including its ability to make the certifications required by Section 404 thereof, in a timely manner;
- addressing any disruptions that may be caused by competitors of August Nanometrics attempting to acquire it;
- minimizing any potential interference to August Nanometrics sales efforts that may be caused by its competitors disseminating false information about August Nanometrics;
- reducing the effects of potential litigation diverting the attention of management away from day to day integration issues;
- addressing any challenges involved with August Nanometrics ability to earn profits with the amortization of fair value of property, plants, equipment and intangible assets; and

- overcoming the challenges involved with integrating August Technology s and Nanometrics diverse ERP systems worldwide and minimizing any disruptions that may be caused by such integration.

August Nanometrics may not successfully integrate our operations with those of Nanometrics in a timely manner, or at all, and August Nanometrics may not realize the anticipated benefits and synergies of the proposed merger to the extent, or in the timeframe, anticipated. The anticipated benefits of the merger

with Nanometrics are based on projections and assumptions, including successful integration, not actual experience. The failure to integrate our business with the business of Nanometrics or to realize any of the anticipated benefits of the proposed merger could seriously hinder August Nanometrics plans for product development and business as well as business and market expansion following the merger.

In addition to the integration risks discussed above, August Nanometrics ability to realize these benefits and synergies could be adversely affected by practical or legal constraints on its ability to combine operations. Even if the integration of Nanometrics and our operations, products and personnel is successful, it may place a significant burden on management and internal resources. The diversion of management attention and any difficulties encountered in the transition and integration process could harm August Nanometrics business, financial condition and operating results.

Our business may be adversely affected and, under certain circumstances, we may be required to pay a termination fee if the merger with Nanometrics is not completed.

If the merger with Nanometrics is not completed, our business and operations may be harmed to the extent that customers, suppliers and others believe that we cannot effectively compete in the marketplace without the merger, or there is customer or employee uncertainty surrounding the future direction of our product and service offerings and our strategy on a stand-alone basis. We may not be able to find an equivalent or more attractive partner. Completion of the merger with Nanometrics is subject to several closing conditions, including obtaining requisite regulatory and shareholder approvals, and we and Nanometrics may be unable to obtain such approvals on a timely basis or at all. In addition, we would not derive the strategic benefits expected to result from the merger if the merger is not completed, which could adversely affect our business. Further, we will be required to pay significant costs incurred in connection with the merger with Nanometrics, including legal, accounting and a portion of the financial advisory fees, whether or not the merger is completed. Moreover, under specified circumstances, we may be required to pay to Nanometrics a termination fee equal to $8.3 million plus any applicable costs, expenses and interest pursuant to the Merger Agreement.

We expect to incur significant costs associated with the merger with Nanometrics.

We estimate that we will incur significant direct transaction costs in connection with the merger with Nanometrics, which will be recognized and expensed as incurred. In addition, we will incur legal fees and related costs in connection with defending August Technology and its directors against two purported class action lawsuits that have been initiated against us and the members of our board of directors. We believe August Nanometrics may incur charges to operations, which cannot be reasonably estimated at this time, in the quarter in which the merger with Nanometrics is completed or the following quarters, to reflect costs associated with integrating the two companies. There can be no assurance that August Nanometrics will not incur additional material charges in subsequent quarters to reflect additional costs associated with the merger with Nanometrics and the integration of the two companies.

We must continue to retain and motivate executives and key employees and recruit new employees, which may be difficult in light of uncertainty regarding the proposed merger with Nanometrics and offers from Rudolph and KLA, and failure to do so could seriously harm our business.

In order to be successful, during the period before the merger with Nanometrics is completed, we must continue to retain and motivate executives and other key employees and recruit new employees. Our employees may experience uncertainty about their future role with August Nanometrics until or after strategies with regard to August Nanometrics are announced or executed. These potential distractions of the proposed merger with Nanometrics and the unsolicited offers from Rudolph and KLA may adversely affect our ability to attract, motivate and retain executives and key employees and keep them focused on the strategies and goals of August Nanometrics. Any failure by us to retain and motivate executives and key employees during the period prior to the completion of this merger could seriously harm our business, as well as the business of August Nanometrics.

Uncertainty regarding our proposed merger with Nanometrics may cause customers, distributors, resellers and others to delay or defer decisions which may harm our results of operations.

Because our proposed merger with Nanometrics is subject to several closing conditions and because we have received competing offers from Rudolph and KLA, there may be uncertainty regarding the completion of the proposed merger with Nanometrics. This uncertainty may cause customers, distributors, resellers and others to delay or defer decisions concerning purchases of our products, or elect to switch to other suppliers, which could negatively affect our business and results of operations. Prospective customers could also be reluctant to purchase August Nanometrics products due to uncertainty about the direction of August Nanometrics products and willingness to support and service existing products. In addition, customers, distributors, resellers and others may also seek to change existing agreements with Nanometrics or August Technology as a result of the proposed merger. These and other actions by customers, distributors, resellers and others could negatively affect our business and results of operations.

We and our directors have been named as defendants in two purported class action lawsuits relating to our proposed merger with Nanometrics and we are likely to incur significant legal costs in the defense of these lawsuits and, if we or our directors lose, we may be precluded from completing the merger with Nanometrics and incur additional financial obligations.

We and each of our directors, Jeff O Dell, James Bernards, Roger Gower, Michael Wright and Linda Hall Whitman, have been named as defendants in two separate lawsuits that purport to be class action claims on behalf of our shareholders. We received a summons and complaint with respect to the first of these proceedings on February 4, 2005 and the second on February 14, 2005. Both lawsuits are brought in Minnesota District Court and claim that the directors have breached their fiduciary duties to our shareholders in connection with their actions in agreeing to the proposed merger with Nanometrics Incorporated. The plaintiffs in both actions seek various forms of injunctive relief including an order enjoining us and our directors from consummating the merger with Nanometrics. We are likely to incur significant legal fees and expenses in defending against these claims and to indemnify our directors for their legal fees and expenses in defense of these claims. In addition, there can be no assurance that we or our directors will prevail in these lawsuits, and we or our directors may suffer an adverse result that prevents us from completing our merger with Nanometrics or forces us to take other actions or pay damages that may adversely affect our business.

The microelectronic industries that we serve are highly cyclical, causing significant variability in our results of operations.

We primarily serve microelectronic industries and our business depends heavily upon capital expenditures by manufacturers in these industries. Microelectronic industries are highly cyclical, with periods of capacity shortage and periods of excess capacity; this is historically due to sudden changes in demand for microelectronic devices. In periods of excess capacity, there are often drastic changes in the timing and quantity of capital equipment purchases and investments in new technology or capacity needs by our customers. The timing, length and volatility of these periods are difficult to predict, resulting in pressure on our revenues, gross margin and net income. In addition to affecting our customers, downturns also challenge our suppliers, vendors, other partners, as well as our management, sales, engineering, manufacturing, customer service and other employees, who are vital to our success.

During downturns in microelectronic industries, customers typically reduce or delay purchases, and/or delay delivery or cancel orders. As a result, it is imperative that we maintain an organization able to quickly and effectively align with market conditions, including bringing our cost structures in line with current industry and overall market conditions. At the same time, we must also meet the following objectives:

- continue to serve our existing customers;
- provide new and improved solutions for new and existing customers;

- operate effectively with our suppliers; and
- motivate and retain key employees.

If we are, for any reason, unable to achieve any one or more of the above objectives in an efficient, effective and timely manner, there could be a material adverse effect on our business, financial condition and results of operations. Furthermore, any delays or reductions in future purchases of capital equipment or delays or cancellations of current orders by microelectronic device manufacturers, for any reason, would likely have a material adverse effect on our business, financial condition and results of operations.

Our future rate of growth is highly dependent on the development and growth of the market for microelectronic device inspection equipment.

We primarily target our products to address the needs of microelectronic device manufacturers for defect inspection and metrology. If for any reason the market for microelectronic device inspection equipment fails to grow in the long term, contrary to our current expectations, we may be unable to maintain current revenue levels in the short term and return to our historical growth in the long term. Growth in this market is dependent to a large extent upon microelectronic manufacturers replacing manual inspection with automated inspection technology. There is no assurance that manufacturers will undertake this replacement at the rate we expect.

Our sales and operating results can fluctuate significantly from period to period, which may adversely affect the market price of our stock.

Our quarterly and annual operating results are affected by a wide variety of factors that could adversely affect sales or operating results, or lead to significant variability in our operating results. In addition, because a significant portion of our revenue in any particular quarter has historically come from the sale of a relatively small number of systems, the loss of any system sale could have a significant negative impact. A variety of factors could cause this variability, including the following:

- order cancellations or delays in orders by customers;
- the long sales cycle of our products;
- decreases in capital spending by our customers;
- new product introductions by our competitors and competitive pricing pressures;
- entrance into, or additional resources focused on, our markets by larger competitors;
- component shortages resulting in manufacturing delays; and
- delays in the development, introduction and manufacture of our products.

We cannot predict the impact of these and other factors on our revenues and operating results in any future period. Results of operations in any period, therefore, should not be considered indicative of the results to be expected for any future period. Because of this difficulty in predicting future performance, our operating results may fall below expectations of securities analysts or investors in some future quarter or quarters. Our failure to meet these expectations would likely adversely affect the market price of our common stock.

Global economic and political environments are important to economic conditions, and long term continued risk or concerns regarding economic and political circumstances could decrease customer demand for our products.

Future political or related events similar or comparable to the September 11, 2001 terrorist attacks, significant military conflicts, or long term reactions of governments and society to such events, may significantly affect the willingness or ability of our customers to visit our facilities or trade shows, review our systems capabilities and/or purchase or take delivery of our products. Such events may also affect our

abilities to visit our customers, perform application studies for our customers, and sell and deliver solutions and to service those solutions. Any decline in the willingness or ability of our customers to travel and visit our facilities, or in our ability to travel and visit our customers, could have a material adverse effect on our business, financial condition and results of operations. In addition, such events could have an adverse effect on the economy generally, and microelectronic industries in particular, causing our customers to reduce or delay capital equipment purchases.

The market acceptance of our products is critical to our growth.

Microelectronic device manufacturing equipment and processes are subject to rapid technological changes. We continue to expend significant resources developing new systems, new models to existing system series and improvements or enhancements on current models. Due to the length of the product development cycles in our industries, we must make these significant time and resource expenditures well in advance of any prospect of a revenue stream from such new products. If our customers do not continue to accept our current products and also accept and integrate our new products into their operations, our revenue, cash flow, operating results or stock price would be negatively and materially impacted.

Our growth expectations are dependent on successfully penetrating the front-end of the microelectronic device manufacturing process.

We continue to enhance our inspection and metrology product offering for the front-end of the microelectronic device manufacturing process, a market segment that we have limited experience in serving. We are not a well-recognized supplier to this market, and will need to establish new customer relationships and win the confidence of these customers to compete effectively in this market. The front-end of the microelectronic device manufacturing market is dominated by large, well-established competitors with significantly greater resources and name recognition than we have. In order to compete effectively with these larger competitors, we must develop process and applications expertise to identify the inspection needs of this market and produce cost-effective, technologically advanced solutions addressing these needs. In addition, we must create and execute programs to effectively market to and service these customers. Failure to successfully penetrate the front-end of the microelectronic device manufacturing market would have a material adverse affect on our business prospects.

If we are unable to keep pace with rapid technological changes by developing and introducing successful new products and technologies in a timely manner, our products may become obsolete and our business will suffer.

The microelectronic capital equipment manufacturing business is a highly competitive business and microelectronic device manufacturing equipment and processes are subject to rapid technological changes. We believe that our future success will depend in part upon our ability to continue to enhance our existing product line to meet customer needs and to develop and introduce new products in a timely manner. We cannot assure you that our product enhancement efforts to improve and advance products, such as the AXi, NSX and 3Di Series, or our new product development efforts such as the E20 for edge and B20 for backside inspection systems, will be successful or that we will be able to respond effectively to technological change. In addition, we cannot provide assurance that we will be able to develop new products for the most opportunistic new markets and applications.

We continue to make significant investments in research, development and engineering in new technology and/or businesses with new or complementary products, services and/or technologies, and we are aware of the numerous risks associated therewith, including but not limited to:

- diversion of management s attention from day-to-day operational matters and current products and customers;
- lack of synergy, or the inability to realize expected synergies;
- failure to commercialize the new technology or business;

- failure to meet the expected performance of the new technology or business;
- lower-than-expected market opportunities or market acceptance of any new products; and
- unexpected reduction of sales of existing products by new products.

If we are unsuccessful at developing new products and technologies, our revenue, operating results or stock price would be negatively impacted.

Our products are complex and any product or process development issues could negatively impact our operations or financial results.

Our products are complex and often the applications to our customers businesses are unique. We believe that our future success will depend in part upon our ability to meet our customers functionality and reliability requirements in a timely manner. We cannot be sure that our product offerings, application assistance, enhancement efforts, or our new product development efforts will fulfill critical functionality and reliability requirement. In addition, new product offerings that are highly complex in terms of software or hardware may require application or service work such as bug fixing prior to acceptance, thereby delaying revenue recognition. If we are unsuccessful in these areas, our market share, revenue, operating results or stock price would be negatively impacted.

Our market is highly competitive and we may lose business to larger and better-financed competitors.

The microelectronic defect inspection equipment industry is highly competitive in national and international markets. We have many domestic and foreign competitors. Our current primary competitors in final manufacturing, testing and solutions are Camtek Ltd., Hitachi, Ltd., ICOS Vision Systems, Robotic Vision Systems, Inc., and Toray Industries, Inc. In the front-end market, we compete with larger competitors, such as KLA-Tencor Corporation and Rudolph Technologies, Inc., for certain automated macro inspection applications. Most of these competitors, as well as other potential competitors, have substantially greater financial resources and more extensive engineering, manufacturing, marketing and customer support capabilities than we have. Unless we are able to continue to invest significant financial resources in developing products and enhancing customer support worldwide, we will likely not be able to compete effectively.

As we continue to diversify into the evolving and emerging microelectronic markets, including semiconductors, advanced packaging, optoelectronics, MEMS, flat panel display, printheads, data storage, disk drives, medical devices and other similar devices, we will face significantly increased competition.

Our operating results could be negatively impacted if we are unable to obtain the necessary resources to invest in our growth.

We intend to continue to make investments to support business growth and may require additional funds to respond to future business challenges, such as the need to develop new products and enhance existing products, enhance our operating infrastructure, acquire complementary businesses and technologies and satisfy working capital requirements. Accordingly, we may need to engage in equity or debt financing to secure additional funds. Equity and debt financing, however, might not be available when needed or, if available, might not be available on terms satisfactory to us. If we are unable to obtain adequate financing or financing on terms satisfactory to us, our ability to continue to support our business growth and to respond to business challenges could be significantly limited.

Our success depends on attracting and retaining key personnel.

Our future success will depend in large part upon our ability to recruit and retain highly skilled technical, manufacturing, managerial, financial and marketing personnel. The labor market in which we operate is highly competitive and as a result, we may not be able to retain and recruit key personnel. Our failure to hire, retain, or adequately train key personnel could have a negative impact on our future financial and business results.

In addition, during the recent microelectronic industry downturn we have had reductions in our work force, reduced or eliminated salary increases and for certain periods implemented pay cuts at the management level, and reduced discretionary spending. Any of the above measures may have long term adverse effects on our ability to retain key personnel.

Our business may be harmed if we fail to obtain and protect our intellectual property rights.

Our ability to obtain intellectual property rights and licenses and to preserve other intellectual property rights covering our products and our products under development is an important component of our ability to compete in the microelectronic defect inspection industry. To protect these rights, we have obtained 14 domestic patents and intend to continue to seek patents on our inventions when appropriate. As of December 31, 2004, we have 53 pending patent applications in the United States and additional international applications and expect our portfolio to increase in the future. The process of seeking intellectual property protection can be time-consuming and expensive. We cannot ensure that:

- patents will be issued from currently pending or future applications;
- our existing patents or any new patents will be sufficient in scope or strength to provide meaningful protection or any commercial advantage to us;
- foreign intellectual property laws will protect our intellectual property rights; or
- others will not independently develop similar products, duplicate our products or design around our technology.

If we do not successfully protect and then enforce our intellectual property rights, our competitive position could suffer, which could harm our operating results.

We also rely on trade secrets, proprietary know-how and confidentiality provisions in agreements with employees, consultants, key customers and vendors to protect our intellectual property. Other parties may not comply with the terms of their agreements with us and we may not be able to adequately enforce our rights against these people.

Third parties may claim that we are infringing upon their intellectual property and we could suffer significant litigation costs, licensing expenses or be prevented from selling our products.

Intellectual property rights are uncertain and involve complex legal and factual questions. We may be unknowingly infringing upon the intellectual property rights of others and may be liable for that infringement, which could result in significant liability for us. If we do infringe upon the intellectual property rights of others, we could be forced to either seek a license to those intellectual property rights or to alter our products so that they no longer infringe. A license could be very expensive to obtain or may not be available at all. Similarly, changing our products or processes to avoid infringing upon the rights of others may be costly or impractical.

We may become responsible for patent litigation costs. If we were to become involved in a dispute regarding intellectual property, whether ours or that of another company, we may be required to participate in legal proceedings. These types of proceedings will be costly and time-consuming, even if we eventually prevail. If we do not prevail, we might be forced to pay significant damages, obtain licenses, modify our products or processes, stop making products or stop using processes.

Our dependence on a few significant customers exposes us to operating risks.

Sales to our ten largest customers accounted for 66%, 73% and 66% of net revenues in 2004, 2003 and 2002, respectively. Our customers are able to cancel orders, prior to shipment, with few or no penalties. If a significant customer reduces orders or delays shipments for any reason, our revenues, operating results and financial condition will be negatively affected. In addition, our ability to increase our sales will depend in part upon our ability to obtain orders from new customers for whom there is intense competition.

Our dependence on subcontractors and sole or limited source suppliers may prevent us from delivering an acceptable product on a timely basis and could result in disruption of our operations.

We rely on subcontractors to manufacture many of the components and subassemblies for our products and we depend on single or limited source suppliers for some of our components. Our reliance on subcontractors reduces the level of control we have over the manufacturing process and exposes us to significant risks such as inadequate capacity, late delivery, substandard quality and high costs.

If a supplier were to become unable to provide parts in the volumes needed or at an acceptable price, we would have to identify and qualify acceptable replacements from alternative sources of supply, or manufacture the components internally. Depending on the part, the process of qualifying subcontractors and suppliers generally takes between 60 and 180 days. We generally do not have written supply agreements with our single or limited source suppliers and purchase our custom components through blanket and individual purchase orders. If we were unable to obtain these components in a timely fashion, we may not be able to meet demands for future shipments. We believe that we would be able to find alternative solutions if supplies were unavailable from any of our sole source suppliers, including the supplier of our image processing component. This may take time and the disruption would adversely affect our results of operations.

We assemble and test all of our products at a single facility, and any disruption in the operations of that facility could adversely impact our business and operating results.

We assemble and test all of our automated inspection systems at one facility located in Bloomington, Minnesota. Any disruption in the operation of that facility, whether due to technical or labor difficulties, destruction or damage from fire or earthquake, infrastructure failures such as power or water shortage or any other reason, could interrupt our manufacturing operations, impair critical systems, disrupt communications with our customers and suppliers and cause us to write off inventory and to lose sales.

Failure to adjust our orders for parts and subcomponents in an accurate and timely manner in response to changing market conditions or customer acceptance of our products could adversely affect our financial position and earnings.

Our earnings could be negatively affected and our inventory levels could materially increase if we are unable to predict our inventory needs in an accurate and timely manner and adjust our orders for parts and subcomponents should our needs increase or decrease materially due to unexpected increases or decreases in demand for our products. Any material increase in our inventories could result in an adverse effect on our financial position, while any material decrease in our ability to procure needed inventories could result in an inability to supply customer demand for our products thus adversely affecting our revenues.

Our dependence upon international customers and suppliers may reduce our revenues or impede our ability to supply products.

International sales have accounted for a significant portion of our revenues in recent years. Sales outside of the United States accounted for 73%, 76% and 52% of our net revenues in 2004, 2003 and 2002, respectively. In addition, we rely on non-United States suppliers for several components of the systems we sell. As a result, a major part of our revenues and the ability to manufacture our products are subject to the

risks associated with international commerce. International sales and our relationships with suppliers and customers may be hurt by many factors, including:

- changes in law or policy resulting in burdensome government controls, tariffs, restrictions, embargoes or export license requirements;
- political or economic instability in our target international markets;
- instability caused by infectious disease or other like outbreaks, or the threat or concern thereof;
- longer payment cycles common in foreign markets;
- difficulties in staffing and managing our international operations;
- less favorable foreign intellectual property laws making it harder to protect our technology from appropriation by competitors;
- difficulties in collecting our accounts receivable because of the geographic distance and unfavorable creditor laws; and
- currency fluctuations may increase the relative price of our products in foreign markets and thereby adversely affect sales.

We are also subject to risks associated with shipping products outside of the United States including shipping delays, varying business conditions, differing business cultures and cultural diversities, among other risks. If our international sales or relationships with international suppliers and customers are adversely affected by any of these factors, our financial condition could be adversely affected.

Our financial performance is highly dependent upon sales to customers in Asia.

Sales to customers in Asia accounted for 68%, 64% and 45% of our net revenues in 2004, 2003 and 2002, respectively. We expect our dependence upon the Asian market to increase. In recent years, Asia has experienced serious economic problems including currency devaluations, debt defaults, lack of liquidity and recessions. Our revenues depend upon the capital expenditures of microelectronic manufacturers, many of whom have operations and customers in Asia. Serious economic problems in Asia would likely result in a significant decrease in the sale of equipment to microelectronic industries. If we are unable to maintain our customer relationships in Asia, our future financial condition, revenues and operating results will be negatively affected.

We will continue to rely upon distributors for a portion of our future sales, and a disruption in our relationships with these distributors could have a negative impact on our international sales.

Sales through our independent distributors represented 4%, 14% and 8% of our net revenues in 2004, 2003 and 2002, respectively. One distributor accounts for a significant portion of these sales. The activities of these distributors are not fully within our control. Although we believe that we maintain good relations with our independent distributors, the relationships may nevertheless deteriorate in the future. A reduction in the sales or service efforts or financial viability of any of our independent distributors, or a termination of our relationships with them, could harm our sales, our financial results and our ability to support our customers.

We have acquired Semiconductor Technologies & Instruments, Inc., or STI, the assets of Counterpoint Solutions Inc., or CSI and certain assets of DMSVision software division of Inspex, Inc., or DMSVision, and we may make other acquisitions; the acquisitions of STI, CSI and DMSVision, and any future acquisitions may not be successful and may adversely affect our business.

We are looking for strategic opportunities to grow and diversify our product offerings through acquisitions. In this regard, we recently completed the acquisitions of STI, CSI and DMSVision. Your

evaluation of our business and prospects may be difficult because of our limited operating history with STI, CSI and DMSVision. There can be no assurance that we will be successful in integrating the operations of STI, CSI and DMSVision, identifying other appropriate candidates, or integrating products and operations with any such candidates that we may acquire.

Any such acquisition could involve the dilutive issuance of equity securities and the incurrence of debt. In addition, the acquisitions of STI, CSI and DMSVision and future acquisitions may involve numerous additional risks, including:

- the diversion of the attention of our management team from other business concerns;
- risks of entering into markets or producing products where we have limited or no experience, including difficulties in integrating purchased technologies and products with our technologies and products;
- the potential loss of key customers of an acquired company;
- the potential loss of key personnel of an acquired company;
- exposure to unanticipated liabilities of an acquired company; and
- greater financial requirements for purchase price and added working capital.

Even when an acquired company has already developed and marketed products, there can be no assurance that the products will continue to be successful, that product enhancements will be made in a timely fashion or that pre-acquisition due diligence will have identified all possible issues that might arise with respect to the acquired company or its products.

If a microelectronic device manufacturer is loyal to another microelectronic equipment supplier, we may be unable to sell our products to that potential customer and our sales and market share could suffer as a result.

We believe that once a microelectronic device manufacturer has selected one vendor s capital equipment for a production line application, the manufacturer generally relies upon that capital equipment and, to the extent possible, subsequent generations of the same vendor s equipment, for the life of the application. Once a vendor s equipment has been installed in a production line, a microelectronic device manufacturer must often make substantial technical modifications and may experience production-line downtime in order to switch to another vendor s equipment. 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 to that customer once it has selected another vendor s capital equipment for an application.

Change in accounting for stock-based compensation could adversely affect our results of operations.

We have historically compensated our employees, including many key personnel and new hires, through the issuance of options to acquire capital stock. Effective as of the third quarter of fiscal year ended 2005, we will be required to expense unvested and newly issued employee stock options. This change from current accounting regulations could have a significant impact on our results of operations and could affect the manner in which we conduct business.

If we cannot effectively manage our growth, our business may suffer.

We intend to continue to grow by increasing our sales efforts and completing strategic acquisitions. To effectively manage our growth, we must, among other things:

- engage, train and manage a larger sales force and additional service personnel;
- expand the geographic coverage of our sales force;
- expand our information systems;
- identify and successfully integrate acquired businesses into our operations; and
- administer appropriate financial and administrative control procedures.

Our anticipated growth will likely place a significant strain on our management, financial, operational, technical, sales and administrative resources. Any failure to effectively manage our growth may cause our business to suffer and our stock price to decline.

Increased competition could impair sales of our products or cause us to reduce our prices.

We expect our current competitors and other companies to continue to improve the design and performance of their products and to introduce new products with competitive prices and performance characteristics. Competitive pressures may from time to time require us to selectively reduce prices on our systems in an effort to protect our market share. Even if we reduce prices, our potential customers may choose to purchase competing products developed by our competitors, many of whom have development, production, marketing and distribution resources significantly greater than our own. Price reductions or lost sales as a result of these competitive pressures would reduce our total revenues and adversely impact our financial results.

Our operations could be impaired as a result of disasters, business interruptions beyond our control or similar events, including global or regional outbreaks of infectious diseases such as severe acute respiratory syndrome.

Disasters such as earthquakes, flooding, fire, electricity failure, or accidents that affect our operations, manufacturing facility, or the health of our employees or customers could adversely affect our operating results and financial condition. Continued or future outbreaks of infectious diseases such as severe acute respiratory syndrome (SARS), avian flu, or other similar or comparable outbreaks or fears or concerns of possible outbreaks may significantly affect the willingness or ability of our customers to visit our facilities or trade shows, review our systems capabilities and/or purchase or take delivery of our products, as well as our ability to visit our customers, to perform application studies for our customers, to sell and deliver products, and to service those products. Any government mandated or suggested restrictions on travel, quarantines, or declines in the willingness or ability of our customers to travel and visit our facilities or our ability to travel and visit our customers, could have a material adverse effect on our business, financial condition and results of operations.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Market Risk

We are exposed to market risk primarily from changes in interest rates and credit risk. We do not have material exposure to market risk from fluctuations in foreign currency exchange rates because all sales are made in U.S. dollars.

Interest Rate Risk

We are exposed to interest rate risk primarily from investments in cash equivalents and short-term and long-term marketable debt securities (the Investment Portfolio). The entire Investment Portfolio is classified as available-for-sale and, accordingly, is recorded on the consolidated balance sheet at fair value based on quoted market prices, with unrealized gains and losses reported in Shareholders Equity under the caption Accumulated other comprehensive income (loss) . The entire Investment Portfolio is denominated in U.S. dollars. We do not use derivative financial instruments in the Investment Portfolio. Due to the short duration of our investment portfolio, an immediate 10 percent change in interest rates is not expected to have a material adverse effect on our near-term financial condition or results of operations.

Credit Risk

Financial instruments which potentially subject us to credit risk consist principally of securities in the Investment Portfolio and trade receivables. We limit credit risk related to the Investment Portfolio by placing all investments with high credit quality issuers and limit the amount of investment with any one issuer. As of December 31, 2004, 64% of the Investment Portfolio consisted of government securities and corporate commercial paper and bonds with maturities of one year or less. We limit credit risk associated with trade receivables by performing ongoing credit evaluations and believe that there is no additional risk beyond amounts provided for collection losses to be inherent in trade receivables.

Item 8. Financial Statements and Supplementary Data

AUGUST TECHNOLOGY CORPORATION

Index to Consolidated Financial Statements

Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders
August Technology Corporation:

We have audited the accompanying consolidated balance sheets of August Technology Corporation and subsidiaries as of December 31, 2004 and 2003, and the related consolidated statements of operations, shareholders equity, and cash flows for each of the years in the three-year period ended December 31, 2004. In connection with our audits of the consolidated financial statements, we also have audited the financial statement schedule. These consolidated financial statements and financial statement schedule are the responsibility of the Company s management. Our responsibility is to express an opinion on these consolidated 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, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of August Technology Corporation and subsidiaries as of December 31, 2004 and 2003, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2004, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the related 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.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the effectiveness of August Technology Corporation s internal control over financial reporting as of December 31, 2004, based on criteria established in Internal Control Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated March 7, 2005, expressed an unqualified opinion on management s assessment of, and the effective operation of, internal control over financial reporting.

/s/ KPMG LLP

Minneapolis, Minnesota
March 7, 2005

Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders
August Technology Corporation:

We have audited management s assessment, included in the accompanying Management s Report on Internal Control Over Financial Reporting that August Technology Corporation maintained effective internal control over financial reporting as of December 31, 2004, based on criteria established in Internal Control Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). August Technology Corporation s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting. Our responsibility is to express an opinion on management s assessment and an opinion on the effectiveness of the Company s internal control over financial reporting 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 effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, evaluating management s assessment, testing and evaluating the design and operating effectiveness of internal control, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company s assets that could have a material effect on the financial statements.

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

In our opinion, management s assessment that August Technology Corporation maintained effective internal control over financial reporting as of December 31, 2004, is fairly stated, in all material respects, based on criteria established in Internal Control Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Also, in our opinion, August Technology Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2004, based on criteria established in Internal Control Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of August Technology Corporation and subsidiaries as of December 31, 2004 and 2003, and the related consolidated statements of operations, shareholders equity, and cash flows for each of the years in the three-year period ended December 31, 2004, and our report dated March 7, 2005, expressed an unqualified opinion on those consolidated financial statements.

/s/ KPMG LLP

Minneapolis, Minnesota
March 7, 2005

AUGUST TECHNOLOGY CORPORATION
CONSOLIDATED BALANCE SHEETS
(In thousands, except share amounts)

	December 31, 2004	2003
ASSETS		
Current assets:		
Cash and cash equivalents	$ 5,518	$ 10,027
Short-term marketable debt securities	28,615	43,528
Accounts receivable, net	8,603	4,094
Inventories	20,131	11,651
Inventories at customers under purchase orders	3,993	2,293
Prepaid expenses and other current assets	2,306	1,631
Total current assets	69,166	73,224
Property and equipment, net	5,994	3,141
Long-term marketable debt securities	16,289	10,295
Purchased technology, net	3,703	1,179
Goodwill	498	498
Other assets	150	610
Total assets	$ 95,800	$ 88,947
LIABILITIES AND SHAREHOLDERS EQUITY		
Current liabilities:		
Accounts payable	$ 3,366	$ 5,409
Accrued compensation	1,691	1,146
Other accrued liabilities	2,306	1,414
Customer deposits and deferred revenues	6,841	2,436
Total current liabilities	14,204	10,405
Other non-current liabilities	131	65
Total liabilities	14,335	10,470
Commitments and contingencies (note 12)		
Shareholders equity:		
Common stock, no par value, 42,000,000 shares authorized 17,839,298 and 17,382,538 shares issued and outstanding, respectively	90,347	88,086
Undesignated capital stock, no par value, 3,000,000 shares authorized, no shares issued or outstanding		
Deferred compensation related to stock options		(49)
Accumulated deficit	(8,776)	(9,578)
Accumulated other comprehensive income (loss)	(106)	18
Total shareholders equity	81,465	78,477
Total liabilities and shareholders equity	$ 95,800	$ 88,947

See accompanying notes to consolidated financial statements.

AUGUST TECHNOLOGY CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share amounts)

	Years Ended December 31,		
	2004	**2003**	**2002**
Net revenues	$ 68,443	$ 40,323	$ 25,058
Cost of revenues	31,925	18,290	11,068
Gross profit	36,518	22,033	13,990
Selling, general and administrative expenses	22,798	14,359	13,013
Research and development expenses	13,561	10,430	9,847
Operating income (loss)	159	(2,756)	(8,870)
Interest income	847	407	624
Other income	73		
Income (loss) before provision for income taxes	1,079	(2,349)	(8,246)
Provision for income taxes	277		687
Net income (loss)	$ 802	$ (2,349)	$ (8,933)
Net income (loss) per share:			
Basic	$ 0.05	$ (0.16)	$ (0.69)
Diluted	$ 0.04	$ (0.16)	$ (0.69)
Weighted average number of shares:			
Basic	17,755	14,381	13,033
Diluted	18,211	14,381	13,033

See accompanying notes to consolidated financial statements.

AUGUST TECHNOLOGY CORPORATION
CONSOLIDATED STATEMENTS OF SHAREHOLDERS EQUITY
(In thousands, except share amounts)

	Common Stock Shares Issued And Outstanding	Amount	Deferred Compensation Related To Stock Options	Retained Earnings (Accumulated Deficit)	Accumulated Other Comprehensive Income (Loss)	Total Shareholders Equity
Balances at December 31, 2001	12,812,164	$ 41,020	$ (192)	$ 1,704	$ (9)	$ 42,523
Net loss				(8,933)		(8,933)
Other comprehensive income (loss):						
Foreign currency translation adjustments					(3)	(3)
Net unrealized gain on securities					55	55
Comprehensive loss						(8,881)
Issuances of common stock in conjunction with:						
Exercises of employee stock options	303,673	942				942
Employee stock purchase plan	36,467	220				220
Amortization of deferred compensation related to stock options		(24)	87			63
Balances at December 31, 2002	13,152,304	42,158	(105)	(7,229)	43	34,867
Net loss				(2,349)		(2,349)
Other comprehensive loss:						
Foreign currency translation adjustments					(8)	(8)
Net unrealized loss on securities					(17)	(17)
Comprehensive loss						(2,374)
Issuances of common stock in conjunction with:						
Follow on public offering, net of expenses	3,490,238	42,049				42,049
Acquisitions	415,385	2,160				2,160
Exercises of employee stock options	282,341	1,498				1,498
Employee stock purchase plan	42,270	219				219
Expense related to issuances of stock options to nonemployees		7				7
Amortization of deferred compensation related to stock options		(5)	56			51
Balances at December 31, 2003	17,382,538	88,086	(49)	(9,578)	18	78,477
Net income				802		802
Other comprehensive income (loss):						
Foreign currency translation adjustments					21	21
Net unrealized loss on securities					(145)	(145)
Comprehensive income						678
Issuances of common stock in conjunction with:						
Exercises of employee stock options	414,171	1,879				1,879
Employee stock purchase plan	30,714	297				297
Restricted stock award	2,500	20				20
Exercises of warrants	9,375	11				11
Tax benefit from stock options exercised		50				50
Expense related to issuances of stock options to nonemployees		4				4
Amortization of deferred compensation related to stock options			49			49
Balances at December 31, 2004	17,839,298	$ 90,347	$	$ (8,776)	$ (106)	$ 81,465

See accompanying notes to consolidated financial statements.

AUGUST TECHNOLOGY CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Years Ended December 31,		
	2004	**2003**	**2002**
Cash flows from operating activities:			
Net income (loss)	$ 802	$ (2,349)	$ (8,933)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	3,007	1,951	1,399
Provision for doubtful accounts	135	195	148
Tax benefit from stock options exercised	50		
Amortization of deferred compensation related to stock options	49	51	63
Issuance of restricted stock	20		
Deferred income taxes	19		896
Changes in operating assets and liabilities, net of effect of acquisitions:			
Accounts receivable	(4,519)	3,171	(2,465)
Inventories	(8,452)	(3,474)	920
Inventories at customers under purchase orders	(1,700)	(312)	20
Prepaid expenses and other current assets	(672)	(188)	1,427
Accounts payable	(2,041)	3,130	632
Accrued compensation	536	591	(61)
Other accrued liabilities	767	849	(113)
Customer deposits and deferred revenues	4,156	232	(447)
Net cash provided by (used in) operating activities	(7,843)	3,847	(6,514)
Cash flows from investing activities:			
Proceeds from maturities of marketable debt securities	228,884	246,020	34,738
Purchases of marketable debt securities	(220,110)	(282,978)	(27,231)
Purchases of property and equipment	(5,021)	(981)	(1,209)
Cash paid in acquisitions	(2,343)	(1,539)	
Investments in other assets	(252)		(571)
Net cash provided by (used in) investing activities	1,158	(39,478)	5,727
Cash flows from financing activities:			