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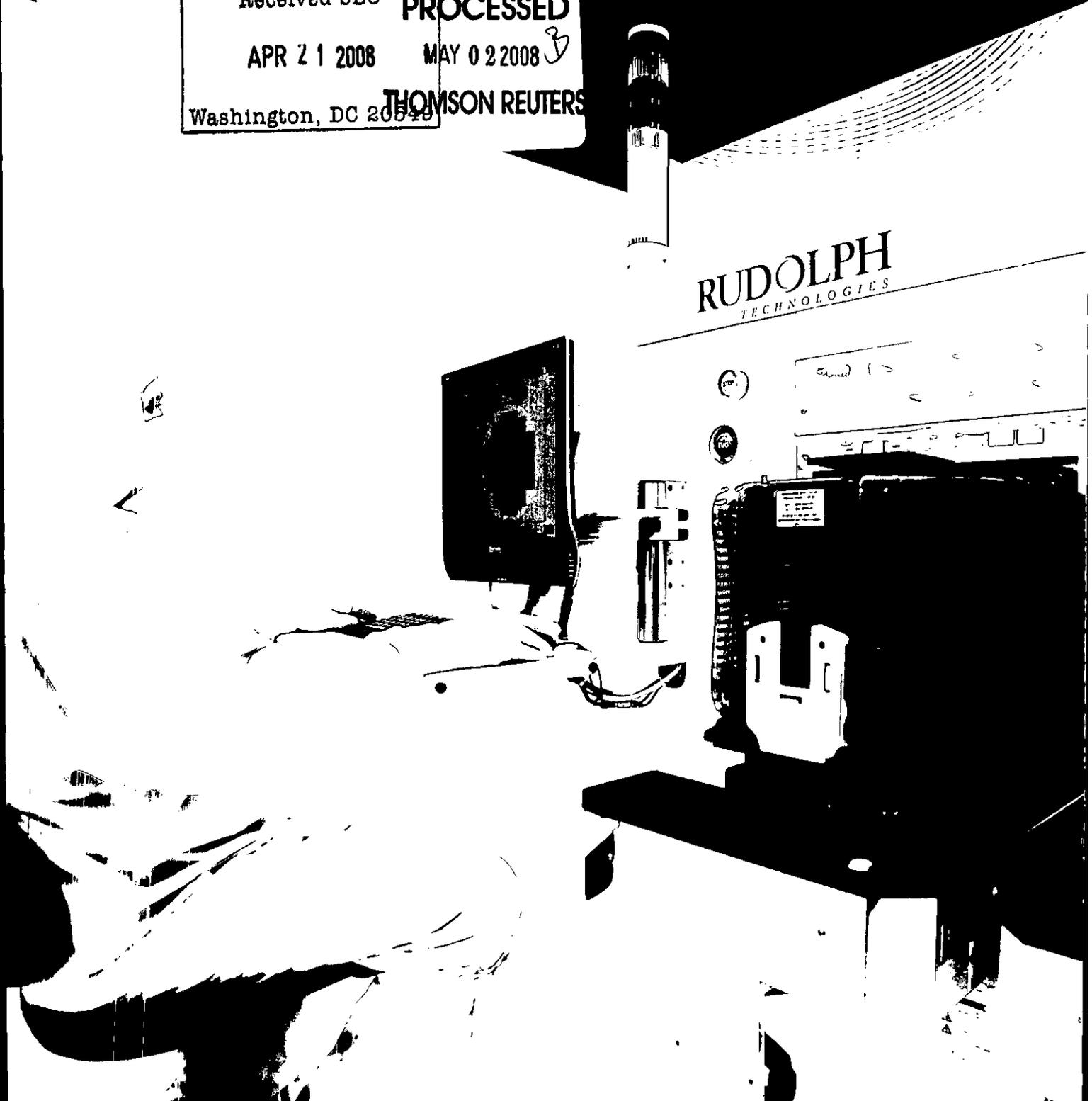
RUDOLPH

TECHNOLOGIES

2007 Annual Report

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DEAR FELLOW SHAREHOLDERS

The past year was a challenging one, as semiconductor device manufacturers over-estimated demand, particularly for memory chips. Nonetheless, I was pleased with Rudolph's accomplishments in the face of sharply-deteriorating markets for our process characterization solutions. We responded to this drop in demand by quickly taking steps in the second half of 2007 to bring predictability and consistency to our performance. We ended the year with earnings of \$.40 per share and free cash flow exceeding \$25 million, as your company remained financially sound.

To adjust to changing market conditions, we refocused on our mission and vision for the business. We made significant progress on execution of our business model, which calls for progress on three major fronts: (1) organic growth; (2) inorganic growth via merger and acquisition (M&A); and (3) industry collaborations and partnerships.

Organically, we have expanded our addressable opportunities in our three business units, Inspection, Metrology and Data Analysis & Review, with the introduction of five new products aimed at continuing to provide best-of-breed technical solutions to meet our customers' most demanding requirements. These are expected to allow us to capture increasing market share in our chosen niches as the industry continues to track with Moore's Law and devices shrink to critical line-width dimensions of 45 nanometers and smaller. We are already seeing contributions from these new products as our customers shift from capacity buys to technology buys.

In December 2007 and January 2008, we announced the closings of two M&A transactions, each designed to give us leadership positions in attractive growth markets. The first was our purchase of the semiconductor assets of Applied Precision, LLC, which gives us the #1 market share position in the probe card test and analysis business, and directly abuts our final manufacturing (back-end) macro defect inspection market. The second was our purchase of the Wafer Scanner assets of RVS1 Inspection, LLC, which gave us what our due diligence showed to be the best three-dimensional inspection technology to complement our #1 position in two-dimensional inspection. Both of these are forecast to be accretive to earnings in 2008. These acquisitions added four products to our growing portfolio. As a result, we believe we now hold close to 50 percent market share in overall back-end metrology and inspection markets, with more than double the next competitor's share. We intend to apply our most advanced technology to ensure this market leadership in the back-end is further strengthened, thus providing the company with added growth predictability within the realm of industry cyclicality. We fully expect to bring value-added technical solutions to the fast-growing test and packaging markets at attractive gross margins.

In the past several quarters, we announced three major collaboration and partnership arrangements: (1) an OEM licensing of our integrated inspection software to Tokyo Electron Limited for inclusion in their current track systems, and a program to develop inspection on their next-generation systems; (2) a program at ASML in The Netherlands to develop macro defect inspection technology using our leading-edge AXi all-surface tool to address the defect issues now on the critical path for our industry's next-generation immersion lithography solution; and (3) Rudolph Technologies has become the first semiconductor equipment supplier to become an associate member of SEMATECH's International Process Characterization Program at the College of Nanoscale Science and Engineering at Albany, New York. This is a world-class program that is expected to provide long-term research and development collaborations with SEMATECH member companies. Our shareholders can expect to hear of more progress in each of these three growth avenues in the coming quarters.

Nonetheless, we ended 2007 with the macro economic situation deteriorating here in the United States, and many analysts now forecasting a 20 to 25 percent decline in capital spending for 2008. Memory overcapacity continues to make us very cautious. Order visibility is not clear in the short term; however, your company has adjusted to these realities quickly and we believe we are well positioned to exit the current cycle as a stronger company.

The company's cash and marketable securities balance remains extremely strong, with over \$73 million at the end of 2007, and we are actively pursuing consolidation opportunities designed to enhance our position in the marketplace as well as our value to our investors. We have the scope and scale to play the role of a consolidator, and we will continue to exhibit discipline in our M&A activities. The intent is to capitalize on our strong brand reputation and global infrastructure, while leveraging our business model to the benefit of all our multiple constituencies. The best days for Rudolph Technologies are still ahead of us.

On behalf of the Board of Directors, I would like to thank you—our stockholders—for your support and confidence. Our employees, along with customers and suppliers, drive our growth. Each of your contributions has been vital to our achievements to date and is sincerely appreciated.

Sincerely yours,



Paul F. McLaughlin
Chairman and Chief Executive Officer

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

FORM 10-K

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Section

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Washington, DC
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(MARK ONE)

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

For the Fiscal Year Ended December 31, 2007

OR

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

For the transition period from _____ to _____
Commission File No. 000-27965

RUDOLPH TECHNOLOGIES, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

22-3531208
(I.R.S. Employer
Identification Number)

One Rudolph Road, P.O. Box 1000, Flanders, NJ 07836

(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (973) 691-1300

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

None

SECURITIES REGISTERED PURSUANT TO SECTION 12(g) OF THE ACT:

Common Stock, \$0.001 Par Value

(Title of Class)

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

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

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

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

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company

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

The aggregate market value of the voting stock held by non-affiliates of the registrant based on the closing price of the registrant's stock price on June 30, 2007 of \$16.61 was approximately \$418,039,201.

The registrant had 30,495,282 shares of Common Stock outstanding as of February 6, 2008.

DOCUMENTS INCORPORATED BY REFERENCE

The following document is incorporated by reference in Part III of this Annual Report on Form 10-K: Items 10, 11, 12, 13 and 14 of Part III incorporate by reference information from the definitive proxy statement for the registrant's annual meeting of stockholders to be held on May 20, 2008.

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FORWARD LOOKING STATEMENTS

Certain statements in this Annual Report on Form 10-K are forward-looking statements, including those concerning our expectations of future revenues, gross profits, research and development and engineering expenses, selling, general and administrative expenses, product introductions, technology development, manufacturing practices and cash requirements. The statements contained in this Annual Report on Form 10-K that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 and within the meaning of the Private Securities Litigation Reform Act of 1995. In addition, we may, from time to time make oral forward-looking statements. Forward-looking statements may be identified by the words such as, but not limited to, "anticipate", "believe", "expect", "intend", "plan", "should", "may", "could", "will" and words or phrases of similar meaning, as they relate to our management or us.

The forward-looking statements contained herein reflect our current expectations with respect to future events and are subject to certain risks, uncertainties and assumptions. The forward-looking statements reflect our position as of the date of this report and we undertake no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise. Actual results may differ materially from those projected in such forward-looking statements for a number of reasons including, but not limited to, the following: variations in the level of orders which can be affected by general economic conditions and growth rates in the semiconductor manufacturing industry and in the markets served by our customers, the international economic and political climates, difficulties or delays in product functionality or performance, the delivery performance of sole source vendors, the timing of future product releases, failure to respond adequately to either changes in technology or customer preferences, changes in pricing by us or our competitors, ability to manage growth, risk of nonpayment of accounts receivable, changes in budgeted costs and the "Risk Factors" set forth in Item 1A. Our stockholders should carefully review the cautionary statements contained in this Form 10-K below. You should also review any additional disclosures and cautionary statements we make from time to time in our Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and other filings.

PART I

Item 1. Business.

General

Rudolph Technologies, Inc. is a worldwide leader in the design, development, manufacture and support of high-performance process control metrology, defect inspection, and data analysis systems used by semiconductor device manufacturers. We provide yield management solutions used in both wafer processing and final manufacturing through a family of standalone systems and integrated modules for both transparent and opaque thin film measurements and macro-defect inspection. All of these systems feature production-worthy automation and are backed by worldwide customer support.

Our acquisition of the net assets of Applied Precision's semiconductor division to be known as the Rudolph Technologies Probe Card Test and Analysis division ("PCTA") was completed on December 18, 2007. As a result, we expanded our offerings of inspection systems to include probe card test and analysis products. For our customers in semiconductor packaging and test, these products enable process validation, process verification and process improvement within probe and wafer test segments.

Metrology Systems. The industry's first production-oriented microprocessor-controlled ellipsometer for thin transparent film measurements was introduced by Rudolph in 1977. Since that time, we have consistently provided innovative product developments designed to meet manufacturers' most advanced measurement requirements. Our patented transparent film technology uses up to four lasers operating simultaneously at multiple angles and multiple wavelengths, providing powerful analysis and measurement capabilities to handle

the most challenging requirements of today's advanced processes and tomorrow's new materials. Unlike the white-light sources used in spectroscopic ellipsometers, laser light sources make our metrology tools inherently stable, increase measurement speed and accuracy, and reduce maintenance costs by minimizing the time required to re-qualify a light source when it is replaced. Our systems also employ a proprietary reflectometer technology that allows the characterization of films and film stacks that cannot be performed using conventional reflectometry or ellipsometry alone.

In November 2007 Rudolph announced it had granted Entrepix, Inc., an exclusive license to manufacture, sell, service and support the Rudolph AutoEL® series of thin-film ellipsometers. Thousands of AutoEL tools have been placed in universities, semiconductor research labs and semiconductor production facilities since it was commercialized in 1977, with many of those tools still in use today.

For opaque film characterization, we brought patented optical acoustic metal film metrology technology to the semiconductor manufacturing floor that allows customers to simultaneously measure the thickness and other properties of up to six metal or other opaque film layers in a non-contact manner on product wafers. PULSE Technology™ uses an ultra-fast laser to generate sound waves that pass down through a stack of opaque films such as those used in copper or aluminum interconnect processes, sending back to the surface an echo that indicates film thickness, density, and other process critical parameters. We believe we are a leader in providing systems that can non-destructively measure opaque thin-film stacks with the speed and accuracy semiconductor device manufacturers demand in order to achieve high yields with the latest fabrication processes. The technology is ideal for characterizing copper interconnect structures and the majority of all systems sold have been for copper applications.

Inspection Systems. Chip manufacturers deploy advanced macro-defect inspection (defects greater in size than 0.5 micron) throughout the fab to monitor key process steps, gather process-enhancing information and ultimately, lower manufacturing costs. Field-established tools such as the NSX®, AXi™, and WaferView® are found in wafer processing (front-end) and final manufacturing (back-end) facilities around the world. These high-speed tools incorporate features such as waferless recipe creation, tool-to-tool correlation, multiple inspection resolutions and proprietary review and classification software that are required in today's high-volume integrated circuit (IC) manufacturing environments. In addition to wafer frontside inspection, Rudolph's innovative Explorer™ Cluster incorporates wafer edge and backside inspection in one integrated platform to enhance productivity and continuously improve fab yield.

Data Analysis & Review Systems. Rudolph has a comprehensive offering of software solutions for process management and data review. Using wafer maps, charts and graphs, the vast amount of data gathered through automated inspection can be analyzed to determine trends that ultimately affect yield. Our goal is to provide our customers with timely and accurate information so that corrective actions can be taken. Software solutions available to our customers include products that identify, classify and analyze defect data as well as fabwide systems that are designed to determine the root cause of yield excursions as early as possible in the production flow.

Technology

We believe that our expertise in engineering and our continued investment in research and development enable us to rapidly develop new technologies and products in response to emerging industry trends. The breadth of our technology enables us to offer our customers a diverse combination of measurement technologies that provide process control for the majority of thin films used in semiconductor manufacturing. Additionally, our defect detection and classification technologies allow us to provide yield enhancement for critical front-end processes such as photolithography, diffusion, etch, CMP, and outgoing quality control. Information learned through post-fab inspection is critical. Advanced macro-defect inspection within the final manufacturing (back-end) process provides our customers with critical quality assurance and process information. Defects may be created during probing, bumping, dicing or general handling, and can have a major impact on device and process quality.

Optical Acoustics. Optical acoustic metrology involves the use of ultra-fast laser induced sonar for metal and opaque thin film measurement. This technology sends ultrasonic waves into multi-layer opaque films and then analyzes the resulting echoes to simultaneously determine the thickness of each individual layer in complex multi-layer metal film stacks. The echo's amplitude and phase can be used to detect film properties, missing layers, and interlayer problems. Since different phenomena affect amplitude and phase uniquely, a variety of process critical interlayer problems can be detected in a single measurement.

The use of optical acoustics to measure multi-layer metal and opaque films was pioneered by scientists at Brown University in collaboration with engineers at Rudolph. The proprietary optical acoustic technology in our PULSE Technology systems measures the thickness of single or multi-layer opaque films ranging from less than 40 Angstroms to greater than five microns. It provides these measurements at a rate of up to 70 wafers per hour within one to two percent accuracy and typically less than 1% repeatability. This range of thicknesses covers the majority of thick and thin metal films projected by the International Roadmap for Semiconductors to be used through the end of this decade. Our non-contact, non-destructive optical acoustic technology and small spot size enable our PULSE Technology systems to measure film properties directly on product wafers.

Ellipsometry. Ellipsometry is a non-contact, non-destructive optical technique for transparent thin film measurement. We have been an industry leader in ellipsometry technology for the last three decades. We hold patents on several ellipsometry technologies, including our proprietary technique that uses four lasers for multiple-angle of incidence, multiple wavelength ellipsometry. Laser ellipsometry technology enables our transparent film systems to continue to provide the increasingly higher level of accuracy needed as thinner films and newer materials are introduced for future generations of semiconductor devices. We extended this same optical technology to characterize the scatterometry signal from patterned surfaces, allowing measurement of critical dimensions.

Reflectometry. For applications requiring broader spectral coverage, some of our ellipsometry tools are also equipped with a reflectometer. Reflectometry uses a white or ultraviolet light source to determine the properties of transparent thin films by analyzing the wavelength and intensity of light reflected from the surface of a wafer. This optical information is processed with software algorithms to determine film thickness and other material properties. By combining data from both the laser ellipsometer and broad spectrum reflectometer, it is possible to characterize films and film stacks that cannot be adequately analyzed by either method individually.

Automated Defect Detection and Classification. Automating the defect detection and classification process is best done by a system that can mimic, or even extend, the response of the human eye, but at a much higher speed, with high resolution and more consistently. To do this, our systems capture full-color whole wafer images using simultaneous dark and bright field illumination. The resulting bright and dark field images are compared to those from an "ideal" wafer having no defects. When a difference is detected, its image is broken down into mathematical vectors that allow rapid and accurate comparison with a library of known classified defects stored in the tool's database. Patented and proprietary enhancements of this approach enable very fast and highly repeatable image classification. The system is pre-programmed with an extensive library of default local, global, and color defects and can also absorb a virtually unlimited amount of new defect classes. This allows customers to define defects based on their existing defect classification system, provides more reliable automated rework decisions, and enables more accurate statistical process control data.

All-surface Inspection. Rudolph has made all-surface, 100% advanced macro-defect inspection and metrology a reality. There are four types of all-surface inspection: wafer frontside, edge, and backside; and post-fab die and wafer. The edge inspection process focuses on the area near the wafer edge, an area that poses difficulty for traditional wafer frontside inspection technology due to its varied topography and process variation. Edge bevel inspection looks for defects on the side edge of a wafer. The edge bead removal and edge exclusion metrology involve a topside surface measurement required exclusively in the photolithography process, primarily to determine if wafers have been properly aligned for the edge exclusion region. The primary reason for wafer backside inspection is to determine if contamination has been created that may spread throughout the fab. For instance, it is critical that the wafer backside be free of defects prior to the photolithography process to prevent focus and exposure problems on the wafer front-side.

Probe Card Test and Analysis. The combination of fast 3D-OCM (optical comparative metrology) Technology with improved testing accuracy and repeatability is designed to reduce total test time for even the most advanced large area probe cards. 3-D capabilities enable users to analyze probe marks and probe tips in a rapid and information-rich format.

Classification. Classifying defects off-line enables automated inspection systems to maintain their high throughput. Using defect image files captured by automated inspection systems, operators are able to view high-resolution defect images to determine killer defects. Classifying defects enables faster analysis by grouping defects found together as one larger defect, a scratch for example, and defects of similar types across a wafer lot to be grouped based on size, repeating defects and other user-defined specifications. Automatically classifying defects provides far greater yield learning than human classification.

Yield Analysis. Using wafer maps, charts and graphs, the vast amounts of data gathered through automated inspection can be analyzed to determine trends across bumps, die, wafers and lots. This analysis may determine where in the process an inconsistency is being introduced, allowing for enhancements to be made and yields improved. Defect data analysis is performed to identify, analyze and locate the source of defects and other manufacturing process excursions. Using either a single wafer map or a composite map created from multiple wafer maps, this analysis enables identification of defect patterns and distribution. When combined with inspection data from strategically-placed inspection points, this analysis may pinpoint the source of the defects so corrective action can be taken.

Products

We market and sell products to all major logic, memory, and application specific integrated circuit (ASIC) device manufacturers. Our customers rely on Rudolph for versatile full-fab metrology and inspection systems as well as yield management software solutions. These systems are designed for high-volume production facilities and offer automated wafer handling for 200 and 300 mm configurations. Our systems operate at high throughput with ultraclean operation and high reliability.

| Product | Introduced | Functionality | Type of Fab | |
|--------------------------|------------|---|------------------|---------------------|
| | | | Wafer Processing | Final Manufacturing |
| Metrology Systems | | | | |
| <i>MetaPULSE®</i> | 1997 | - Non-contact system for thin opaque films | | |
| <i>MetaPULSE-II</i> | 2001 | - Patented Picosecond Ultrasonic Laser Sonar Technology (PULSE®) | X | |
| <i>MetaPULSE-III</i> | 2005 | - Designed for advanced copper and non-copper applications | | |
| <i>MetaPULSE-IIIa</i> | 2007 | - Improved throughput and repeatability | | |
| <i>S3000A™</i> | 2007 | - Superior accuracy for transparent film measurements | X | |
| <i>S3000™/S2000™</i> | 2006 | - Incorporates ellipsometry technology for transparent film application - Optimized price/performance for fabwide applications - Available with pattern recognition software - Enhanced data review mode | X | |

| Product | Introduced | Functionality | Type of Fab | |
|---|------------|---|------------------|---------------------|
| | | | Wafer Processing | Final Manufacturing |
| Inspection & Probe Card Test Systems | | | | |
| AXi™ Series | 2003 | <ul style="list-style-type: none"> - Advanced detection of defects >0.5 micron - Inspection of patterned and unpatterned wafers - In line, high-speed, 100% inspection - Full color review | X | |
| E25™ System | 2003 | <ul style="list-style-type: none"> - 2D defect detection of the wafer's edge - Metrology of edge feature - Incorporated into the Explorer Cluster | X | X |
| B20™ System | 2003 | <ul style="list-style-type: none"> - 2D defect detection of the wafer's backside - Darkfield, brightfield and color imaging - Incorporated into the Explorer Cluster | X | X |
| NSX® Series | 1997 | <ul style="list-style-type: none"> - Fully automated defect detection >0.5 micron - 2D wafer, die & bump inspection - In line, high-speed, 100% inspection | | X |
| 3Di™ Series | 2001 | <ul style="list-style-type: none"> - 2D & 3D wafer bump inspection & metrology system - In line, high-speed, 100% inspection | | X |
| WaferView® 320 | 2004 | <ul style="list-style-type: none"> - Automated macro-defect inspection for lithography applications - Advanced color vision system - Patented knowledge-based algorithms | X | |
| ProbeWoRx® | 2003 | <ul style="list-style-type: none"> - Probe card production metrology - 3D Optical Comparative Metrology - High-speed test times - Automated, one-touch measurements | | X |
| WaferWoRx® | 2006 | <ul style="list-style-type: none"> - Probing process analysis - 3D probe tip analysis - Proprietary, advanced software | | X |
| PrecisionPoint | 2002 | <ul style="list-style-type: none"> - Probe card analyzer - Tests devices simultaneously - Upgradable | | X |

| Product | Introduced | Functionality | Type of Fab | |
|---------------------------|------------|--|------------------|---------------------|
| | | | Wafer Processing | Final Manufacturing |
| Software Solutions | | | | |
| Discover™ | 2007 | <ul style="list-style-type: none"> - Fabwide software for archival and retrieval of process related data - Facilitates root cause analysis, yield enhancement and yield learning | X | |
| Discover Enterprise™ | 2005 | <ul style="list-style-type: none"> - In line, all surface defect analysis and data management - Trend analysis and visualization tools - Wafer maps visualize all-surface defects - Identifies root cause of defects and process excursions | X | X |
| Harmony ASR™ | 2005 | <ul style="list-style-type: none"> - Off line defect review and classification - Defects displayed in real time - Rapid classification of unknown defects; review of previously-classified defects | X | X |
| TrueADC™ | 2005 | <ul style="list-style-type: none"> - Automatic defect classification - High accuracy, consistency and scalability - Patented feature-based defect matching technology - Utilizes dynamic defect library method | X | X |
| Process Sentinel™ | 2006 | <ul style="list-style-type: none"> - Fabwide spatial process control system - Traces patterns back to yield-killing process issues - Combined defect and sort solution - Quickly isolates systemic faults - Advanced segmentation and wafer stacking capability | X | |
| TrueADC™ Enterprise | 2007 | <ul style="list-style-type: none"> - Serving the entire fab - Defect classification with a high level of accuracy - Ensures database lookup, classification and timely response to the tool - Minimum impact to throughput | X | X |
| Yield Optimizer™ | 2006 | <ul style="list-style-type: none"> - Builds predictive models - Optimizes yield and reduces excursions - Identifies the most critical metrology measurements for controlling yield | X | X |

Customers

Over 90 semiconductor device manufacturers have purchased Rudolph products for installation at multiple sites. We support a diverse customer base in terms of both geographic location and type of semiconductor device manufactured. Our customers are located in 20 countries.

We depend on a relatively small number of customers and end users for a large percentage of our revenues. In the years 2005, 2006 and 2007, sales to end user customers that individually represented at least five percent of our revenues accounted for 62.6%, 40.9% and 37.1% of our revenues, respectively. In 2005, 2006 and 2007, sales to Intel Corporation accounted for 20.3%, 14.0 % and 11.5% of our revenues, respectively. No other individual end user customer accounted for more than 10% of our 2007 revenues. We do not have purchase contracts with any of our customers that obligate them to continue to purchase our products.

Research and Development

The thin film transparent, opaque process control and macro-defect inspection metrology market is characterized by continuous technological development and product innovations. We believe that the rapid and ongoing development of new products and enhancements to existing products is critical to our success. Accordingly, we devote a significant portion of our technical, management and financial resources to research and development programs.

The core competencies of our research and development team include metrology systems for high volume manufacturing, ellipsometry, ultra-fast optics, picosecond acoustic and optical design, advanced metrology application development and algorithm development. To leverage our internal research and development capabilities, we maintain close relationships with leading research institutions in the metrology field, including Brown University. Our relationship with Brown University has resulted in the development of the optical acoustic technology underlying our *MetaPULSE* product line. We have been granted exclusive licenses from Brown University Research Foundation, subject to rights retained by Brown and the United States government for their own non-commercial uses for several patents relating to this technology.

Our research and development expenditures in 2005, 2006 and 2007 were \$11.9 million, \$29.9 million and \$30.0 million, respectively. We plan to continue our strong commitment to new product development in the future, and we expect that our level of research and development expenses will increase in absolute dollar terms in future periods.

Sales, Customer Service and Application Support

We maintain an extensive network of direct sales, customer service and application support offices in several locations throughout the world. We maintain sales, service or applications offices in locations including but not limited to, New Jersey, Minnesota, Massachusetts, Texas, Washington, Germany, Scotland, Ireland, Israel, Korea, Singapore, Taiwan, China and Japan.

We provide our customers with comprehensive support before, during and after the delivery of our products. For example, in order to facilitate the smooth integration of our tools into our customers' operations, we often assign dedicated, site-specific field service and applications engineers to provide long-term support at selected customer sites. We also provide comprehensive service and applications training for customers at our training facility in Mt. Olive, New Jersey and at customer locations. In addition, we maintain a group of highly skilled applications scientists at strategically located facilities throughout the world and at selected customer locations.

Manufacturing

Our principal manufacturing activities include assembly, final test and calibration. These activities are conducted in our manufacturing facilities in New Jersey, Minnesota and Washington. Our core manufacturing competencies include electrical, optical and mechanical assembly and testing as well as the management of new

product transitions. While we use standard components and subassemblies wherever possible, most mechanical parts, metal fabrications and critical components used in our products are engineered and manufactured to our specifications. We expect to rely increasingly on subcontractors and turnkey suppliers to fabricate components, build assemblies and perform other non-core activities in a cost-effective manner.

We rely on a number of limited source suppliers for certain parts and subassemblies. This reliance creates a potential inability to obtain an adequate supply of required components, and reduced control over pricing and time of delivery of components. An inability to obtain adequate supplies would require us to seek alternative sources of supply or might require us to redesign our systems to accommodate different components or subassemblies. However, if we were forced to seek alternative sources of supply, manufacture such components or subassemblies internally, or redesign our products, this could prevent us from shipping our products to our customers on a timely basis, which could have a material adverse effect on our operations.

Intellectual Property

We have a policy of seeking patents on inventions governing new products or technologies as part of our ongoing research, development, and manufacturing activities. As of December 31, 2007, we have been granted, or hold exclusive licenses to, 121 U.S. and foreign patents. The patents we own, jointly own or exclusively license have expiration dates ranging from 2008 to 2025. We also have 107 pending regular and provisional applications in the U.S. and other countries. Our patents and applications principally cover various aspects of transparent thin film measurement, altered material characterization and macro-defect detection and classification.

We have been granted exclusive licenses from Brown University Research Foundation, subject to rights retained by Brown and the United States government for their own non-commercial uses, for several patents relating to the optical acoustic technology underlying our *MetaPULSE* product family. The terms of these exclusive licenses are equal to the lives of the patents. We pay royalties to Brown based upon a percentage of our revenues from the sale of systems that incorporate technology covered by the Brown patents. We also have the right to support patent activity with respect to new ultra-fast acoustic technology developed by Brown scientists, and to acquire exclusive licenses to this technology. Brown may terminate the licenses if we fail to pay royalties to Brown or if we materially breach our license agreement with Brown.

Our pending patents may never be issued, and even if they are, these patents, our existing patents and the patents we license may not provide sufficiently broad protection to protect our proprietary rights, or they may prove to be unenforceable. To protect our proprietary rights, we also rely on a combination of copyrights, trademarks, trade secret laws, contractual provisions and licenses. There can be no assurance that any patents issued or licensed by us will not be challenged, invalidated or circumvented or that the rights granted thereunder will provide us with a competitive advantage.

The laws of some foreign countries do not protect our proprietary rights to as great an extent as do the laws of the United States, and many U.S. companies have encountered substantial infringement problems in protecting their proprietary rights against infringement in such countries, some of which are countries in which we have sold and continue to sell products. There is a risk that our means of protecting our proprietary rights may not be adequate. For example, our competitors may independently develop similar technology or duplicate our products. If we fail to adequately protect our intellectual property, it would be easier for our competitors to sell competing products.

Competition

The market for semiconductor capital equipment is highly competitive. We face substantial competition from established companies in each of the markets that we serve. We principally compete with KLA-Tencor and Camtek. We compete to a lesser extent with companies such as Nanometrics, Vistec, and Nikon. Each of our

products also competes with products that use different metrology techniques. Some of our competitors have greater financial, engineering, manufacturing and marketing resources, broader product offerings and service capabilities and larger installed customer bases than we do.

Significant competitive factors in the market for metrology systems include system performance, ease of use, reliability, cost of ownership, technical support and customer relationships. We believe that, while price and delivery are important competitive factors, the customers' overriding requirement is for a product that meets their technical capabilities. To remain competitive, we believe we will need to maintain a high level of investment in research and development and process applications. No assurances can be given that we will continue to be competitive in the future.

Backlog

We schedule production of our systems based upon order backlog and informal customer forecasts. We include in backlog only those orders to which the customer has assigned a purchase order number and for which delivery has been specified within 12 months. Because shipment dates may be changed and customers may cancel or delay orders with little or no penalty, our backlog as of any particular date may not be a reliable indicator of actual sales for any succeeding period. At December 31, 2007, we had a backlog of approximately \$26.7 million compared with a backlog of approximately \$26.1 million at December 31, 2006.

Employees

As of December 31, 2007, we had 648 employees. Our employees are not represented by any collective bargaining agreements, and we have never experienced a work stoppage. We believe our employee relations are good.

Available Information

We were incorporated in New Jersey in 1958 and reincorporated in Delaware in 1999. The Internet website address of Rudolph Technologies, Inc. is <http://www.rudolphtech.com>. The information on our website is not incorporated into this Annual Report. The Company's Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K (and any amendments to those reports) are made available free of charge, on or through our Internet website, as soon as reasonably practicable after such material is electronically filed with or furnished to the Securities and Exchange Commission, or SEC. All reports we file with the SEC are also available free of charge via EDGAR through the SEC's website at <http://www.sec.gov>.

We also make available, free of charge, through the investors page on our corporate website Rudolph Technologies' corporate summary, Code of Business Conduct and Ethics and Financial Code of Ethics, charters of the committees of our board of directors, as well as other information and materials, including information about how to contact our board of directors, its committees and their members. To find this information and obtain copies, visit our website at <http://www.rudolphtech.com>.

Item 1A. Risk Factors.

Risks Related to Rudolph

Our operating results have varied and will likely continue to vary significantly from quarter to quarter in the future, causing volatility in our stock price

Our quarterly operating results have varied in the past and will likely continue to vary significantly from quarter to quarter in the future, causing volatility in our stock price. Some of the factors that may influence our operating results and subject our stock to extreme price and volume fluctuations include:

- changes in customer demand for our systems, which is influenced by economic conditions in the semiconductor device industry, demand for products that use semiconductors, market acceptance of our systems and products of our customers and changes in our product offerings;

- seasonal variations in customer demand, including the tendency of European sales to slow significantly in the third quarter of each year;
- the timing, cancellation or delay of customer orders, shipments and acceptance;
- product development costs, including increased research, development, engineering and marketing expenses associated with our introduction of new products and product enhancements; and
- the levels of our fixed expenses, including research and development costs associated with product development, relative to our revenue levels.

In light of these factors and the cyclical nature of the semiconductor industry, we expect to continue to experience significant fluctuations in quarterly and annual operating results. Moreover, many of our expenses are fixed in the short-term which, together with the need for continued investment in research and development, marketing and customer support, limits our ability to reduce expenses quickly. As a result, declines in net sales could harm our business and the price of our common stock could substantially decline.

Our largest customers account for a significant portion of our revenues, and our revenues and cash flows would significantly decline if one or more of these customers were to purchase significantly fewer of our systems or they delayed or cancelled a large order

Sales to end user customers that individually represent at least five percent of our revenues typically account for, in the aggregate, a considerable amount of our revenues. We operate in the highly concentrated, capital-intensive semiconductor device manufacturing industry. Historically, a significant portion of our revenues in each quarter and year has been derived from sales to relatively few customers, and this trend is expected to continue. If any of our key customers were to purchase significantly fewer of our systems in the future, or if a large order were delayed or cancelled, our revenues and cash flows would significantly decline. We expect that we will continue to depend on a small number of large customers for a significant portion of our revenues for at least the next several years. In addition, as large semiconductor device manufacturers seek to establish closer relationships with their suppliers, we expect that our customer base will become even more concentrated.

Our revenue may vary significantly each quarter due to relatively small fluctuations in our unit sales

During any quarter, a significant portion of our revenue may be derived from the sale of a relatively small number of systems. Our transparent film measurement systems range in selling price from approximately \$250,000 to \$1.0 million per system, our opaque film measurement systems range in selling price from approximately \$900,000 to \$2.0 million per system and our macro-defect inspection and probe card and test analysis systems range in selling price from approximately \$250,000 to \$1.4 million per system. Accordingly, a small change in the number of systems we sell may also cause significant changes in our operating results. This, in turn, could cause fluctuations in the market price of our common stock.

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

Variations in the length of our sales cycles could cause our revenues and cash flows, and consequently, our business, financial condition, operating results and cash flows, to fluctuate widely from period to period. This variation could cause our stock price to decline. Our customers generally take a long time to evaluate our inspection and/or film metrology systems and many people are involved in the evaluation process. We expend significant resources educating and providing information to our prospective customers regarding the uses and benefits of our systems in the semiconductor fabrication process. The length of time it takes for us to make a sale depends upon many factors including, but not limited to:

- the efforts of our sales force;
- the complexity of the customer's fabrication processes;
- the internal technical capabilities and sophistication of the customer;

- the customer's budgetary constraints; and
- the quality and sophistication of the customer's current metrology and/or inspection equipment.

Because of the number of factors influencing the sales process, the period between our initial contact with a customer and the time when we recognize revenue from that customer, if ever, and receive payment varies widely in length. Our sales cycles, including the time it takes for us to build a product to customer specifications after receiving an order to the time we recognize revenue, typically range from six to 15 months. Sometimes our sales cycles can be much longer, particularly with customers in Japan. During these cycles, we commit substantial resources to our sales efforts in advance of receiving any revenue, and we may never receive any revenue from a customer despite our sales efforts. If we do make a sale, our customers often purchase only one of our systems, and then evaluate its performance for a lengthy period before purchasing any more of our systems. The number of additional products a customer purchases, if any, depends on many factors, including a customer's capacity requirements. The period between a customer's initial purchase and any subsequent purchases can vary from six months to a year or longer, and variations in the length of this period could cause further fluctuations in our operating results and possibly in our stock price.

Most of our revenues have been derived from customers outside of the United States subjecting us to operational, financial and political risks, such as unexpected changes in regulatory requirements, tariffs, political and economic instability, outbreaks of hostilities, and difficulties in managing foreign sales representatives and foreign branch operations

Due to the significant level of our international sales, we are subject to a number of material risks, including:

Unexpected changes in regulatory requirements including tariffs and other market barriers. The semiconductor device industry is a high-visibility industry in many of the European and Asian countries in which we sell our products. Because the governments of these countries have provided extensive financial support to our semiconductor device manufacturing customers in these countries, we believe that our customers could be disproportionately affected by any trade embargoes, excise taxes or other restrictions imposed by their governments on trade with United States companies such as ourselves. Any restrictions of these types could result in a reduction in our sales to customers in these countries.

Political and economic instability. We are subject to various global risks related to political and economic instabilities in countries in which we derive sales. If terrorist activities, armed conflict, civil or military unrest or political instability occurs outside of the U.S., these events may result in reduced demand for our products. There is considerable political instability in Taiwan related to its disputes with China and in South Korea related to its disputes with North Korea. In addition, several Asian countries, particularly Japan, have experienced significant economic instability. An outbreak of hostilities or other political upheaval in China, Taiwan or South Korea, or an economic downturn in Japan or other countries, would likely harm the operations of our customers in these countries. The effect of these types of events on our revenues and cash flows could be material because we derive substantial revenues from sales to semiconductor device foundries in Taiwan such as Taiwan Semiconductor Manufacturing Company Ltd. and United Microelectronics Corporation, from memory chip manufacturers in South Korea such as Hynix and Samsung, and from semiconductor device manufacturers in Japan such as NEC and Toshiba.

Difficulties in staffing and managing foreign branch operations. During periods of tension between the governments of the United States and certain other countries, it is often difficult for United States companies such as ourselves to staff and manage operations in such countries.

Currency fluctuations as compared to the U.S. Dollar. A substantial portion of our international sales are denominated in U.S. dollars. As a result, if the dollar rises in value in relation to foreign currencies, our systems will become more expensive to customers outside the United States and less competitive with systems produced by competitors outside the United States. These conditions could negatively impact our international sales. Foreign sales also expose us to collection risk in the event it becomes more expensive for our foreign customers to convert their local currencies into U.S. dollars.

If we deliver systems with defects, our credibility will be harmed and the sales and market acceptance of our systems will decrease

Our systems are complex and have occasionally contained errors, defects and bugs when introduced. When this occurs, our credibility and the market acceptance and sales of our systems could be harmed. Further, if our systems contain errors, defects or bugs, we may be required to expend significant capital and resources to alleviate these problems. Defects could also lead to product liability as a result of product liability lawsuits against us or against our customers. We have agreed to indemnify our customers under certain circumstances against liability arising from defects in our systems. Our product liability policy currently provides \$2.0 million of coverage per claim, with an overall umbrella limit of \$5.0 million. In the event of a successful product liability claim, we could be obligated to pay damages significantly in excess of our product liability insurance limits.

If we are not successful in developing new and enhanced products for the semiconductor device manufacturing industry we will lose market share to our competitors

We operate in an industry that is highly competitive and subject to evolving industry standards, rapid technological changes, rapid changes in consumer demands and the rapid introduction of new, higher performance systems with shorter product life cycles. To be competitive in our demanding market, we must continually design, develop and introduce in a timely manner new inspection and film metrology systems that meet the performance and price demands of semiconductor device manufacturers. We must also continue to refine our current systems so that they remain competitive. We expect to continue to make significant investments in our research and development activities. We may experience difficulties or delays in our development efforts with respect to new systems, and we may not ultimately be successful in our product enhancement efforts to improve and advance products or in responding effectively to technological change, as not all research and development activities result in viable commercial products. In addition, we cannot provide assurance that we will be able to develop new products for the most opportunistic new markets and applications. Any significant delay in releasing new systems could cause our products to become obsolete, adversely affect our reputation, give a competitor a first-to-market advantage or cause a competitor to achieve greater market share. 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 new products developed by us do not gain general market acceptance, we will be unable to generate revenues and recover our research and development costs

Metrology and inspection product development is inherently risky because it is difficult to foresee developments in semiconductor device manufacturing technology, coordinate technical personnel, and identify and eliminate system design flaws. Further, our products are complex and often the applications to our customers' businesses are unique. Any new systems we introduce may not achieve or sustain a significant degree of market acceptance and sales.

We expect to spend a significant amount of time and resources developing new systems and refining our existing systems. In light of the long product development cycles inherent in our industry, these expenditures will be made well in advance of the prospect of deriving revenue from the sale of those systems. Our ability to commercially introduce and successfully market new systems are subject to a wide variety of challenges during the development cycle, including start-up bugs, design defects, and other matters that could delay introduction of these systems. In addition, since our customers are not obligated by long-term contracts to purchase our systems, our anticipated product orders may not materialize, or orders that are placed may be cancelled. As a result, if we do not achieve market acceptance of new products, we may be unable to generate sufficient revenues and cash flows to recover our research and development costs and our market share, revenue, operating results or stock price would be negatively impacted.

Even if we are able to develop new products that gain market acceptance, sales of these new products could impair our ability to sell existing products

Competition from our new systems could have a negative effect on sales of our existing systems and the prices that we could charge for these systems. We may also divert sales and marketing resources from our current systems in order to successfully launch and promote our new or next generation systems. This diversion of resources could have a further negative effect on sales of our current systems and the value of inventory.

If our relationships with our large customers deteriorate, our product development activities could be adversely affected

The success of our product development efforts depends on our ability to anticipate market trends and the price, performance and functionality requirements of semiconductor device manufacturers. In order to anticipate these trends and ensure that critical development projects proceed in a coordinated manner, we must continue to collaborate closely with our largest customers. Our relationships with these and other customers provide us with access to valuable information regarding trends in the semiconductor device industry, which enables us to better plan our product development activities. If our current relationships with our large customers are impaired, or if we are unable to develop similar collaborative relationships with important customers in the future, our product development activities could be adversely affected.

Our ability to reduce costs is limited by our ongoing need to invest in research and development and to provide customer support activities

Our industry is characterized by the need for continual investment in research and development as well as customer service and support. As a result, our operating results could be materially affected if operating costs associated with our research and development as well as customer support activities increase in the future or we are unable to reduce those activities.

We may fail to adequately protect our intellectual property and, therefore, lose our competitive advantage

Our future success and competitive position depend in part upon our ability to obtain and maintain proprietary technology for our principal product families, and we rely, in part, on patent and trade secret law and confidentiality agreements to protect that technology. If we fail to adequately protect our intellectual property, it will give our competitors a significant advantage. We own or have licensed a number of patents relating to our transparent and opaque thin film metrology and macro-defect inspection systems, and have filed applications for additional patents. Any of our pending patent applications may be rejected, and we may be unable to develop additional proprietary technology that is patentable in the future.

In addition, the patents that we do own or that have been issued or licensed to us may not provide us with competitive advantages and may be challenged by third parties. Further, third parties may also design around these patents. In addition to patent protection, we rely upon trade secret protection for our confidential and proprietary information and technology. We routinely enter into confidentiality agreements with our employees and other third parties. However, in the event that a confidentiality agreement is breached, we may not have adequate remedies. Our confidential and proprietary information and technology might also be independently developed by, or become otherwise known to, third parties.

Protection of our intellectual property rights, or the efforts of third parties to enforce their own intellectual property rights against us, may result in costly and time-consuming litigation, substantial damages, lost product sales and/or the loss of important intellectual property rights

We may be required to initiate litigation in order to enforce any patents issued to or licensed by us, or to determine the scope or validity of a third party's patent or other proprietary rights. Any litigation, regardless of outcome, could be expensive and time consuming, and could subject us to significant liabilities or require us to re-engineer our products or obtain expensive licenses from third parties.

In addition, our commercial success depends in part on our ability to avoid infringing or misappropriating patents or other proprietary rights owned by third parties. From time to time we may receive communications from third parties asserting that our products or systems infringe, or may infringe, the proprietary rights of these third parties. These claims of infringement may lead to protracted and costly litigation, which could require us to pay substantial damages or have the sale of our products or systems stopped by an injunction. Infringement claims could also cause product or system delays or require us to redesign our products or systems, and these delays could result in the loss of substantial revenues. We may also be required to obtain a license from the third party or cease activities utilizing the third party's proprietary rights. We may not be able to enter into such a license or such a license may not be available on commercially reasonable terms. Accordingly, the loss of important intellectual property rights could hinder our ability to sell our systems, or make the sale of these systems more expensive.

Our efforts to protect our intellectual property may be less effective in certain foreign countries, where intellectual property rights are not as well protected as in the United States

The laws of some foreign countries do not protect our proprietary rights to as great an extent as do the laws of the United States, and many U.S. companies have encountered substantial problems in protecting their proprietary rights against infringement abroad. For example, Taiwan is not a signatory of the Patent Cooperation Treaty, which is designed to specify rules and methods for defending intellectual property internationally. The publication of a patent in Taiwan prior to the filing of a patent in Taiwan would invalidate the ability of a company to obtain a patent in Taiwan. Similarly, in contrast to the United States where the contents of patents remain confidential during the patent application process, in Taiwan the contents of a patent are published upon filing which provides competitors an advance view of the contents of a patent application prior to the establishment of patent rights. Consequently, there is a risk that we may be unable to adequately protect its proprietary rights in certain foreign countries. If this occurs, it would be easier for our competitors to develop and sell competing products in these countries.

Some of our current and potential competitors have significantly greater resources than we do, and increased competition could impair sales of our products or cause us to reduce our prices

The market for semiconductor capital equipment is highly competitive. We face substantial competition from established companies in each of the markets we serve. We principally compete with KLA-Tencor and Camtek. We compete to a lesser extent with companies such as Nanometrics, Vistec and Nikon. Each of our products also competes with products that use different metrology or inspection techniques. Some of our competitors have greater financial, engineering, manufacturing and marketing resources, broader product offerings and service capabilities and larger installed customer bases than we do. As a result, these competitors may be able to respond more quickly to new or emerging technologies or market developments by devoting greater resources to the development, promotion and sale of products, which, in turn, could impair sales of our products. Further, there may be significant merger and acquisition activity among our competitors and potential competitors, which, in turn, may provide them with a competitive advantage over us by enabling them to rapidly expand their product offerings and service capabilities to meet a broader range of customer needs.

Many of our customers and potential customers in the semiconductor device manufacturing industry are large companies that require global support and service for their semiconductor capital equipment. We believe that our global support and service infrastructure is sufficient to meet the needs of our customers and potential customers. However, some of our competitors have more extensive infrastructures than we do, which could place us at a disadvantage when competing for the business of global semiconductor device manufacturers. Many of our competitors are investing heavily in the development of new systems that will compete directly with our systems. We have from time to time selectively reduced prices on our systems in order to protect our market share, and competitive pressures may necessitate further price reductions. We expect our competitors in each product area to continue to improve the design and performance of their products and to introduce new products with competitive prices and performance characteristics. These product introductions would likely require us to

decrease the prices of our systems and increase the level of discounts that we grant our customers. Price reductions or lost sales as a result of these competitive pressures would reduce our total revenues and could adversely impact our financial results.

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

We believe that once a semiconductor 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 application, a semiconductor 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.

We must attract and retain key personnel with knowledge of semiconductor device manufacturing and inspection and/or metrology equipment to help support our future growth, and competition for such personnel in our industry is high

Our success depends to a significant degree upon the continued contributions of our key management, engineering, sales and marketing, customer support, finance and manufacturing personnel. The loss of any of these key personnel, each of whom would be extremely difficult to replace, could harm our business and operating results. Although we have employment and noncompetition agreements with key members of our senior management team, including Messrs. McLaughlin and Roth, these individuals or other key employees may still leave us. We do not have key person life insurance on any of our executives. In addition, to support our future growth, we will need to attract and retain additional qualified employees. Competition for such personnel in our industry is intense, and we may not be successful in attracting and retaining qualified employees.

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

We obtain some of the components and subassemblies included in our systems from a limited group of suppliers and do not have long-term contracts with many of our suppliers. Our dependence on limited source suppliers of components and our lack of long-term contracts with many of our suppliers exposes us to several risks, including a potential inability to obtain an adequate supply of components, price increases, late deliveries and poor component quality. Disruption or termination of the supply of these components could delay shipments of our systems, damage our customer relationships and reduce our sales. From time to time in the past, we have experienced temporary difficulties in receiving shipments from our suppliers. The lead-time required for shipments of some of our components can be as long as four months. In addition, the lead time required to qualify new suppliers for lasers could be as long as a year, and the lead time required to qualify new suppliers of other components could be as long as nine months. If we are unable to accurately predict our component needs, or if our component supply is disrupted, we may miss market opportunities by not being able to meet the demand for our systems. Further, a significant increase in the price of one or more of these components or subassemblies could seriously harm our results of operations and cash flows.

Any prolonged disruption in the operations of our manufacturing facilities could have a material adverse effect on our revenues

Our manufacturing processes are highly complex and require sophisticated and costly equipment and a specially designed facility. As a result, any prolonged disruption in the operations of our manufacturing facilities, whether due to technical or labor difficulties, or destruction of or damage as a result of a fire or any other reason,

could seriously harm our ability to satisfy our customer order deadlines. If we cannot timely deliver our systems, our results from operations and cash flows could be materially and adversely affected.

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 results of operations

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.

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

Our success depends on our ability to continually enhance and broaden our product offerings in response to changing technologies, customer demands and competitive pressures. To this end, we have, from time to time, engaged in the process of identifying, analyzing and negotiating possible acquisition transactions and we expect to continue to do so in the future. We may choose to acquire new and complementary businesses, products, technologies and/or services instead of developing them ourselves. We may, however, face competition for acquisition targets from larger and more established companies with greater financial resources, making it more difficult for us to complete acquisitions. We cannot provide any assurance that we will be successful in consummating future acquisitions on favorable terms or that we will realize the benefits that we anticipate from one or more acquisitions that we consummate. Integrating any business, product technology or service we acquire could be expensive and time-consuming and/or disrupt our ongoing business. Further, there are 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;
- failure to retain key employees and customer or supplier relationships;
- lower-than-expected market opportunities or market acceptance of any new products; and
- unexpected reduction of sales of existing products by new products.

Our inability to consummate one or more acquisitions on such favorable terms or our failure to realize the intended benefits from one or more acquisitions, could have a material adverse effect on our business, liquidity, financial position and/or results of operations, including as a result of our incurrence of indebtedness and related interest expense and our assumption of unforeseen contingent liabilities. In order to finance any acquisitions, we might need to raise additional funds through public or private equity or debt financings. In that event, we could be forced to obtain financing on terms that are not favorable to us and, in the case of equity financing, that result in dilution to our stockholders. In addition, any impairment of goodwill or other intangible assets, amortization of intangible assets, write-down of other assets or charges resulting from the costs of acquisitions and purchase accounting could harm our business and operating results.

We may not realize the benefits of the Probe Card Test and Analysis division acquisition and the RVSI Inspection intellectual property and selected assets acquisition.

On December 18, 2007, we completed the acquisition of the semiconductor division of Applied Precision LLC to be known as our Probe Card Test and Analysis division. On January 22, 2008, we announced that we had acquired all intellectual property and selected assets from privately-held RVSI Inspection, headquartered in Hauppauge, New York. Our failure to meet the challenges involved in realizing any of the anticipated benefits of the acquisitions, could seriously harm our financial position, results of operations and cash flows. Realizing the benefits of the acquisitions will depend in part on the continued successful integration of technology, operations and personnel. The anticipated benefits of the acquisitions are based on projections and assumptions, not actual experience. The failure to realize any of the anticipated benefits of the acquisitions could seriously hinder our plans for product development as well as business and market expansion following the acquisitions.

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.

Changes in tax rates or tax liabilities could affect results.

As a global company, we are subject to taxation in the United States and various other countries. Significant judgment is required to determine and estimate worldwide tax liabilities. Our future annual and quarterly tax rates could be affected by numerous factors, including changes in the (1) applicable tax laws; (2) composition of earnings in countries with differing tax rates; or (3) valuation of our deferred tax assets and liabilities. In addition, we are subject to regular examination of our income tax returns by the Internal Revenue Service and other tax authorities. We regularly assess the likelihood of favorable or unfavorable outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. Although we believe our tax estimates are reasonable, there can be no assurance that any final determination will not be materially different from the treatment reflected in our historical income tax provisions and accruals, which could materially and adversely affect our results of operations.

We are subject to internal control evaluations and attestation requirements of Section 404 of the Sarbanes-Oxley Act.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, we must include in our Annual Report on Form 10-K a report of management on the effectiveness of our internal control over financial reporting and report by our independent registered public accounting firm regarding the effectiveness of our internal control. Ongoing compliance with these requirements is complex, costly and time-consuming. If (1) we fail to maintain effective internal control over financial reporting; (2) our management does not timely assess the adequacy of such internal control; or (3) our independent registered public accounting firm does not timely attest to the effectiveness of our internal control, we could be subject to regulatory sanctions and the public's perception of us may decline.

Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2007 and concluded that we did not maintain effective internal control over financial reporting as a result of the identification of a material weakness. The material weakness that we identified relates to the process

and procedures surrounding the preparation and review of the income tax provision as of December 31, 2007. Specifically, we did not ensure that effective oversight of the work performed by our outside tax advisors was exercised. The errors resulting from the material weakness, which were primarily attributable to acquisition related tax matters, did not have a material effect on our financial results for the year ended December 31, 2007. However, combinations of such errors could have resulted in our annual or interim financial statements being materially misstated. For more information related to this material weakness and our remediation plans, see Part II, Item 9A. "Management's Report on Internal Control Over Financial Reporting".

Risks Related to the Semiconductor Device Industry

Cyclicality in the semiconductor device industry has led to substantial decreases in demand for our systems and may from time to time continue to do so

Our operating results are subject to significant variation due to the cyclical nature of the semiconductor device industry. Our business depends upon the capital expenditures of semiconductor device manufacturers, which, in turn, depend upon the current and anticipated market demand for semiconductors and products using semiconductors. The timing, length and severity of the up-and-down cycles in the semiconductor equipment industry are difficult to predict. This cyclical nature of the industry in which we operate affects our ability to accurately predict future revenue and, thus, future expense levels. When cyclical fluctuations result in lower than expected revenue levels, operating results may be adversely affected and cost reduction measures may be necessary in order for us to remain competitive and financially sound. During a down cycle, we must be in a position to adjust our cost and expense structure to prevailing market conditions and to continue to motivate and retain our key employees. In addition, during periods of rapid growth, we must be able to increase manufacturing capacity and personnel to meet customer demand. We can provide no assurance that these objectives can be met in a timely manner in response to industry cycles. If we fail to respond to industry cycles, our business could be seriously harmed.

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

We 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 or metrology equipment fails to grow in the long term, we may be unable to maintain current revenue levels in the short term and maintain our historical growth in the long term. Growth in the inspection market is dependent to a large extent upon microelectronic manufacturers replacing manual inspection with automated inspection technology. Growth in the metrology market is dependent to a large extent upon new chip designs and capacity expansion of microelectronic manufacturers. There is no assurance that manufacturers will undertake these actions at the rate we expect.

Risks Related to our Stock

Provisions of our charter documents and Delaware law, as well as our stockholder rights plan, could discourage potential acquisition proposals and/or delay, deter or prevent a change in control of our company

Provisions of our certificate of incorporation and bylaws, as well as our recently adopted stockholders rights plan, may inhibit changes in control of our company not approved by our board of directors. These provisions also limit the circumstances in which a premium can be paid for the common stock, and in which a proxy contest for control of our board may be initiated. These provisions provide for:

- a prohibition on stockholder actions through written consent;
- a requirement that special meetings of stockholders be called only by our chief executive officer or board of directors;
- advance notice requirements for stockholder proposals and director nominations by stockholders;
- limitations on the ability of stockholders to amend, alter or repeal our by-laws;
- the authority of our board to issue, without stockholder approval, preferred stock with such terms as the board may determine; and
- the authority of our board, without stockholder approval, to adopt a Stockholders Rights Plan. Such a Shareholders Rights Plan was adopted by the board of directors on June 27, 2005.

We are also entitled to avail ourselves of the protections of Section 203 of the Delaware General Corporation Law, which could inhibit changes in control of us.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Our executive office building is located at One Rudolph Road in Flanders, New Jersey. We own and lease facilities for engineering, sales and service related purposes in the United States and six other countries—China, Japan, Korea, Singapore, Taiwan and Scotland. The following table indicates the general location, the general purpose and the square footage of our principal facilities. The expiration years of the leases covering the leased facilities are also indicated.

| <u>Location</u> | <u>Facility Purpose</u> | <u>Approximate Square Footage</u> | <u>Lease Expiration Year, Unless Owned</u> |
|--------------------------|--|-----------------------------------|--|
| Flanders, New Jersey | Executive Office | 20,000 | Owned |
| Mt. Olive, New Jersey | Engineering, Manufacturing and Service | 83,500 | 2016 |
| Bloomington, Minnesota | Engineering, Manufacturing and Service | 78,500 | 2012 |
| Lowell, Massachusetts | Engineering, Manufacturing and Service | 10,000 | 2008 |
| Richardson, Texas | Yield Metrology Group | 21,000 | Owned |
| Issaquah, Washington | Engineering, Manufacturing and Service | 28,000 | 2008 |
| Hsin-Chu, Taiwan | Sales and Service | 10,500 | 2008 |
| Takatsu, Japan | Sales and Service | 5,000 | 2008 |
| Sungnam-si, Korea | Sales and Service | 9,500 | 2009 |
| Shanghai, China | Sales and Service | 3,500 | 2009 |
| Singapore | Sales and Service | 2,000 | 2009 |
| Scotland, United Kingdom | Sales and Service | 1,000 | 2009 |

We also lease office space for other smaller sales and service offices in several locations throughout the world.

We believe that our existing facilities and capital equipment are adequate to meet our current requirements, and that suitable additional or substitute space is available on commercially reasonable terms if needed.

Item 3. Legal Proceedings.

From time to time we are subject to legal proceedings and claims in the ordinary course of business. We are not aware of any legal proceedings or claims that management believes would have a material adverse effect on our consolidated financial statements taken as a whole.

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

No matters were submitted to a vote of security holders during the fourth quarter of the fiscal year covered by this report.

Item 6. Selected Financial Data.

The following selected financial data should be read in conjunction with our Consolidated Financial Statements and the related Notes thereto appearing elsewhere in this Form 10-K, and "Management's Discussion and Analysis of Financial Condition and Results of Operations." The balance sheet data as of December 31, 2006 and 2007 and the statement of operations data for the years ended December 31, 2005, 2006 and 2007 set forth below were derived from our audited consolidated financial statements included elsewhere in this Form 10-K. The balance sheet data as of December 31, 2003, 2004 and 2005, and the statement of operations data for the years ended December 31, 2003 and 2004 were derived from our audited consolidated financial statements not included herein.

| | Year Ended December 31, | | | | |
|--|---------------------------------------|-----------|-----------|------------|------------|
| | 2003 | 2004 | 2005 | 2006 (1) | 2007 (2) |
| | (In thousands, except per share data) | | | | |
| Statement of Operations Data: | | | | | |
| Revenues | \$ 58,500 | \$ 84,248 | \$ 82,918 | \$ 201,168 | \$ 160,129 |
| Cost of revenues | 33,214 | 44,595 | 44,390 | 103,726 | 78,889 |
| Gross profit | 25,286 | 39,653 | 38,528 | 97,442 | 81,240 |
| Operating expenses: | | | | | |
| Research and development | 13,390 | 15,847 | 11,901 | 29,856 | 29,993 |
| In-process research and development | — | — | — | 9,900 | 1,000 |
| Selling, general and administrative | 10,561 | 15,222 | 20,373 | 32,393 | 33,204 |
| Amortization | 877 | 876 | 876 | 4,048 | 4,487 |
| Total operating expenses | 24,828 | 31,945 | 33,150 | 76,197 | 68,684 |
| Operating income | 458 | 7,708 | 5,378 | 21,245 | 12,556 |
| Interest income and other, net | 1,610 | 1,899 | 1,388 | 3,191 | 4,149 |
| Income before provision for income taxes | 2,068 | 9,607 | 6,766 | 24,436 | 16,705 |
| Provision for income taxes | 298 | 2,855 | 1,789 | 11,730 | 4,846 |
| Net income | \$ 1,770 | \$ 6,752 | \$ 4,977 | \$ 12,706 | \$ 11,859 |
| Earnings per share: | | | | | |
| Basic | \$ 0.11 | \$ 0.40 | \$ 0.29 | \$ 0.47 | \$ 0.41 |
| Diluted | \$ 0.11 | \$ 0.40 | \$ 0.29 | \$ 0.46 | \$ 0.40 |
| Weighted average shares outstanding: | | | | | |
| Basic | 16,409 | 16,746 | 16,899 | 27,276 | 29,168 |
| Diluted | 16,723 | 16,914 | 16,942 | 27,574 | 29,312 |

| | December 31, | | | | |
|----------------------------|--------------|-----------|-----------|-----------|-----------|
| | 2003 | 2004 | 2005 | 2006 | 2007 |
| Balance Sheet Data: | | | | | |
| Cash and cash equivalents | \$ 28,220 | \$ 12,627 | \$ 37,986 | \$ 72,479 | \$ 57,420 |
| Marketable securities | 52,342 | 64,120 | 42,821 | 33,714 | 16,505 |
| Working capital | 111,450 | 120,403 | 125,678 | 200,942 | 176,298 |
| Total assets | 160,371 | 171,280 | 180,001 | 440,486 | 460,216 |
| Retained earnings | 8,462 | 15,214 | 20,191 | 32,897 | 44,776 |
| Total stockholders' equity | 148,537 | 156,775 | 164,534 | 392,876 | 424,478 |

- (1) Effective January 1, 2006, we adopted the provisions prescribed by the Financial Accounting Standards Board in Statement of Financial Accounting Standards No. 123 (revised 2004), "Share-Based Payment." Consequently, we began recognizing compensation cost measured at fair value over the service period for stock awards expected to vest. In addition, Statement of Operations data for 2006 reflects the results of operations of August Technology since February 15, 2006.
- (2) Statement of Operations data for 2007 reflects the results of operations of PCTA since December 18, 2007.

We are also entitled to avail ourselves of the protections of Section 203 of the Delaware General Corporation Law, which could inhibit changes in control of us.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Our executive office building is located at One Rudolph Road in Flanders, New Jersey. We own and lease facilities for engineering, sales and service related purposes in the United States and six other countries—China, Japan, Korea, Singapore, Taiwan and Scotland. The following table indicates the general location, the general purpose and the square footage of our principal facilities. The expiration years of the leases covering the leased facilities are also indicated.

| <u>Location</u> | <u>Facility Purpose</u> | <u>Approximate Square Footage</u> | <u>Lease Expiration Year, Unless Owned</u> |
|--------------------------|--|-----------------------------------|--|
| Flanders, New Jersey | Executive Office | 20,000 | Owned |
| Mt. Olive, New Jersey | Engineering, Manufacturing and Service | 83,500 | 2016 |
| Bloomington, Minnesota | Engineering, Manufacturing and Service | 78,500 | 2012 |
| Lowell, Massachusetts | Engineering, Manufacturing and Service | 10,000 | 2008 |
| Richardson, Texas | Yield Metrology Group | 21,000 | Owned |
| Issaquah, Washington | Engineering, Manufacturing and Service | 28,000 | 2008 |
| Hsin-Chu, Taiwan | Sales and Service | 10,500 | 2008 |
| Takatsu, Japan | Sales and Service | 5,000 | 2008 |
| Sungnam-si, Korea | Sales and Service | 9,500 | 2009 |
| Shanghai, China | Sales and Service | 3,500 | 2009 |
| Singapore | Sales and Service | 2,000 | 2009 |
| Scotland, United Kingdom | Sales and Service | 1,000 | 2009 |

We also lease office space for other smaller sales and service offices in several locations throughout the world.

We believe that our existing facilities and capital equipment are adequate to meet our current requirements, and that suitable additional or substitute space is available on commercially reasonable terms if needed.

Item 3. Legal Proceedings.

From time to time we are subject to legal proceedings and claims in the ordinary course of business. We are not aware of any legal proceedings or claims that management believes would have a material adverse effect on our consolidated financial statements taken as a whole.

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

No matters were submitted to a vote of security holders during the fourth quarter of the fiscal year covered by this report.

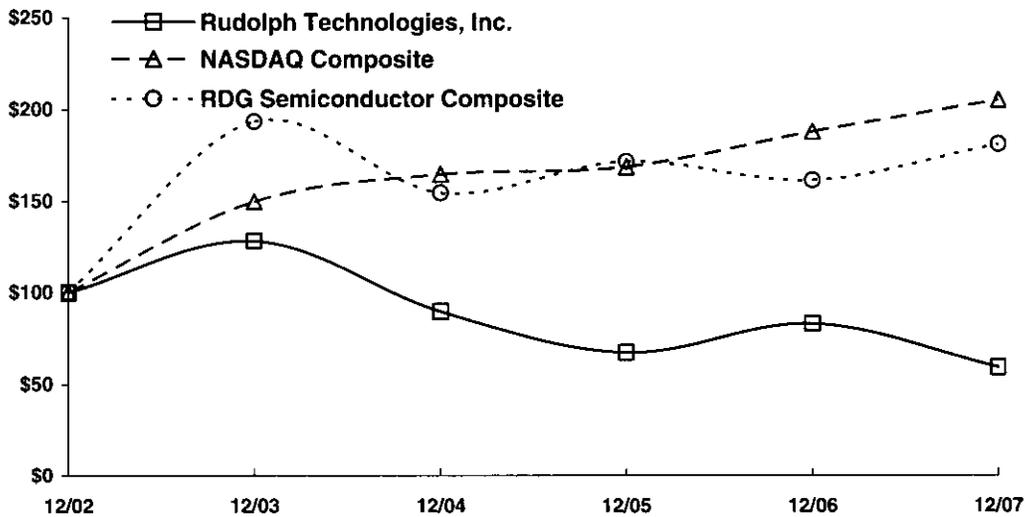
PART II

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

Our common stock is traded on the Nasdaq National Market under the symbol “RTEC.” Set forth below is a line graph comparing the annual percentage change in the cumulative return to the stockholders of the Company’s Common Stock with the cumulative return of the Nasdaq Composite Index and the Research Data Group (RDG) Semiconductor Composite Index for the period commencing on December 31, 2002, and ending on December 31, 2007. The information contained in the performance graph shall not be deemed to be “soliciting material” or to be “filed” with the SEC, nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, except to the extent that the Company specifically incorporates it by reference into such filing.

The graph assumes that \$100 was invested on December 31, 2002 in the Company’s Common Stock and in each index, and that all dividends were reinvested. No cash dividends have been declared or paid on the Company’s Common Stock. Stockholder returns over the indicated period should not be considered indicative of future stockholder returns. The Company operates on a 52-week calendar year. Under the assumptions stated above, over the period from December 31, 2002 to December 31, 2007 the total annual compound return on an investment in the Company would have been (9.99)%, as compared to 15.46% for the Nasdaq Composite Index and 12.60% for the RDG Semiconductor Composite Index.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*
Among Rudolph Technologies, Inc., The NASDAQ Composite Index
And The RDG Semiconductor Composite Index



* \$100 invested on 12/31/02 in stock or index-including reinvestment of dividends.
Fiscal year ending December 31.

| | 12/02 | 12/03 | 12/04 | 12/05 | 12/06 | 12/07 |
|---------------------------------------|--------|--------|--------|--------|--------|--------|
| Rudolph Technologies, Inc. | 100.00 | 128.08 | 89.61 | 67.22 | 83.09 | 59.08 |
| NASDAQ Composite | 100.00 | 149.75 | 164.64 | 168.60 | 187.83 | 205.22 |
| RDG Semiconductor Composite | 100.00 | 193.54 | 154.51 | 171.58 | 161.34 | 181.00 |

The following table sets forth, for the periods indicated, the high and low sale prices per share of our common stock as reported on the NASDAQ National Market.

| | Price Range of Common Stock | |
|------------------------------|--------------------------------|---------|
| | High | Low |
| Year Ended December 31, 2006 | | |
| First Quarter | \$18.09 | \$12.75 |
| Second Quarter | \$20.00 | \$13.70 |
| Third Quarter | \$19.25 | \$12.80 |
| Fourth Quarter | \$20.15 | \$13.10 |
| Year Ended December 31, 2007 | | |
| First Quarter | \$18.10 | \$14.83 |
| Second Quarter | \$18.21 | \$14.95 |
| Third Quarter | \$18.29 | \$11.50 |
| Fourth Quarter | \$15.09 | \$10.03 |

As of February 11, 2008, there were 96 stockholders of record of our common stock and approximately 5,753 beneficial stockholders. The closing market value of our common stock on February 11, 2008 was \$9.02.

We have never declared or paid a cash dividend on our common stock and do not anticipate paying any cash dividends in the foreseeable future. We currently intend to retain our earnings, if any, for the development of our business. The declaration of any future dividends by us is within the discretion of our Board of Directors and will be dependent on our earnings, financial condition and capital requirements as well as any other factors deemed relevant by our Board of Directors.

Certain Equity Compensation Plan Information included in Item 12 of Part III, hereof, is hereby incorporated into this Item 5 of Part II and will be included in our Proxy Statement for the 2008 Annual Meeting of Stockholders.

Item 6. Selected Financial Data.

The following selected financial data should be read in conjunction with our Consolidated Financial Statements and the related Notes thereto appearing elsewhere in this Form 10-K, and "Management's Discussion and Analysis of Financial Condition and Results of Operations." The balance sheet data as of December 31, 2006 and 2007 and the statement of operations data for the years ended December 31, 2005, 2006 and 2007 set forth below were derived from our audited consolidated financial statements included elsewhere in this Form 10-K. The balance sheet data as of December 31, 2003, 2004 and 2005, and the statement of operations data for the years ended December 31, 2003 and 2004 were derived from our audited consolidated financial statements not included herein.

| | Year Ended December 31, | | | | |
|--|---------------------------------------|-----------------|-----------------|------------------|------------------|
| | 2003 | 2004 | 2005 | 2006 (1) | 2007 (2) |
| | (In thousands, except per share data) | | | | |
| Statement of Operations Data: | | | | | |
| Revenues | \$ 58,500 | \$ 84,248 | \$ 82,918 | \$ 201,168 | \$ 160,129 |
| Cost of revenues | 33,214 | 44,595 | 44,390 | 103,726 | 78,889 |
| Gross profit | 25,286 | 39,653 | 38,528 | 97,442 | 81,240 |
| Operating expenses: | | | | | |
| Research and development | 13,390 | 15,847 | 11,901 | 29,856 | 29,993 |
| In-process research and development | — | — | — | 9,900 | 1,000 |
| Selling, general and administrative | 10,561 | 15,222 | 20,373 | 32,393 | 33,204 |
| Amortization | 877 | 876 | 876 | 4,048 | 4,487 |
| Total operating expenses | 24,828 | 31,945 | 33,150 | 76,197 | 68,684 |
| Operating income | 458 | 7,708 | 5,378 | 21,245 | 12,556 |
| Interest income and other, net | 1,610 | 1,899 | 1,388 | 3,191 | 4,149 |
| Income before provision for income taxes | 2,068 | 9,607 | 6,766 | 24,436 | 16,705 |
| Provision for income taxes | 298 | 2,855 | 1,789 | 11,730 | 4,846 |
| Net income | <u>\$ 1,770</u> | <u>\$ 6,752</u> | <u>\$ 4,977</u> | <u>\$ 12,706</u> | <u>\$ 11,859</u> |
| Earnings per share: | | | | | |
| Basic | \$ 0.11 | \$ 0.40 | \$ 0.29 | \$ 0.47 | \$ 0.41 |
| Diluted | \$ 0.11 | \$ 0.40 | \$ 0.29 | \$ 0.46 | \$ 0.40 |
| Weighted average shares outstanding: | | | | | |
| Basic | 16,409 | 16,746 | 16,899 | 27,276 | 29,168 |
| Diluted | 16,723 | 16,914 | 16,942 | 27,574 | 29,312 |
| | December 31, | | | | |
| | 2003 | 2004 | 2005 | 2006 | 2007 |
| Balance Sheet Data: | | | | | |
| Cash and cash equivalents | \$ 28,220 | \$ 12,627 | \$ 37,986 | \$ 72,479 | \$ 57,420 |
| Marketable securities | 52,342 | 64,120 | 42,821 | 33,714 | 16,505 |
| Working capital | 111,450 | 120,403 | 125,678 | 200,942 | 176,298 |
| Total assets | 160,371 | 171,280 | 180,001 | 440,486 | 460,216 |
| Retained earnings | 8,462 | 15,214 | 20,191 | 32,897 | 44,776 |
| Total stockholders' equity | 148,537 | 156,775 | 164,534 | 392,876 | 424,478 |

- (1) Effective January 1, 2006, we adopted the provisions prescribed by the Financial Accounting Standards Board in Statement of Financial Accounting Standards No. 123 (revised 2004), "Share-Based Payment." Consequently, we began recognizing compensation cost measured at fair value over the service period for stock awards expected to vest. In addition, Statement of Operations data for 2006 reflects the results of operations of August Technology since February 15, 2006.
- (2) Statement of Operations data for 2007 reflects the results of operations of PCTA since December 18, 2007.

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

Overview

We are a worldwide leader in the design, development, manufacture and support of high-performance process control metrology, defect inspection, and data analysis systems used by semiconductor device manufacturers. We provide yield management solutions used in both wafer processing and final manufacturing through a family of standalone systems and integrated modules for both transparent and opaque thin film measurements and macro-defect inspection. All of these systems feature production-worthy automation and are backed by worldwide customer support.

On December 18, 2007, Rudolph, along with our wholly-owned subsidiary, Mariner Acquisition Company LLC, entered into, and consummated the transactions contemplated by, an agreement with Applied Precision Holdings, LLC and Applied Precision, LLC (collectively, "Applied"), pursuant to which we purchased substantially all of the assets and assumed certain liabilities of the semiconductor division of Applied to be known as the Probe Card Test and Analysis division ("PCTA"). The PCTA is engaged in the business of designing, developing, manufacturing, marketing, selling and supporting advanced probe card metrology and wafer probe process monitoring equipment and is complementary to our existing business.

The closing occurred on December 18, 2007 and we paid \$57.9 million in cash and issued 1.3 million shares of common stock for a total purchase price of \$71.9 million. Under the terms of the purchase agreement, we agreed to assume the following liabilities of Applied relating to the PCTA: accounts payable, assigned contracts, licenses and leases, warranty claims and employee liabilities. In addition, we agreed to assume the defense of and all obligations relating to certain litigation. The cash portion of the purchase price is subject to further post-closing adjustment based on the final closing net asset balance. The purchase price has been preliminarily allocated based on estimates of the fair values of assets acquired and liabilities assumed. The final valuation of net assets is expected to be completed during 2008, but no later than one year from the acquisition date. The results of operations of the PCTA have been included in our consolidated financial statements since the date of the acquisition. Due to the size of the PCTA, we do not expect a material effect, other than the in-process research and development ("IPRD") charge, on comparability to prior periods of our financial position, results of operations and cash flows.

On February 15, 2006, the merger with August Technology was completed. Under the terms of the agreement, we paid an aggregate of \$37.2 million in cash and issued an aggregate of 11.3 million shares of our common stock to former August Technology shareholders. The results of operations of August Technology have been included in our consolidated financial statements since the date of the merger. Due to the size of August Technology and the effects of purchase accounting, our financial position, results of operations and cash flows may not be comparable to prior periods. With the exception of future tax adjustments related to the merger, the effects of purchase accounting were completed in 2006.

Rudolph's business is affected by the annual spending patterns of our customers on semiconductor capital equipment. The amount that our customers devote to capital equipment spending depends on a number of factors, including general worldwide economic conditions as well as other economic drivers such as personal computer, cell phone and personal electronic device sales. Current forecasts by industry analysts for the semiconductor device manufacturing industry project a year-over-year decrease in capital spending of 15-20% for 2008. We monitor capital equipment spending through announced capital spending plans by our customers and monthly-published industry data such as the book-to-bill ratio. The book-to-bill ratio is a 3-month running statistic that compares bookings or orders placed with capital equipment suppliers to billings or shipments. A book-to-bill above one shows that semiconductor device equipment manufacturers are ordering equipment at a pace that exceeds the equipment suppliers' shipments for the period. The three month rolling average North American semiconductor equipment book-to-bill ratio was 0.9 for the month of December 2007, increasing from the September 2007 book-to-bill ratio of 0.8.

Historically, a significant portion of our revenues in each quarter and year has been derived from sales to relatively few customers, and we expect this trend to continue. For the years ended December 31, 2005, 2006 and 2007, sales to customers that individually represented at least five percent of our revenues accounted for 62.6%,

40.9%, and 37.1% of our revenues, respectively. For the years ended December 31, 2005, 2006 and 2007, sales to Intel accounted for 20.3%, 14.0% and 11.5% of our revenues, respectively.

We do not have purchase contracts with any of our customers that obligate them to continue to purchase our products, and they could cease purchasing products from us at any time. A delay in purchase or cancellation by any of our large customers could cause quarterly revenues to vary significantly. In addition, during a given quarter, a significant portion of our revenues may be derived from the sale of a relatively small number of systems. Our transparent film measurement systems range in average selling price from approximately \$250,000 to \$1.0 million per system, our opaque film measurement systems range in average selling price from approximately \$900,000 to \$2.0 million per system and our macro-defect inspection and probe card and test analysis systems range in average selling price from approximately \$250,000 to \$1.4 million per system. Accordingly, a small change in the number of systems we sell may also cause significant changes in our operating results. Because fluctuations in the timing of orders from our major customers or in the number of our individual systems we sell could cause our revenues to fluctuate significantly in any given quarter or year, we do not believe that period-to-period comparisons of our financial results are necessarily meaningful, and they should not be relied upon exclusively as an indication of our future performance.

A significant portion of our revenues has been derived from customers outside of the United States. In 2005, approximately 77.5% of our revenues were derived from customers outside of the United States, of which 56.3% were derived from customers in Asia and 21.2% were derived from customers in Europe. In 2006, approximately 70.6% of our revenues were derived from customers outside of the United States, of which 59.9% were derived from customers in Asia and 10.7% were derived from customers in Europe. In 2007, approximately 77.1% of our revenues were derived from customers outside of the United States, of which 58.5% were derived from customers in Asia and 18.6% were derived from customers in Europe. We expect that revenues generated from customers outside of the United States will continue to account for a significant percentage of our revenues.

The sales cycle for our systems typically ranges from six to 15 months, and can be longer when our customers are evaluating new technology. Due to the length of these cycles, we invest significantly in research and development and sales and marketing in advance of generating revenues related to these investments. Additionally, the rate and timing of customer orders may vary significantly from month to month. Accordingly, if sales of our products do not occur when we expect, our expenses and inventory levels may increase relative to revenues and total assets.

Results of Operations

The following table sets forth, for the periods indicated, our statements of operations data as percentages of our revenues. Our results of operations are reported as one business segment.

| | Year Ended December 31, | | |
|--|-------------------------|-------------|-------------|
| | 2005 | 2006 | 2007 |
| Revenues | 100.0% | 100.0% | 100.0% |
| Cost of revenues | 53.5 | 51.6 | 49.3 |
| Gross profit | <u>46.5</u> | <u>48.4</u> | <u>50.7</u> |
| Operating expenses: | | | |
| Research and development | 14.4 | 14.9 | 18.7 |
| In-process research and development | — | 4.9 | 0.6 |
| Selling, general and administrative | 24.6 | 16.1 | 20.7 |
| Amortization | 1.0 | 2.0 | 2.8 |
| Total operating expenses | <u>40.0</u> | <u>37.9</u> | <u>42.9</u> |
| Operating income | 6.5 | 10.5 | 7.8 |
| Interest income and other, net | 1.7 | 1.6 | 2.6 |
| Income before provision for income taxes | 8.2 | 12.1 | 10.4 |
| Provision for income taxes | 2.2 | 5.8 | 3.0 |
| Net income | <u>6.0%</u> | <u>6.3%</u> | <u>7.4%</u> |

Results of Operations 2005, 2006 and 2007

Revenues. Our revenues are derived from the sale of our systems, services, spare parts and software licensing. Our revenues were \$82.9 million, \$201.2 million and \$160.1 million in the years 2005, 2006 and 2007. These changes represent an increase of 142.6% from 2005 to 2006 and a decrease of 20.4% from 2006 to 2007. The increase in revenue from 2005 to 2006 was primarily related to the August Technology merger. The decrease in revenue from 2006 to 2007 is primarily due to the current weakness in the overall semiconductor equipment manufacturing sector.

The following table lists, for the periods indicated, the different sources of our revenues in dollars and as percentages of our total revenues:

| | Year Ended December 31, | | | | | |
|--------------------------|-------------------------|-------------|------------------|-------------|------------------|-------------|
| | 2005 | | 2006 | | 2007 | |
| Systems: | | | | | | |
| Metrology | \$52,596 | 63% | \$ 68,035 | 34% | \$ 34,738 | 22% |
| Inspection | 11,644 | 14 | 100,666 | 50 | 85,012 | 53 |
| Parts | 9,188 | 11 | 14,217 | 7 | 13,678 | 9 |
| Services | 8,205 | 10 | 11,457 | 6 | 14,121 | 8 |
| Software licensing | 1,285 | 2 | 6,793 | 3 | 12,580 | 8 |
| Total revenue | <u>\$82,918</u> | <u>100%</u> | <u>\$201,168</u> | <u>100%</u> | <u>\$160,129</u> | <u>100%</u> |

Systems revenue increased from 2005 to 2006 reflecting additional revenues of \$88.2 million related to the August Technology merger and an increase in metrology systems revenues of \$15.4 million. Systems revenue decreased from 2006 to 2007 due to the current weakness in the overall semiconductor equipment manufacturing sector and reflects a decrease in metrology systems revenue of \$33.3 million and a decrease in inspection systems of \$15.7 million. Systems revenue generated by our latest product releases and major enhancements in each of our product families amounted to 32% of total revenue for 2005 compared to 31% of total revenue for 2006 and 29% of total revenue for 2007. The year-over-year increase in parts and service revenues in absolute dollars from 2005 to 2006 reflects additional parts and service revenues of \$3.5 million related to the August Technology merger as well as customers continuing to spend more on repair and maintenance of their existing equipment. The year-over-year increase in parts and service revenues in absolute dollars from 2006 to 2007 is primarily due to customers continuing to spend more on repair and maintenance of their existing equipment. Parts and services revenues are generated from part sales, maintenance service contracts, system upgrades, as well as time and material billable service calls. Software licensing revenues increased from 2005 to 2006 due to the August Technology merger. The year-over-year increase in software licensing revenues in absolute dollars from 2006 to 2007 reflects the sale of certain technology rights to Tokyo Electron.

Deferred revenues of \$6.0 million are recorded in other current liabilities at December 31, 2007 and primarily consist of \$5.3 million for deferred maintenance agreements and \$0.7 million for systems awaiting acceptance and outstanding deliverables.

Gross Profit. Our gross profit has been and will continue to be affected by a variety of factors, including inventory step-up from purchase accounting, manufacturing efficiencies, excess and obsolete inventory write-offs, pricing by competitors or suppliers, new product introductions, product sales mix, production volume, customization and reconfiguration of systems, international and domestic sales mix, and parts and service margins. Our gross profit was \$38.5 million, \$97.4 million and \$81.2 million in 2005, 2006 and 2007, respectively. The increase in gross profit as a percentage of revenue from 2005 to 2006 is primarily due to higher sales volume, partially offset by charges to cost of goods sold including a \$3.7 million charge for the sale of inventory written-up to fair value upon the August Technology merger and \$2.6 million in charges related to duplicative inventory. The increase in gross profit as a percentage of revenue from 2006 to 2007 is primarily due to the sales and transfer of certain technology rights to Tokyo Electron and higher charges to cost of goods sold in 2006.

Research and Development. The thin film transparent, opaque process control and macro-defect inspection and probe card test analysis market is characterized by continuous technological development and product innovations. We believe that the rapid and ongoing development of new products and enhancements to existing products, including the transition to copper and low-k dielectrics, the progression to 300 mm wafers, the continuous shrinkage in critical dimensions, and the evolution of ultra-thin gate process control, is critical to our success. Accordingly, we devote a significant portion of our technical, management and financial resources to research and development programs. Research and development expenditures consist primarily of salaries and related expenses of employees engaged in research, design and development activities. They also include consulting fees and the cost of related supplies. Our research and development expense was \$11.9 million, \$29.9 million and \$30.0 million in 2005, 2006 and 2007, respectively. The year-over-year dollar increase from 2005 to 2006 primarily reflects additional research and development cost of \$13.0 million related to the merged activities of August Technology and increased compensation costs including share-based compensation costs. The year-over-year dollar increase from 2006 to 2007 is primarily due to the engineering team from the August Technology merger being included for the full year ended December 31, 2007, and the write-off of \$0.5 million for certain software project costs, partially offset by cost containment initiatives. We continue to maintain our commitment to investing in new product development and enhancement to existing products as we position ourselves for future growth.

In-Process Research and Development. In 2006, the merger with August Technology resulted in our recording of \$9.9 million for the write-off of IPRD. At the time of the merger, we determined that the IPRD had not reached technological feasibility and that it did not have an alternative future use. The purchased in-process technology projects, which were comprised of macro-defect inspection and software projects, had a value assigned to them of \$6.9 million and \$3.0 million, respectively. The defect inspection projects, relate to the next generation of our AXi defect detection systems with enhanced defect capture capabilities, and were approximately 90% complete as of the date of merger. The estimated costs to complete these projects consisted primarily of internal engineering labor costs and were completed by the third quarter of 2006. The software projects, relate to new enhancement features to our next generation inspection products, and were approximately 50% complete as of the date of merger, with the remaining cost to complete consisting primarily of internal software development labor cost. The software projects were completed in 2007. We generated revenue from the inspection project in the third quarter of 2006 and the software project in 2007.

In 2007, the acquisition of the PCTA resulted in our recording of \$1.0 million for the write-off of IPRD. At the time of the acquisition, we determined that the IPRD had not reached technological feasibility and that it did not have an alternative future use. The purchased in-process technology project was a probe card test project related to the next generation of our ProbeWoRx systems with enhanced capabilities, and was approximately 20% complete as of the date of acquisition. The estimated costs to complete this project of \$2.1 million, consist primarily of internal engineering labor costs which will be completed in 2008. If we are not successful in completing the inspection project on a timely basis, the future sales of our inspection products may be adversely affected resulting in erosion of our market share.

Selling, General and Administrative. Selling, general and administrative expense is primarily comprised of salaries and related costs for sales, marketing, and general administrative personnel, as well as commissions and other non-personnel related expenses. Our selling, general and administrative expense was \$20.4 million, \$32.4 million and \$33.2 million in 2005, 2006 and 2007, respectively. The year-over-year dollar increase from 2005 to 2006 in selling, general and administrative expense was primarily due to \$10.6 million related to merged activities of August Technology and increased compensation costs. The year-over-year dollar increase from 2006 to 2007 in selling, general and administrative expense was primarily due to administrative costs associated with the merged activities of August Technology being included for the full year of 2007 and increased compensation costs.

Interest Income and Other, Net. Interest income and other, net was \$1.4 million, \$3.2 million and \$4.1 million in 2005, 2006 and 2007, respectively. Interest income and other, net consisted primarily of interest

income and realized gains and losses on sales of marketable securities. The year-over year increases in interest income and other, net of \$1.8 million from 2005 to 2006 and \$1.0 million from 2006 to 2007 are primarily due to higher invested cash balances and higher average interest rates.

Income Taxes. Income tax expense was \$1.8 million, \$11.7 million and \$4.8 million in 2005, 2006 and 2007, respectively. Our effective tax rate was 26%, 48% and 29% in 2005, 2006 and 2007, respectively. Our effective tax rate differs from the statutory rate of 35% primarily as a function of state income taxes offset by benefits from research and development tax credits, the domestic manufacturing production deduction and tax exempt interest. In addition, in 2006 and 2007, our effective tax rate was impacted by the non-deductibility of the IPRD charges for tax purposes of \$9.9 million and \$1.0 million, respectively.

Liquidity and Capital Resources

At December 31, 2005, we had \$80.8 million of cash, cash equivalents and marketable securities and \$125.7 million in working capital. At December 31, 2006, our cash, cash equivalents and marketable securities totaled \$106.2 million, while working capital amounted to \$200.9 million. At December 31, 2007, we had \$73.9 million of cash, cash equivalents and marketable securities and \$176.3 million in working capital.

Typically during periods of revenue growth, changes in accounts receivable and inventories represent a use of cash as we incur costs and expend cash in advance of receiving cash from our customers. Similarly, during periods of declining revenue, changes in accounts receivable and inventories represent a source of cash as inventory purchases decline and revenue from prior periods is collected. However, in 2005, as our revenues declined from \$84.2 million to \$82.9 million, our change in accounts receivables represented a use of cash. This was primarily due to longer collection times from our Japanese customers. Also in 2007, as our revenues declined our change in inventories represented a use of cash. This was primarily due to increasing inventory related to new products and the slow down in the back-end of the inspection business. Because of the lack of visibility in projected sales for 2008, we are uncertain as to the level of expected cash to be provided from operating activities in 2008.

Net cash provided by operating activities in 2005, 2006 and 2007 totaled \$8.1 million, \$20.6 million and \$23.6 million, respectively. During 2005, cash provided by operating activities was primarily due to net income, adjusted to exclude the effect of non-cash charges, of \$10.4 million, a decrease in inventories of \$3.7 million, an increase in other non-current liabilities of \$0.8 million and a decrease in prepaid expenses and other assets of \$0.6 million, partially offset by an increase in accounts receivable of \$5.7 million, a decrease in accrued liabilities of \$1.2 million and a decrease in income taxes payable of \$0.3 million. The increase in receivables is primarily due to the timing of shipments towards the end of the year and longer collection times in Japan. During 2006, cash provided by operating activities was primarily due to net income, adjusted to exclude the effect of non-cash charges, of \$42.6 million, an increase in deferred revenue of \$7.9 million, an increase in other current liabilities of \$1.0 million, an increase in accrued liabilities of \$0.8 million and an increase in income taxes payable of \$0.6 million, partially offset by an increase in accounts receivable of \$25.1 million and an increase in inventories of \$7.1 million. During 2007, cash provided by operating activities was primarily due to net income, adjusted to exclude the effect of non-cash charges, of \$23.4 million and a decrease in accounts receivable of \$21.4, partially offset by a decrease in deferred revenue of \$6.1 million, an increase in inventories of \$5.4 million, a decrease in accrued liabilities of \$4.0 million, a decrease in accounts payable of \$3.3 million and an increase in prepaid expenses and other assets of \$2.3 million.

Net cash provided by investing activities in 2005 and 2006 totaled \$16.0 million and \$3.6 million, respectively. Net cash used in 2007 was \$40.5 million. In 2005, net cash provided by investing activities included proceeds from sales of marketable securities of \$70.4 million, partially offset by purchases of marketable securities of \$50.0 million, capital expenditures of \$2.7 million, costs incurred for capitalized software of \$0.9 million and acquisition costs for business combinations of \$0.9 million. Capital expenditures in 2005 were primarily related to our new facility in Mt. Olive, New Jersey. In 2006, net cash provided by investing activities

included proceeds from sales of marketable securities of \$93.4 million, partially offset by purchases of marketable securities of \$70.8 million, capital expenditures of \$4.7 million, costs incurred for capitalized software of \$2.2 million and acquisition costs for the August Technology merger of \$12.1 million net of cash acquired of \$29.9 million. In 2007, net cash used by investing activities included purchases of marketable securities of \$77.7 million, acquisition costs for business combinations of \$56.2 million, capital expenditures of \$1.0 million, costs incurred for capitalized software of \$0.7 million, partially offset by proceeds from sales of marketable securities of \$95.1 million. Capital expenditures over the next twelve months are expected to be approximately within the range of \$3.0 million to \$6.0 million.

Net cash provided by financing activities was \$1.5 million, \$10.1 million and \$1.5 million in 2005, 2006 and 2007, respectively. In 2005, net cash provided by financing activities was a result of proceeds received from sales of shares through share-based compensation plans. In 2006, net cash provided by financing activities was a result of proceeds received from sales of shares through share-based compensation plans of \$9.0 million and tax benefit from share-based compensation plans of \$1.2 million. In 2007, net cash provided by financing activities was a result of proceeds received from sales of shares through share-based compensation plans of \$1.3 million and tax benefit from share-based compensation plans of \$0.1 million.

From time to time we evaluate whether to acquire new or complementary businesses, products and/or technologies. We may fund all or a portion of the purchase price of these acquisitions in cash. On February 15, 2006, we announced that our merger with August Technology Corporation had been completed. Under the terms of the agreement, we paid an aggregate of \$37.2 million in cash and issued an aggregate of 11.3 million shares of our common stock to former August Technology shareholders. On December 18, 2007, we announced that our acquisition of the semiconductor division of Applied Precision Holdings, LLC had been completed. Under the terms of the agreement, we paid an aggregate of \$57.9 million in cash and issued an aggregate of 1.3 million shares of our common stock to Applied Precision Holdings, LLC. On January 22, 2008, we announced that we had acquired all intellectual property and selected assets from privately-held RVSI Inspection, LLC, headquartered in Hauppauge, New York. We paid cash for this acquisition and will account for it as a business combination.

Our future capital requirements will depend on many factors, including the timing and amount of our revenues and our investment decisions, which will affect our ability to generate additional cash. We believe that our existing cash, cash equivalents and marketable securities will be sufficient to meet our anticipated cash requirements for working capital and capital expenditures for the foreseeable future. Thereafter, if cash generated from operations and financing activities is insufficient to satisfy our working capital requirements, we may seek additional funding through bank borrowings, sales of securities or other means. There can be no assurance that we will be able to raise any such capital on terms acceptable to us or at all.

Contractual Obligations

The following table summarizes our significant contractual obligations at December 31, 2007, and the effect such obligations are expected to have on our liquidity and cash flows in future periods. This table excludes the liability for unrecognized tax benefits that totaled approximately \$5.9 million at December 31, 2007. We are currently unable to provide a reasonably reliable estimate of the amount or periods when cash settlement of this liability may occur.

| | Payments due by period | | | | |
|------------------------------------|------------------------|------------------|----------------|----------------|-------------------|
| | Total | Less than 1 year | 1-3 years | 3-5 years | More than 5 years |
| Operating lease obligations | \$10,726 | \$ 2,527 | \$3,388 | \$2,633 | \$2,178 |
| Open and committed purchase orders | 21,506 | 21,506 | — | — | — |
| Total | <u>\$32,232</u> | <u>\$24,033</u> | <u>\$3,388</u> | <u>\$2,633</u> | <u>\$2,178</u> |

Off-Balance Sheet Arrangements

The Company does not have any off-balance sheet arrangements that have or are reasonably likely to have a material effect on our financial condition, results of operations or liquidity and capital resources.

Critical Accounting Policies

Management's discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America. We review the accounting policies we use in reporting our financial results on a regular basis. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities. On an ongoing basis, we evaluate our estimates, including those related to revenue recognition, accounts receivable, inventories, business acquisitions, intangible assets, share-based payments, income taxes and warranty obligations. We base our estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Results may differ from these estimates due to actual outcomes being different from those on which we based our assumptions. These estimates and judgments are reviewed by management on an ongoing basis, and by the Audit Committee at the end of each quarter prior to the public release of our financial results. We believe the following critical accounting policies affect our more significant judgments and estimates used in the preparation of our consolidated financial statements.

Revenue Recognition. Revenue is recognized when there is persuasive evidence of an arrangement, delivery has occurred, the sales price is fixed or determinable, and collection of the related receivable is reasonably assured. Certain sales of our products are sold and accounted for as multiple element arrangements, consisting primarily of the sale of the product, software, installation and training services. We generally recognize product revenue upon shipment. When customer acceptance is subjective and not obtained prior to shipment, we defer product revenue until such time as positive affirmation of acceptance has been obtained from the customer. Customer acceptance is generally based on our products meeting published performance specifications. The amount of revenue allocated to the shipment of products is done on a residual method basis. Under this method, the total arrangement value is allocated first to undelivered contract elements, based on their fair values, with the remainder being allocated to product revenue. The fair value of installation and training services is based upon billable hourly rates and the estimated time to complete the service. Revenue related to undelivered installation services is deferred until such time as installation is completed at the customer's site. Revenue related to training services is recognized ratably over the training period. 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.

Allowance for Doubtful Accounts. We maintain allowances for doubtful accounts for estimated losses resulting from the inability of our customers to make required payments. We specifically analyze accounts receivable and analyze historical bad debts, customer concentrations, customer credit-worthiness, current economic trends and changes in our customer payment terms when evaluating the adequacy of the allowance for doubtful accounts. If the financial condition of our customers were to deteriorate, resulting in an impairment of their ability to make payments or our assumptions are otherwise incorrect, additional allowances may be required.

Excess and Obsolete Inventory. We write down our excess and obsolete inventory equal to the difference between the cost of inventory and the estimated market value based upon assumptions about future product life-cycles, product demand and market conditions. If actual product life-cycles, product demand and market conditions are less favorable than those projected by management, additional inventory write-downs may be required.

Business Acquisitions. We account for acquired or merged businesses using the purchase method of accounting which requires that the assets acquired and liabilities assumed be recorded at the date of acquisition or merger at their respective fair values. The judgments made in determining the estimated fair value assigned to each class of assets acquired and liabilities assumed, as well as asset lives, can materially impact our consolidated financial position and results of operations. Accordingly, for significant items, we typically obtain assistance from independent valuation specialists.

There are several methods that can be used to determine the fair value of assets acquired and liabilities assumed. For intangible assets, we normally utilize the "income method." This method starts with a forecast of all of the expected future net cash flows. These cash flows are then adjusted to present value by applying an appropriate discount rate that reflects the risk factors associated with the cash flow streams. Some of the more significant estimates and assumptions inherent in the income method or other methods include the projected future cash flows (including timing) and the discount rate reflecting the risks inherent in the future cash flows. Determining the useful life of an intangible asset also requires judgment. For example, different types of intangible assets will have different useful lives and certain assets may even be considered to have indefinite useful lives. All of these judgments and estimates can significantly impact our consolidated financial position and results of operations.

The purchase price is preliminarily allocated based on estimates of the fair values of assets acquired and liabilities assumed. The final valuation of net assets is expected to be completed within one year from the acquisition or merger date. At the acquisition or merger date, we begin to formulate a plan to exit or restructure certain activities, if applicable. As we finalize our plans to exit or restructure activities, we may record additional liabilities for, among other things, severance and severance related costs, which would also increase the goodwill recorded.

Goodwill. Our formal annual impairment testing date for goodwill is October 31st or prior to the next annual testing date if an event occurs or circumstances change that would make it more likely than not that the fair value of a reporting unit is below its carrying amount. In fiscal 2007, we changed our annual impairment testing date from December 31 to October 31. This change was made to allow us additional time to complete the impairment test by the end of the financial statement reporting deadline. The goodwill impairment test is a two-step process which requires us to make judgmental assumptions regarding fair value. The initial first step consists of estimating the fair value of our aggregated reporting unit using the market value of our common stock at October 31, multiplied by the number of outstanding common shares (market capitalization) and an implied control premium as if it were to be acquired by a single stockholder. We obtain information on completed sales of similar companies in a comparable industry to estimate an implied control premium for us. We compare the estimated fair value of the reporting unit to its carrying value which includes goodwill. If the results of the initial market capitalization test produce results which are below the reporting unit carrying value, we will also consider if, the market capitalization is temporarily low and, if so, we may also perform a discounted cash flow test. If the estimated fair value is less than the carrying value, the second step is completed to compute the impairment amount by determining the "implied fair value" of goodwill. This determination requires the allocation of the estimated fair value of the reporting unit to the assets and liabilities of the reporting unit. Any remaining unallocated fair value represents the "implied fair value" of goodwill which is compared to the corresponding carrying value to compute the goodwill impairment amount. We believe our estimates of the underlying components of fair value are reasonable. As of December 31, 2007, a one dollar per share increase or decrease in our common stock would have a \$30.5 million effect on our market capitalization before adding a control premium. Testing is required between annual tests if events occur or circumstances change that would, more likely than not, reduce the fair value of the reporting unit below its carrying value. Such an event may occur if, for an extended period of time, the market value of our common stock plus the implied control premium were less than the carrying value. Should actual results not meet our expectations or assumptions change in future years, our impairment assessment could result in a lower fair value estimate which could result in an impairment charge that may materially affect the carrying value of our assets and results from operations.

Long-Lived Assets and Acquired Intangible Assets. We periodically review long-lived assets, other than goodwill, for impairment whenever changes in events or circumstances indicate that the carrying amount of an

asset may not be recoverable. Assumptions and estimates used in the determination of impairment losses, such as future cash flows and disposition costs, may affect the carrying value of long-lived assets and the impairment of such long-lived assets, if any, could have a material effect on our consolidated financial statements.

Share-Based Compensation. Prior to fiscal 2006, we accounted for share-based compensation plans under the recognition and measurement provisions of Accounting Principles Board Opinion No. 25. Effective January 1, 2006, we adopted the provisions of Statement of Financial Accounting Standards ("SFAS") No. 123 (revised 2004) "Share-Based Payment" ("SFAS 123R") using the modified-prospective-transition method. SFAS 123R requires companies to recognize the fair-value of share-based compensation transactions in the statement of operations. The fair value of our stock options is estimated at the date of grant using the Black-Scholes option pricing model. The Black-Scholes valuation calculation requires us to estimate key assumptions such as future stock price volatility, expected terms, risk-free rates and dividend yield. Expected stock price volatility is based on historical volatility of our stock. We use historical data to estimate option exercises and employee terminations within the valuation model. The expected term of options granted is derived from an analysis of historical exercises and remaining contractual life of stock options, and represents the period of time that options granted are expected to be outstanding. The risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant. We have never paid cash dividends, and do not currently intend to pay cash dividends, and thus have assumed a 0% dividend yield. If our actual experience differs significantly from the assumptions used to compute our share-based compensation cost, or if different assumptions had been used, we may have recorded too much or too little share-based compensation cost. In addition, we are required to estimate the expected forfeiture rate of our share grants and only recognize the expense for those shares expected to vest. If the actual forfeiture rate is materially different from our estimate, our share-based compensation expense could be materially different.

Warranties. We provide for the estimated cost of product warranties at the time revenue is recognized. While we engage in product quality programs and processes, our warranty obligation is affected by product failure rates, material usage and service delivery costs incurred in correcting a product failure. Should actual product failure rates, material usage or service delivery costs differ from our estimates, revisions to the estimated warranty liability would be required.

Accounting for Income Taxes. As part of the process of preparing our consolidated financial statements, we are required to estimate our actual current tax exposure together with our temporary differences resulting from differing treatment of items for tax and accounting purposes. These temporary differences result in deferred tax assets and liabilities, which are included within our consolidated balance sheet. We must then assess the likelihood that our deferred tax assets will be recovered from future taxable income and to the extent we believe that recovery is not likely, we must establish a valuation allowance. Significant management judgment is required in determining our provision for income taxes and any valuation allowance recorded against our deferred tax assets. The need for a valuation allowance is based on our estimates of taxable income by jurisdiction in which we operate and the period over which our deferred taxes will be recoverable. In the event that actual results differ from these estimates or we adjust these estimates in future periods, we may need to adjust the valuation allowance, which could materially impact our financial position and results of operations. At December 31, 2007, we had a valuation allowance of \$1.3 million for a portion of deferred tax assets attributable to state R&D tax credits and capital losses.

We adopted FASB Financial Interpretation No. ("FIN") 48, "Accounting for Uncertainty in Income Taxes," at the beginning of fiscal 2007. As a result of the adoption of FIN 48, we recognize liabilities for uncertain tax positions based on the two-step process prescribed by the interpretation. The first step requires us to determine if the weight of available evidence indicates that the tax position has met the threshold for recognition; therefore, we must evaluate whether it is more likely than not that the position will be sustained on audit, including resolution of any related appeals or litigation processes. The second step requires us to measure the tax benefit of the tax position taken, or expected to be taken, in an income tax return as the largest amount that is more than 50% likely of being realized when effectively settled. This measurement step is inherently difficult and requires subjective estimations

of such amounts to determine the probability of various possible outcomes. We reevaluate the uncertain tax positions each quarter based on factors including, but not limited to, changes in facts or circumstances, changes in tax law, effectively settled issues, and new audit activity. Such a change in recognition or measurement could result in the recognition of a tax benefit or an additional charge to the tax provision in the period.

Although we believe the measurement of our liabilities for uncertain tax positions is reasonable, no assurance can be given that the final outcome of these matters will not be different than what is reflected in the historical income tax provisions and accruals. If additional taxes are assessed as a result of an audit or litigation, it could have a material effect on our income tax provision and net income in the period or periods for which that determination is made.

Impact of Recent Accounting Pronouncements

In December 2007, the Financial Accounting Standards Board ("FASB") issued SFAS No. 141R, "Business Combinations" ("SFAS 141R"), which establishes principles and requirements for how an acquirer recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, any noncontrolling interest in an acquiree, and the recognition and measurement of goodwill acquired in a business combination or a gain from a bargain purchase. SFAS 141R applies prospectively to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after December 15, 2008.

In November 2007, the Emerging Issues Task Force ("EITF") issued EITF Issue No. 07-1 ("EITF 07-1"), "Accounting for Collaborative Arrangements," which defines collaborative arrangements and establishes reporting and disclosure requirements for such arrangements. EITF 07-1 is effective for fiscal years beginning after December 15, 2008. We are continuing to evaluate the impact of adopting the provisions EITF 07-1; however, we do not anticipate that adoption will have a material effect on our financial position or results of operations.

In February 2007, the FASB issued SFAS No. 159 ("SFAS 159"), "The Fair Value Option for Financial Assets and Financial Liabilities- Including an amendment of FASB Statement No. 115." SFAS 159 permits entities to choose to measure many financial instruments and certain other items at fair value. The objective is to improve financial reporting by providing entities with the opportunity to mitigate volatility in reporting earnings caused by measuring related assets and liabilities differently without having to apply complex hedge accounting provisions. SFAS 159 is effective for fiscal years that begin after November 15, 2007. Our adoption of SFAS 159 is not expected to impact our financial position or results of operations.

In September 2006, the FASB issued SFAS No. 157 ("SFAS 157"), "Fair Value Measurements." SFAS 157 defines fair value, establishes a framework for measuring fair value and expands disclosures about fair value measurements. SFAS 157 is effective for fiscal years beginning after November 15, 2007. However, on February 12, 2008, the FASB issued FSP FAS 157-2 which defers the effective date of SFAS 157 for one year for nonfinancial assets and non-financial liabilities that are not recognized or disclosed at fair value in the financial statements on a recurring basis. Based on our current operations, we do not expect that the adoption of the non-deferred portion of SFAS 157 will have a material impact on our financial position or results of operations. We have not yet evaluated the impact of the adoption of the deferred portion of SFAS 157.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Interest Rate and Credit Market Risk

We are exposed to changes in interest rates and market liquidity primarily from our investments in certain available-for-sale securities. Our available-for-sale securities consist of fixed and variable rate income investments (U.S. Treasury and Agency securities, asset-backed securities, mortgage-backed securities, auction rate securities and corporate bonds). We continually monitor our exposure to changes in interest rates, market

liquidity and credit ratings of issuers from our available-for-sale securities. It is possible that we are at risk if interest rates, market liquidity or credit ratings of issuers change in an unfavorable direction. The magnitude of any gain or loss will be a function of the difference between the fixed rate of the financial instrument and the market rate and our financial condition and results of operations could be materially affected. Based on sensitivity analysis performed on our financial investments held as of December 31, 2007, an immediate adverse change of 10% in interest rates (e.g. 3.00% to 3.30%) would result in a \$0.1 million decrease in the fair value of our available-for-sale securities.

Foreign Currency Risk

We have branch operations in Taiwan, Singapore, China and Korea and wholly-owned subsidiaries in Europe and Japan. Our international subsidiaries and branches operate primarily using local functional currencies. These foreign branches and subsidiaries are limited in their operations and level of investment so that the risk of currency fluctuations is not material. A substantial portion of our international systems sales are denominated in U.S. dollars with the exception of Japan and, as a result, we have relatively little exposure to foreign currency exchange risk with respect to these sales. Substantially all our sales in Japan are denominated in Japanese yen. From time to time, we may enter into forward exchange contracts to economically hedge a portion of, but not all, existing and anticipated foreign currency denominated transactions expected to occur within 12 months. The change in fair value of the forward contracts is recognized in the Consolidated Statements of Operations each reporting period. As of December 31, 2006 and 2007, we had fifteen and seventeen forward contracts outstanding, respectively. The total notional contract value of these outstanding forward contracts at December 31, 2006 and 2007 was \$6.4 million and \$5.7 million, respectively. We do not use derivative financial instruments for trading or speculative purposes.

Item 8. Financial Statements and Supplementary Data.

The consolidated financial statements required by this item are set forth on the pages indicated at Item 15(a) of this Annual Report on Form 10-K.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

a) Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time period specified in SEC rules and forms. These controls and procedures are also designed to ensure that such information is accumulated and communicated to our management, including our principal executive and principal financial officers, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating disclosure controls and procedures, we have recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. Management is required to apply judgment in evaluating its controls and procedures.

We performed an evaluation under the supervision and with the participation of our management, including our principal executive and principal financial officers, to assess the effectiveness of the design and operation of our disclosure controls and procedures under the Exchange Act as of December 31, 2007. Based on that evaluation, our management, including our principal executive and principal financial officers, concluded that our disclosure controls and procedures were not effective as of December 31, 2007 because of a material weakness in our internal control over financial reporting.

b) Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). 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 accounting principles generally accepted in the United States of America. Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on that criteria, the material weakness described below has caused our management to conclude we did not maintain effective internal control over financial reporting as of December 31, 2007.

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.

A material weakness is defined in Public Company Accounting Oversight Board Auditing Standard No. 5 as a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis.

Our management determined that the process and procedures surrounding the preparation and review of the income tax provision did not include adequate management oversight and review controls as of December 31, 2007. Specifically, we did not ensure that effective oversight of the work performed by our outside tax advisor, Deloitte Tax LLP was exercised. The resulting errors from the material weakness, which were primarily attributable to acquisition related tax matters, did not have a material effect on the Company's financial results for the year ended December 31, 2007. However, combinations of such errors could have resulted in our annual or interim financial statements being materially misstated.

Management's assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2007, excluded PCTA because it was acquired by the Company in December 2007. The total assets and total revenue of PCTA represent 17.0% or \$78.3 million of consolidated total assets (including goodwill and other intangible assets of \$43.2 million and \$16.2 million) and 0.2% or \$0.4 million of consolidated total revenue, of the Company as of and for the year ended December 31, 2007. Registrants are permitted to exclude acquisitions from their assessment of internal control over financial reporting during the first year if, among other circumstances and factors, there is not adequate time between the consummation date of the acquisition and the assessment date for assessing internal controls.

Our consolidated financial statements as of and for the year ended December 31, 2007 have been audited by KPMG LLP, our independent registered public accounting firm, in accordance with the standards of the Public Company Accounting Oversight Board (United States). KPMG LLP has also audited our internal control over financial reporting as of December 31, 2007, as stated in its attestation report included elsewhere in this Annual Report on Form 10-K.

c) Changes in Internal Control Over Financial Reporting

Except for outsourcing the preparation of our year-end income tax provision, there have been no changes during the Company's quarter ended December 31, 2007 in our internal control over financial reporting (as defined in Rules 13a-15(f) under the Exchange Act) that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

d) Remediation Steps Subsequent to December 31, 2007

Management is taking the following measures to address the material weakness identified above and to enhance our internal control over financial reporting procedures:

- Re-evaluate the design of income tax accounting processes and controls and implement new and improved processes and controls, if warranted; and
- Increase the level of review and discussion of significant tax matters and supporting documentation with our outside advisor and senior finance management.

We anticipate that these remediation actions will represent ongoing improvement measures. While we are taking steps to remediate the material weakness, additional measures may be required. During 2008, we will assess the effectiveness of our remediation efforts in connection with our management's tests of internal control over financial reporting.

Item 9B. Other Information.

None.

PART III

Certain information required by Part III is omitted from this Annual Report on Form 10-K because we will file a definitive proxy statement within one hundred twenty (120) days after the end of the fiscal year pursuant to Regulation 14A (the "Proxy Statement") for our Annual Meeting of Stockholders currently scheduled for May 20, 2008, and the information included in the Proxy Statement is incorporated herein by reference.

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this Item with respect to directors and executive officers is incorporated by reference to the Proxy Statement. Information regarding compliance with Section 16 of the Securities Exchange Act of 1934, as amended, is incorporated by reference to the information under the heading "Section 16(a) Beneficial Ownership Reporting Compliance" in the Proxy Statement.

Code of Ethics. We have adopted a code of ethics that applies to our principal executive officer, principal financial officer and controller. This code of ethics is posted on our internet website address at <http://www.rudolphtech.com>.

Item 11. Executive Compensation.

The information required by this Item is incorporated by reference to the Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this Item is incorporated by reference to the Proxy Statement.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this Item is incorporated by reference to the Proxy Statement.

Item 14. Principal Accounting Fees and Services.

The information required by this Item is incorporated by reference to the Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedule.

(a) The following documents are filed as part of this Annual Report on Form 10-K:

1. Financial Statements

The consolidated financial statements and consolidated financial statement information required by this Item are included on pages F-1 through F-8 of this report. The Reports of Independent Registered Public Accounting Firm appear on pages F-2 through F-3 of this report.

2. Financial Statement Schedule

See Index to financial statements on page F-1 of this report.

3. Exhibits

The following is a list of exhibits. Where so indicated, exhibits, which were previously filed, are incorporated by reference.

| <u>Exhibit No.</u> | <u>Description</u> |
|--------------------|---|
| 2.1 | Agreement and Plan of Merger, dated as of June 27, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation (incorporated by reference to Exhibit 99.2 to the Company's Schedule 13D filed with the SEC on July 7, 2005). |
| 2.2 | Amendment No. 1, dated as of December 8, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation, to the Agreement and Plan of Merger, dated as of June 27, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 9, 2005). |
| 2.3 | Asset Purchase Agreement dated as of December 18, 2007, by and among the Registrant, Mariner Acquisition Company LLC, Applied Precision Holding, LLC and Applied Precision, LLC (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 21, 2007). |
| 3.1 | Restated Certificate of Incorporation of Registrant (incorporated herein by reference to Exhibit (3.1(b)) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871 filed on September 9, 1999). |
| 3.2 | Amended and Restated Bylaws of Registrant (incorporated herein by reference to Exhibit (3.2(b)) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 3.3 | Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on February 15, 2006, No. 000-27965). |
| 3.4 | Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on August 1, 2007, No. 000-27965). |
| 4.1 | Rights Agreement (incorporated by reference to Exhibit 4.1 of the Registrant's Registration Statement on Form 8-A, filed with the Commission on June 28, 2005, No 000-27965). |

| <u>Exhibit No.</u> | <u>Description</u> |
|--------------------|--|
| 4.2 | August Technology Corporation 1997 Stock Incentive Plan (incorporated by reference to the Appendix to August Technology Corporation's Proxy Statement for its 2004 Annual Shareholders Meeting, filed with the Commission on March 11, 2004, No. 000-30637). |
| 10.1+ | License Agreement, dated June 28, 1995, between the Registrant and Brown University Research Foundation (incorporated herein by reference to Exhibit (10.1) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.2 | Form of Indemnification Agreement (incorporated herein by reference to Exhibit (10.3) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.3 | Amended 1996 Non-Qualified Stock Option Plan (incorporated herein by reference to Exhibit 10.15 to Registrant's quarterly report on Form 10-Q, filed on November 14, 2001). |
| 10.4 | Form of 1999 Stock Plan (incorporated herein by reference to Exhibit (10.4) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.5 | Form of 1999 Employee Stock Purchase Plan (incorporated herein by reference to Exhibit (10.5) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.6 | Management Agreement, dated as of July 24, 2000, by and between Rudolph Technologies, Inc. and Paul F. McLaughlin (incorporated herein by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000). |
| 10.7 | Management Agreement, dated as of July 24, 2000 by and between Rudolph Technologies, Inc. and Steven R. Roth (incorporated herein by reference to Exhibit 10.14 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000). |
| 10.8 | Registration Agreement, dated June 14, 1996 by and among the Registrant, 11, L.L.C., Riverside Rudolph, L.L.C., Dr. Richard F. Spanier, Paul F. McLaughlin (incorporated herein by reference to Exhibit (10.9) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.9 | Stockholders Agreement, dated June 14, 1996 by and among the Registrant, Administration of Florida, Liberty Partners Holdings 11, L.L.C., Riverside Rudolph, L.L.C., Dr. Richard F. Spanier, Paul McLaughlin, Dale Moorman, Thomas Cooper and (incorporated herein by reference to Exhibit (10.10) to the Registrant's Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.10 | Form of option agreement under 1999 Stock Plan (incorporated herein by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 5, 2004). |
| 10.11 | Form of Restricted Stock Award pursuant to the Rudolph Technologies, Inc. 1999 Stock Plan (filed with Rudolph Technologies, Inc.'s Current Report on Form 8-K filed on June 21, 2005 and incorporated herein by reference). |
| 10.12 | Form of Company Shareholder Voting Agreement (incorporated by reference to Exhibit 99.2 to the Company's Schedule 13D filed with the SEC on July 7, 2005). |
| 14.1 | Rudolph Technologies Code of Business Conduct and Ethics (incorporated herein by reference to Exhibit 14.1 to Registrant's annual report on Form 10-K, filed on March 16, 2006). |

| <u>Exhibit No.</u> | <u>Description</u> |
|--------------------|---|
| 14.2 | Rudolph Technologies Financial Code of Ethics (incorporated herein by reference to Exhibit 14.1 to Registrant's annual report on Form 10-K, filed on March 16, 2006). |
| 18.1 | Preferability letter of KPMG LLP, Independent Registered Public Accounting Firm, filed herewith. |
| 21.1 | Subsidiaries. |
| 23.1 | Consent of KPMG LLP, Independent Registered Public Accounting Firm. |
| 31.1 | Certification of Paul F. McLaughlin, Chief Executive Officer, pursuant to Securities Exchange Act Rule 13a-14(a). |
| 31.2 | Certification of Steven R. Roth, Chief Financial Officer, pursuant to Securities Exchange Act Rule 13a-14(a). |
| 32.1 | Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Paul F. McLaughlin, Chief Executive Officer of Rudolph Technologies, Inc. |
| 32.2 | Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Steven R. Roth, Chief Financial Officer of Rudolph Technologies, Inc. |

+ Confidential treatment has been granted with respect to portions of this exhibit.

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS AND
FINANCIAL STATEMENT SCHEDULE

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Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors of Rudolph Technologies, Inc.:

We have audited the consolidated financial statements of Rudolph Technologies, Inc. and subsidiaries as listed in the accompanying index. In connection with our audits of the consolidated financial statements, we also have audited the consolidated financial statement schedule as listed in the accompanying index. These consolidated financial statements and the financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements and the 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 Rudolph Technologies, Inc. and subsidiaries as of December 31, 2007 and 2006, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2007, 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.

As discussed in Note 12 to the consolidated financial statements, the Company adopted Financial Accounting Standards Board Interpretation No. 48, "Accounting for Uncertainties in Income Taxes", effective January 1, 2007.

As discussed in Note 2 to the consolidated financial statements, the Company adopted Statement of Financial Accounting Standards No. 123(R), "Share-Based Payment", effective January 1, 2006.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Rudolph Technologies, Inc.'s internal control over financial reporting as of December 31, 2007, 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 3, 2008, expressed an adverse opinion on the effectiveness of the Company's internal control over financial reporting.

/s/ KPMG LLP

Short Hills, New Jersey
March 3, 2008

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
Rudolph Technologies, Inc.:

We have audited Rudolph Technologies, Inc.'s internal control over financial reporting as of December 31, 2007, based on criteria established in *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Rudolph Technologies, Inc.'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, included in Item 9A.(b) of the accompanying annual report on Form 10-K. Our responsibility is to express an opinion on 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, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included 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.

Rudolph Technologies, Inc. acquired the probe card test and analysis business (PCTA) of Applied Precision Holdings, LLC and Applied Precision, LLC during 2007, and management excluded from its assessment of the effectiveness of Rudolph Technologies, Inc.'s internal control over financial reporting as of December 31, 2007, PCTA's internal control over financial reporting associated with total assets of \$78 million, including \$43 million of goodwill and \$16 million of other intangible assets, and total revenues of \$0.4 million included in the consolidated financial statements of Rudolph Technologies, Inc. and subsidiaries as of and for the year ended December 31, 2007. Our audit of internal control over financial reporting of Rudolph Technologies, Inc. also excluded an evaluation of the internal control over financial reporting of PCTA.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis. The following material weakness has been identified and included in management's assessment: the Company did not have adequate oversight and review controls regarding the preparation and review of the accounting for income taxes as of December 31, 2007. We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated financial statements of Rudolph Technologies, Inc. and subsidiaries listed

in the accompanying index. This material weakness was considered in determining the nature, timing, and extent of audit tests applied in our audit of the 2007 consolidated financial statements, and this report does not affect our report dated March 3, 2008, which expressed an unqualified opinion on those consolidated financial statements.

In our opinion, because of the effect of the aforementioned material weakness on the achievement of the objectives of the control criteria, Rudolph Technologies, Inc. has not maintained effective internal control over financial reporting as of December 31, 2007, based on criteria established in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

/s/ KPMG LLP

Short Hills, New Jersey
March 3, 2008

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

(In thousands, except per share data)

| | December 31, | |
|---|--------------|-----------|
| | 2006 | 2007 |
| ASSETS | | |
| Current Assets: | | |
| Cash and cash equivalents | \$ 72,479 | \$ 57,420 |
| Marketable securities | 33,714 | 16,505 |
| Accounts receivable, less allowance of \$299 in 2006 and \$214 in 2007 | 65,373 | 50,015 |
| Inventories | 55,433 | 70,987 |
| Income taxes receivable | — | 404 |
| Deferred income taxes | 7,950 | 4,665 |
| Prepaid expenses and other current assets | 1,795 | 3,631 |
| Total current assets | 236,744 | 203,627 |
| Property, plant and equipment, net | 16,882 | 16,062 |
| Goodwill | 145,176 | 188,832 |
| Identifiable intangible assets, net | 37,401 | 48,125 |
| Capitalized software | 3,607 | 3,097 |
| Other assets | 676 | 473 |
| Total assets | \$440,486 | \$460,216 |
| LIABILITIES AND STOCKHOLDERS' EQUITY | | |
| Current liabilities: | | |
| Accounts payable | \$ 8,054 | \$ 7,975 |
| Accrued liabilities: | | |
| Payroll and related expenses | 6,408 | 3,910 |
| Royalties | 1,831 | 780 |
| Warranty | 2,171 | 2,365 |
| Income taxes payable | 2,113 | — |
| Deferred revenue | 11,928 | 5,956 |
| Other current liabilities | 3,297 | 6,343 |
| Total current liabilities | 35,802 | 27,329 |
| Deferred income taxes | 10,647 | 3,556 |
| Other non-current liabilities | 1,161 | 4,853 |
| Total liabilities | 47,610 | 35,738 |
| Commitments and contingencies (Note 8) | | |
| Stockholders' equity: | | |
| Preferred stock, \$0.001 par value, 5,000 shares authorized, no shares issued and outstanding at December 31, 2006 and 2007 | — | — |
| Common stock, \$0.001 par value, 50,000 shares authorized, 28,977 and 30,480 issued and outstanding at December 31, 2006 and 2007, respectively | 29 | 30 |
| Additional paid-in capital | 361,128 | 379,886 |
| Accumulated other comprehensive loss | (1,178) | (214) |
| Retained earnings | 32,897 | 44,776 |
| Total stockholders' equity | 392,876 | 424,478 |
| Total liabilities and stockholders' equity | \$440,486 | \$460,216 |

The accompanying notes are an integral part of these consolidated financial statements.

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share data)

| | Year Ended December 31, | | |
|--|-------------------------|------------------|------------------|
| | 2005 | 2006 | 2007 |
| Revenues | \$82,918 | \$201,168 | \$160,129 |
| Cost of revenues | 44,390 | 103,726 | 78,889 |
| Gross profit | <u>38,528</u> | <u>97,442</u> | <u>81,240</u> |
| Operating expenses: | | | |
| Research and development | 11,901 | 29,856 | 29,993 |
| In-process research and development | — | 9,900 | 1,000 |
| Selling, general and administrative | 20,373 | 32,393 | 33,204 |
| Amortization | 876 | 4,048 | 4,487 |
| Total operating expenses | <u>33,150</u> | <u>76,197</u> | <u>68,684</u> |
| Operating income | 5,378 | 21,245 | 12,556 |
| Interest income and other, net | 1,388 | 3,191 | 4,149 |
| Income before provision for income taxes | 6,766 | 24,436 | 16,705 |
| Provision for income taxes | 1,789 | 11,730 | 4,846 |
| Net income | <u>\$ 4,977</u> | <u>\$ 12,706</u> | <u>\$ 11,859</u> |
| Earnings per share: | | | |
| Basic | \$ 0.29 | \$ 0.47 | \$ 0.41 |
| Diluted | \$ 0.29 | \$ 0.46 | \$ 0.40 |
| Weighted average number of shares outstanding: | | | |
| Basic | 16,899 | 27,276 | 29,168 |
| Diluted | 16,942 | 27,574 | 29,312 |

The accompanying notes are an integral part of these consolidated financial statements.

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
AND COMPREHENSIVE INCOME
For the years ended December 31, 2005, 2006 and 2007
(In thousands)

| | Common Stock | | Additional Paid-in Capital | Accumulated Other Comprehensive Loss | Unearned Compensation | Retained Earnings | Total | Comprehensive Income |
|--|--------------|--------|----------------------------------|---|--------------------------|----------------------|-----------|-------------------------|
| | Shares | Amount | | | | | | |
| Balance at December 31, 2004 | 16,817 | \$ 17 | \$142,986 | \$(1,442) | \$ — | \$15,214 | \$156,775 | |
| Proceeds from sales of shares through share-based compensation plans | 124 | — | 1,503 | — | — | — | 1,503 | |
| Net income | — | — | — | — | — | 4,977 | 4,977 | \$ 4,977 |
| Share-based compensation | — | — | 75 | — | 556 | — | 631 | |
| Unearned compensation | — | — | 2,580 | — | (2,580) | — | — | |
| Tax benefit for sale of shares through share-based compensation plans | — | — | 134 | — | — | — | 134 | |
| Currency translation | — | — | — | 518 | — | — | 518 | 518 |
| Unrealized loss on investments | — | — | — | (4) | — | — | (4) | (4) |
| Comprehensive income | | | | | | | | \$ 5,491 |
| Balance at December 31, 2005 | 16,941 | 17 | 147,278 | (928) | (2,024) | 20,191 | 164,534 | |
| Proceeds from sales of shares through share-based compensation plans | 738 | 1 | 8,957 | — | — | — | 8,958 | |
| Net income | — | — | — | — | — | 12,706 | 12,706 | \$12,706 |
| Share-based compensation | — | — | 1,936 | — | — | — | 1,936 | |
| Adoption of SFAS 123R | — | — | (2,024) | — | 2,024 | — | — | |
| Excess tax benefit for sale of shares through share-based compensation plans | — | — | 1,167 | — | — | — | 1,167 | |
| Common stock issued in merger | 11,298 | 11 | 197,822 | — | — | — | 197,833 | |
| Assumed August Technology options | — | — | 6,040 | — | — | — | 6,040 | |
| Tax benefit on tax deductible transaction costs | — | — | (48) | — | — | — | (48) | |
| Currency translation | — | — | — | (401) | — | — | (401) | (401) |
| Unrealized gain on investments | — | — | — | 151 | — | — | 151 | 151 |
| Comprehensive income | | | | | | | | \$12,456 |
| Balance at December 31, 2006 | 28,977 | 29 | 361,128 | (1,178) | — | 32,897 | 392,876 | |
| Proceeds from sales of shares through share-based compensation plans | 196 | — | 1,344 | — | — | — | 1,344 | |
| Net income | — | — | — | — | — | 11,859 | 11,859 | \$11,859 |
| Adoption of FIN 48 | — | — | — | — | — | 20 | 20 | |
| Share-based compensation | — | — | 3,119 | — | — | — | 3,119 | |
| Excess tax benefit for sale of shares through share-based compensation plans | — | — | 148 | — | — | — | 148 | |
| Common stock issued in acquisition | 1,307 | 1 | 14,147 | — | — | — | 14,148 | |
| Currency translation | — | — | — | 812 | — | — | 812 | 812 |
| Unrealized gain on investments | — | — | — | 152 | — | — | 152 | 152 |
| Comprehensive income | | | | | | | | \$12,823 |
| Balance at December 31, 2007 | 30,480 | 30 | 379,886 | (214) | — | 44,776 | 424,478 | |

The accompanying notes are an integral part of these consolidated financial statements.

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

| | Year Ended December 31, | | |
|--|-------------------------|------------------|------------------|
| | 2005 | 2006 | 2007 |
| Cash flows from operating activities: | | | |
| Net income | \$ 4,977 | \$ 12,706 | \$ 11,859 |
| Adjustments to reconcile net income to net cash and cash equivalents provided by operating activities: | | | |
| Amortization | 876 | 4,372 | 5,700 |
| Depreciation | 1,773 | 4,300 | 4,500 |
| In-process research and development | — | 9,900 | 1,000 |
| Foreign currency exchange loss | 885 | 55 | 45 |
| Net loss on sale of marketable securities | 856 | 162 | — |
| Tax benefit for sale of shares through share-based compensation plans | 134 | — | — |
| Share-based compensation | 631 | 1,936 | 3,119 |
| Provision for doubtful accounts and inventory valuation | 394 | 3,497 | 496 |
| Deferred income taxes | (109) | 5,718 | (3,314) |
| Decrease (increase) in assets excluding effects of business combinations: | | | |
| Accounts receivable | (5,669) | (25,096) | 21,401 |
| Income taxes receivable | — | — | (1,089) |
| Inventories | 3,702 | (7,079) | (5,395) |
| Prepaid expenses and other assets | 626 | 323 | (2,339) |
| Increase (decrease) in liabilities excluding effects of business combinations: | | | |
| Accounts payable | (207) | (438) | (3,326) |
| Accrued liabilities | (1,244) | 790 | (3,958) |
| Income taxes payable | (312) | 610 | (537) |
| Deferred revenue | 4 | 7,873 | (6,131) |
| Other current liabilities | (70) | 1,017 | (617) |
| Non-current liabilities | 830 | (1) | 2,168 |
| Net cash and cash equivalents provided by operating activities | <u>8,077</u> | <u>20,645</u> | <u>23,582</u> |
| Cash flows from investing activities: | | | |
| Purchases of marketable securities | (49,965) | (70,803) | (77,748) |
| Proceeds from sales of marketable securities | 70,404 | 93,410 | 95,147 |
| Purchases of property, plant and equipment | (2,677) | (4,664) | (1,007) |
| Capitalized software | (882) | (2,230) | (712) |
| Purchase of business, net of cash acquired | (863) | (12,109) | (56,166) |
| Net cash and cash equivalents provided by (used in) investing activities | <u>16,017</u> | <u>3,604</u> | <u>(40,486)</u> |
| Cash flows from financing activities: | | | |
| Proceeds from sales of shares through share-based compensation plans | 1,503 | 8,957 | 1,344 |
| Tax benefit for sale of shares through share-based compensation plans | — | 1,167 | 148 |
| Net cash and cash equivalents provided by financing activities | <u>1,503</u> | <u>10,124</u> | <u>1,492</u> |
| Effect of exchange rate changes on cash and cash equivalents | (238) | 120 | 353 |
| Net increase (decrease) in cash and cash equivalents | 25,359 | 34,493 | (15,059) |
| Cash and cash equivalents at beginning of year | 12,627 | 37,986 | 72,479 |
| Cash and cash equivalents at end of year | <u>\$ 37,986</u> | <u>\$ 72,479</u> | <u>\$ 57,420</u> |
| Supplemental disclosure of cash flow information: | | | |
| Net cash paid during the period for: | | | |
| Income taxes | \$ 1,959 | \$ 4,097 | \$ 8,170 |
| Non-cash investing activities: | | | |
| Acquisition costs for business combinations | \$ 2,138 | \$ 6,039 | \$ 1,315 |
| Stock issued for business combinations | \$ — | \$ 197,833 | \$ 14,022 |

The accompanying notes are an integral part of these consolidated financial statements.

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(In thousands, except per share data)

1. Organization and Nature of Operations:

Rudolph Technologies, Inc. (the "Company") designs, develops, manufactures and supports high-performance process control equipment used in semiconductor device manufacturing. The Company has branch sales and service offices in China, Korea, Taiwan and Singapore and wholly-owned sales and service subsidiaries in Europe, Japan, Washington and Minnesota. The Company operates in a single segment and supports a wide variety of applications in the areas of diffusion, etch, lithography, CVD, PVD, CMP and macro-defect detection and classification.

On February 15, 2006, the Company completed its merger with August Technology Corporation. August Technology was a world-class provider of automated defect detection and product characterization systems for microelectronic device manufacturers. Their systems provided manufacturers with information that enables process-enhancing decisions, ultimately lowering manufacturing costs and decreasing time-to-market. They had 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. In addition, they had introduced new products for edge and backside inspection systems 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.

On December 18, 2007, the Company's wholly-owned subsidiary, Mariner Acquisition Company LLC, entered into, and consummated the transactions contemplated by, an agreement with Applied Precision Holdings, LLC and Applied Precision, LLC (collectively, "Applied"), pursuant to which it purchased substantially all of the assets and assumed certain liabilities of the semiconductor division of Applied to be known as the Rudolph Technologies Probe Card Test and Analysis division ("PCTA"). The PCTA is engaged in the business of designing, developing, manufacturing, marketing, selling and supporting advanced probe card metrology and wafer probe process monitoring equipment and is complementary to the Company's existing business.

2. Summary of Significant Accounting Policies:

A. Consolidation:

The consolidated financial statements reflect the accounts of the Company and its wholly-owned subsidiaries. All intercompany accounts and transactions have been eliminated.

B. Revenue Recognition:

Revenue is recognized upon shipment provided that there is persuasive evidence of an arrangement, delivery has occurred, the sales price is fixed or determinable, and collection of the related receivable is reasonably assured. Certain sales of the Company's products are sold and accounted for as multiple element arrangements, consisting primarily of the sale of the product, software, installation and training services. The Company generally recognizes product revenue upon shipment. When customer acceptance is subjective and not obtained prior to shipment, the Company defers product revenue until such time as positive affirmation of acceptance has been obtained from the customer. Customer acceptance is generally based on the Company's products meeting published performance specifications. The amount of revenue allocated to the shipment of products is done on a residual method basis. Under this method, the total arrangement value is allocated first to undelivered contract elements, based on their fair values, with the remainder being allocated to product revenue. The fair value of installation, training and other services is based upon billable hourly rates and the estimated time to complete the service. Revenue related to undelivered installation services is deferred until such time as installation is

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(In thousands, except per share data)

completed at the customer's site. Revenue related to training services is recognized ratably over the training period. 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. If vendor specific objective evidence does not exist for the undelivered elements of an arrangement that includes software, all revenue is deferred and recognized ratably over the period required to deliver the remaining elements.

Revenues from parts sales are recognized at the time of shipment. Revenue from service contracts is recognized ratably over the period of the contract. A provision for the estimated cost of fulfilling warranty obligations is recorded at the time the related revenue is recognized.

License support and maintenance revenue is recognized ratably over the contract period.

C. Estimates:

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Significant estimates made by management include allowance for doubtful accounts, inventory obsolescence, purchase accounting allocations, recoverability and useful lives of property, plant and equipment and identifiable intangible assets, recoverability of goodwill, recoverability of deferred tax assets, liabilities for product warranty, accruals for contingencies and share-based payments, including forfeitures and liabilities for tax uncertainties. Actual results could differ from those estimates.

D. Cash and Cash Equivalents:

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

E. Marketable Securities:

The Company determined that all of its investment securities are to be classified as available-for-sale. Available-for-sale securities are carried at fair value, with the unrealized gains and losses reported in stockholders' equity under the caption "Accumulated other comprehensive loss." Realized gains and losses, interest and dividends on available-for-sale securities are included in interest income and other, net. Available-for-sale securities are classified as current assets regardless of their maturity date if they are available for use in current operations. The Company reviews its investment portfolio to identify and evaluate investments that have indications of possible impairment. Factors considered in determining whether a loss is other-than-temporary include the length of time and extent to which fair value has been less than the cost basis, credit quality and the Company's ability and intent to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value. When a decline in fair value is determined to be other-than-temporary, unrealized losses on available-for-sale securities are charged against earnings. The specific identification method is used to determine the gains and losses on marketable securities.

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
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F. Allowance for Doubtful Accounts:

The Company evaluates the collectability of accounts receivable based on a combination of factors. In the cases where the Company is aware of circumstances that may impair a specific customer's ability to meet its financial obligation, the Company records a specific allowance against amounts due, and thereby reduces the net recognized receivable to the amount management reasonably believes will be collected. For all other customers, the Company recognizes allowances for doubtful accounts based on the length of time the receivables are outstanding, industry and geographic concentrations, the current business environment and historical experience.

G. Inventories:

Inventories are stated at the lower of cost (first-in, first-out) or market. Cost includes material, labor and overhead costs. Demonstration units, which are available for sale, are stated at their manufacturing costs and reserves are recorded to adjust the demonstration units to their net realizable value.

H. Property, Plant and Equipment:

Property, plant and equipment are stated at cost. Depreciation of property, plant and equipment is computed using the straight-line method over the estimated useful lives of the assets which are thirty years for buildings, four to seven years for machinery and equipment, seven years for furniture and fixtures, and three years for computer equipment. Leasehold improvements are amortized using the straight-line method over the lesser of the lease term or the estimated useful life of the related asset. Repairs and maintenance costs are expensed as incurred and major renewals and betterments are capitalized.

I. Impairment of Long-Lived Assets:

Long-lived assets, such as property, plant, and equipment, and identifiable acquired intangible assets with definite useful lives, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized by the amount by which the carrying amount of the asset exceeds the fair value of the asset, which is generally based on discounted cash flows.

J. Goodwill and Other Intangible Assets:

Intangible assets with definitive useful lives are amortized using the straight-line method over their estimated useful lives. Goodwill and intangible assets with indefinite useful lives are not amortized but are tested for impairment at least annually and when there are indications of impairment in accordance with the provisions of Statement of Financial Accounting Standards ("SFAS") No. 142, "Goodwill and Other Intangible Assets." Under SFAS No. 142, goodwill impairment is deemed to exist if the net book value of a reporting unit exceeds its estimated fair value. The Company estimates the fair value of its aggregated reporting unit using the market value of its common stock at October 31 multiplied by the number of outstanding common shares (market capitalization) and an implied control premium as if it were to be acquired by a single stockholder. The Company obtains information on completed sales of similar companies in a comparable industry to estimate the implied control premium for the Company. If the results of the initial market capitalization test produce results which are below the reporting unit carrying value, the Company may also perform a discounted cash flow test. The Company tested for goodwill impairment on October 31, 2007. In 2007, the Company changed its annual impairment testing date from December 31 to October 31. The Company believes October 31 is preferable as it provides additional time prior to the Company's year-end of December 31 to complete the impairment testing and report the results of those tests in its annual filing on Form 10-K.

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K. Concentration of Credit Risk:

Financial instruments, which potentially subject the Company to concentrations of credit risk, consist primarily of accounts receivable, cash and cash equivalents and marketable securities. The Company performs ongoing credit evaluations of its customers and generally does not require collateral for sales on credit. The Company maintains allowances for potential credit losses. The Company maintains cash and cash equivalents and marketable securities with higher credit quality issuers and monitors the amount of credit exposure to any one issuer.

L. Warranties:

The Company generally provides a warranty on its products for a period of twelve to fifteen months against defects in material and workmanship. The Company provides for the estimated cost of product warranties at the time revenue is recognized.

M. Income Taxes:

The Company accounts for income taxes using the asset and liability approach for deferred taxes which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in the Company's consolidated financial statements or tax returns. A valuation allowance is recorded to reduce a deferred tax asset to that portion which more likely than not will be realized. Additionally, taxes are separated into current and non-current amounts based on the classification of the related amounts for financial reporting purposes. The Company does not provide for federal income taxes on the undistributed earnings of its foreign operations as it is the Company's intention to permanently re-invest undistributed earnings.

On July 13, 2006, the Financial Accounting Standards Board ("FASB") issued Interpretation No. 48, "Accounting for Uncertainty in Income Taxes—An Interpretation of FASB Statement No. 109" ("FIN 48"). Under FIN 48, the impact of an uncertain income tax position is recognized at the largest amount that is more-likely-than-not to be sustained upon audit by the relevant taxing authority and includes consideration of interest and penalties. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained. Under FIN 48, the liability for unrecognized tax benefits is classified as non-current unless the liability is expected to be settled in cash within 12 months of the reporting date.

N. Translation of Foreign Currencies:

The Company's international subsidiaries and branch offices operate primarily using local functional currencies. Assets and liabilities are translated at exchange rates in effect at the balance sheet date, and income and expense accounts and cash flow items are translated at average monthly exchange rates during the period.

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Net exchange gains or losses resulting from the translation of foreign financial statements and the effect of exchange rates on intercompany transactions of a long-term investment nature are recorded directly as a separate component of stockholders' equity under the caption, "Accumulated other comprehensive loss". Any foreign currency gains or losses related to transactions are included in operating results. Net foreign exchange rate gains and losses included in operating results are not material for all periods presented. The Company had accumulated exchange losses resulting from the translation of foreign operation financial statements of \$1,010 and \$198 as of December 31, 2006 and 2007, respectively.

O. Share-based Compensation:

Prior to January 1, 2006, the Company's share-based compensation plans were accounted for in accordance with Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees" and related interpretations. Under this method, no compensation expense for stock options was recognized as long as the exercise price equaled or exceeded the market price of the underlying stock on the date of the grant. Compensation cost for restricted stock units issued to employees and directors was based upon the market value on the date grant. Such compensation costs were charged to unearned compensation in stockholders' equity and amortized to expense over the requisite service period. The Company elected the disclosure-only alternative permitted under SFAS No. 123, "Accounting for Stock-Based Compensation" ("SFAS 123"), as amended by SFAS No. 148, "Accounting for Stock-Based Compensation—Transition and Disclosure" ("SFAS 148"), for fixed stock-based awards to employees.

On January 1, 2006, the Company adopted SFAS No. 123 (revised 2004), "Share-Based Payment" ("SFAS 123R") using the modified prospective method, which requires measurement of compensation cost for all stock awards at fair value on date of grant and recognition of compensation cost over the service period for awards expected to vest. The fair value of stock options is determined using the Black-Scholes valuation model, which is consistent with the Company's valuation model previously utilized for options in footnote disclosures required under SFAS 123, as amended by SFAS 148. The Black-Scholes valuation calculation requires the Company to estimate key assumptions such as future stock price volatility, expected terms, risk-free interest rates and dividend yield. Expected stock price volatility is based on historical volatility of the Company's stock. The Company uses historical data to estimate option exercises and employee terminations within the valuation model. The expected term of options granted is derived from an analysis of historical exercises and remaining contractual life of stock options, and represents the period of time that options granted are expected to be outstanding. The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant. The Company has never paid cash dividends, and does not currently intend to pay cash dividends, and thus has assumed a 0% dividend yield. Such value is recognized as expense over the service period, net of estimated forfeitures. The estimation of stock awards that will ultimately vest requires significant judgment. The Company considers many factors when estimating expected forfeitures, including types of awards, employee class, and historical experience. Actual results, and future changes in estimates, may differ substantially from the Company's current estimates. Prior to the adoption of SFAS 123R, the Company recorded forfeitures as incurred. Upon adoption of SFAS 123R, compensation expense for all share-based payments includes an estimate for forfeitures and is recognized over the expected term of the share-based awards using the straight-line method. The impact of this change on prior period compensation cost was immaterial. Additionally, the unearned compensation of \$2,024 at the SFAS 123R adoption date relating to previous restricted stock unit grants was offset against additional paid-in capital.

Results for prior periods have not been restated to reflect the effects of implementing SFAS 123R. The following table illustrates the effect on net income and earnings per share if the Company had applied the fair value recognition provisions of SFAS 123, as amended by SFAS 148, to stock options granted under the Company's

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stock-based employee compensation plans for year ended December 31, 2005. For purposes of this pro forma disclosure, the value of the stock options was estimated using a Black-Scholes option-pricing formula and amortized to expense over the options' vesting periods, with option forfeitures accounted for as they occurred:

| | <u>Year Ended December 31, 2005</u> |
|--|---|
| Net income, as reported | \$ 4,977 |
| Add: Share-based employee compensation expense included in reported net income, net of related income tax benefits | 396 |
| Deduct: Share-based employee compensation expense determined under fair value based method, net of related income tax benefits | <u>(8,902)</u> |
| Pro forma net loss | <u><u>\$(3,529)</u></u> |
| <i>Net income (loss) per share:</i> | |
| Basic-as reported | \$ 0.29 |
| Basic-pro forma | \$ (0.21) |
| Diluted-as reported | \$ 0.29 |
| Diluted-pro forma | \$ (0.21) |

Effective April 14, 2005, the Company accelerated the vesting of all unvested stock options awarded to employees, officers and other eligible participants under the Company's 1999 Stock Plan. A total of 959 options to purchase shares of Rudolph stock became immediately exercisable as a result of the vesting acceleration, however only 87 of the stock options, or 9% of the total accelerated shares, were "in the money". These options were typically scheduled to incrementally vest beginning on the first anniversary of their respective grant date. The Company recognized a de minimus charge in the second quarter of 2005 as a result of the acceleration. The Company took this action because it produces a more favorable impact on the Company's results of operations following the adoption of SFAS No. 123R, effective January 1, 2006. By accelerating the vesting of these options, the Company believes it will save approximately \$7.0 million in future compensation expense that would have been required to be expensed, beginning January 1, 2006, over the remaining service period. In addition, effective May 1, 2005, the Company amended its ESPP. The amendment removed the "look back" provision, that was previously a part of the ESPP and reduced the discount for purchasing shares of the Company's stock to five percent. These modifications to the ESPP were also made as a result of the Company's anticipated adoption of SFAS No. 123R.

For additional information on the Company's share-based compensation plans, see Note 10 of Notes to the Consolidated Financial Statements.

P. Research and Development and Software Development Costs:

Expenditures for research and development are expensed as incurred. The Company accounts for software development costs in accordance with SFAS No. 86, "Accounting for Costs of Computer Software to Be Sold, Leased or Marketed." SFAS No. 86 requires that certain software product development costs incurred after technological feasibility has been established, be capitalized and amortized, commencing upon the general release of the software product to the Company's customers, over the economic life of the software product. Annual amortization of capitalized costs is computed using the greater of: (i) the ratio of current gross revenues for the software product over the total of current and anticipated future gross revenues for the software product or (ii) the straight-line basis, typically over seven years. Software product development costs incurred prior to the product reaching technological feasibility are expensed as incurred and included in research and development

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costs. At December 31, 2006 and 2007, capitalized software development costs were \$3,607 and \$3,097, respectively. There was no amortization of software development cost during the year ended December 31, 2005. During the years ended December 31, 2006 and 2007, \$345 and \$704 of software development costs were amortized, respectively. During 2007, the Company recorded a write down of capitalized software of \$507 in cost of revenues in the Consolidated Statement of Operations.

Q. Fair Value of Financial Instruments:

The carrying amounts of the Company's financial instruments, including cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities, approximate fair value due to their short maturities.

R. Derivative Instruments and Hedging Activities:

The Company reports derivatives and hedging activities in accordance with SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities." This statement requires that all derivative instruments be recorded on the balance sheet at fair value. Changes in the fair value of derivatives are recorded each period in current earnings or accumulated other comprehensive loss, depending on whether the derivative is designated as part of a hedge transaction, and if it is, depending on the type of hedge transaction.

The Company, when it considers it to be appropriate, enters into forward contracts to hedge the economic exposures arising from foreign currency denominated transactions. At December 31, 2006 and 2007, these contracts included the sale of Japanese Yen to purchase U.S. dollars. The foreign currency forward contracts were entered into by our Japanese subsidiary to hedge a portion of certain intercompany obligations. The forward contracts are not designated as hedges for accounting purposes and therefore, the change in fair value is recorded in selling, general and administrative expenses in the Consolidated Statements of Operations.

The dollar equivalent of the US dollar forward contracts and related fair values as of December 31, 2006 and 2007 were as follows:

| | December 31, | |
|---------------------------------------|--------------|----------|
| | 2006 | 2007 |
| Notional amount | \$6,439 | \$5,706 |
| Fair value of asset (liability) | \$ 144 | \$ (127) |

The Company recognized a gain of \$172, \$106 and \$278 with respect to forward contracts which matured during 2005, 2006 and 2007, respectively. The aggregate notional amount of these contracts was \$1,736, \$6,277 and \$8,802, respectively.

S. Reclassifications:

Certain prior year amounts have been reclassified to conform to the 2007 financial statement presentation.

T. Recent Accounting Pronouncements:

In December 2007, the Financial Accounting Standards Board ("FASB") issued SFAS No. 141R, "Business Combinations" ("SFAS 141R"), which establishes principles and requirements for how an acquirer recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, any

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noncontrolling interest in an acquiree, and the recognition and measurement of goodwill acquired in a business combination or a gain from a bargain purchase. SFAS 141R applies prospectively to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after December 15, 2008.

In November 2007, the Emerging Issues Task Force ("EITF") issued EITF Issue No. 07-1 ("EITF 07-1"), "Accounting for Collaborative Arrangements," which defines collaborative arrangements and establishes reporting and disclosure requirements for such arrangements. EITF 07-1 is effective for fiscal years beginning after December 15, 2008. The Company is continuing to evaluate the impact of adopting the provisions EITF 07-1; however, it does not anticipate that adoption will have a material effect on its financial position or results of operations.

In February 2007, the FASB issued SFAS No. 159 ("SFAS 159"), "The Fair Value Option for Financial Assets and Financial Liabilities- Including an amendment of FASB Statement No. 115." SFAS 159 permits entities to choose to measure many financial instruments and certain other items at fair value. The objective is to improve financial reporting by providing entities with the opportunity to mitigate volatility in reporting earnings caused by measuring related assets and liabilities differently without having to apply complex hedge accounting provisions. SFAS 159 is effective for fiscal years that begin after November 15, 2007. The Company's adoption of SFAS 159 is not expected to impact its financial position or results of operations.

In September 2006, the FASB issued SFAS No. 157 ("SFAS 157"), "Fair Value Measurements." SFAS 157 defines fair value, establishes a framework for measuring fair value and expands disclosures about fair value measurements. SFAS 157 is effective for fiscal years beginning after November 15, 2007. However, on February 12, 2008, the FASB issued FSP FAS 157-2 which defers the effective date of SFAS 157 for one year for nonfinancial assets and nonfinancial liabilities that are not recognized or disclosed at fair value in the financial statements on a recurring basis. Based on the Company's current operations, it does not expect that the adoption of the non-deferred portion of SFAS 157 will have a material impact on its financial position or results of operations. We have not yet evaluated the impact of the adoption of the deferred portion of SFAS 157.

3. Business Combinations:

August Technology

On February 15, 2006, the merger with August Technology was approved by its shareholders, and the issuance of shares of Rudolph common stock was approved by Rudolph's stockholders, at their respective special meetings. The combined company is known as Rudolph Technologies, Inc. The aggregate purchase price was \$246,739, consisted of \$37,200 in cash, 11,298 shares of common stock valued at \$197,833, the fair value of assumed August Technology options of \$6,040 and transaction costs of \$5,666.

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The transaction was accounted for using the purchase method of accounting for business combinations and, accordingly, the results of operations of August Technology have been included in the Company's consolidated financial statements since the date of merger. The following table summarizes the estimated fair value of the assets acquired and liabilities assumed at the date of merger:

| | |
|--|------------------|
| Cash | \$ 29,893 |
| Marketable securities | 13,418 |
| Accounts receivable | 14,283 |
| Inventories | 23,582 |
| Property, plant and equipment | 6,075 |
| Goodwill | 132,809 |
| Identifiable intangible assets | 42,700 |
| Other assets | 1,585 |
| Accounts payable and accrued liabilities | (11,733) |
| Deferred taxes | (4,279) |
| Other liabilities | (1,594) |
| | <u>\$246,739</u> |

The above purchase price has been allocated based on estimates of the fair values of assets acquired and liabilities assumed. With the exception of future tax adjustments related to the merger, the effects of purchase accounting were completed during 2006. The fair value of inventories included a step-up of \$3,842, of which \$3,699 and \$143 were recognized in cost of revenues for the years ended December 31, 2006 and 2007, respectively. At the merger date, the Company formulated a plan to exit or restructure certain activities. The Company recorded \$173 for these activities, which have occurred during the year ended December 31, 2006.

Factors that contributed to a purchase price that resulted in recognition of goodwill include:

- the combination of August Technology's defect inspection technology with Rudolph's *MetaPULSE* metrology products is expected to improve copper metrology process controls and should allow the combined company to offer a more comprehensive and better integrated set of tools to its customers and enhance its ability to compete more effectively;
- the combination of August Technology's defect inspection experience and technology with Rudolph's complementary defect inspection experience and technology should allow the combined company to offer its customers a more comprehensive suite of tools more quickly, thus enhancing the company's ability to compete more effectively;
- consolidation of territorial sales activities and common marketing programs;
- redeployment or elimination of duplicative functional and facilities costs;
- reduction of customer service costs as a result of the consolidation of the companies' global customer service and regional support networks;
- creation of a larger sales and service organization worldwide, the expansion of the companies' dedicated sales teams and a higher profile with customers, which is expected to present greater opportunities for potential revenue enhancements by marketing and cross-selling the products of the combined company;
- avoidance of incurring certain costs that the companies would expect to incur on a stand-alone basis in furtherance of their growth strategies;

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- the combined company is expected to have greater prominence within the financial community, providing improved access to capital;
- the direct sales and service presence of the combined company in the important Japanese semiconductor manufacturing market (where Rudolph has three offices with over 20 employees) may increase opportunities for product orders;
- the combined experience, financial resources, development expertise, size and breadth of product offerings of the combined company may allow it to respond more quickly and effectively to technological change, increased consolidation and industry demands; and
- the ability of the assembled workforce to continue to deliver value-added solutions and develop new products and industry leading production technologies that solve customer problems.

Approximately \$9.9 million of the acquired identifiable intangible assets represented the estimated fair value of in-process research and development ("IPRD") projects that had not yet reached technological feasibility and had no alternative future use. Accordingly, this amount was immediately expensed in the Consolidated Statement of Operations at the merger date. The purchased in-process technology projects was comprised of next generation automated macro-defect inspection systems with enhanced defect capture capabilities and software projects which improve the tools' capabilities. The defect inspection and software projects had a value assigned to them of \$6.9 million and \$3.0 million, respectively. The defect inspection projects related to the next generation of the Company's AXi defect detection systems with enhanced defect capture capabilities and were completed by the third quarter of 2006. The software projects related to new enhancement features to the Company's next generation inspection products and were completed in 2007.

PCTA

On December 18, 2007, Rudolph and a wholly-owned subsidiary of the Company entered into, and consummated the transactions contemplated by, an Asset Purchase Agreement with Applied Precision Holdings, LLC and Applied Precision, LLC (collectively, "Applied"), pursuant to which the Company purchased substantially all of the assets and assumed certain liabilities of the semiconductor division of Applied to be known as the Rudolph Technologies Probe Card Test and Analysis division ("PCTA"). The PCTA is engaged in the business of designing, developing, manufacturing, marketing, selling and supporting advanced probe card metrology and wafer probe process monitoring equipment and is complementary to the Company's existing business.

The closing under the Asset Purchase Agreement occurred on December 18, 2007 and the Company paid \$57,897 in cash and acquisition costs and issued 1,307 shares of common stock for a total purchase price of \$71,919. The purchase price has been preliminarily allocated based on estimates of the fair values of assets acquired and liabilities assumed. With the exception of future tax adjustments related to the acquisition, the final valuation of net assets is expected to be completed during 2008, but no later than one year from the acquisition date. The results of operations of the PCTA have been included in our consolidated financials statements since the date of the acquisition.

The Company has agreed to assume the following liabilities of the PCTA: accounts payable, assigned contracts, licenses and leases, warranty claims and employee liabilities, all as more fully described in the Asset Purchase Agreement. In addition, the Company has agreed to assume the defense of and all obligations relating to certain litigation currently pending against Applied.

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The transaction was accounted for using the purchase method of accounting for business combinations and, accordingly, the results of operations of the PCTA have been included in the Company's consolidated financial statements since the date of acquisition. The following table summarizes the estimated fair value of the assets acquired and liabilities assumed at the date of acquisition:

| | |
|---|-----------------|
| Accounts receivable | 5,660 |
| Inventories | 12,001 |
| Prepaid expenses and other current assets | 157 |
| Property, plant and equipment | 1,123 |
| Goodwill | 43,194 |
| Identifiable intangible assets | 16,200 |
| Accounts payable and accrued liabilities | (3,776) |
| Deferred revenue | (159) |
| Other liabilities | <u>(2,481)</u> |
| | <u>\$71,919</u> |

The fair value of inventories included a step-up of \$2,418, of which none was recognized in cost of revenues for the year ended December 31, 2007. At the acquisition date, the Company formulated a plan to exit or restructure certain activities. The Company recorded \$254 for these activities during the year ended December 31, 2007.

Factors that contributed to a purchase price that resulted in recognition of goodwill include:

- the combination of PCTA and Rudolph products should allow the combined company to offer its customers a more comprehensive suite of tools and a better integrated set of tools, thus enhancing the Company's ability to compete more effectively;
- the ability of the assembled workforce to continue to deliver value-added solutions and develop new products and industry leading production technologies that solve customer problems;
- consolidation of territorial sales activities and common marketing programs;
- redeployment or elimination of duplicative functional and facilities costs;
- reduction of customer service costs as a result of the consolidation of the companies' global customer service and regional support networks; and
- the combined experience, financial resources, development expertise, size and breadth of product offerings of the combined company may allow it to respond more quickly and effectively to technological change, increased consolidation and industry demands

Of the \$16,200 of acquired identifiable assets, the following table reflects the allocation of the acquired identifiable assets and related preliminary estimates of useful lives:

| | | |
|--|------------------|--|
| Developed technology | \$ 11,600 | 8 years estimated useful life |
| Customer and distributor relationships | 2,900 | 7.2 years weighted average estimated useful life |
| Trade names | 700 | 3 years estimated useful life |
| In-process research and development | <u>1,000</u> | |
| | <u>\$ 16,200</u> | |

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Approximately \$1.0 million of the acquired identifiable intangible assets represents the estimated fair value of in-process research and development (“IPRD”) projects that had not yet reached technological feasibility and had no alternative future use. Accordingly, this amount was immediately expensed in the Consolidated Statement of Operations at the merger date. The purchased in-process technology project was a probe card test project, related to the next generation of the Company’s ProbeWoRx systems with enhanced capabilities, and was approximately 20% complete as of the date of acquisition. The estimated costs to complete this project of \$2,100, consist primarily of internal engineering labor costs which will be completed in 2008. If we are not successful in completing the inspection project on a timely basis, the future sales of the Company’s inspection products may be adversely affected resulting in erosion of the Company’s market share.

Pro Forma Combined Results of Operations

The following unaudited pro forma consolidated financial information presents the combined results of operations of the Company, August Technology and PCTA as if the respective merger and acquisition occurred at the beginning of the period presented, after giving effect to certain adjustments, including interest income and amortization expense. Due to the non-recurring nature of the IPRD and inventory step-up charges, these amounts have not been included in the unaudited pro forma consolidated financial information. The unaudited pro forma consolidated financial information does not necessarily reflect the results of operations that would have occurred had the merger and acquisition been completed as of the date indicated or of the results that may be obtained in the future.

| | Year Ended December 31, | | |
|---------------------|-------------------------|---------------------|-----------|
| | 2005 | 2006 (Unaudited) | 2007 |
| Revenues | \$202,825 | \$249,731 | \$194,262 |
| Net income | \$ 8,728 | \$ 25,526 | \$ 13,213 |
| Earnings per share: | | | |
| Basic | \$ 0.30 | \$ 0.85 | \$ 0.43 |
| Diluted | \$ 0.30 | \$ 0.84 | \$ 0.43 |

RVSI Inspection

On January 22, 2008, the Company announced that it had acquired all intellectual property and selected assets from privately-held RVSI Inspection, LLC, headquartered in Hauppauge, New York. The Company paid cash for this acquisition and will account for it as a business combination.

4. Marketable Securities:

At December 31, 2006, marketable securities are categorized as follows:

| | Amortized Cost | Gross Unrealized Holding Gains | Gross Unrealized Holding Losses | Fair Value |
|--|-------------------|-----------------------------------|------------------------------------|---------------|
| Treasury notes and obligations of U.S. | | | | |
| Government agencies | \$ 8,058 | \$ 2 | \$(154) | \$ 7,906 |
| Tax-free auction rate securities | 19,675 | — | — | 19,675 |
| Asset-backed securities | 1,654 | — | (28) | 1,626 |
| Corporate bonds | 3,689 | — | (73) | 3,616 |
| Mortgage-backed securities | 913 | 1 | (23) | 891 |
| Total marketable securities | \$33,989 | \$ 3 | \$(278) | \$33,714 |

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At December 31, 2007, marketable securities are categorized as follows:

| | <u>Amortized Cost</u> | <u>Gross Unrealized Holding Gains</u> | <u>Gross Unrealized Holding Losses</u> | <u>Fair Value</u> |
|--|---------------------------|---|--|-----------------------|
| Treasury notes and obligations of U.S. | | | | |
| Government agencies | \$ 2,938 | \$ 25 | \$ (5) | \$ 2,958 |
| Tax-free auction rate securities | 9,227 | — | — | 9,227 |
| Asset-backed securities | 1,132 | — | (7) | 1,125 |
| Corporate bonds | 2,605 | 2 | (125) | 2,482 |
| Mortgage-backed securities | 726 | 2 | (15) | 713 |
| Total marketable securities | <u>\$16,628</u> | <u>\$ 29</u> | <u>\$(152)</u> | <u>\$16,505</u> |

The amortized cost and estimated fair value of marketable securities classified by the maturity date listed on the security, regardless of the Consolidated Balance Sheet classification, is as follows at December 31, 2006 and 2007:

| | <u>December 31, 2006</u> | | <u>December 31, 2007</u> | |
|--|---------------------------|-----------------------|---------------------------|-----------------------|
| | <u>Amortized Cost</u> | <u>Fair Value</u> | <u>Amortized Cost</u> | <u>Fair Value</u> |
| Due within one year | \$22,358 | \$22,339 | \$ 9,857 | \$ 9,848 |
| Due after one through five years | 9,966 | 9,749 | 4,240 | 4,142 |
| Due after five through ten years | 457 | 447 | 222 | 219 |
| Due after ten years | 1,208 | 1,179 | 2,309 | 2,296 |
| Total marketable securities | <u>\$33,989</u> | <u>\$33,714</u> | <u>\$16,628</u> | <u>\$16,505</u> |

Net realized losses of \$856, \$162 and \$0 were included in the Consolidated Statement of Operations for 2005, 2006 and 2007, respectively.

The following table summarizes the estimated fair value and gross unrealized holding losses of marketable securities, aggregated by investment instrument and period of time in an unrealized loss position at December 31, 2006:

| | <u>In Unrealized Loss Position for less than 12 Months</u> | | <u>In Unrealized Loss Position for 12 Months or Greater</u> | | <u>Total in Unrealized Loss Position</u> | |
|--------------------------------------|--|--|---|--|--|--|
| | <u>Fair Value</u> | <u>Gross Unrealized Losses</u> | <u>Fair Value</u> | <u>Gross Unrealized Losses</u> | <u>Fair Value</u> | <u>Gross Unrealized Losses</u> |
| Treasury notes and obligations of | | | | | | |
| U.S. Government agencies | \$— | \$— | \$ 7,625 | \$(154) | \$ 7,626 | \$(154) |
| Tax-free auction rate securities ... | — | — | — | — | — | — |
| Asset-backed securities | 31 | (1) | 1,506 | (27) | 1,537 | (28) |
| Corporate bonds | — | — | 3,689 | (73) | 3,689 | (73) |
| Mortgage-backed securities | 22 | — | 818 | (23) | 840 | (23) |
| Total marketable securities ... | <u>\$ 53</u> | <u>\$ (1)</u> | <u>\$13,638</u> | <u>\$(277)</u> | <u>\$13,692</u> | <u>\$(278)</u> |

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(In thousands, except per share data)

The following table summarizes the estimated fair value and gross unrealized holding losses of marketable securities, aggregated by investment instrument and period of time in an unrealized loss position at December 31, 2007:

| | In Unrealized Loss Position for less than 12 Months | | In Unrealized Loss Position for 12 Months or Greater | | Total in Unrealized Loss Position | |
|--|--|-------------------------------|---|-------------------------------|--------------------------------------|-------------------------------|
| | Fair Value | Gross Unrealized Losses | Fair Value | Gross Unrealized Losses | Fair Value | Gross Unrealized Losses |
| Treasury notes and obligations of | | | | | | |
| U.S. Government agencies | \$— | \$— | \$ 996 | \$ (5) | \$ 996 | \$ (5) |
| Tax-free auction rate securities . . . | — | — | — | — | — | — |
| Asset-backed securities | 16 | — | 1,006 | (7) | 1,022 | (7) |
| Corporate bonds | 45 | (1) | 2,203 | (124) | 2,248 | (125) |
| Mortgage-backed securities | — | — | 505 | (15) | 505 | (15) |
| Total marketable securities . . . | <u>\$ 61</u> | <u>\$ (1)</u> | <u>\$4,710</u> | <u>\$(151)</u> | <u>\$4,771</u> | <u>\$(152)</u> |

The gross unrealized losses related to marketable securities are primarily due to a decrease in the fair value of debt securities as a result of current market conditions in mortgage-backed securities and an increase in interest rates since the securities were purchased. The Company has determined that the gross unrealized losses on its marketable securities at December 31, 2006 and 2007 are temporary in nature. The Company reviews its investment portfolio to identify and evaluate investments that have indications of possible impairment. Factors considered in determining whether a loss is other-than-temporary include the length of time and extent to which fair value has been less than the cost basis, credit quality and the Company's ability and intent to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value.

5. Inventories:

Inventories are comprised of the following:

| | December 31, | |
|-----------------------------|-----------------|-----------------|
| | 2006 | 2007 |
| Materials | \$33,347 | \$34,556 |
| Work-in-process | 12,687 | 20,820 |
| Finished goods | 9,399 | 15,611 |
| Total inventories | <u>\$55,433</u> | <u>\$70,987</u> |

The Company has established reserves of \$2,805 and \$3,394 at December 31, 2006 and 2007, respectively, for slow moving and obsolete inventory. During 2006, the Company recorded a charge of \$3,585 for excess parts, for older product lines and for parts that design and engineering advancements rendered obsolete, of which \$2,567 was written off. During 2007, the Company recorded a charge of \$661 for the write-down of inventory for excess parts, for older product lines and for parts that design and engineering advancements rendered obsolete. In 2007, the Company wrote off \$72 of the inventory reserve.

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)
(In thousands, except per share data)

6. Property, Plant and Equipment:

Property, plant and equipment, net is comprised of the following:

| | December 31, | |
|--|------------------|------------------|
| | 2006 | 2007 |
| Land and building | \$ 5,180 | \$ 5,185 |
| Machinery and equipment | 9,471 | 11,829 |
| Furniture and fixtures | 2,425 | 2,668 |
| Computer equipment | 5,207 | 6,407 |
| Leasehold improvements | 5,945 | 5,791 |
| | <u>28,228</u> | <u>31,880</u> |
| Accumulated depreciation | <u>(11,346)</u> | <u>(15,818)</u> |
| Property, plant and equipment, net | <u>\$ 16,882</u> | <u>\$ 16,062</u> |

Depreciation expense amounted to \$1,773, \$4,300 and \$4,500 for the years ended December 31, 2005, 2006, and 2007, respectively.

7. Identifiable Intangible Assets and Goodwill:

Identifiable intangible assets as of December 31, 2006 are as follows:

| | Gross Carrying Amount | Accumulated Amortization | Net |
|--|--------------------------|-----------------------------|-----------------|
| Developed technology | \$37,991 | \$7,669 | \$30,322 |
| Customer relationships | 4,400 | 429 | 3,971 |
| Trade names | 3,400 | 292 | 3,108 |
| Total identifiable intangible assets | <u>\$45,791</u> | <u>\$8,390</u> | <u>\$37,401</u> |

Identifiable intangible assets as of December 31, 2007 are as follows:

| | Gross Carrying Amount | Accumulated Amortization | Net |
|--|--------------------------|-----------------------------|-----------------|
| Developed technology | \$49,591 | \$11,324 | \$38,267 |
| Customer and distributor relationships | 7,300 | 917 | 6,383 |
| Trade names | 4,100 | 625 | 3,475 |
| Total identifiable intangible assets | <u>\$60,991</u> | <u>\$12,866</u> | <u>\$48,125</u> |

Intangible asset amortization expense amounted to \$876, \$4,027 and \$4,476 for the years ended December 31, 2005, 2006 and 2007, respectively. Assuming no change in the gross carrying value of identifiable intangible assets and estimated lives, estimated amortization expense amounts to \$6,638 for 2008, \$6,297 for 2009, \$6,081 for 2010, \$5,848 for 2011 and \$5,848 for 2012.

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)
(In thousands, except per share data)

The changes in the carrying amount of goodwill are as follows:

| | |
|--|-------------------------|
| Balance as of December 31, 2005 | \$ 13,245 |
| August Technology merger | <u>131,931</u> |
| Balance as of December 31, 2006 | 145,176 |
| PCTA acquisition | 43,194 |
| Tax adjustments related to prior acquisition | <u>462</u> |
| Balance as of December 31, 2007 | <u><u>\$188,832</u></u> |

8. Commitments and Contingencies:

Intellectual Property Indemnification Obligations

The Company has entered into agreements with customers that include limited intellectual property indemnification obligations that are customary in the industry. These guarantees generally require the Company to compensate the other party for certain damages and costs incurred as a result of third party intellectual property claims arising from these transactions. The nature of the intellectual property indemnification obligations prevents the Company from making a reasonable estimate of the maximum potential amount it could be required to pay to its customers. Historically, the Company has not made any indemnification payments under such agreements and no amount has been accrued in the accompanying consolidated financial statements with respect to these indemnification guarantees.

Warranty Reserves

The Company generally provides a warranty on its products for a period of twelve to fifteen months against defects in material and workmanship. The Company estimates the costs that may be incurred during the warranty period and records a liability in the amount of such costs at the time revenue is recognized. The Company's estimate is based primarily on historical experience. The Company periodically assesses the adequacy of its recorded warranty liabilities and adjusts the amounts as necessary. Settlements of warranty reserves are generally associated with sales that occurred during the 12 to 15 months prior to the year-end and warranty accruals are related to sales during the year.

Changes in the Company's warranty reserves are as follows:

| | Year Ended December 31, | | |
|--|-------------------------|------------------------|------------------------|
| | 2005 | 2006 | 2007 |
| Balance, beginning of the year | \$ 1,209 | \$ 1,234 | \$ 2,171 |
| Accruals | 1,945 | 2,298 | 2,669 |
| Warranty liability assumed in merger | — | 1,244 | 532 |
| Settlements | <u>(1,920)</u> | <u>(2,605)</u> | <u>(3,007)</u> |
| Balance, end of the year | <u><u>\$ 1,234</u></u> | <u><u>\$ 2,171</u></u> | <u><u>\$ 2,365</u></u> |

Legal Matters

From time to time the Company is subject to legal proceedings and claims in the ordinary course of business. The Company is not aware of any legal proceedings or claims that management believes would have a material adverse effect on the Company's consolidated financial statements taken as a whole.

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)
(In thousands, except per share data)

Lease Agreements

The Company rents space for its manufacturing and service operations and sales offices, which expire through 2016. Total rent expense for these facilities amounted to \$1,550, \$2,162 and \$2,264 for the years ended December 31, 2005, 2006 and 2007, respectively.

The Company also leases certain equipment pursuant to operating leases, which expire through 2010. Rent expense related to these leases amounted to \$42, \$165 and \$171 for the years ended December 31, 2005, 2006 and 2007, respectively.

Total future minimum lease payments under noncancelable operating leases as of December 31, 2007 amounted to \$2,527 for 2008, \$1,842 for 2009, \$1,546 for 2010, \$1,533 for 2011, \$1,100 for 2012 and \$2,177 for all periods thereafter.

Royalty Agreements

Under various licensing agreements, the Company is obligated to pay royalties based on net sales of products sold. There are no minimum annual royalty payments. Royalty expense amounted to \$2,071, \$2,990 and \$1,389 for the years ended December 31, 2005, 2006 and 2007, respectively.

Open and Committed Purchase Orders

The Company has open and committed purchase orders of \$21.5 million as of December 31, 2007.

9. Preferred Share Purchase Rights:

On June 27, 2005, the Board of Directors of the Company adopted a Stockholder Rights Plan (the "Rights Plan") and declared a dividend distribution of one Preferred Share Purchase Right (a "Right") on each outstanding share of Company common stock. Each right entitles stockholders to buy one one-thousandth of a share of newly created Series A Junior Participating Preferred Stock of Rudolph at an exercise price of \$120. The Company's Board is entitled to redeem the Rights at \$0.001 per Right at any time before a person has acquired 15% or more of the outstanding Rudolph common stock.

Subject to limited exceptions, the Rights will be exercisable if a person or group acquires 15% or more of Rudolph common stock or announces a tender offer for 15% or more of the common stock. Each Right other than Rights held by the Acquiring Person which will become void entitles its holder to purchase a number of common shares of Rudolph having a market value at that time of twice the Right's exercise price.

The Rights Plan will expire in 2015. The adoption of the Rights Plan had no impact on the financial position or results of operations of the Company.

10. Share-Based Compensation and Employee Benefit Plans:

Share-Based Compensation Plans

The Company's share-based compensation plans are intended to attract and retain employees and to provide an incentive for them to assist the Company to achieve long-range performance goals and to enable them to participate in long-term growth of the Company. The Company settles stock option exercises and restricted stock awards with newly issued common shares.

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)
(In thousands, except per share data)

In 1996, the Company adopted the 1996 Stock Option Plan (the "Option Plan"). Under the Option Plan, the Company was authorized to grant options to purchase up to 1,070 shares of common stock. All of the outstanding options became 100% vested upon the initial public offering of the Company on November 12, 1999. As of December 31, 2006 and 2007, there were no shares of common stock reserved for future grants under the Option Plan.

The Company established the 1999 Stock Plan (the "1999 Plan") effective August 31, 1999. The 1999 Plan provides for the grant of 2,000 stock options and stock purchase rights, subject to annual increases, to employees, directors and consultants at an exercise price equal to or greater than the fair market value of the common stock on the date of grant. Options granted under the 1999 Plan typically grade vest over a five-year period and expire ten years from the date of grant. Restricted stock units granted under the 1999 Plan typically vest over a five-year period for employees and one year for directors. As of December 31, 2006 and 2007, there were 892 and 1,029 shares of common stock reserved for future grants under the 1999 Plan, respectively.

The Company assumed the August Technology Corporation 1997 Stock Plan (the "1997 Plan") at the merger date. Stock options granted under the 1997 Plan vest over periods that range from immediate to five-years and expire in either seven or ten years from the date of grant. As of December 31, 2006, there were 666 shares of common stock reserved for future grants under the 1997 Plan. In the third quarter of 2007, the 1997 Plan expired and as of December 31, 2007, there were no shares of common stock reserved for future grants under the 1997 Plan.

The following table reflects share-based compensation expense by type of award in accordance with SFAS 123R:

| | <u>Year Ended December 31,</u> | |
|--|--------------------------------|----------------|
| | <u>2006</u> | <u>2007</u> |
| Share-based compensation expense: | | |
| Stock options | \$ 750 | \$ 721 |
| Restricted stock units | <u>1,186</u> | <u>2,398</u> |
| Total share-based compensation | 1,936 | 3,119 |
| Tax effect on share-based compensation | <u>757</u> | <u>1,279</u> |
| Net effect on net income | <u>\$1,179</u> | <u>\$1,840</u> |
| Tax effect on: | | |
| Cash flows from financing activities | \$1,167 | \$ 148 |
| Effect on earnings per share—basic | \$(0.04) | \$(0.06) |
| Effect on earnings per share—diluted | \$(0.04) | \$(0.06) |

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)
(In thousands, except per share data)

Valuation Assumptions for Stock Options

For the year ended December 31, 2005, there were 2 stock options granted. For the year ended December 31, 2006, there were 5 stock options granted and 369 unvested options and 1,049 vested options assumed from the August Technology merger. The fair value of the vested options assumed from the August Technology merger was \$6,040, the fair value at the merger date. For the year ended, December 31, 2007, there were no stock options granted. The fair value of each option was estimated on the date of grant for the granted options and the merger date for the unvested options assumed from the August Technology merger, using the Black-Scholes option-pricing model with the following assumptions:

| | Year Ended December 31, | |
|--|-------------------------|--------|
| | 2005 | 2006 |
| Expected life (years) | 5.0 | 3.4 |
| Expected volatility | 50.9% | 55.1% |
| Expected dividend yield | 0.0% | 0.0% |
| Risk-free interest rate | 3.9% | 4.6% |
| Weighted average fair value per option | \$7.55 | \$8.99 |

Stock Option Activity

The following table summarizes stock option activity:

| | Shares | Weighted Average Exercise Price Per Share | Weighted Average Remaining Contractual Term (years) | Aggregate Intrinsic Value |
|---|--------------|--|---|---------------------------------|
| Outstanding at December 31, 2004 | 2,738 | \$22.55 | | |
| Granted | 2 | 15.30 | | |
| Exercised | (61) | 13.13 | | |
| Expired | (106) | 25.85 | | |
| Forfeited | (59) | 21.12 | | |
| Outstanding at December 31, 2005 | 2,514 | 22.67 | | |
| Granted | 5 | 16.72 | | |
| Assumed from August Technology | 1,418 | 14.02 | | |
| Exercised | (674) | 12.84 | | |
| Expired | (113) | 22.27 | | |
| Forfeited | (42) | 13.56 | | |
| Outstanding at December 31, 2006 | 3,108 | \$20.98 | | |
| Granted | — | — | | |
| Exercised | (96) | 11.54 | | |
| Expired | (241) | 14.39 | | |
| Forfeited | (16) | 21.93 | | |
| Outstanding at December 31, 2007 | <u>2,755</u> | <u>\$21.27</u> | <u>3.9</u> | <u>\$577</u> |
| Vested or expected to vest at December 31, 2007 | <u>2,737</u> | <u>\$21.31</u> | <u>3.8</u> | <u>\$290</u> |
| Exercisable at December 31, 2007 | <u>2,614</u> | <u>\$21.66</u> | <u>3.7</u> | <u>\$546</u> |

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(In thousands, except per share data)

The total intrinsic value of the stock options exercised during 2005, 2006 and 2007 was \$233, \$3,472 and \$506, respectively. In connection with these exercises, the tax benefits realized by the Company for 2005, 2006 and 2007 were \$134, \$1,167 and \$191, respectively.

The options outstanding and exercisable at December 31, 2007 were in the following exercise price ranges:

| Range of Exercise Prices | Options Outstanding | | | Options Exercisable | |
|--------------------------|---------------------|---|---------------------------------|---------------------|---------------------------------|
| | Shares | Weighted Average Remaining Contractual Life (years) | Weighted Average Exercise Price | Shares | Weighted Average Exercise Price |
| \$ 0.56 - \$ 14.81 | 628 | 5.1 | \$12.26 | 518 | \$12.02 |
| \$ 14.82 - \$ 16.41 | 871 | 3.2 | \$16.12 | 849 | \$16.13 |
| \$ 16.49 - \$ 24.20 | 553 | 4.3 | \$21.74 | 544 | \$21.82 |
| \$ 24.25 - \$ 40.13 | 671 | 3.3 | \$34.66 | 671 | \$34.66 |
| \$ 41.75 - \$ 50.30 | <u>32</u> | <u>3.2</u> | <u>\$48.68</u> | <u>32</u> | <u>\$48.68</u> |
| \$ 0.56 - \$ 50.30 | <u>2,755</u> | 3.9 | \$21.27 | <u>2,614</u> | \$21.66 |

As of December 31, 2007, there was \$1,151 of total unrecognized compensation cost related to stock options granted under the plans. That cost is expected to be recognized over a weighted average remaining period of 2.0 years.

The Company recognized a tax benefit of \$569 for stock options exercised during the year ended December 31, 2006, which was assumed in the purchase price of the August Technology merger. This benefit reduced goodwill.

Restricted Stock Unit Activity

The following table summarizes restricted stock unit activity:

A summary of the Company's restricted stock unit activity with respect to the years ended December 31, 2005, 2006 and 2007 follows:

| | Number of Shares | Weighted Average Grant Date Fair Value |
|--------------------------------|------------------|--|
| Nonvested at December 31, 2004 | — | \$ — |
| Granted | 161 | \$16.60 |
| Vested | — | \$ — |
| Forfeited | — | \$ — |
| Nonvested at December 31, 2005 | 161 | \$16.60 |
| Granted | 228 | \$16.61 |
| Vested | (48) | \$16.23 |
| Forfeited | <u>(5)</u> | \$14.97 |
| Nonvested at December 31, 2006 | 336 | \$16.68 |
| Granted | 463 | \$15.69 |
| Vested | (86) | \$16.24 |
| Forfeited | <u>(33)</u> | \$16.24 |
| Nonvested at December 31, 2007 | <u>680</u> | \$16.08 |

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(In thousands, except per share data)

As of December 31, 2007, there was \$7,852 of total unrecognized compensation cost related to restricted stock units granted under the plans. That cost is expected to be recognized over a weighted average period of 3.7 years.

Employee Stock Purchase Plan

The Company established an Employee Stock Purchase Plan (the "ESPP") effective August 31, 1999 and amended on May 1, 2005. Under the terms of the ESPP, eligible employees may have up to 15% of eligible compensation deducted from their pay and applied to the purchase of shares of Rudolph common stock. The price the employee must pay for each share of stock will be 95% of the fair market value of the Rudolph common stock at the end of the applicable six-month purchase period. The ESPP is intended to qualify under Section 423 of the Internal Revenue Code and is a non-compensatory plan as defined by SFAS 123R. No stock-based compensation expense for the ESPP was recorded for the year ended December 31, 2006 and 2007. As of December 31, 2006 and 2007, there were 1,727 and 2,010 shares available for issuance under the ESPP, respectively.

401(k) Savings Plan

The Company has a 401(k) savings plan to provide retirement and incidental benefits for its employees. As allowed under Section 401(k) of the Internal Revenue Code, the Plan provides tax-deferred salary deductions for eligible employees. Employees may contribute up to 100% of their annual compensation to the Plan, limited to a maximum annual amount as set periodically by the Internal Revenue Service. The Plan provides a 50% match of all employee contributions up to 6 percent of the employee's salary. Company matching contributions to the Plan totaled \$393, \$693 and \$746 for the years ended December 31, 2005, 2006 and 2007, respectively.

Profit Sharing Program

The Company has a profit sharing program, wherein a percentage of pre-tax profits, at the discretion of the Board of Directors, is provided to all employees who have completed a stipulated employment period. The Company did not make contributions to this program for the years ended December 31, 2005, 2006 and 2007.

11. Interest Income and Other, Net:

| | Year Ended December 31, | | |
|--|-------------------------|---------|---------|
| | 2005 | 2006 | 2007 |
| Interest income | \$2,234 | \$3,345 | \$4,143 |
| Realized losses on sale of marketable securities | (856) | (162) | — |
| Rental income | 10 | 8 | 6 |
| Total interest income and other, net | \$1,388 | \$3,191 | \$4,149 |

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)
(In thousands, except per share data)

12. Income Taxes:

The components of income tax expense are as follows:

| | <u>Year Ended December 31,</u> | | |
|--------------------------------|--------------------------------|-----------------|-----------------|
| | <u>2005</u> | <u>2006</u> | <u>2007</u> |
| Current: | | | |
| Federal | \$ (89) | \$ 2,253 | \$ 3,827 |
| State | 387 | 1,840 | 939 |
| Foreign | 1,536 | 1,920 | 3,395 |
| | <u>1,834</u> | <u>6,013</u> | <u>8,161</u> |
| Deferred: | | | |
| Federal | (349) | 5,456 | (2,507) |
| State | (53) | 173 | (674) |
| Foreign | 357 | 88 | (134) |
| | <u>(45)</u> | <u>5,717</u> | <u>(3,315)</u> |
| Total income tax expense | <u>\$1,789</u> | <u>\$11,730</u> | <u>\$ 4,846</u> |

Income before income tax of \$1,988 and \$4,778 was generated by domestic and foreign operations, respectively, in 2005. Income before income tax of \$13,532 and \$10,904 was generated by domestic and foreign operations, respectively, in 2006. Income before income tax of \$2,856 and \$13,849 was generated by domestic and foreign operations, respectively, in 2007.

Deferred tax assets and liabilities are comprised of the following:

| | <u>December 31,</u> | |
|---|---------------------|-----------------|
| | <u>2006</u> | <u>2007</u> |
| Research and development credit carryforward | \$ 3,387 | \$ 3,709 |
| Reserves and accruals not currently deductible | 1,489 | 1,199 |
| Deferred revenue | 1,004 | 2,190 |
| Domestic net operating loss carryforwards | 49 | 280 |
| Foreign net operating loss and credit carryforwards | — | 2,288 |
| Amortization of intangibles | 2,956 | 2,293 |
| Tax deductible transaction costs | 780 | 704 |
| Share-based compensation | 573 | 196 |
| Inventory obsolescence reserve | 2,455 | 1,370 |
| Other | 667 | 823 |
| Gross deferred tax assets | 13,360 | 15,052 |
| Valuation allowance for deferred tax assets | (964) | (1,295) |
| Deferred tax assets after valuation allowance | <u>12,396</u> | <u>13,757</u> |
| Amortization of intangibles | (14,592) | (12,436) |
| Other | (501) | (212) |
| Total deferred tax liabilities | <u>(15,093)</u> | <u>(12,648)</u> |
| Net deferred tax assets (liabilities) | <u>\$ (2,697)</u> | <u>\$ 1,109</u> |

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(In thousands, except per share data)

The provision for income taxes differs from the amount of income tax determined by applying the applicable U.S. federal income tax rate of 34% for the year ended December 31, 2005 and 35% for the years ended December 31, 2006 and 2007 to income before provision for income taxes as follows:

| | Year Ended December 31, | | |
|---|-------------------------|-----------------|-----------------|
| | 2005 | 2006 | 2007 |
| Federal income tax provision at statutory rate | \$2,310 | \$ 8,553 | \$ 5,847 |
| State taxes, net of federal effect | 351 | 1,290 | 306 |
| In-process research and development write-off | — | 3,465 | 350 |
| Research tax credit | (566) | (765) | (1,262) |
| Extraterritorial income exclusion | (174) | (296) | — |
| Domestic manufacturing benefit | — | (185) | (279) |
| Change in valuation allowance for deferred tax assets | (106) | (524) | 331 |
| Other | (26) | 192 | (447) |
| Provision for income taxes | <u>\$1,789</u> | <u>\$11,730</u> | <u>\$ 4,846</u> |
| Effective tax rate | <u>26%</u> | <u>48%</u> | <u>29%</u> |

In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities, projected future taxable income, and tax planning strategies in making this assessment. Based upon the level of historical taxable income and projections for future taxable income over the periods in which the deferred tax assets are deductible, management believes unless otherwise noted by a valuation allowance that it is more likely than not that the Company will realize the benefits of its deferred tax assets at December 31, 2007. At December 31, 2007, the Company had state and foreign net operating loss carryforwards of approximately \$431 and \$133, respectively. The net operating loss carryforwards expire on various dates through December 31, 2014. At December 31, 2007, the Company had federal and state research & development credits and foreign tax credit carryforwards of \$1,711, \$3,102 and \$2,154, respectively. The federal research & development credits are set to expire at various dates through December 31, 2027. The state research & development credits are set to expire at various dates through December 21, 2022. The foreign tax credit is set to expire at various dates through December 31, 2017.

The Company adopted the provisions of FIN 48, as amended by FSP 48-1, effective January 1, 2007. As a result of the implementation of FIN 48, as amended, the Company recognized increases in the liability for unrecognized tax benefits of \$2,173, non-current deferred tax assets of \$1,948 and goodwill of \$245. The adoption of FIN 48, as amended, resulted in a cumulative effect adjustment to retained earnings of \$20 as of January 1, 2007.

The following table is a reconciliation of beginning and ending balances of unrecognized tax benefits:

| | |
|---|-----------------|
| Unrecognized tax benefits, opening balance | \$ 4,552 |
| Gross increases—tax positions in prior period | 635 |
| Gross increases—current-period tax positions | 1,301 |
| Lapse of statute of limitations | (613) |
| Unrecognized tax benefits, ending balance | <u>\$ 5,875</u> |

The total amount of unrecognized tax benefits as of the date of adoption was \$4,552. Included in the balance of unrecognized tax benefits at January 1, 2007, are \$2,359 of tax benefits that, if recognized, would affect the effective tax rate. Also included in the balance of unrecognized tax benefits at January 1, 2007, are \$245 of tax

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(In thousands, except per share data)

benefits that, if recognized, would result in a decrease to goodwill recorded in business combinations, and \$1,948 of tax benefits that, if recognized, would result in adjustments to other tax accounts, primarily deferred taxes and non-current receivables. As of December 31, 2007, the total amount of unrecognized tax benefits is \$5,875, of which \$3,610 would impact the effective tax rate if recognized. Additional adjustments to goodwill arising from the August merger and the PCTA acquisition may be recorded as accounting for pre-acquisition tax positions is finalized. There are no known tax positions which are reasonably possible to change over the next twelve months necessitating a significant change in the Company's unrecognized tax benefits.

The Company recognizes accrued interest and penalties related to unrecognized tax benefits in income tax expense. Upon adoption of FIN 48 on January 1, 2007, the Company increased its accrual for interest and penalties to \$96. During the year ended December 31, 2007, the Company recognized approximately \$33 in interest and penalties expense associated with uncertain tax positions. As of December 31, 2007, the Company had accrued interest and penalties expense related to unrecognized tax benefits of \$129.

The Company is subject to U.S. federal income tax as well as income tax in multiple state and foreign jurisdictions. Presently, the Company has not been contacted by the Internal Revenue Service for examination of income tax returns for open periods, December 31, 2003 through December 31, 2006. The Company has also not been contacted by any U.S. state, local or foreign tax authority for all open tax periods beginning after December 31, 2002.

13. Segment Reporting and Geographic Information:

Operating segments are business units that have separate financial information and are separately reviewed by the Company's chief decision maker. The Company's chief decision maker is the Chief Executive Officer. The Company and its subsidiaries currently operate in a single reportable segment: the design, development, manufacture, sale and service of process control metrology systems used in semiconductor device manufacturing. The chief operating decision maker allocates resources and assesses performance of the business and other activities at the operating segment level.

The following table lists the different sources of revenue:

| | Year Ended December 31, | | | | | |
|--------------------------|-------------------------|-------------|------------------|-------------|------------------|-------------|
| | 2005 | | 2006 | | 2007 | |
| Systems: | | | | | | |
| Metrology | \$52,596 | 63% | \$ 68,035 | 34% | \$ 34,738 | 22% |
| Inspection | 11,644 | 14 | 100,666 | 50 | 85,012 | 53 |
| Parts | 9,188 | 11 | 14,217 | 7 | 13,678 | 9 |
| Services | 8,205 | 10 | 11,457 | 6 | 14,121 | 8 |
| Software licensing | 1,285 | 2 | 6,793 | 3 | 12,580 | 8 |
| Total revenue | <u>\$82,918</u> | <u>100%</u> | <u>\$201,168</u> | <u>100%</u> | <u>\$160,129</u> | <u>100%</u> |

For geographical reporting, revenues are attributed to the geographic location in which the customer is located. Revenue by geographic region is as follows:

| | Year Ended December 31, | | |
|------------------------------|-------------------------|------------------|------------------|
| | 2005 | 2006 | 2007 |
| Revenues from third parties: | | | |
| United States | \$18,675 | \$ 59,097 | \$ 36,710 |
| Asia | 46,666 | 120,472 | 93,631 |
| Europe | 17,577 | 21,599 | 29,788 |
| Total | <u>\$82,918</u> | <u>\$201,168</u> | <u>\$160,129</u> |

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(In thousands, except per share data)

| | Year Ended December 31, | | |
|---|-------------------------|-------|-------|
| | 2005 | 2006 | 2007 |
| Customers comprising 10% or more of the Company's total revenue for the period indicated: | | | |
| A | 20.3% | 14.0% | 11.5% |
| B | 10.1% | 2.9% | 7.0% |

| | Year Ended December 31, | | |
|--|-------------------------|---------|---------|
| | 2005 | 2006 | 2007 |
| Accounts receivable of customers comprising 10% or more of the Company's total revenue for the period indicated: | | | |
| A | \$2,151 | \$7,094 | \$1,680 |
| B | \$5,600 | \$4,454 | \$5,621 |

The majority of the Company's assets are within the United States of America.

14. Earnings Per Share:

Basic earnings per share is computed by dividing net income by the weighted average number of common shares outstanding during the period. Diluted earnings gives effect to all potential dilutive common shares outstanding during the period. The computation of diluted earnings per share does not assume conversion, exercise or contingent exercise of securities that would have an anti-dilutive effect.

The computations of basic and diluted earnings per share for the years ended December 31, 2005, 2006 and 2007 are as follows:

| | Income (Numerator) | Shares (Denominator) | Per-Share Amount |
|---|-----------------------|-------------------------|---------------------|
| For the year ended December 31, 2005 | | | |
| Basic earnings per share: | | | |
| Net income | \$ 4,977 | 16,899 | \$ 0.29 |
| Effect of dilutive stock options and restricted stock units | — | 43 | — |
| Diluted earnings per share: | | | |
| Net income | \$ 4,977 | 16,942 | \$ 0.29 |
| For the year ended December 31, 2006 | | | |
| Basic earnings per share: | | | |
| Net income | \$12,706 | 27,276 | \$ 0.47 |
| Effect of dilutive stock options and restricted stock units | — | 298 | (0.01) |
| Diluted earnings per share: | | | |
| Net income | \$12,706 | 27,574 | \$ 0.46 |
| For the year ended December 31, 2007 | | | |
| Basic earnings per share: | | | |
| Net income | \$11,859 | 29,168 | \$ 0.41 |
| Effect of dilutive stock options and restricted stock units | — | 144 | (0.01) |
| Diluted earnings per share: | | | |
| Net income | \$11,859 | 29,312 | \$ 0.40 |

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(In thousands, except per share data)

For the year ended December 31, 2005, the weighted average number of stock options and restricted stock units excluded from the computation of diluted earnings per share were 2,092 and 126, respectively. For the year ended December 31, 2006, the weighted average number of stock options and restricted stock units excluded from the computation of diluted earnings per share were 2,008 and 12, respectively. For the year ended December 31, 2007, the weighted average number of stock options and restricted stock units excluded from the computation of diluted earnings per share were 2,185 and 129, respectively.

15. Quarterly Consolidated Financial Data (unaudited):

The following tables present certain unaudited consolidated quarterly financial information for each of the eight quarters ended December 31, 2007. In the opinion of the Company's management, this quarterly information has been prepared on the same basis as the consolidated financial statements and includes all adjustments (consisting only of normal recurring adjustments) necessary to present fairly the information for the periods presented. The results of operations for any quarter are not necessarily indicative of results for the full year or for any future period.

Year-over-year quarterly comparisons of the Company's results of operations may not be as meaningful as the sequential quarterly comparisons set forth below tend to reflect the cyclical activity of the semiconductor industry as a whole. For the 2006 quarters reflect the August Technology merger effective February 15, 2006, and for the 2007 fourth quarter reflects the PCTA acquisition effective December 18, 2007. Quarterly fluctuations in expenses are related directly to sales activity and volume and may also reflect the timing of operating expenses incurred throughout the year and the purchase accounting effects of business combinations.

| | Quarters Ended | | | | Total |
|--|-------------------|------------------|-----------------------|----------------------|-----------|
| | March 31, 2006 | June 30, 2006 | September 30, 2006 | December 31, 2006 | |
| Revenues | \$ 31,848 | \$56,692 | \$58,166 | \$54,462 | \$201,168 |
| Gross profit | 9,249 | 29,691 | 30,567 | 27,935 | 97,442 |
| Income (loss) before income taxes | (12,907) | 12,996 | 13,352 | 10,995 | 24,436 |
| Net income (loss) | (11,746) | 7,991 | 8,071 | 8,390 | 12,706 |
| Earnings (loss) per share: | | | | | |
| Basic | \$ (0.52) | \$ 0.28 | \$ 0.28 | \$ 0.29 | \$ 0.47 |
| Diluted | \$ (0.52) | \$ 0.28 | \$ 0.28 | \$ 0.29 | \$ 0.46 |
| Weighted average number of shares outstanding: | | | | | |
| Basic | 22,545 | 28,638 | 28,849 | 28,954 | 27,276 |
| Diluted | 22,545 | 28,943 | 29,119 | 29,342 | 27,574 |

| | Quarters Ended | | | | Total |
|--|-------------------|------------------|-----------------------|----------------------|-----------|
| | March 31, 2007 | June 30, 2007 | September 30, 2007 | December 31, 2007 | |
| Revenues | \$ 48,356 | \$47,730 | \$31,461 | \$32,582 | \$160,129 |
| Gross profit | 26,250 | 24,850 | 15,540 | 14,600 | 81,240 |
| Income (loss) before income taxes | 8,705 | 7,749 | 1,203 | (952) | 16,705 |
| Net income (loss) | 5,564 | 5,451 | 1,388 | (544) | 11,859 |
| Earnings (loss) per share: | | | | | |
| Basic | \$ 0.19 | \$ 0.19 | \$ 0.05 | \$ (0.02) | \$ 0.41 |
| Diluted | \$ 0.19 | \$ 0.19 | \$ 0.05 | \$ (0.02) | \$ 0.40 |
| Weighted average number of shares outstanding: | | | | | |
| Basic | 29,031 | 29,108 | 29,152 | 29,371 | 29,168 |
| Diluted | 29,224 | 29,312 | 29,250 | 29,371 | 29,312 |

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)
(In thousands, except per share data)

SCHEDULE OF VALUATION AND QUALIFYING ACCOUNTS

| <u>Column A</u> | <u>Column B</u> | <u>Column C</u> | | <u>Column D</u> | <u>Column E</u> |
|--|---------------------------------------|--|--|-------------------|---------------------------------|
| <u>Description</u> | <u>Balance at Beginning of Period</u> | <u>Charged to (Recovery of) Costs and Expenses</u> | <u>Charged to Other Accounts (net)</u> | <u>Deductions</u> | <u>Balance at End of Period</u> |
| Year 2005: | | | | | |
| Allowance for doubtful accounts . . . | \$ 323 | \$ (68) | \$ — | \$ 25 | \$ 230 |
| Inventory valuation | 1,307 | 480 | — | — | 1,787 |
| Warranty | 1,209 | 1,945 | — | 1,920 | 1,234 |
| Deferred tax valuation allowance . . . | 629 | 258 | — | 363 | 524 |
| Year 2006: | | | | | |
| Allowance for doubtful accounts . . . | \$ 230 | \$ 69 | \$ — | \$ — | \$ 299 |
| Inventory valuation | 1,787 | 3,585 | — | 2,567 | 2,805 |
| Warranty | 1,234 | 2,298 | 1,244 | 2,605 | 2,171 |
| Deferred tax valuation allowance . . . | 524 | 964 | — | 524 | 964 |
| Year 2007: | | | | | |
| Allowance for doubtful accounts . . . | \$ 299 | \$ (85) | \$ — | \$ — | \$ 214 |
| Inventory valuation | 2,805 | 661 | — | 72 | 3,394 |
| Warranty | 2,171 | 2,669 | 532 | 3,007 | 2,365 |
| Deferred tax valuation allowance . . . | 964 | 331 | — | — | 1,295 |

SIGNATURES

PURSUANT TO THE REQUIREMENTS OF SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934, THE REGISTRANT HAS DULY CAUSED THIS REPORT TO BE SIGNED ON ITS BEHALF BY THE UNDERSIGNED, THEREUNTO DULY AUTHORIZED.

RUDOLPH TECHNOLOGIES, INC.

By: /s/ PAUL F. McLAUGHLIN
 Paul F. McLaughlin
 Chairman and Chief Executive Officer

Date: March 3, 2008

PURSUANT TO THE REQUIREMENTS OF THE SECURITIES EXCHANGE ACT OF 1934, THIS REPORT HAS BEEN SIGNED BELOW BY THE FOLLOWING PERSONS ON BEHALF OF THE REGISTRANT AND IN THE CAPACITIES AND ON THE DATES INDICATED.

| <u>Signature</u> | <u>Title</u> | <u>Date</u> |
|---|---|---------------|
| <u> /s/ PAUL F. McLAUGHLIN </u> Paul F. McLaughlin | Chairman and Chief Executive Officer | March 3, 2008 |
| <u> /s/ STEVEN R. ROTH </u> Steven R. Roth | Senior Vice President, Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer) | March 3, 2008 |
| <u> /s/ DANIEL H. BERRY </u> Daniel H. Berry | Director | March 3, 2008 |
| <u> /s/ PAUL CRAIG </u> Paul Craig | Director | March 3, 2008 |
| <u> /s/ THOMAS G. GREIG </u> Thomas G. Greig | Director | March 3, 2008 |
| <u> /s/ JEFF L. O'DELL </u> Jeff L. O'Dell | Director | March 3, 2008 |
| <u> /s/ CARL E. RING, JR. </u> Carl E. Ring, Jr. | Director | March 3, 2008 |
| <u> /s/ RICHARD F. SPANIER </u> Richard F. Spanier | Director | March 3, 2008 |
| <u> /s/ AUBREY C. TOBEY </u> Aubrey C. Tobey | Director | March 3, 2008 |
| <u> /s/ JOHN R. WHITTEN </u> John R. Whitten | Director | March 3, 2008 |
| <u> /s/ MICHAEL W. WRIGHT </u> Michael W. Wright | Director | March 3, 2008 |

EXHIBIT INDEX

| <u>Exhibit No.</u> | <u>Description</u> |
|--------------------|--|
| 2.1 | Agreement and Plan of Merger, dated as of June 27, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation (incorporated by reference to Exhibit 99.2 to the Company's Schedule 13D filed with the SEC on July 7, 2005). |
| 2.2 | Amendment No. 1, dated as of December 8, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation, to the Agreement and Plan of Merger, dated as of June 27, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation. (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 9, 2005). |
| 2.3 | Asset Purchase Agreement dated as of December 18, 2007, by and among the Registrant, Mariner Acquisition Company LLC, Applied Precision Holding, LLC and Applied Precision, LLC (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 21, 2007). |
| 3.1 | Restated Certificate of Incorporation of Registrant (incorporated herein by reference to Exhibit (3.1(b)) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871 filed on September 9, 1999). |
| 3.2 | Amended and Restated Bylaws of Registrant (incorporated herein by reference to Exhibit (3.2(b) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999. |
| 3.3 | Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on February 15, 2006, No. 000-27965). |
| 3.4 | Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on August 1, 2007, No. 000-27965). |
| 4.1 | Rights Agreement (incorporated by reference to Exhibit 4.1 of the Registrant's Registration Statement on Form 8-A, filed with the Commission on June 28, 2005, No 000-27965). |
| 4.2 | August Technology Corporation 1997 Stock Incentive Plan (incorporated by reference to the Appendix to August Technology Corporation's Proxy Statement for its 2004 Annual Shareholders Meeting, filed with the Commission on March 11, 2004, No. 000-30637). |
| 10.1+ | License Agreement, dated June 28, 1995, between the Registrant and Brown University Research Foundation (incorporated herein by reference to Exhibit (10.1) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.2 | Form of Indemnification Agreement (incorporated herein by reference to Exhibit (10.3) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.3 | Amended 1996 Non-Qualified Stock Option Plan (incorporated herein by reference to Exhibit 10.15 to Registrant's quarterly report on Form 10-Q, filed on November 14, 2001). |
| 10.4 | Form of 1999 Stock Plan (incorporated herein by reference to Exhibit (10.4) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.5 | Form of 1999 Employee Stock Purchase Plan (incorporated herein by reference to Exhibit (10.5) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |

| <u>Exhibit No.</u> | <u>Description</u> |
|--------------------|--|
| 10.6 | Management Agreement, dated as of July 24, 2000, by and between Rudolph Technologies, Inc. and Paul F. McLaughlin (incorporated herein by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000). |
| 10.7 | Management Agreement, dated as of July 24, 2000 by and between Rudolph Technologies, Inc. and Steven R. Roth (incorporated herein by reference to Exhibit 10.14 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000). |
| 10.8 | Registration Agreement, dated June 14, 1996 by and among the Registrant, 11, L.L.C., Riverside Rudolph, L.L.C., Dr. Richard F. Spanier, Paul F. McLaughlin (incorporated herein by reference to Exhibit (10.9) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.9 | Stockholders Agreement, dated June 14, 1996 by and among the Registrant, Administration of Florida, Liberty Partners Holdings 11, L.L.C., Riverside Rudolph, L.L.C., Dr. Richard F. Spanier, Paul McLaughlin, Dale Moorman, Thomas Cooper and (incorporated herein by reference to Exhibit (10.10) to the Registrant's Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.10 | Form of option agreement under 1999 Stock Plan (incorporated herein by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 5, 2004). |
| 10.11 | Form of Restricted Stock Award pursuant to the Rudolph Technologies, Inc. 1999 Stock Plan (filed with Rudolph Technologies, Inc.'s Current Report on Form 8-K filed on June 21, 2005 and incorporated herein by reference). |
| 10.12 | Form of Company Shareholder Voting Agreement (incorporated by reference to Exhibit 99.2 to the Company's Schedule 13D filed with the SEC on July 7, 2005). |
| 14.1 | Rudolph Technologies Code of Business Conduct and Ethics (incorporated herein by reference to Exhibit 14.1 to Registrant's annual report on Form 10-K, filed on March 16, 2006). |
| 14.2 | Rudolph Technologies Financial Code of Ethics (incorporated herein by reference to Exhibit 14.1 to Registrant's annual report on Form 10-K, filed on March 16, 2006). |
| 18.1 | Preferability letter of KPMG LLP, Independent Registered Public Accounting Firm, filed herewith. |
| 21.1 | Subsidiaries. |
| 23.1 | Consent of KPMG LLP, Independent Registered Public Accounting Firm. |
| 31.1 | Certification of Paul F. McLaughlin, Chief Executive Officer, pursuant to Securities Exchange Act Rule 13a-14(a). |
| 31.2 | Certification of Steven R. Roth, Chief Financial Officer, pursuant to Securities Exchange Act Rule 13a-14(a). |
| 32.1 | Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Paul F. McLaughlin, Chief Executive Officer of Rudolph Technologies, Inc. |
| 32.2 | Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Steven R. Roth, Chief Financial Officer of Rudolph Technologies, Inc. |

+ Confidential treatment has been granted with respect to portions of this exhibit.

**Certification of Chief Executive Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002**

I, Paul F. McLaughlin, certify that:

1. I have reviewed this annual report on Form 10-K of Rudolph Technologies, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 3, 2008

By: /s/ PAUL F. McLAUGHLIN

Paul F. McLaughlin
Chairman and Chief Executive Officer

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

I, Paul F. McLaughlin, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Rudolph Technologies, Inc. on Form 10-K for the year ended December 31, 2007 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of Rudolph Technologies, Inc.

Date: March 3, 2008

By: /s/ PAUL F. MCLAUGHLIN
 Paul F. McLaughlin
 Chairman and Chief Executive Officer

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

FORM 10-K

(MARK ONE)

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

For the Fiscal Year Ended December 31, 2007

OR

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

For the transition period from to
Commission File No. 000-27965

RUDOLPH TECHNOLOGIES, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

22-3531208
(I.R.S. Employer
Identification Number)

One Rudolph Road, P.O. Box 1000, Flanders, NJ 07836
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (973) 691-1300

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

None

SECURITIES REGISTERED PURSUANT TO SECTION 12(g) OF THE ACT:

Common Stock, \$0.001 Par Value
(Title of Class)

SEC
Mail Processing
Division

APR 2 1 2008

Washington, DC
100

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes [] No [X]

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes [] No [X]

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

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

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

Large accelerated filer [] Accelerated filer [X] Non-accelerated filer [] Smaller reporting company []

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes [] No [X]

The aggregate market value of the voting stock held by non-affiliates of the registrant based on the closing price of the registrant's stock price on June 30, 2007 of \$16.61 was approximately \$418,039,201.

The registrant had 30,495,282 shares of Common Stock outstanding as of February 6, 2008.

DOCUMENTS INCORPORATED BY REFERENCE

The following document is incorporated by reference in Part III of this Annual Report on Form 10-K: Items 10, 11, 12, 13 and 14 of Part III incorporate by reference information from the definitive proxy statement for the registrant's annual meeting of stockholders to be held on May 20, 2008.

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FORWARD LOOKING STATEMENTS

Certain statements in this Annual Report on Form 10-K are forward-looking statements, including those concerning our expectations of future revenues, gross profits, research and development and engineering expenses, selling, general and administrative expenses, product introductions, technology development, manufacturing practices and cash requirements. The statements contained in this Annual Report on Form 10-K that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 and within the meaning of the Private Securities Litigation Reform Act of 1995. In addition, we may, from time to time make oral forward-looking statements. Forward-looking statements may be identified by the words such as, but not limited to, "anticipate", "believe", "expect", "intend", "plan", "should", "may", "could", "will" and words or phrases of similar meaning, as they relate to our management or us.

The forward-looking statements contained herein reflect our current expectations with respect to future events and are subject to certain risks, uncertainties and assumptions. The forward-looking statements reflect our position as of the date of this report and we undertake no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise. Actual results may differ materially from those projected in such forward-looking statements for a number of reasons including, but not limited to, the following: variations in the level of orders which can be affected by general economic conditions and growth rates in the semiconductor manufacturing industry and in the markets served by our customers, the international economic and political climates, difficulties or delays in product functionality or performance, the delivery performance of sole source vendors, the timing of future product releases, failure to respond adequately to either changes in technology or customer preferences, changes in pricing by us or our competitors, ability to manage growth, risk of nonpayment of accounts receivable, changes in budgeted costs and the "Risk Factors" set forth in Item 1A. Our stockholders should carefully review the cautionary statements contained in this Form 10-K below. You should also review any additional disclosures and cautionary statements we make from time to time in our Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and other filings.

PART I

Item 1. Business.

General

Rudolph Technologies, Inc. is a worldwide leader in the design, development, manufacture and support of high-performance process control metrology, defect inspection, and data analysis systems used by semiconductor device manufacturers. We provide yield management solutions used in both wafer processing and final manufacturing through a family of standalone systems and integrated modules for both transparent and opaque thin film measurements and macro-defect inspection. All of these systems feature production-worthy automation and are backed by worldwide customer support.

Our acquisition of the net assets of Applied Precision's semiconductor division to be known as the Rudolph Technologies Probe Card Test and Analysis division ("PCTA") was completed on December 18, 2007. As a result, we expanded our offerings of inspection systems to include probe card test and analysis products. For our customers in semiconductor packaging and test, these products enable process validation, process verification and process improvement within probe and wafer test segments.

Metrology Systems. The industry's first production-oriented microprocessor-controlled ellipsometer for thin transparent film measurements was introduced by Rudolph in 1977. Since that time, we have consistently provided innovative product developments designed to meet manufacturers' most advanced measurement requirements. Our patented transparent film technology uses up to four lasers operating simultaneously at multiple angles and multiple wavelengths, providing powerful analysis and measurement capabilities to handle

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the most challenging requirements of today's advanced processes and tomorrow's new materials. Unlike the white-light sources used in spectroscopic ellipsometers, laser light sources make our metrology tools inherently stable, increase measurement speed and accuracy, and reduce maintenance costs by minimizing the time required to re-qualify a light source when it is replaced. Our systems also employ a proprietary reflectometer technology that allows the characterization of films and film stacks that cannot be performed using conventional reflectometry or ellipsometry alone.

In November 2007 Rudolph announced it had granted Entrepix, Inc., an exclusive license to manufacture, sell, service and support the Rudolph AutoEL® series of thin-film ellipsometers. Thousands of AutoEL tools have been placed in universities, semiconductor research labs and semiconductor production facilities since it was commercialized in 1977, with many of those tools still in use today.

For opaque film characterization, we brought patented optical acoustic metal film metrology technology to the semiconductor manufacturing floor that allows customers to simultaneously measure the thickness and other properties of up to six metal or other opaque film layers in a non-contact manner on product wafers. PULSE Technology™ uses an ultra-fast laser to generate sound waves that pass down through a stack of opaque films such as those used in copper or aluminum interconnect processes, sending back to the surface an echo that indicates film thickness, density, and other process critical parameters. We believe we are a leader in providing systems that can non-destructively measure opaque thin-film stacks with the speed and accuracy semiconductor device manufacturers demand in order to achieve high yields with the latest fabrication processes. The technology is ideal for characterizing copper interconnect structures and the majority of all systems sold have been for copper applications.

Inspection Systems. Chip manufacturers deploy advanced macro-defect inspection (defects greater in size than 0.5 micron) throughout the fab to monitor key process steps, gather process-enhancing information and ultimately, lower manufacturing costs. Field-established tools such as the NSX®, AXi™, and WaferView® are found in wafer processing (front-end) and final manufacturing (back-end) facilities around the world. These high-speed tools incorporate features such as waferless recipe creation, tool-to-tool correlation, multiple inspection resolutions and proprietary review and classification software that are required in today's high-volume integrated circuit (IC) manufacturing environments. In addition to wafer frontside inspection, Rudolph's innovative Explorer™ Cluster incorporates wafer edge and backside inspection in one integrated platform to enhance productivity and continuously improve fab yield.

Data Analysis & Review Systems. Rudolph has a comprehensive offering of software solutions for process management and data review. Using wafer maps, charts and graphs, the vast amount of data gathered through automated inspection can be analyzed to determine trends that ultimately affect yield. Our goal is to provide our customers with timely and accurate information so that corrective actions can be taken. Software solutions available to our customers include products that identify, classify and analyze defect data as well as fabwide systems that are designed to determine the root cause of yield excursions as early as possible in the production flow.

Technology

We believe that our expertise in engineering and our continued investment in research and development enable us to rapidly develop new technologies and products in response to emerging industry trends. The breadth of our technology enables us to offer our customers a diverse combination of measurement technologies that provide process control for the majority of thin films used in semiconductor manufacturing. Additionally, our defect detection and classification technologies allow us to provide yield enhancement for critical front-end processes such as photolithography, diffusion, etch, CMP, and outgoing quality control. Information learned through post-fab inspection is critical. Advanced macro-defect inspection within the final manufacturing (back-end) process provides our customers with critical quality assurance and process information. Defects may be created during probing, bumping, dicing or general handling, and can have a major impact on device and process quality.

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Optical Acoustics. Optical acoustic metrology involves the use of ultra-fast laser induced sonar for metal and opaque thin film measurement. This technology sends ultrasonic waves into multi-layer opaque films and then analyzes the resulting echoes to simultaneously determine the thickness of each individual layer in complex multi-layer metal film stacks. The echo's amplitude and phase can be used to detect film properties, missing layers, and interlayer problems. Since different phenomena affect amplitude and phase uniquely, a variety of process critical interlayer problems can be detected in a single measurement.

The use of optical acoustics to measure multi-layer metal and opaque films was pioneered by scientists at Brown University in collaboration with engineers at Rudolph. The proprietary optical acoustic technology in our PULSE Technology systems measures the thickness of single or multi-layer opaque films ranging from less than 40 Angstroms to greater than five microns. It provides these measurements at a rate of up to 70 wafers per hour within one to two percent accuracy and typically less than 1% repeatability. This range of thicknesses covers the majority of thick and thin metal films projected by the International Roadmap for Semiconductors to be used through the end of this decade. Our non-contact, non-destructive optical acoustic technology and small spot size enable our PULSE Technology systems to measure film properties directly on product wafers.

Ellipsometry. Ellipsometry is a non-contact, non-destructive optical technique for transparent thin film measurement. We have been an industry leader in ellipsometry technology for the last three decades. We hold patents on several ellipsometry technologies, including our proprietary technique that uses four lasers for multiple-angle of incidence, multiple wavelength ellipsometry. Laser ellipsometry technology enables our transparent film systems to continue to provide the increasingly higher level of accuracy needed as thinner films and newer materials are introduced for future generations of semiconductor devices. We extended this same optical technology to characterize the scatterometry signal from patterned surfaces, allowing measurement of critical dimensions.

Reflectometry. For applications requiring broader spectral coverage, some of our ellipsometry tools are also equipped with a reflectometer. Reflectometry uses a white or ultraviolet light source to determine the properties of transparent thin films by analyzing the wavelength and intensity of light reflected from the surface of a wafer. This optical information is processed with software algorithms to determine film thickness and other material properties. By combining data from both the laser ellipsometer and broad spectrum reflectometer, it is possible to characterize films and film stacks that cannot be adequately analyzed by either method individually.

Automated Defect Detection and Classification. Automating the defect detection and classification process is best done by a system that can mimic, or even extend, the response of the human eye, but at a much higher speed, with high resolution and more consistently. To do this, our systems capture full-color whole wafer images using simultaneous dark and bright field illumination. The resulting bright and dark field images are compared to those from an "ideal" wafer having no defects. When a difference is detected, its image is broken down into mathematical vectors that allow rapid and accurate comparison with a library of known classified defects stored in the tool's database. Patented and proprietary enhancements of this approach enable very fast and highly repeatable image classification. The system is pre-programmed with an extensive library of default local, global, and color defects and can also absorb a virtually unlimited amount of new defect classes. This allows customers to define defects based on their existing defect classification system, provides more reliable automated rework decisions, and enables more accurate statistical process control data.

All-surface Inspection. Rudolph has made all-surface, 100% advanced macro-defect inspection and metrology a reality. There are four types of all-surface inspection: wafer frontside, edge, and backside; and post-fab die and wafer. The edge inspection process focuses on the area near the wafer edge, an area that poses difficulty for traditional wafer frontside inspection technology due to its varied topography and process variation. Edge bevel inspection looks for defects on the side edge of a wafer. The edge bead removal and edge exclusion metrology involve a topside surface measurement required exclusively in the photolithography process, primarily to determine if wafers have been properly aligned for the edge exclusion region. The primary reason for wafer backside inspection is to determine if contamination has been created that may spread throughout the fab. For instance, it is critical that the wafer backside be free of defects prior to the photolithography process to prevent focus and exposure problems on the wafer front-side.

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Probe Card Test and Analysis. The combination of fast 3D-OCM (optical comparative metrology) Technology with improved testing accuracy and repeatability is designed to reduce total test time for even the most advanced large area probe cards. 3-D capabilities enable users to analyze probe marks and probe tips in a rapid and information-rich format.

Classification. Classifying defects off-line enables automated inspection systems to maintain their high throughput. Using defect image files captured by automated inspection systems, operators are able to view high-resolution defect images to determine killer defects. Classifying defects enables faster analysis by grouping defects found together as one larger defect, a scratch for example, and defects of similar types across a wafer lot to be grouped based on size, repeating defects and other user-defined specifications. Automatically classifying defects provides far greater yield learning than human classification.

Yield Analysis. Using wafer maps, charts and graphs, the vast amounts of data gathered through automated inspection can be analyzed to determine trends across bumps, die, wafers and lots. This analysis may determine where in the process an inconsistency is being introduced, allowing for enhancements to be made and yields improved. Defect data analysis is performed to identify, analyze and locate the source of defects and other manufacturing process excursions. Using either a single wafer map or a composite map created from multiple wafer maps, this analysis enables identification of defect patterns and distribution. When combined with inspection data from strategically-placed inspection points, this analysis may pinpoint the source of the defects so corrective action can be taken.

Products

We market and sell products to all major logic, memory, and application specific integrated circuit (ASIC) device manufacturers. Our customers rely on Rudolph for versatile full-fab metrology and inspection systems as well as yield management software solutions. These systems are designed for high-volume production facilities and offer automated wafer handling for 200 and 300 mm configurations. Our systems operate at high throughput with ultraclean operation and high reliability.

| Product | Introduced | Functionality Metrology Systems | Type of Fab | |
|-----------------------|------------|---|------------------|---------------------|
| | | | Wafer Processing | Final Manufacturing |
| <i>MetaPULSE®</i> | 1997 | - Non-contact system for thin opaque films | | |
| <i>MetaPULSE-II</i> | 2001 | - Patented Picosecond Ultrasonic Laser Sonar Technology (PULSE®) | | |
| <i>MetaPULSE-III</i> | 2005 | - Designed for advanced copper and non-copper applications | X | |
| <i>MetaPULSE-IIIa</i> | 2007 | - Improved throughput and repeatability | | |
| <i>S3000A™</i> | 2007 | - Superior accuracy for transparent film measurements | X | |
| <i>S3000™/S2000™</i> | 2006 | - Incorporates ellipsometry technology for transparent film application - Optimized price/performance for fabwide applications - Available with pattern recognition software - Enhanced data review mode | X | |

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| Product | Introduced | Functionality | Type of Fab | |
|----------------|------------|---|------------------|---------------------|
| | | | Wafer Processing | Final Manufacturing |
| AXi™ Series | 2003 | Inspection & Probe Card Test Systems - Advanced detection of defects >0.5 micron - Inspection of patterned and unpatterned wafers - In line, high-speed, 100% inspection - Full color review | X | |
| E25™ System | 2003 | - 2D defect detection of the wafer's edge - Metrology of edge feature - Incorporated into the Explorer Cluster | X | X |
| B20™ System | 2003 | - 2D defect detection of the wafer's backside - Darkfield, brightfield and color imaging - Incorporated into the Explorer Cluster | X | X |
| NSX® Series | 1997 | - Fully automated defect detection >0.5 micron - 2D wafer, die & bump inspection - In line, high-speed, 100% inspection | | X |
| 3Di™ Series | 2001 | - 2D & 3D wafer bump inspection & metrology system - In line, high-speed, 100% inspection | | X |
| WaferView® 320 | 2004 | - Automated macro-defect inspection for lithography applications - Advanced color vision system - Patented knowledge-based algorithms | X | |
| ProbeWoRx® | 2003 | - Probe card production metrology - 3D Optical Comparative Metrology - High-speed test times - Automated, one-touch measurements | | X |
| WaferWoRx® | 2006 | - Probing process analysis - 3D probe tip analysis - Proprietary, advanced software | | X |
| PrecisionPoint | 2002 | - Probe card analyzer - Tests devices simultaneously - Upgradable | | X |

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| Product | Introduced | Functionality Software Solutions | Type of Fab | |
|----------------------|------------|--|------------------|---------------------|
| | | | Wafer Processing | Final Manufacturing |
| Discover™ | 2007 | <ul style="list-style-type: none"> - Fabwide software for archival and retrieval of process related data - Facilitates root cause analysis, yield enhancement and yield learning | X | |
| Discover Enterprise™ | 2005 | <ul style="list-style-type: none"> - In line, all surface defect analysis and data management - Trend analysis and visualization tools - Wafer maps visualize all-surface defects - Identifies root cause of defects and process excursions | X | X |
| Harmony ASR™ | 2005 | <ul style="list-style-type: none"> - Off line defect review and classification - Defects displayed in real time - Rapid classification of unknown defects; review of previously-classified defects | X | X |
| TrueADC™ | 2005 | <ul style="list-style-type: none"> - Automatic defect classification - High accuracy, consistency and scalability - Patented feature-based defect matching technology - Utilizes dynamic defect library method | X | X |
| Process Sentinel™ | 2006 | <ul style="list-style-type: none"> - Fabwide spatial process control system - Traces patterns back to yield-killing process issues - Combined defect and sort solution - Quickly isolates systemic faults - Advanced segmentation and wafer stacking capability | X | |
| TrueADC™ Enterprise | 2007 | <ul style="list-style-type: none"> - Serving the entire fab - Defect classification with a high level of accuracy - Ensures database lookup, classification and timely response to the tool - Minimum impact to throughput | X | X |
| Yield Optimizer™ | 2006 | <ul style="list-style-type: none"> - Builds predictive models - Optimizes yield and reduces excursions - Identifies the most critical metrology measurements for controlling yield | X | X |

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Customers

Over 90 semiconductor device manufacturers have purchased Rudolph products for installation at multiple sites. We support a diverse customer base in terms of both geographic location and type of semiconductor device manufactured. Our customers are located in 20 countries.

We depend on a relatively small number of customers and end users for a large percentage of our revenues. In the years 2005, 2006 and 2007, sales to end user customers that individually represented at least five percent of our revenues accounted for 62.6%, 40.9% and 37.1% of our revenues, respectively. In 2005, 2006 and 2007, sales to Intel Corporation accounted for 20.3%, 14.0 % and 11.5% of our revenues, respectively. No other individual end user customer accounted for more than 10% of our 2007 revenues. We do not have purchase contracts with any of our customers that obligate them to continue to purchase our products.

Research and Development

The thin film transparent, opaque process control and macro-defect inspection metrology market is characterized by continuous technological development and product innovations. We believe that the rapid and ongoing development of new products and enhancements to existing products is critical to our success. Accordingly, we devote a significant portion of our technical, management and financial resources to research and development programs.

The core competencies of our research and development team include metrology systems for high volume manufacturing, ellipsometry, ultra-fast optics, picosecond acoustic and optical design, advanced metrology application development and algorithm development. To leverage our internal research and development capabilities, we maintain close relationships with leading research institutions in the metrology field, including Brown University. Our relationship with Brown University has resulted in the development of the optical acoustic technology underlying our *MetaPULSE* product line. We have been granted exclusive licenses from Brown University Research Foundation, subject to rights retained by Brown and the United States government for their own non-commercial uses for several patents relating to this technology.

Our research and development expenditures in 2005, 2006 and 2007 were \$11.9 million, \$29.9 million and \$30.0 million, respectively. We plan to continue our strong commitment to new product development in the future, and we expect that our level of research and development expenses will increase in absolute dollar terms in future periods.

Sales, Customer Service and Application Support

We maintain an extensive network of direct sales, customer service and application support offices in several locations throughout the world. We maintain sales, service or applications offices in locations including but not limited to, New Jersey, Minnesota, Massachusetts, Texas, Washington, Germany, Scotland, Ireland, Israel, Korea, Singapore, Taiwan, China and Japan.

We provide our customers with comprehensive support before, during and after the delivery of our products. For example, in order to facilitate the smooth integration of our tools into our customers' operations, we often assign dedicated, site-specific field service and applications engineers to provide long-term support at selected customer sites. We also provide comprehensive service and applications training for customers at our training facility in Mt. Olive, New Jersey and at customer locations. In addition, we maintain a group of highly skilled applications scientists at strategically located facilities throughout the world and at selected customer locations.

Manufacturing

Our principal manufacturing activities include assembly, final test and calibration. These activities are conducted in our manufacturing facilities in New Jersey, Minnesota and Washington. Our core manufacturing competencies include electrical, optical and mechanical assembly and testing as well as the management of new

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product transitions. While we use standard components and subassemblies wherever possible, most mechanical parts, metal fabrications and critical components used in our products are engineered and manufactured to our specifications. We expect to rely increasingly on subcontractors and turnkey suppliers to fabricate components, build assemblies and perform other non-core activities in a cost-effective manner.

We rely on a number of limited source suppliers for certain parts and subassemblies. This reliance creates a potential inability to obtain an adequate supply of required components, and reduced control over pricing and time of delivery of components. An inability to obtain adequate supplies would require us to seek alternative sources of supply or might require us to redesign our systems to accommodate different components or subassemblies. However, if we were forced to seek alternative sources of supply, manufacture such components or subassemblies internally, or redesign our products, this could prevent us from shipping our products to our customers on a timely basis, which could have a material adverse effect on our operations.

Intellectual Property

We have a policy of seeking patents on inventions governing new products or technologies as part of our ongoing research, development, and manufacturing activities. As of December 31, 2007, we have been granted, or hold exclusive licenses to, 121 U.S. and foreign patents. The patents we own, jointly own or exclusively license have expiration dates ranging from 2008 to 2025. We also have 107 pending regular and provisional applications in the U.S. and other countries. Our patents and applications principally cover various aspects of transparent thin film measurement, altered material characterization and macro-defect detection and classification.

We have been granted exclusive licenses from Brown University Research Foundation, subject to rights retained by Brown and the United States government for their own non-commercial uses, for several patents relating to the optical acoustic technology underlying our *MetaPULSE* product family. The terms of these exclusive licenses are equal to the lives of the patents. We pay royalties to Brown based upon a percentage of our revenues from the sale of systems that incorporate technology covered by the Brown patents. We also have the right to support patent activity with respect to new ultra-fast acoustic technology developed by Brown scientists, and to acquire exclusive licenses to this technology. Brown may terminate the licenses if we fail to pay royalties to Brown or if we materially breach our license agreement with Brown.

Our pending patents may never be issued, and even if they are, these patents, our existing patents and the patents we license may not provide sufficiently broad protection to protect our proprietary rights, or they may prove to be unenforceable. To protect our proprietary rights, we also rely on a combination of copyrights, trademarks, trade secret laws, contractual provisions and licenses. There can be no assurance that any patents issued or licensed by us will not be challenged, invalidated or circumvented or that the rights granted thereunder will provide us with a competitive advantage.

The laws of some foreign countries do not protect our proprietary rights to as great an extent as do the laws of the United States, and many U.S. companies have encountered substantial infringement problems in protecting their proprietary rights against infringement in such countries, some of which are countries in which we have sold and continue to sell products. There is a risk that our means of protecting our proprietary rights may not be adequate. For example, our competitors may independently develop similar technology or duplicate our products. If we fail to adequately protect our intellectual property, it would be easier for our competitors to sell competing products.

Competition

The market for semiconductor capital equipment is highly competitive. We face substantial competition from established companies in each of the markets that we serve. We principally compete with KLA-Tencor and Camtek. We compete to a lesser extent with companies such as Nanometrics, Vistec, and Nikon. Each of our

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products also competes with products that use different metrology techniques. Some of our competitors have greater financial, engineering, manufacturing and marketing resources, broader product offerings and service capabilities and larger installed customer bases than we do.

Significant competitive factors in the market for metrology systems include system performance, ease of use, reliability, cost of ownership, technical support and customer relationships. We believe that, while price and delivery are important competitive factors, the customers' overriding requirement is for a product that meets their technical capabilities. To remain competitive, we believe we will need to maintain a high level of investment in research and development and process applications. No assurances can be given that we will continue to be competitive in the future.

Backlog

We schedule production of our systems based upon order backlog and informal customer forecasts. We include in backlog only those orders to which the customer has assigned a purchase order number and for which delivery has been specified within 12 months. Because shipment dates may be changed and customers may cancel or delay orders with little or no penalty, our backlog as of any particular date may not be a reliable indicator of actual sales for any succeeding period. At December 31, 2007, we had a backlog of approximately \$26.7 million compared with a backlog of approximately \$26.1 million at December 31, 2006.

Employees

As of December 31, 2007, we had 648 employees. Our employees are not represented by any collective bargaining agreements, and we have never experienced a work stoppage. We believe our employee relations are good.

Available Information

We were incorporated in New Jersey in 1958 and reincorporated in Delaware in 1999. The Internet website address of Rudolph Technologies, Inc. is <http://www.rudolphtech.com>. The information on our website is not incorporated into this Annual Report. The Company's Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K (and any amendments to those reports) are made available free of charge, on or through our Internet website, as soon as reasonably practicable after such material is electronically filed with or furnished to the Securities and Exchange Commission, or SEC. All reports we file with the SEC are also available free of charge via EDGAR through the SEC's website at <http://www.sec.gov>.

We also make available, free of charge, through the investors page on our corporate website Rudolph Technologies' corporate summary, Code of Business Conduct and Ethics and Financial Code of Ethics, charters of the committees of our board of directors, as well as other information and materials, including information about how to contact our board of directors, its committees and their members. To find this information and obtain copies, visit our website at <http://www.rudolphtech.com>.

Item 1A. Risk Factors.

Risks Related to Rudolph

Our operating results have varied and will likely continue to vary significantly from quarter to quarter in the future, causing volatility in our stock price

Our quarterly operating results have varied in the past and will likely continue to vary significantly from quarter to quarter in the future, causing volatility in our stock price. Some of the factors that may influence our operating results and subject our stock to extreme price and volume fluctuations include:

- changes in customer demand for our systems, which is influenced by economic conditions in the semiconductor device industry, demand for products that use semiconductors, market acceptance of our systems and products of our customers and changes in our product offerings;

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- seasonal variations in customer demand, including the tendency of European sales to slow significantly in the third quarter of each year;
- the timing, cancellation or delay of customer orders, shipments and acceptance;
- product development costs, including increased research, development, engineering and marketing expenses associated with our introduction of new products and product enhancements; and
- the levels of our fixed expenses, including research and development costs associated with product development, relative to our revenue levels.

In light of these factors and the cyclical nature of the semiconductor industry, we expect to continue to experience significant fluctuations in quarterly and annual operating results. Moreover, many of our expenses are fixed in the short-term which, together with the need for continued investment in research and development, marketing and customer support, limits our ability to reduce expenses quickly. As a result, declines in net sales could harm our business and the price of our common stock could substantially decline.

Our largest customers account for a significant portion of our revenues, and our revenues and cash flows would significantly decline if one or more of these customers were to purchase significantly fewer of our systems or they delayed or cancelled a large order

Sales to end user customers that individually represent at least five percent of our revenues typically account for, in the aggregate, a considerable amount of our revenues. We operate in the highly concentrated, capital-intensive semiconductor device manufacturing industry. Historically, a significant portion of our revenues in each quarter and year has been derived from sales to relatively few customers, and this trend is expected to continue. If any of our key customers were to purchase significantly fewer of our systems in the future, or if a large order were delayed or cancelled, our revenues and cash flows would significantly decline. We expect that we will continue to depend on a small number of large customers for a significant portion of our revenues for at least the next several years. In addition, as large semiconductor device manufacturers seek to establish closer relationships with their suppliers, we expect that our customer base will become even more concentrated.

Our revenue may vary significantly each quarter due to relatively small fluctuations in our unit sales

During any quarter, a significant portion of our revenue may be derived from the sale of a relatively small number of systems. Our transparent film measurement systems range in selling price from approximately \$250,000 to \$1.0 million per system, our opaque film measurement systems range in selling price from approximately \$900,000 to \$2.0 million per system and our macro-defect inspection and probe card and test analysis systems range in selling price from approximately \$250,000 to \$1.4 million per system. Accordingly, a small change in the number of systems we sell may also cause significant changes in our operating results. This, in turn, could cause fluctuations in the market price of our common stock.

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

Variations in the length of our sales cycles could cause our revenues and cash flows, and consequently, our business, financial condition, operating results and cash flows, to fluctuate widely from period to period. This variation could cause our stock price to decline. Our customers generally take a long time to evaluate our inspection and/or film metrology systems and many people are involved in the evaluation process. We expend significant resources educating and providing information to our prospective customers regarding the uses and benefits of our systems in the semiconductor fabrication process. The length of time it takes for us to make a sale depends upon many factors including, but not limited to:

- the efforts of our sales force;
- the complexity of the customer's fabrication processes;
- the internal technical capabilities and sophistication of the customer;

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- the customer's budgetary constraints; and
- the quality and sophistication of the customer's current metrology and/or inspection equipment.

Because of the number of factors influencing the sales process, the period between our initial contact with a customer and the time when we recognize revenue from that customer, if ever, and receive payment varies widely in length. Our sales cycles, including the time it takes for us to build a product to customer specifications after receiving an order to the time we recognize revenue, typically range from six to 15 months. Sometimes our sales cycles can be much longer, particularly with customers in Japan. During these cycles, we commit substantial resources to our sales efforts in advance of receiving any revenue, and we may never receive any revenue from a customer despite our sales efforts. If we do make a sale, our customers often purchase only one of our systems, and then evaluate its performance for a lengthy period before purchasing any more of our systems. The number of additional products a customer purchases, if any, depends on many factors, including a customer's capacity requirements. The period between a customer's initial purchase and any subsequent purchases can vary from six months to a year or longer, and variations in the length of this period could cause further fluctuations in our operating results and possibly in our stock price.

Most of our revenues have been derived from customers outside of the United States subjecting us to operational, financial and political risks, such as unexpected changes in regulatory requirements, tariffs, political and economic instability, outbreaks of hostilities, and difficulties in managing foreign sales representatives and foreign branch operations

Due to the significant level of our international sales, we are subject to a number of material risks, including:

Unexpected changes in regulatory requirements including tariffs and other market barriers. The semiconductor device industry is a high-visibility industry in many of the European and Asian countries in which we sell our products. Because the governments of these countries have provided extensive financial support to our semiconductor device manufacturing customers in these countries, we believe that our customers could be disproportionately affected by any trade embargoes, excise taxes or other restrictions imposed by their governments on trade with United States companies such as ourselves. Any restrictions of these types could result in a reduction in our sales to customers in these countries.

Political and economic instability. We are subject to various global risks related to political and economic instabilities in countries in which we derive sales. If terrorist activities, armed conflict, civil or military unrest or political instability occurs outside of the U.S., these events may result in reduced demand for our products. There is considerable political instability in Taiwan related to its disputes with China and in South Korea related to its disputes with North Korea. In addition, several Asian countries, particularly Japan, have experienced significant economic instability. An outbreak of hostilities or other political upheaval in China, Taiwan or South Korea, or an economic downturn in Japan or other countries, would likely harm the operations of our customers in these countries. The effect of these types of events on our revenues and cash flows could be material because we derive substantial revenues from sales to semiconductor device foundries in Taiwan such as Taiwan Semiconductor Manufacturing Company Ltd. and United Microelectronics Corporation, from memory chip manufacturers in South Korea such as Hynix and Samsung, and from semiconductor device manufacturers in Japan such as NEC and Toshiba.

Difficulties in staffing and managing foreign branch operations. During periods of tension between the governments of the United States and certain other countries, it is often difficult for United States companies such as ourselves to staff and manage operations in such countries.

Currency fluctuations as compared to the U.S. Dollar. A substantial portion of our international sales are denominated in U.S. dollars. As a result, if the dollar rises in value in relation to foreign currencies, our systems will become more expensive to customers outside the United States and less competitive with systems produced by competitors outside the United States. These conditions could negatively impact our international sales. Foreign sales also expose us to collection risk in the event it becomes more expensive for our foreign customers to convert their local currencies into U.S. dollars.

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If we deliver systems with defects, our credibility will be harmed and the sales and market acceptance of our systems will decrease

Our systems are complex and have occasionally contained errors, defects and bugs when introduced. When this occurs, our credibility and the market acceptance and sales of our systems could be harmed. Further, if our systems contain errors, defects or bugs, we may be required to expend significant capital and resources to alleviate these problems. Defects could also lead to product liability as a result of product liability lawsuits against us or against our customers. We have agreed to indemnify our customers under certain circumstances against liability arising from defects in our systems. Our product liability policy currently provides \$2.0 million of coverage per claim, with an overall umbrella limit of \$5.0 million. In the event of a successful product liability claim, we could be obligated to pay damages significantly in excess of our product liability insurance limits.

If we are not successful in developing new and enhanced products for the semiconductor device manufacturing industry we will lose market share to our competitors

We operate in an industry that is highly competitive and subject to evolving industry standards, rapid technological changes, rapid changes in consumer demands and the rapid introduction of new, higher performance systems with shorter product life cycles. To be competitive in our demanding market, we must continually design, develop and introduce in a timely manner new inspection and film metrology systems that meet the performance and price demands of semiconductor device manufacturers. We must also continue to refine our current systems so that they remain competitive. We expect to continue to make significant investments in our research and development activities. We may experience difficulties or delays in our development efforts with respect to new systems, and we may not ultimately be successful in our product enhancement efforts to improve and advance products or in responding effectively to technological change, as not all research and development activities result in viable commercial products. In addition, we cannot provide assurance that we will be able to develop new products for the most opportunistic new markets and applications. Any significant delay in releasing new systems could cause our products to become obsolete, adversely affect our reputation, give a competitor a first-to-market advantage or cause a competitor to achieve greater market share. 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 new products developed by us do not gain general market acceptance, we will be unable to generate revenues and recover our research and development costs

Metrology and inspection product development is inherently risky because it is difficult to foresee developments in semiconductor device manufacturing technology, coordinate technical personnel, and identify and eliminate system design flaws. Further, our products are complex and often the applications to our customers' businesses are unique. Any new systems we introduce may not achieve or sustain a significant degree of market acceptance and sales.

We expect to spend a significant amount of time and resources developing new systems and refining our existing systems. In light of the long product development cycles inherent in our industry, these expenditures will be made well in advance of the prospect of deriving revenue from the sale of those systems. Our ability to commercially introduce and successfully market new systems are subject to a wide variety of challenges during the development cycle, including start-up bugs, design defects, and other matters that could delay introduction of these systems. In addition, since our customers are not obligated by long-term contracts to purchase our systems, our anticipated product orders may not materialize, or orders that are placed may be cancelled. As a result, if we do not achieve market acceptance of new products, we may be unable to generate sufficient revenues and cash flows to recover our research and development costs and our market share, revenue, operating results or stock price would be negatively impacted.

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Even if we are able to develop new products that gain market acceptance, sales of these new products could impair our ability to sell existing products

Competition from our new systems could have a negative effect on sales of our existing systems and the prices that we could charge for these systems. We may also divert sales and marketing resources from our current systems in order to successfully launch and promote our new or next generation systems. This diversion of resources could have a further negative effect on sales of our current systems and the value of inventory.

If our relationships with our large customers deteriorate, our product development activities could be adversely affected

The success of our product development efforts depends on our ability to anticipate market trends and the price, performance and functionality requirements of semiconductor device manufacturers. In order to anticipate these trends and ensure that critical development projects proceed in a coordinated manner, we must continue to collaborate closely with our largest customers. Our relationships with these and other customers provide us with access to valuable information regarding trends in the semiconductor device industry, which enables us to better plan our product development activities. If our current relationships with our large customers are impaired, or if we are unable to develop similar collaborative relationships with important customers in the future, our product development activities could be adversely affected.

Our ability to reduce costs is limited by our ongoing need to invest in research and development and to provide customer support activities

Our industry is characterized by the need for continual investment in research and development as well as customer service and support. As a result, our operating results could be materially affected if operating costs associated with our research and development as well as customer support activities increase in the future or we are unable to reduce those activities.

We may fail to adequately protect our intellectual property and, therefore, lose our competitive advantage

Our future success and competitive position depend in part upon our ability to obtain and maintain proprietary technology for our principal product families, and we rely, in part, on patent and trade secret law and confidentiality agreements to protect that technology. If we fail to adequately protect our intellectual property, it will give our competitors a significant advantage. We own or have licensed a number of patents relating to our transparent and opaque thin film metrology and macro-defect inspection systems, and have filed applications for additional patents. Any of our pending patent applications may be rejected, and we may be unable to develop additional proprietary technology that is patentable in the future.

In addition, the patents that we do own or that have been issued or licensed to us may not provide us with competitive advantages and may be challenged by third parties. Further, third parties may also design around these patents. In addition to patent protection, we rely upon trade secret protection for our confidential and proprietary information and technology. We routinely enter into confidentiality agreements with our employees and other third parties. However, in the event that a confidentiality agreement is breached, we may not have adequate remedies. Our confidential and proprietary information and technology might also be independently developed by, or become otherwise known to, third parties.

Protection of our intellectual property rights, or the efforts of third parties to enforce their own intellectual property rights against us, may result in costly and time-consuming litigation, substantial damages, lost product sales and/or the loss of important intellectual property rights

We may be required to initiate litigation in order to enforce any patents issued to or licensed by us, or to determine the scope or validity of a third party's patent or other proprietary rights. Any litigation, regardless of outcome, could be expensive and time consuming, and could subject us to significant liabilities or require us to re-engineer our products or obtain expensive licenses from third parties.

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In addition, our commercial success depends in part on our ability to avoid infringing or misappropriating patents or other proprietary rights owned by third parties. From time to time we may receive communications from third parties asserting that our products or systems infringe, or may infringe, the proprietary rights of these third parties. These claims of infringement may lead to protracted and costly litigation, which could require us to pay substantial damages or have the sale of our products or systems stopped by an injunction. Infringement claims could also cause product or system delays or require us to redesign our products or systems, and these delays could result in the loss of substantial revenues. We may also be required to obtain a license from the third party or cease activities utilizing the third party's proprietary rights. We may not be able to enter into such a license or such a license may not be available on commercially reasonable terms. Accordingly, the loss of important intellectual property rights could hinder our ability to sell our systems, or make the sale of these systems more expensive.

Our efforts to protect our intellectual property may be less effective in certain foreign countries, where intellectual property rights are not as well protected as in the United States

The laws of some foreign countries do not protect our proprietary rights to as great an extent as do the laws of the United States, and many U.S. companies have encountered substantial problems in protecting their proprietary rights against infringement abroad. For example, Taiwan is not a signatory of the Patent Cooperation Treaty, which is designed to specify rules and methods for defending intellectual property internationally. The publication of a patent in Taiwan prior to the filing of a patent in Taiwan would invalidate the ability of a company to obtain a patent in Taiwan. Similarly, in contrast to the United States where the contents of patents remain confidential during the patent application process, in Taiwan the contents of a patent are published upon filing which provides competitors an advance view of the contents of a patent application prior to the establishment of patent rights. Consequently, there is a risk that we may be unable to adequately protect its proprietary rights in certain foreign countries. If this occurs, it would be easier for our competitors to develop and sell competing products in these countries.

Some of our current and potential competitors have significantly greater resources than we do, and increased competition could impair sales of our products or cause us to reduce our prices

The market for semiconductor capital equipment is highly competitive. We face substantial competition from established companies in each of the markets we serve. We principally compete with KLA-Tencor and Camtek. We compete to a lesser extent with companies such as Nanometrics, Vistec and Nikon. Each of our products also competes with products that use different metrology or inspection techniques. Some of our competitors have greater financial, engineering, manufacturing and marketing resources, broader product offerings and service capabilities and larger installed customer bases than we do. As a result, these competitors may be able to respond more quickly to new or emerging technologies or market developments by devoting greater resources to the development, promotion and sale of products, which, in turn, could impair sales of our products. Further, there may be significant merger and acquisition activity among our competitors and potential competitors, which, in turn, may provide them with a competitive advantage over us by enabling them to rapidly expand their product offerings and service capabilities to meet a broader range of customer needs.

Many of our customers and potential customers in the semiconductor device manufacturing industry are large companies that require global support and service for their semiconductor capital equipment. We believe that our global support and service infrastructure is sufficient to meet the needs of our customers and potential customers. However, some of our competitors have more extensive infrastructures than we do, which could place us at a disadvantage when competing for the business of global semiconductor device manufacturers. Many of our competitors are investing heavily in the development of new systems that will compete directly with our systems. We have from time to time selectively reduced prices on our systems in order to protect our market share, and competitive pressures may necessitate further price reductions. We expect our competitors in each product area to continue to improve the design and performance of their products and to introduce new products with competitive prices and performance characteristics. These product introductions would likely require us to

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decrease the prices of our systems and increase the level of discounts that we grant our customers. Price reductions or lost sales as a result of these competitive pressures would reduce our total revenues and could adversely impact our financial results.

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

We believe that once a semiconductor 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 application, a semiconductor 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.

We must attract and retain key personnel with knowledge of semiconductor device manufacturing and inspection and/or metrology equipment to help support our future growth, and competition for such personnel in our industry is high

Our success depends to a significant degree upon the continued contributions of our key management, engineering, sales and marketing, customer support, finance and manufacturing personnel. The loss of any of these key personnel, each of whom would be extremely difficult to replace, could harm our business and operating results. Although we have employment and noncompetition agreements with key members of our senior management team, including Messrs. McLaughlin and Roth, these individuals or other key employees may still leave us. We do not have key person life insurance on any of our executives. In addition, to support our future growth, we will need to attract and retain additional qualified employees. Competition for such personnel in our industry is intense, and we may not be successful in attracting and retaining qualified employees.

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

We obtain some of the components and subassemblies included in our systems from a limited group of suppliers and do not have long-term contracts with many of our suppliers. Our dependence on limited source suppliers of components and our lack of long-term contracts with many of our suppliers exposes us to several risks, including a potential inability to obtain an adequate supply of components, price increases, late deliveries and poor component quality. Disruption or termination of the supply of these components could delay shipments of our systems, damage our customer relationships and reduce our sales. From time to time in the past, we have experienced temporary difficulties in receiving shipments from our suppliers. The lead-time required for shipments of some of our components can be as long as four months. In addition, the lead time required to qualify new suppliers for lasers could be as long as a year, and the lead time required to qualify new suppliers of other components could be as long as nine months. If we are unable to accurately predict our component needs, or if our component supply is disrupted, we may miss market opportunities by not being able to meet the demand for our systems. Further, a significant increase in the price of one or more of these components or subassemblies could seriously harm our results of operations and cash flows.

Any prolonged disruption in the operations of our manufacturing facilities could have a material adverse effect on our revenues

Our manufacturing processes are highly complex and require sophisticated and costly equipment and a specially designed facility. As a result, any prolonged disruption in the operations of our manufacturing facilities, whether due to technical or labor difficulties, or destruction of or damage as a result of a fire or any other reason,

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could seriously harm our ability to satisfy our customer order deadlines. If we cannot timely deliver our systems, our results from operations and cash flows could be materially and adversely affected.

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 results of operations

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.

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

Our success depends on our ability to continually enhance and broaden our product offerings in response to changing technologies, customer demands and competitive pressures. To this end, we have, from time to time, engaged in the process of identifying, analyzing and negotiating possible acquisition transactions and we expect to continue to do so in the future. We may choose to acquire new and complementary businesses, products, technologies and/or services instead of developing them ourselves. We may, however, face competition for acquisition targets from larger and more established companies with greater financial resources, making it more difficult for us to complete acquisitions. We cannot provide any assurance that we will be successful in consummating future acquisitions on favorable terms or that we will realize the benefits that we anticipate from one or more acquisitions that we consummate. Integrating any business, product technology or service we acquire could be expensive and time-consuming and/or disrupt our ongoing business. Further, there are 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;
- failure to retain key employees and customer or supplier relationships;
- lower-than-expected market opportunities or market acceptance of any new products; and
- unexpected reduction of sales of existing products by new products.

Our inability to consummate one or more acquisitions on such favorable terms or our failure to realize the intended benefits from one or more acquisitions, could have a material adverse effect on our business, liquidity, financial position and/or results of operations, including as a result of our incurrence of indebtedness and related interest expense and our assumption of unforeseen contingent liabilities. In order to finance any acquisitions, we might need to raise additional funds through public or private equity or debt financings. In that event, we could be forced to obtain financing on terms that are not favorable to us and, in the case of equity financing, that result in dilution to our stockholders. In addition, any impairment of goodwill or other intangible assets, amortization of intangible assets, write-down of other assets or charges resulting from the costs of acquisitions and purchase accounting could harm our business and operating results.

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We may not realize the benefits of the Probe Card Test and Analysis division acquisition and the RVSI Inspection intellectual property and selected assets acquisition.

On December 18, 2007, we completed the acquisition of the semiconductor division of Applied Precision LLC to be known as our Probe Card Test and Analysis division. On January 22, 2008, we announced that we had acquired all intellectual property and selected assets from privately-held RVSI Inspection, headquartered in Hauppauge, New York. Our failure to meet the challenges involved in realizing any of the anticipated benefits of the acquisitions, could seriously harm our financial position, results of operations and cash flows. Realizing the benefits of the acquisitions will depend in part on the continued successful integration of technology, operations and personnel. The anticipated benefits of the acquisitions are based on projections and assumptions, not actual experience. The failure to realize any of the anticipated benefits of the acquisitions could seriously hinder our plans for product development as well as business and market expansion following the acquisitions.

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.

Changes in tax rates or tax liabilities could affect results.

As a global company, we are subject to taxation in the United States and various other countries. Significant judgment is required to determine and estimate worldwide tax liabilities. Our future annual and quarterly tax rates could be affected by numerous factors, including changes in the (1) applicable tax laws; (2) composition of earnings in countries with differing tax rates; or (3) valuation of our deferred tax assets and liabilities. In addition, we are subject to regular examination of our income tax returns by the Internal Revenue Service and other tax authorities. We regularly assess the likelihood of favorable or unfavorable outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. Although we believe our tax estimates are reasonable, there can be no assurance that any final determination will not be materially different from the treatment reflected in our historical income tax provisions and accruals, which could materially and adversely affect our results of operations.

We are subject to internal control evaluations and attestation requirements of Section 404 of the Sarbanes-Oxley Act.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, we must include in our Annual Report on Form 10-K a report of management on the effectiveness of our internal control over financial reporting and report by our independent registered public accounting firm regarding the effectiveness of our internal control. Ongoing compliance with these requirements is complex, costly and time-consuming. If (1) we fail to maintain effective internal control over financial reporting; (2) our management does not timely assess the adequacy of such internal control; or (3) our independent registered public accounting firm does not timely attest to the effectiveness of our internal control, we could be subject to regulatory sanctions and the public's perception of us may decline.

Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2007 and concluded that we did not maintain effective internal control over financial reporting as a result of the identification of a material weakness. The material weakness that we identified relates to the process

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and procedures surrounding the preparation and review of the income tax provision as of December 31, 2007. Specifically, we did not ensure that effective oversight of the work performed by our outside tax advisors was exercised. The errors resulting from the material weakness, which were primarily attributable to acquisition related tax matters, did not have a material effect on our financial results for the year ended December 31, 2007. However, combinations of such errors could have resulted in our annual or interim financial statements being materially misstated. For more information related to this material weakness and our remediation plans, see Part II, Item 9A. "Management's Report on Internal Control Over Financial Reporting".

Risks Related to the Semiconductor Device Industry

Cyclicality in the semiconductor device industry has led to substantial decreases in demand for our systems and may from time to time continue to do so

Our operating results are subject to significant variation due to the cyclical nature of the semiconductor device industry. Our business depends upon the capital expenditures of semiconductor device manufacturers, which, in turn, depend upon the current and anticipated market demand for semiconductors and products using semiconductors. The timing, length and severity of the up-and-down cycles in the semiconductor equipment industry are difficult to predict. This cyclical nature of the industry in which we operate affects our ability to accurately predict future revenue and, thus, future expense levels. When cyclical fluctuations result in lower than expected revenue levels, operating results may be adversely affected and cost reduction measures may be necessary in order for us to remain competitive and financially sound. During a down cycle, we must be in a position to adjust our cost and expense structure to prevailing market conditions and to continue to motivate and retain our key employees. In addition, during periods of rapid growth, we must be able to increase manufacturing capacity and personnel to meet customer demand. We can provide no assurance that these objectives can be met in a timely manner in response to industry cycles. If we fail to respond to industry cycles, our business could be seriously harmed.

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

We 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 or metrology equipment fails to grow in the long term, we may be unable to maintain current revenue levels in the short term and maintain our historical growth in the long term. Growth in the inspection market is dependent to a large extent upon microelectronic manufacturers replacing manual inspection with automated inspection technology. Growth in the metrology market is dependent to a large extent upon new chip designs and capacity expansion of microelectronic manufacturers. There is no assurance that manufacturers will undertake these actions at the rate we expect.

Risks Related to our Stock

Provisions of our charter documents and Delaware law, as well as our stockholder rights plan, could discourage potential acquisition proposals and/or delay, deter or prevent a change in control of our company

Provisions of our certificate of incorporation and bylaws, as well as our recently adopted stockholders rights plan, may inhibit changes in control of our company not approved by our board of directors. These provisions also limit the circumstances in which a premium can be paid for the common stock, and in which a proxy contest for control of our board may be initiated. These provisions provide for:

- a prohibition on stockholder actions through written consent;
- a requirement that special meetings of stockholders be called only by our chief executive officer or board of directors;
- advance notice requirements for stockholder proposals and director nominations by stockholders;
- limitations on the ability of stockholders to amend, alter or repeal our by-laws;
- the authority of our board to issue, without stockholder approval, preferred stock with such terms as the board may determine; and
- the authority of our board, without stockholder approval, to adopt a Stockholders Rights Plan. Such a Shareholders Rights Plan was adopted by the board of directors on June 27, 2005.

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We are also entitled to avail ourselves of the protections of Section 203 of the Delaware General Corporation Law, which could inhibit changes in control of us.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Our executive office building is located at One Rudolph Road in Flanders, New Jersey. We own and lease facilities for engineering, sales and service related purposes in the United States and six other countries—China, Japan, Korea, Singapore, Taiwan and Scotland. The following table indicates the general location, the general purpose and the square footage of our principal facilities. The expiration years of the leases covering the leased facilities are also indicated.

| <u>Location</u> | <u>Facility Purpose</u> | <u>Approximate Square Footage</u> | <u>Lease Expiration Year, Unless Owned</u> |
|--------------------------|--|---|--|
| Flanders, New Jersey | Executive Office | 20,000 | Owned |
| Mt. Olive, New Jersey | Engineering, Manufacturing and Service | 83,500 | 2016 |
| Bloomington, Minnesota | Engineering, Manufacturing and Service | 78,500 | 2012 |
| Lowell, Massachusetts | Engineering, Manufacturing and Service | 10,000 | 2008 |
| Richardson, Texas | Yield Metrology Group | 21,000 | Owned |
| Issaquah, Washington | Engineering, Manufacturing and Service | 28,000 | 2008 |
| Hsin-Chu, Taiwan | Sales and Service | 10,500 | 2008 |
| Takatsu, Japan | Sales and Service | 5,000 | 2008 |
| Sungnam-si, Korea | Sales and Service | 9,500 | 2009 |
| Shanghai, China | Sales and Service | 3,500 | 2009 |
| Singapore | Sales and Service | 2,000 | 2009 |
| Scotland, United Kingdom | Sales and Service | 1,000 | 2009 |

We also lease office space for other smaller sales and service offices in several locations throughout the world.

We believe that our existing facilities and capital equipment are adequate to meet our current requirements, and that suitable additional or substitute space is available on commercially reasonable terms if needed.

Item 3. Legal Proceedings.

From time to time we are subject to legal proceedings and claims in the ordinary course of business. We are not aware of any legal proceedings or claims that management believes would have a material adverse effect on our consolidated financial statements taken as a whole.

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

No matters were submitted to a vote of security holders during the fourth quarter of the fiscal year covered by this report.

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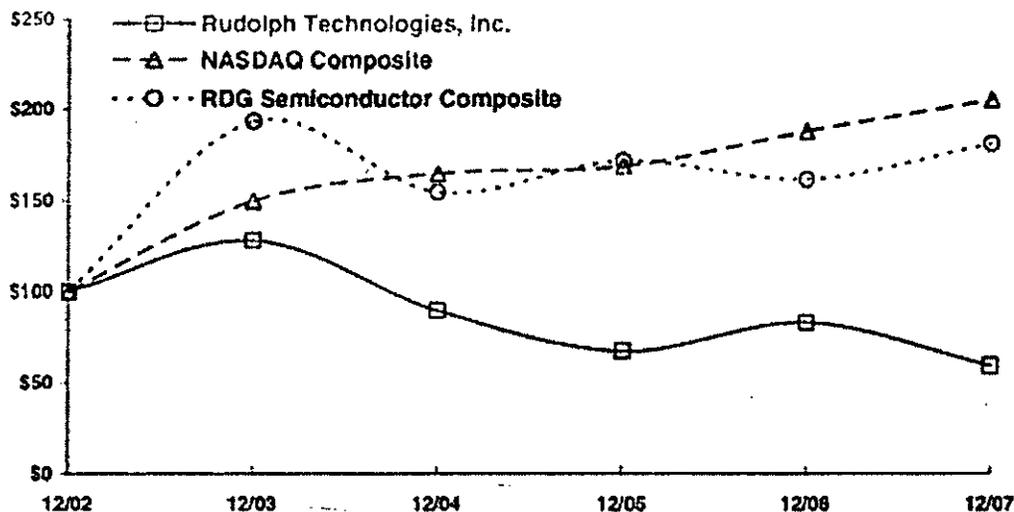
PART II

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

Our common stock is traded on the Nasdaq National Market under the symbol "RTEC." Set forth below is a line graph comparing the annual percentage change in the cumulative return to the stockholders of the Company's Common Stock with the cumulative return of the Nasdaq Composite Index and the Research Data Group (RDG) Semiconductor Composite Index for the period commencing on December 31, 2002, and ending on December 31, 2007. The information contained in the performance graph shall not be deemed to be "soliciting material" or to be "filed" with the SEC, nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, except to the extent that the Company specifically incorporates it by reference into such filing.

The graph assumes that \$100 was invested on December 31, 2002 in the Company's Common Stock and in each index, and that all dividends were reinvested. No cash dividends have been declared or paid on the Company's Common Stock. Stockholder returns over the indicated period should not be considered indicative of future stockholder returns. The Company operates on a 52-week calendar year. Under the assumptions stated above, over the period from December 31, 2002 to December 31, 2007 the total annual compound return on an investment in the Company would have been (9.99)%, as compared to 15.46% for the Nasdaq Composite Index and 12.60% for the RDG Semiconductor Composite Index.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*
Among Rudolph Technologies, Inc., The NASDAQ Composite Index
And The RDG Semiconductor Composite Index



* \$100 invested on 12/31/02 in stock or index-including reinvestment of dividends.
Fiscal year ending December 31.

| | 12/02 | 12/03 | 12/04 | 12/05 | 12/06 | 12/07 |
|-----------------------------|--------|--------|--------|--------|--------|--------|
| Rudolph Technologies, Inc. | 100.00 | 128.08 | 89.61 | 67.22 | 83.09 | 59.08 |
| NASDAQ Composite | 100.00 | 149.75 | 164.64 | 168.60 | 187.83 | 205.22 |
| RDG Semiconductor Composite | 100.00 | 193.54 | 154.51 | 171.58 | 161.34 | 181.00 |

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The following table sets forth, for the periods indicated, the high and low sale prices per share of our common stock as reported on the NASDAQ National Market.

| | Price Range of Common Stock | |
|------------------------------|--------------------------------|---------|
| | High | Low |
| Year Ended December 31, 2006 | | |
| First Quarter | \$18.09 | \$12.75 |
| Second Quarter | \$20.00 | \$13.70 |
| Third Quarter | \$19.25 | \$12.80 |
| Fourth Quarter | \$20.15 | \$13.10 |
| Year Ended December 31, 2007 | | |
| First Quarter | \$18.10 | \$14.83 |
| Second Quarter | \$18.21 | \$14.95 |
| Third Quarter | \$18.29 | \$11.50 |
| Fourth Quarter | \$15.09 | \$10.03 |

As of February 11, 2008, there were 96 stockholders of record of our common stock and approximately 5,753 beneficial stockholders. The closing market value of our common stock on February 11, 2008 was \$9.02.

We have never declared or paid a cash dividend on our common stock and do not anticipate paying any cash dividends in the foreseeable future. We currently intend to retain our earnings, if any, for the development of our business. The declaration of any future dividends by us is within the discretion of our Board of Directors and will be dependent on our earnings, financial condition and capital requirements as well as any other factors deemed relevant by our Board of Directors.

Certain Equity Compensation Plan Information included in Item 12 of Part III, hereof, is hereby incorporated into this Item 5 of Part II and will be included in our Proxy Statement for the 2008 Annual Meeting of Stockholders.

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Item 6. Selected Financial Data.

The following selected financial data should be read in conjunction with our Consolidated Financial Statements and the related Notes thereto appearing elsewhere in this Form 10-K, and "Management's Discussion and Analysis of Financial Condition and Results of Operations." The balance sheet data as of December 31, 2006 and 2007 and the statement of operations data for the years ended December 31, 2005, 2006 and 2007 set forth below were derived from our audited consolidated financial statements included elsewhere in this Form 10-K. The balance sheet data as of December 31, 2003, 2004 and 2005, and the statement of operations data for the years ended December 31, 2003 and 2004 were derived from our audited consolidated financial statements not included herein.

| | Year Ended December 31, | | | | |
|---|---------------------------------------|-----------------|-----------------|------------------|------------------|
| | 2003 | 2004 | 2005 | 2006 (1) | 2007 (2) |
| | (In thousands, except per share data) | | | | |
| Statement of Operations Data: | | | | | |
| Revenues | \$ 58,500 | \$ 84,248 | \$ 82,918 | \$ 201,168 | \$ 160,129 |
| Cost of revenues | 33,214 | 44,595 | 44,390 | 103,726 | 78,889 |
| Gross profit | 25,286 | 39,653 | 38,528 | 97,442 | 81,240 |
| Operating expenses: | | | | | |
| Research and development | 13,390 | 15,847 | 11,901 | 29,856 | 29,993 |
| In-process research and development | — | — | — | 9,900 | 1,000 |
| Selling, general and administrative | 10,561 | 15,222 | 20,373 | 32,393 | 33,204 |
| Amortization | 877 | 876 | 876 | 4,048 | 4,487 |
| Total operating expenses | 24,828 | 31,945 | 33,150 | 76,197 | 68,684 |
| Operating income | 458 | 7,708 | 5,378 | 21,245 | 12,556 |
| Interest income and other, net | 1,610 | 1,899 | 1,388 | 3,191 | 4,149 |
| Income before provision for income taxes | 2,068 | 9,607 | 6,766 | 24,436 | 16,705 |
| Provision for income taxes | 298 | 2,855 | 1,789 | 11,730 | 4,846 |
| Net income | \$ 1,770 | \$ 6,752 | \$ 4,977 | \$ 12,706 | \$ 11,859 |
| Earnings per share: | | | | | |
| Basic | \$ 0.11 | \$ 0.40 | \$ 0.29 | \$ 0.47 | \$ 0.41 |
| Diluted | \$ 0.11 | \$ 0.40 | \$ 0.29 | \$ 0.46 | \$ 0.40 |
| Weighted average shares outstanding: | | | | | |
| Basic | 16,409 | 16,746 | 16,899 | 27,276 | 29,168 |
| Diluted | 16,723 | 16,914 | 16,942 | 27,574 | 29,312 |
| | December 31, | | | | |
| | 2003 | 2004 | 2005 | 2006 | 2007 |
| Balance Sheet Data: | | | | | |
| Cash and cash equivalents | \$ 28,220 | \$ 12,627 | \$ 37,986 | \$ 72,479 | \$ 57,420 |
| Marketable securities | 52,342 | 64,120 | 42,821 | 33,714 | 16,505 |
| Working capital | 111,450 | 120,403 | 125,678 | 200,942 | 176,298 |
| Total assets | 160,371 | 171,280 | 180,001 | 440,486 | 460,216 |
| Retained earnings | 8,462 | 15,214 | 20,191 | 32,897 | 44,776 |
| Total stockholders' equity | 148,537 | 156,775 | 164,534 | 392,876 | 424,478 |

- (1) Effective January 1, 2006, we adopted the provisions prescribed by the Financial Accounting Standards Board in Statement of Financial Accounting Standards No. 123 (revised 2004), "Share-Based Payment." Consequently, we began recognizing compensation cost measured at fair value over the service period for stock awards expected to vest. In addition, Statement of Operations data for 2006 reflects the results of operations of August Technology since February 15, 2006.
- (2) Statement of Operations data for 2007 reflects the results of operations of PCTA since December 18, 2007.

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

Overview

We are a worldwide leader in the design, development, manufacture and support of high-performance process control metrology, defect inspection, and data analysis systems used by semiconductor device manufacturers. We provide yield management solutions used in both wafer processing and final manufacturing through a family of standalone systems and integrated modules for both transparent and opaque thin film measurements and macro-defect inspection. All of these systems feature production-worthy automation and are backed by worldwide customer support.

On December 18, 2007, Rudolph, along with our wholly-owned subsidiary, Mariner Acquisition Company LLC, entered into, and consummated the transactions contemplated by, an agreement with Applied Precision Holdings, LLC and Applied Precision, LLC (collectively, "Applied"), pursuant to which we purchased substantially all of the assets and assumed certain liabilities of the semiconductor division of Applied to be known as the Probe Card Test and Analysis division ("PCTA"). The PCTA is engaged in the business of designing, developing, manufacturing, marketing, selling and supporting advanced probe card metrology and wafer probe process monitoring equipment and is complementary to our existing business.

The closing occurred on December 18, 2007 and we paid \$57.9 million in cash and issued 1.3 million shares of common stock for a total purchase price of \$71.9 million. Under the terms of the purchase agreement, we agreed to assume the following liabilities of Applied relating to the PCTA: accounts payable, assigned contracts, licenses and leases, warranty claims and employee liabilities. In addition, we agreed to assume the defense of and all obligations relating to certain litigation. The cash portion of the purchase price is subject to further post-closing adjustment based on the final closing net asset balance. The purchase price has been preliminarily allocated based on estimates of the fair values of assets acquired and liabilities assumed. The final valuation of net assets is expected to be completed during 2008, but no later than one year from the acquisition date. The results of operations of the PCTA have been included in our consolidated financial statements since the date of the acquisition. Due to the size of the PCTA, we do not expect a material effect, other than the in-process research and development ("IPRD") charge, on comparability to prior periods of our financial position, results of operations and cash flows.

On February 15, 2006, the merger with August Technology was completed. Under the terms of the agreement, we paid an aggregate of \$37.2 million in cash and issued an aggregate of 11.3 million shares of our common stock to former August Technology shareholders. The results of operations of August Technology have been included in our consolidated financial statements since the date of the merger. Due to the size of August Technology and the effects of purchase accounting, our financial position, results of operations and cash flows may not be comparable to prior periods. With the exception of future tax adjustments related to the merger, the effects of purchase accounting were completed in 2006.

Rudolph's business is affected by the annual spending patterns of our customers on semiconductor capital equipment. The amount that our customers devote to capital equipment spending depends on a number of factors, including general worldwide economic conditions as well as other economic drivers such as personal computer, cell phone and personal electronic device sales. Current forecasts by industry analysts for the semiconductor device manufacturing industry project a year-over-year decrease in capital spending of 15-20% for 2008. We monitor capital equipment spending through announced capital spending plans by our customers and monthly-published industry data such as the book-to-bill ratio. The book-to-bill ratio is a 3-month running statistic that compares bookings or orders placed with capital equipment suppliers to billings or shipments. A book-to-bill above one shows that semiconductor device equipment manufacturers are ordering equipment at a pace that exceeds the equipment suppliers' shipments for the period. The three month rolling average North American semiconductor equipment book-to-bill ratio was 0.9 for the month of December 2007, increasing from the September 2007 book-to-bill ratio of 0.8.

Historically, a significant portion of our revenues in each quarter and year has been derived from sales to relatively few customers, and we expect this trend to continue. For the years ended December 31, 2005, 2006 and 2007, sales to customers that individually represented at least five percent of our revenues accounted for 62.6%,

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40.9%, and 37.1% of our revenues, respectively. For the years ended December 31, 2005, 2006 and 2007, sales to Intel accounted for 20.3%, 14.0% and 11.5% of our revenues, respectively.

We do not have purchase contracts with any of our customers that obligate them to continue to purchase our products, and they could cease purchasing products from us at any time. A delay in purchase or cancellation by any of our large customers could cause quarterly revenues to vary significantly. In addition, during a given quarter, a significant portion of our revenues may be derived from the sale of a relatively small number of systems. Our transparent film measurement systems range in average selling price from approximately \$250,000 to \$1.0 million per system, our opaque film measurement systems range in average selling price from approximately \$900,000 to \$2.0 million per system and our macro-defect inspection and probe card and test analysis systems range in average selling price from approximately \$250,000 to \$1.4 million per system. Accordingly, a small change in the number of systems we sell may also cause significant changes in our operating results. Because fluctuations in the timing of orders from our major customers or in the number of our individual systems we sell could cause our revenues to fluctuate significantly in any given quarter or year, we do not believe that period-to-period comparisons of our financial results are necessarily meaningful, and they should not be relied upon exclusively as an indication of our future performance.

A significant portion of our revenues has been derived from customers outside of the United States. In 2005, approximately 77.5% of our revenues were derived from customers outside of the United States, of which 56.3% were derived from customers in Asia and 21.2% were derived from customers in Europe. In 2006, approximately 70.6% of our revenues were derived from customers outside of the United States, of which 59.9% were derived from customers in Asia and 10.7% were derived from customers in Europe. In 2007, approximately 77.1% of our revenues were derived from customers outside of the United States, of which 58.5% were derived from customers in Asia and 18.6% were derived from customers in Europe. We expect that revenues generated from customers outside of the United States will continue to account for a significant percentage of our revenues.

The sales cycle for our systems typically ranges from six to 15 months, and can be longer when our customers are evaluating new technology. Due to the length of these cycles, we invest significantly in research and development and sales and marketing in advance of generating revenues related to these investments. Additionally, the rate and timing of customer orders may vary significantly from month to month. Accordingly, if sales of our products do not occur when we expect, our expenses and inventory levels may increase relative to revenues and total assets.

Results of Operations

The following table sets forth, for the periods indicated, our statements of operations data as percentages of our revenues. Our results of operations are reported as one business segment.

| | Year Ended December 31, | | |
|--|-------------------------|--------|--------|
| | 2005 | 2006 | 2007 |
| Revenues | 100.0% | 100.0% | 100.0% |
| Cost of revenues | 53.5 | 51.6 | 49.3 |
| Gross profit | 46.5 | 48.4 | 50.7 |
| Operating expenses: | | | |
| Research and development | 14.4 | 14.9 | 18.7 |
| In-process research and development | — | 4.9 | 0.6 |
| Selling, general and administrative | 24.6 | 16.1 | 20.7 |
| Amortization | 1.0 | 2.0 | 2.8 |
| Total operating expenses | 40.0 | 37.9 | 42.9 |
| Operating income | 6.5 | 10.5 | 7.8 |
| Interest income and other, net | 1.7 | 1.6 | 2.6 |
| Income before provision for income taxes | 8.2 | 12.1 | 10.4 |
| Provision for income taxes | 2.2 | 5.8 | 3.0 |
| Net income | 6.0% | 6.3% | 7.4% |

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Results of Operations 2005, 2006 and 2007

Revenues. Our revenues are derived from the sale of our systems, services, spare parts and software licensing. Our revenues were \$82.9 million, \$201.2 million and \$160.1 million in the years 2005, 2006 and 2007. These changes represent an increase of 142.6% from 2005 to 2006 and a decrease of 20.4% from 2006 to 2007. The increase in revenue from 2005 to 2006 was primarily related to the August Technology merger. The decrease in revenue from 2006 to 2007 is primarily due to the current weakness in the overall semiconductor equipment manufacturing sector.

The following table lists, for the periods indicated, the different sources of our revenues in dollars and as percentages of our total revenues:

| | Year Ended December 31, | | | | | |
|--------------------|-------------------------|-------------|------------------|-------------|------------------|-------------|
| | 2005 | | 2006 | | 2007 | |
| Systems: | | | | | | |
| Metrology | \$52,596 | 63% | \$ 68,035 | 34% | \$ 34,738 | 22% |
| Inspection | 11,644 | 14 | 100,666 | 50 | 85,012 | 53 |
| Parts | 9,188 | 11 | 14,217 | 7 | 13,678 | 9 |
| Services | 8,205 | 10 | 11,457 | 6 | 14,121 | 8 |
| Software licensing | 1,285 | 2 | 6,793 | 3 | 12,580 | 8 |
| Total revenue | <u>\$82,918</u> | <u>100%</u> | <u>\$201,168</u> | <u>100%</u> | <u>\$160,129</u> | <u>100%</u> |

Systems revenue increased from 2005 to 2006 reflecting additional revenues of \$88.2 million related to the August Technology merger and an increase in metrology systems revenues of \$15.4 million. Systems revenue decreased from 2006 to 2007 due to the current weakness in the overall semiconductor equipment manufacturing sector and reflects a decrease in metrology systems revenue of \$33.3 million and a decrease in inspection systems of \$15.7 million. Systems revenue generated by our latest product releases and major enhancements in each of our product families amounted to 32% of total revenue for 2005 compared to 31% of total revenue for 2006 and 29% of total revenue for 2007. The year-over-year increase in parts and service revenues in absolute dollars from 2005 to 2006 reflects additional parts and service revenues of \$3.5 million related to the August Technology merger as well as customers continuing to spend more on repair and maintenance of their existing equipment. The year-over-year increase in parts and service revenues in absolute dollars from 2006 to 2007 is primarily due to customers continuing to spend more on repair and maintenance of their existing equipment. Parts and services revenues are generated from part sales, maintenance service contracts, system upgrades, as well as time and material billable service calls. Software licensing revenues increased from 2005 to 2006 due to the August Technology merger. The year-over-year increase in software licensing revenues in absolute dollars from 2006 to 2007 reflects the sale of certain technology rights to Tokyo Electron.

Deferred revenues of \$6.0 million are recorded in other current liabilities at December 31, 2007 and primarily consist of \$5.3 million for deferred maintenance agreements and \$0.7 million for systems awaiting acceptance and outstanding deliverables.

Gross Profit. Our gross profit has been and will continue to be affected by a variety of factors, including inventory step-up from purchase accounting, manufacturing efficiencies, excess and obsolete inventory write-offs, pricing by competitors or suppliers, new product introductions, product sales mix, production volume, customization and reconfiguration of systems, international and domestic sales mix, and parts and service margins. Our gross profit was \$38.5 million, \$97.4 million and \$81.2 million in 2005, 2006 and 2007, respectively. The increase in gross profit as a percentage of revenue from 2005 to 2006 is primarily due to higher sales volume, partially offset by charges to cost of goods sold including a \$3.7 million charge for the sale of inventory written-up to fair value upon the August Technology merger and \$2.6 million in charges related to duplicative inventory. The increase in gross profit as a percentage of revenue from 2006 to 2007 is primarily due to the sales and transfer of certain technology rights to Tokyo Electron and higher charges to cost of goods sold in 2006.

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Research and Development. The thin film transparent, opaque process control and macro-defect inspection and probe card test analysis market is characterized by continuous technological development and product innovations. We believe that the rapid and ongoing development of new products and enhancements to existing products, including the transition to copper and low-k dielectrics, the progression to 300 mm wafers, the continuous shrinkage in critical dimensions, and the evolution of ultra-thin gate process control, is critical to our success. Accordingly, we devote a significant portion of our technical, management and financial resources to research and development programs. Research and development expenditures consist primarily of salaries and related expenses of employees engaged in research, design and development activities. They also include consulting fees and the cost of related supplies. Our research and development expense was \$11.9 million, \$29.9 million and \$30.0 million in 2005, 2006 and 2007, respectively. The year-over-year dollar increase from 2005 to 2006 primarily reflects additional research and development cost of \$13.0 million related to the merged activities of August Technology and increased compensation costs including share-based compensation costs. The year-over-year dollar increase from 2006 to 2007 is primarily due to the engineering team from the August Technology merger being included for the full year ended December 31, 2007, and the write-off of \$0.5 million for certain software project costs, partially offset by cost containment initiatives. We continue to maintain our commitment to investing in new product development and enhancement to existing products as we position ourselves for future growth.

In-Process Research and Development. In 2006, the merger with August Technology resulted in our recording of \$9.9 million for the write-off of IPRD. At the time of the merger, we determined that the IPRD had not reached technological feasibility and that it did not have an alternative future use. The purchased in-process technology projects, which were comprised of macro-defect inspection and software projects, had a value assigned to them of \$6.9 million and \$3.0 million, respectively. The defect inspection projects, relate to the next generation of our AXi defect detection systems with enhanced defect capture capabilities, and were approximately 90% complete as of the date of merger. The estimated costs to complete these projects consisted primarily of internal engineering labor costs and were completed by the third quarter of 2006. The software projects, relate to new enhancement features to our next generation inspection products, and were approximately 50% complete as of the date of merger, with the remaining cost to complete consisting primarily of internal software development labor cost. The software projects were completed in 2007. We generated revenue from the inspection project in the third quarter of 2006 and the software project in 2007.

In 2007, the acquisition of the PCTA resulted in our recording of \$1.0 million for the write-off of IPRD. At the time of the acquisition, we determined that the IPRD had not reached technological feasibility and that it did not have an alternative future use. The purchased in-process technology project was a probe card test project related to the next generation of our ProbeWoRx systems with enhanced capabilities, and was approximately 20% complete as of the date of acquisition. The estimated costs to complete this project of \$2.1 million, consist primarily of internal engineering labor costs which will be completed in 2008. If we are not successful in completing the inspection project on a timely basis, the future sales of our inspection products may be adversely affected resulting in erosion of our market share.

Selling, General and Administrative. Selling, general and administrative expense is primarily comprised of salaries and related costs for sales, marketing, and general administrative personnel, as well as commissions and other non-personnel related expenses. Our selling, general and administrative expense was \$20.4 million, \$32.4 million and \$33.2 million in 2005, 2006 and 2007, respectively. The year-over-year dollar increase from 2005 to 2006 in selling, general and administrative expense was primarily due to \$10.6 million related to merged activities of August Technology and increased compensation costs. The year-over-year dollar increase from 2006 to 2007 in selling, general and administrative expense was primarily due to administrative costs associated with the merged activities of August Technology being included for the full-year of 2007 and increased compensation costs.

Interest Income and Other, Net. Interest income and other, net was \$1.4 million, \$3.2 million and \$4.1 million in 2005, 2006 and 2007, respectively. Interest income and other, net consisted primarily of interest

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income and realized gains and losses on sales of marketable securities. The year-over year increases in interest income and other, net of \$1.8 million from 2005 to 2006 and \$1.0 million from 2006 to 2007 are primarily due to higher invested cash balances and higher average interest rates.

Income Taxes. Income tax expense was \$1.8 million, \$11.7 million and \$4.8 million in 2005, 2006 and 2007, respectively. Our effective tax rate was 26%, 48% and 29% in 2005, 2006 and 2007, respectively. Our effective tax rate differs from the statutory rate of 35% primarily as a function of state income taxes offset by benefits from research and development tax credits, the domestic manufacturing production deduction and tax exempt interest. In addition, in 2006 and 2007, our effective tax rate was impacted by the non-deductibility of the IPRD charges for tax purposes of \$9.9 million and \$1.0 million, respectively.

Liquidity and Capital Resources

At December 31, 2005, we had \$80.8 million of cash, cash equivalents and marketable securities and \$125.7 million in working capital. At December 31, 2006, our cash, cash equivalents and marketable securities totaled \$106.2 million, while working capital amounted to \$200.9 million. At December 31, 2007, we had \$73.9 million of cash, cash equivalents and marketable securities and \$176.3 million in working capital.

Typically during periods of revenue growth, changes in accounts receivable and inventories represent a use of cash as we incur costs and expend cash in advance of receiving cash from our customers. Similarly, during periods of declining revenue, changes in accounts receivable and inventories represent a source of cash as inventory purchases decline and revenue from prior periods is collected. However, in 2005, as our revenues declined from \$84.2 million to \$82.9 million, our change in accounts receivables represented a use of cash. This was primarily due to longer collection times from our Japanese customers. Also in 2007, as our revenues declined our change in inventories represented a use of cash. This was primarily due to increasing inventory related to new products and the slow down in the back-end of the inspection business. Because of the lack of visibility in projected sales for 2008, we are uncertain as to the level of expected cash to be provided from operating activities in 2008.

Net cash provided by operating activities in 2005, 2006 and 2007 totaled \$8.1 million, \$20.6 million and \$23.6 million, respectively. During 2005, cash provided by operating activities was primarily due to net income, adjusted to exclude the effect of non-cash charges, of \$10.4 million, a decrease in inventories of \$3.7 million, an increase in other non-current liabilities of \$0.8 million and a decrease in prepaid expenses and other assets of \$0.6 million, partially offset by an increase in accounts receivable of \$5.7 million, a decrease in accrued liabilities of \$1.2 million and a decrease in income taxes payable of \$0.3 million. The increase in receivables is primarily due to the timing of shipments towards the end of the year and longer collection times in Japan. During 2006, cash provided by operating activities was primarily due to net income, adjusted to exclude the effect of non-cash charges, of \$42.6 million, an increase in deferred revenue of \$7.9 million, an increase in other current liabilities of \$1.0 million, an increase in accrued liabilities of \$0.8 million and an increase in income taxes payable of \$0.6 million, partially offset by an increase in accounts receivable of \$25.1 million and an increase in inventories of \$7.1 million. During 2007, cash provided by operating activities was primarily due to net income, adjusted to exclude the effect of non-cash charges, of \$23.4 million and a decrease in accounts receivable of \$21.4, partially offset by a decrease in deferred revenue of \$6.1 million, an increase in inventories of \$5.4 million, a decrease in accrued liabilities of \$4.0 million, a decrease in accounts payable of \$3.3 million and an increase in prepaid expenses and other assets of \$2.3 million.

Net cash provided by investing activities in 2005 and 2006 totaled \$16.0 million and \$3.6 million, respectively. Net cash used in 2007 was \$40.5 million. In 2005, net cash provided by investing activities included proceeds from sales of marketable securities of \$70.4 million, partially offset by purchases of marketable securities of \$50.0 million, capital expenditures of \$2.7 million, costs incurred for capitalized software of \$0.9 million and acquisition costs for business combinations of \$0.9 million. Capital expenditures in 2005 were primarily related to our new facility in Mt. Olive, New Jersey. In 2006, net cash provided by investing activities

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included proceeds from sales of marketable securities of \$93.4 million, partially offset by purchases of marketable securities of \$70.8 million, capital expenditures of \$4.7 million, costs incurred for capitalized software of \$2.2 million and acquisition costs for the August Technology merger of \$12.1 million net of cash acquired of \$29.9 million. In 2007, net cash used by investing activities included purchases of marketable securities of \$77.7 million, acquisition costs for business combinations of \$56.2 million, capital expenditures of \$1.0 million, costs incurred for capitalized software of \$0.7 million, partially offset by proceeds from sales of marketable securities of \$95.1 million. Capital expenditures over the next twelve months are expected to be approximately within the range of \$3.0 million to \$6.0 million.

Net cash provided by financing activities was \$1.5 million, \$10.1 million and \$1.5 million in 2005, 2006 and 2007, respectively. In 2005, net cash provided by financing activities was a result of proceeds received from sales of shares through share-based compensation plans. In 2006, net cash provided by financing activities was a result of proceeds received from sales of shares through share-based compensation plans of \$9.0 million and tax benefit from share-based compensation plans of \$1.2 million. In 2007, net cash provided by financing activities was a result of proceeds received from sales of shares through share-based compensation plans of \$1.3 million and tax benefit from share-based compensation plans of \$0.1 million.

From time to time we evaluate whether to acquire new or complementary businesses, products and/or technologies. We may fund all or a portion of the purchase price of these acquisitions in cash. On February 15, 2006, we announced that our merger with August Technology Corporation had been completed. Under the terms of the agreement, we paid an aggregate of \$37.2 million in cash and issued an aggregate of 11.3 million shares of our common stock to former August Technology shareholders. On December 18, 2007, we announced that our acquisition of the semiconductor division of Applied Precision Holdings, LLC had been completed. Under the terms of the agreement, we paid an aggregate of \$57.9 million in cash and issued an aggregate of 1.3 million shares of our common stock to Applied Precision Holdings, LLC. On January 22, 2008, we announced that we had acquired all intellectual property and selected assets from privately-held RVSI Inspection, LLC, headquartered in Hauppauge, New York. We paid cash for this acquisition and will account for it as a business combination.

Our future capital requirements will depend on many factors, including the timing and amount of our revenues and our investment decisions, which will affect our ability to generate additional cash. We believe that our existing cash, cash equivalents and marketable securities will be sufficient to meet our anticipated cash requirements for working capital and capital expenditures for the foreseeable future. Thereafter, if cash generated from operations and financing activities is insufficient to satisfy our working capital requirements, we may seek additional funding through bank borrowings, sales of securities or other means. There can be no assurance that we will be able to raise any such capital on terms acceptable to us or at all.

Contractual Obligations

The following table summarizes our significant contractual obligations at December 31, 2007, and the effect such obligations are expected to have on our liquidity and cash flows in future periods. This table excludes the liability for unrecognized tax benefits that totaled approximately \$5.9 million at December 31, 2007. We are currently unable to provide a reasonably reliable estimate of the amount or periods when cash settlement of this liability may occur.

| | Payments due by period | | | | |
|------------------------------------|------------------------|------------------|----------------|----------------|-------------------|
| | Total | Less than 1 year | 1-3 years | 3-5 years | More than 5 years |
| Operating lease obligations | \$10,726 | \$ 2,527 | \$3,388 | \$2,633 | \$ 2,178 |
| Open and committed purchase orders | 21,506 | 21,506 | — | — | — |
| Total | <u>\$32,232</u> | <u>\$ 24,033</u> | <u>\$3,388</u> | <u>\$2,633</u> | <u>\$ 2,178</u> |

Off-Balance Sheet Arrangements

The Company does not have any off-balance sheet arrangements that have or are reasonably likely to have a material effect on our financial condition, results of operations or liquidity and capital resources.

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Critical Accounting Policies

Management's discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America. We review the accounting policies we use in reporting our financial results on a regular basis. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities. On an ongoing basis, we evaluate our estimates, including those related to revenue recognition, accounts receivable, inventories, business acquisitions, intangible assets, share-based payments, income taxes and warranty obligations. We base our estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Results may differ from these estimates due to actual outcomes being different from those on which we based our assumptions. These estimates and judgments are reviewed by management on an ongoing basis, and by the Audit Committee at the end of each quarter prior to the public release of our financial results. We believe the following critical accounting policies affect our more significant judgments and estimates used in the preparation of our consolidated financial statements.

Revenue Recognition. Revenue is recognized when there is persuasive evidence of an arrangement, delivery has occurred, the sales price is fixed or determinable, and collection of the related receivable is reasonably assured. Certain sales of our products are sold and accounted for as multiple element arrangements, consisting primarily of the sale of the product, software, installation and training services. We generally recognize product revenue upon shipment. When customer acceptance is subjective and not obtained prior to shipment, we defer product revenue until such time as positive affirmation of acceptance has been obtained from the customer. Customer acceptance is generally based on our products meeting published performance specifications. The amount of revenue allocated to the shipment of products is done on a residual method basis. Under this method, the total arrangement value is allocated first to undelivered contract elements, based on their fair values, with the remainder being allocated to product revenue. The fair value of installation and training services is based upon billable hourly rates and the estimated time to complete the service. Revenue related to undelivered installation services is deferred until such time as installation is completed at the customer's site. Revenue related to training services is recognized ratably over the training period. 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.

Allowance for Doubtful Accounts. We maintain allowances for doubtful accounts for estimated losses resulting from the inability of our customers to make required payments. We specifically analyze accounts receivable and analyze historical bad debts, customer concentrations, customer credit-worthiness, current economic trends and changes in our customer payment terms when evaluating the adequacy of the allowance for doubtful accounts. If the financial condition of our customers were to deteriorate, resulting in an impairment of their ability to make payments or our assumptions are otherwise incorrect, additional allowances may be required.

Excess and Obsolete Inventory. We write down our excess and obsolete inventory equal to the difference between the cost of inventory and the estimated market value based upon assumptions about future product life-cycles, product demand and market conditions. If actual product life-cycles, product demand and market conditions are less favorable than those projected by management, additional inventory write-downs may be required.

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Business Acquisitions. We account for acquired or merged businesses using the purchase method of accounting which requires that the assets acquired and liabilities assumed be recorded at the date of acquisition or merger at their respective fair values. The judgments made in determining the estimated fair value assigned to each class of assets acquired and liabilities assumed, as well as asset lives, can materially impact our consolidated financial position and results of operations. Accordingly, for significant items, we typically obtain assistance from independent valuation specialists.

There are several methods that can be used to determine the fair value of assets acquired and liabilities assumed. For intangible assets, we normally utilize the "income method." This method starts with a forecast of all of the expected future net cash flows. These cash flows are then adjusted to present value by applying an appropriate discount rate that reflects the risk factors associated with the cash flow streams. Some of the more significant estimates and assumptions inherent in the income method or other methods include the projected future cash flows (including timing) and the discount rate reflecting the risks inherent in the future cash flows. Determining the useful life of an intangible asset also requires judgment. For example, different types of intangible assets will have different useful lives and certain assets may even be considered to have indefinite useful lives. All of these judgments and estimates can significantly impact our consolidated financial position and results of operations.

The purchase price is preliminarily allocated based on estimates of the fair values of assets acquired and liabilities assumed. The final valuation of net assets is expected to be completed within one year from the acquisition or merger date. At the acquisition or merger date, we begin to formulate a plan to exit or restructure certain activities, if applicable. As we finalize our plans to exit or restructure activities, we may record additional liabilities for, among other things, severance and severance related costs, which would also increase the goodwill recorded.

Goodwill. Our formal annual impairment testing date for goodwill is October 31st or prior to the next annual testing date if an event occurs or circumstances change that would make it more likely than not that the fair value of a reporting unit is below its carrying amount. In fiscal 2007, we changed our annual impairment testing date from December 31 to October 31. This change was made to allow us additional time to complete the impairment test by the end of the financial statement reporting deadline. The goodwill impairment test is a two-step process which requires us to make judgmental assumptions regarding fair value. The initial first step consists of estimating the fair value of our aggregated reporting unit using the market value of our common stock at October 31, multiplied by the number of outstanding common shares (market capitalization) and an implied control premium as if it were to be acquired by a single stockholder. We obtain information on completed sales of similar companies in a comparable industry to estimate an implied control premium for us. We compare the estimated fair value of the reporting unit to its carrying value which includes goodwill. If the results of the initial market capitalization test produce results which are below the reporting unit carrying value, we will also consider if, the market capitalization is temporarily low and, if so, we may also perform a discounted cash flow test. If the estimated fair value is less than the carrying value, the second step is completed to compute the impairment amount by determining the "implied fair value" of goodwill. This determination requires the allocation of the estimated fair value of the reporting unit to the assets and liabilities of the reporting unit. Any remaining unallocated fair value represents the "implied fair value" of goodwill which is compared to the corresponding carrying value to compute the goodwill impairment amount. We believe our estimates of the underlying components of fair value are reasonable. As of December 31, 2007, a one dollar per share increase or decrease in our common stock would have a \$30.5 million effect on our market capitalization before adding a control premium. Testing is required between annual tests if events occur or circumstances change that would, more likely than not, reduce the fair value of the reporting unit below its carrying value. Such an event may occur if, for an extended period of time, the market value of our common stock plus the implied control premium were less than the carrying value. Should actual results not meet our expectations or assumptions change in future years, our impairment assessment could result in a lower fair value estimate which could result in an impairment charge that may materially affect the carrying value of our assets and results from operations.

Long-Lived Assets and Acquired Intangible Assets. We periodically review long-lived assets, other than goodwill, for impairment whenever changes in events or circumstances indicate that the carrying amount of an

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asset may not be recoverable. Assumptions and estimates used in the determination of impairment losses, such as future cash flows and disposition costs, may affect the carrying value of long-lived assets and the impairment of such long-lived assets, if any, could have a material effect on our consolidated financial statements.

Share-Based Compensation. Prior to fiscal 2006, we accounted for share-based compensation plans under the recognition and measurement provisions of Accounting Principles Board Opinion No. 25. Effective January 1, 2006, we adopted the provisions of Statement of Financial Accounting Standards ("SFAS") No. 123 (revised 2004) "Share-Based Payment" ("SFAS 123R") using the modified-prospective-transition method. SFAS 123R requires companies to recognize the fair-value of share-based compensation transactions in the statement of operations. The fair value of our stock options is estimated at the date of grant using the Black-Scholes option pricing model. The Black-Scholes valuation calculation requires us to estimate key assumptions such as future stock price volatility, expected terms, risk-free rates and dividend yield. Expected stock price volatility is based on historical volatility of our stock. We use historical data to estimate option exercises and employee terminations within the valuation model. The expected term of options granted is derived from an analysis of historical exercises and remaining contractual life of stock options, and represents the period of time that options granted are expected to be outstanding. The risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant. We have never paid cash dividends, and do not currently intend to pay cash dividends, and thus have assumed a 0% dividend yield. If our actual experience differs significantly from the assumptions used to compute our share-based compensation cost, or if different assumptions had been used, we may have recorded too much or too little share-based compensation cost. In addition, we are required to estimate the expected forfeiture rate of our share grants and only recognize the expense for those shares expected to vest. If the actual forfeiture rate is materially different from our estimate, our share-based compensation expense could be materially different.

Warranties. We provide for the estimated cost of product warranties at the time revenue is recognized. While we engage in product quality programs and processes, our warranty obligation is affected by product failure rates, material usage and service delivery costs incurred in correcting a product failure. Should actual product failure rates, material usage or service delivery costs differ from our estimates, revisions to the estimated warranty liability would be required.

Accounting for Income Taxes. As part of the process of preparing our consolidated financial statements, we are required to estimate our actual current tax exposure together with our temporary differences resulting from differing treatment of items for tax and accounting purposes. These temporary differences result in deferred tax assets and liabilities, which are included within our consolidated balance sheet. We must then assess the likelihood that our deferred tax assets will be recovered from future taxable income and to the extent we believe that recovery is not likely, we must establish a valuation allowance. Significant management judgment is required in determining our provision for income taxes and any valuation allowance recorded against our deferred tax assets. The need for a valuation allowance is based on our estimates of taxable income by jurisdiction in which we operate and the period over which our deferred taxes will be recoverable. In the event that actual results differ from these estimates or we adjust these estimates in future periods, we may need to adjust the valuation allowance, which could materially impact our financial position and results of operations. At December 31, 2007, we had a valuation allowance of \$1.3 million for a portion of deferred tax assets attributable to state R&D tax credits and capital losses.

We adopted FASB Financial Interpretation No. ("FIN") 48, "Accounting for Uncertainty in Income Taxes," at the beginning of fiscal 2007. As a result of the adoption of FIN 48, we recognize liabilities for uncertain tax positions based on the two-step process prescribed by the interpretation. The first step requires us to determine if the weight of available evidence indicates that the tax position has met the threshold for recognition; therefore, we must evaluate whether it is more likely than not that the position will be sustained on audit, including resolution of any related appeals or litigation processes. The second step requires us to measure the tax benefit of the tax position taken, or expected to be taken, in an income tax return as the largest amount that is more than 50% likely of being realized when effectively settled. This measurement step is inherently difficult and requires subjective estimations

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of such amounts to determine the probability of various possible outcomes. We reevaluate the uncertain tax positions each quarter based on factors including, but not limited to, changes in facts or circumstances, changes in tax law, effectively settled issues, and new audit activity. Such a change in recognition or measurement could result in the recognition of a tax benefit or an additional charge to the tax provision in the period.

Although we believe the measurement of our liabilities for uncertain tax positions is reasonable, no assurance can be given that the final outcome of these matters will not be different than what is reflected in the historical income tax provisions and accruals. If additional taxes are assessed as a result of an audit or litigation, it could have a material effect on our income tax provision and net income in the period or periods for which that determination is made.

Impact of Recent Accounting Pronouncements

In December 2007, the Financial Accounting Standards Board ("FASB") issued SFAS No. 141R, "Business Combinations" ("SFAS 141R"), which establishes principles and requirements for how an acquirer recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, any noncontrolling interest in an acquiree, and the recognition and measurement of goodwill acquired in a business combination or a gain from a bargain purchase. SFAS 141R applies prospectively to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after December 15, 2008.

In November 2007, the Emerging Issues Task Force ("EITF") issued EITF Issue No. 07-1 ("EITF 07-1"), "Accounting for Collaborative Arrangements," which defines collaborative arrangements and establishes reporting and disclosure requirements for such arrangements. EITF 07-1 is effective for fiscal years beginning after December 15, 2008. We are continuing to evaluate the impact of adopting the provisions EITF 07-1; however, we do not anticipate that adoption will have a material effect on our financial position or results of operations.

In February 2007, the FASB issued SFAS No. 159 ("SFAS 159"), "The Fair Value Option for Financial Assets and Financial Liabilities- Including an amendment of FASB Statement No. 115." SFAS 159 permits entities to choose to measure many financial instruments and certain other items at fair value. The objective is to improve financial reporting by providing entities with the opportunity to mitigate volatility in reporting earnings caused by measuring related assets and liabilities differently without having to apply complex hedge accounting provisions. SFAS 159 is effective for fiscal years that begin after November 15, 2007. Our adoption of SFAS 159 is not expected to impact our financial position or results of operations.

In September 2006, the FASB issued SFAS No. 157 ("SFAS 157"), "Fair Value Measurements." SFAS 157 defines fair value, establishes a framework for measuring fair value and expands disclosures about fair value measurements. SFAS 157 is effective for fiscal years beginning after November 15, 2007. However, on February 12, 2008, the FASB issued FSP FAS 157-2 which defers the effective date of SFAS 157 for one year for nonfinancial assets and non-financial liabilities that are not recognized or disclosed at fair value in the financial statements on a recurring basis. Based on our current operations, we do not expect that the adoption of the non-deferred portion of SFAS 157 will have a material impact on our financial position or results of operations. We have not yet evaluated the impact of the adoption of the deferred portion of SFAS 157.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Interest Rate and Credit Market Risk

We are exposed to changes in interest rates and market liquidity primarily from our investments in certain available-for-sale securities. Our available-for-sale securities consist of fixed and variable rate income investments (U.S. Treasury and Agency securities, asset-backed securities, mortgage-backed securities, auction rate securities and corporate bonds). We continually monitor our exposure to changes in interest rates, market

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liquidity and credit ratings of issuers from our available-for-sale securities. It is possible that we are at risk if interest rates, market liquidity or credit ratings of issuers change in an unfavorable direction. The magnitude of any gain or loss will be a function of the difference between the fixed rate of the financial instrument and the market rate and our financial condition and results of operations could be materially affected. Based on sensitivity analysis performed on our financial investments held as of December 31, 2007, an immediate adverse change of 10% in interest rates (e.g. 3.00% to 3.30%) would result in a \$0.1 million decrease in the fair value of our available-for-sale securities.

Foreign Currency Risk

We have branch operations in Taiwan, Singapore, China and Korea and wholly-owned subsidiaries in Europe and Japan. Our international subsidiaries and branches operate primarily using local functional currencies. These foreign branches and subsidiaries are limited in their operations and level of investment so that the risk of currency fluctuations is not material. A substantial portion of our international systems sales are denominated in U.S. dollars with the exception of Japan and, as a result, we have relatively little exposure to foreign currency exchange risk with respect to these sales. Substantially all our sales in Japan are denominated in Japanese yen. From time to time, we may enter into forward exchange contracts to economically hedge a portion of, but not all, existing and anticipated foreign currency denominated transactions expected to occur within 12 months. The change in fair value of the forward contracts is recognized in the Consolidated Statements of Operations each reporting period. As of December 31, 2006 and 2007, we had fifteen and seventeen forward contracts outstanding, respectively. The total notional contract value of these outstanding forward contracts at December 31, 2006 and 2007 was \$6.4 million and \$5.7 million, respectively. We do not use derivative financial instruments for trading or speculative purposes.

Item 8. Financial Statements and Supplementary Data.

The consolidated financial statements required by this item are set forth on the pages indicated at Item 15(a) of this Annual Report on Form 10-K.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

a) Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time period specified in SEC rules and forms. These controls and procedures are also designed to ensure that such information is accumulated and communicated to our management, including our principal executive and principal financial officers, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating disclosure controls and procedures, we have recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. Management is required to apply judgment in evaluating its controls and procedures.

We performed an evaluation under the supervision and with the participation of our management, including our principal executive and principal financial officers, to assess the effectiveness of the design and operation of our disclosure controls and procedures under the Exchange Act as of December 31, 2007. Based on that evaluation, our management, including our principal executive and principal financial officers, concluded that our disclosure controls and procedures were not effective as of December 31, 2007 because of a material weakness in our internal control over financial reporting.

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b) Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). 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 accounting principles generally accepted in the United States of America. Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on that criteria, the material weakness described below has caused our management to conclude we did not maintain effective internal control over financial reporting as of December 31, 2007.

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.

A material weakness is defined in Public Company Accounting Oversight Board Auditing Standard No. 5 as a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis.

Our management determined that the process and procedures surrounding the preparation and review of the income tax provision did not include adequate management oversight and review controls as of December 31, 2007. Specifically, we did not ensure that effective oversight of the work performed by our outside tax advisor, Deloitte Tax LLP was exercised. The resulting errors from the material weakness, which were primarily attributable to acquisition related tax matters, did not have a material effect on the Company's financial results for the year ended December 31, 2007. However, combinations of such errors could have resulted in our annual or interim financial statements being materially misstated.

Management's assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2007, excluded PCTA because it was acquired by the Company in December 2007. The total assets and total revenue of PCTA represent 17.0% or \$78.3 million of consolidated total assets (including goodwill and other intangible assets of \$43.2 million and \$16.2 million) and 0.2% or \$0.4 million of consolidated total revenue, of the Company as of and for the year ended December 31, 2007. Registrants are permitted to exclude acquisitions from their assessment of internal control over financial reporting during the first year if, among other circumstances and factors, there is not adequate time between the consummation date of the acquisition and the assessment date for assessing internal controls.

Our consolidated financial statements as of and for the year ended December 31, 2007 have been audited by KPMG LLP, our independent registered public accounting firm, in accordance with the standards of the Public Company Accounting Oversight Board (United States). KPMG LLP has also audited our internal control over financial reporting as of December 31, 2007, as stated in its attestation report included elsewhere in this Annual Report on Form 10-K.

c) Changes in Internal Control Over Financial Reporting

Except for outsourcing the preparation of our year-end income tax provision, there have been no changes during the Company's quarter ended December 31, 2007 in our internal control over financial reporting (as defined in Rules 13a-15(f) under the Exchange Act) that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

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d) Remediation Steps Subsequent to December 31, 2007

Management is taking the following measures to address the material weakness identified above and to enhance our internal control over financial reporting procedures:

- Re-evaluate the design of income tax accounting processes and controls and implement new and improved processes and controls, if warranted; and
- Increase the level of review and discussion of significant tax matters and supporting documentation with our outside advisor and senior finance management.

We anticipate that these remediation actions will represent ongoing improvement measures. While we are taking steps to remediate the material weakness, additional measures may be required. During 2008, we will assess the effectiveness of our remediation efforts in connection with our management's tests of internal control over financial reporting.

Item 9B. Other Information.

None.

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PART III

Certain information required by Part III is omitted from this Annual Report on Form 10-K because we will file a definitive proxy statement within one hundred twenty (120) days after the end of the fiscal year pursuant to Regulation 14A (the "Proxy Statement") for our Annual Meeting of Stockholders currently scheduled for May 20, 2008, and the information included in the Proxy Statement is incorporated herein by reference.

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this Item with respect to directors and executive officers is incorporated by reference to the Proxy Statement. Information regarding compliance with Section 16 of the Securities Exchange Act of 1934, as amended, is incorporated by reference to the information under the heading "Section 16(a) Beneficial Ownership Reporting Compliance" in the Proxy Statement.

Code of Ethics. We have adopted a code of ethics that applies to our principal executive officer, principal financial officer and controller. This code of ethics is posted on our internet website address at <http://www.rudolphtech.com>.

Item 11. Executive Compensation.

The information required by this Item is incorporated by reference to the Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this Item is incorporated by reference to the Proxy Statement.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this Item is incorporated by reference to the Proxy Statement.

Item 14. Principal Accounting Fees and Services.

The information required by this Item is incorporated by reference to the Proxy Statement.

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PART IV

Item 15. Exhibits and Financial Statement Schedule.

(a) The following documents are filed as part of this Annual Report on Form 10-K:

1. Financial Statements

The consolidated financial statements and consolidated financial statement information required by this Item are included on pages F-1 through F-7 of this report. The Reports of Independent Registered Public Accounting Firm appear on pages F-2 through F-3 of this report.

2. Financial Statement Schedule

See Index to financial statements on page F-1 of this report.

3. Exhibits

The following is a list of exhibits. Where so indicated, exhibits, which were previously filed, are incorporated by reference.

| <u>Exhibit No.</u> | <u>Description</u> |
|--------------------|---|
| 2.1 | Agreement and Plan of Merger, dated as of June 27, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation (incorporated by reference to Exhibit 99.2 to the Company's Schedule 13D filed with the SEC on July 7, 2005). |
| 2.2 | Amendment No. 1, dated as of December 8, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation, to the Agreement and Plan of Merger, dated as of June 27, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 9, 2005). |
| 2.3 | Asset Purchase Agreement dated as of December 18, 2007, by and among the Registrant, Mariner Acquisition Company LLC, Applied Precision Holding, LLC and Applied Precision, LLC (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 21, 2007). |
| 3.1 | Restated Certificate of Incorporation of Registrant (incorporated herein by reference to Exhibit (3.1(b)) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871 filed on September 9, 1999). |
| 3.2 | Amended and Restated Bylaws of Registrant (incorporated herein by reference to Exhibit (3.2(b)) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 3.3 | Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on February 15, 2006, No. 000-27965). |
| 3.4 | Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on August 1, 2007, No. 000-27965). |
| 4.1 | Rights Agreement (incorporated by reference to Exhibit 4.1 of the Registrant's Registration Statement on Form 8-A, filed with the Commission on June 28, 2005, No 000-27965). |

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| <u>Exhibit No.</u> | <u>Description</u> |
|--------------------|--|
| 4.2 | August Technology Corporation 1997 Stock Incentive Plan (incorporated by reference to the Appendix to August Technology Corporation's Proxy Statement for its 2004 Annual Shareholders Meeting, filed with the Commission on March 11, 2004, No. 000-30637). |
| 10.1+ | License Agreement, dated June 28, 1995, between the Registrant and Brown University Research Foundation (incorporated herein by reference to Exhibit (10.1) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.2 | Form of Indemnification Agreement (incorporated herein by reference to Exhibit (10.3) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.3 | Amended 1996 Non-Qualified Stock Option Plan (incorporated herein by reference to Exhibit 10.15 to Registrant's quarterly report on Form 10-Q, filed on November 14, 2001). |
| 10.4 | Form of 1999 Stock Plan (incorporated herein by reference to Exhibit (10.4) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.5 | Form of 1999 Employee Stock Purchase Plan (incorporated herein by reference to Exhibit (10.5) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.6 | Management Agreement, dated as of July 24, 2000, by and between Rudolph Technologies, Inc. and Paul F. McLaughlin (incorporated herein by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000). |
| 10.7 | Management Agreement, dated as of July 24, 2000 by and between Rudolph Technologies, Inc. and Steven R. Roth (incorporated herein by reference to Exhibit 10.14 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000). |
| 10.8 | Registration Agreement, dated June 14, 1996 by and among the Registrant, 11, L.L.C., Riverside Rudolph, L.L.C., Dr. Richard F. Spanier, Paul F. McLaughlin (incorporated herein by reference to Exhibit (10.9) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.9 | Stockholders Agreement, dated June 14, 1996 by and among the Registrant, Administration of Florida, Liberty Partners Holdings 11, L.L.C., Riverside Rudolph, L.L.C., Dr. Richard F. Spanier, Paul McLaughlin, Dale Moorman, Thomas Cooper and (incorporated herein by reference to Exhibit (10.10) to the Registrant's Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.10 | Form of option agreement under 1999 Stock Plan (incorporated herein by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 5, 2004). |
| 10.11 | Form of Restricted Stock Award pursuant to the Rudolph Technologies, Inc. 1999 Stock Plan (filed with Rudolph Technologies, Inc.'s Current Report on Form 8-K filed on June 21, 2005 and incorporated herein by reference). |
| 10.12 | Form of Company Shareholder Voting Agreement (incorporated by reference to Exhibit 99.2 to the Company's Schedule-13D filed with the SEC on July 7, 2005). |
| 14.1 | Rudolph Technologies Code of Business Conduct and Ethics (incorporated herein by reference to Exhibit 14.1 to Registrant's annual report on Form 10-K, filed on March 16, 2006). |

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| <u>Exhibit No.</u> | <u>Description</u> |
|-------------------------------|---|
| 14.2 | Rudolph Technologies Financial Code of Ethics (incorporated herein by reference to Exhibit 14.1 to Registrant's annual report on Form 10-K, filed on March 16, 2006). |
| 18.1 | Preferability letter of KPMG LLP, Independent Registered Public Accounting Firm, filed herewith. |
| 21.1 | Subsidiaries. |
| 23.1 | Consent of KPMG LLP, Independent Registered Public Accounting Firm. |
| 31.1 | Certification of Paul F. McLaughlin, Chief Executive Officer, pursuant to Securities Exchange Act Rule 13a-14 (a). |
| 31.2 | Certification of Steven R. Roth, Chief Financial Officer, pursuant to Securities Exchange Act Rule 13a-14(a). |
| 32.1 | Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Paul F. McLaughlin, Chief Executive Officer of Rudolph Technologies, Inc. |
| 32.2 | Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Steven R. Roth, Chief Financial Officer of Rudolph Technologies, Inc. |

+ Confidential treatment has been granted with respect to portions of this exhibit.

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**RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
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Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors of Rudolph Technologies, Inc.:

We have audited the consolidated financial statements of Rudolph Technologies, Inc. and subsidiaries as listed in the accompanying index. In connection with our audits of the consolidated financial statements, we also have audited the consolidated financial statement schedule as listed in the accompanying index. These consolidated financial statements and the financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements and the 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 Rudolph Technologies, Inc. and subsidiaries as of December 31, 2007 and 2006, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2007, 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.

As discussed in Note 12 to the consolidated financial statements, the Company adopted Financial Accounting Standards Board Interpretation No. 48, "Accounting for Uncertainties in Income Taxes", effective January 1, 2007.

As discussed in Note 2 to the consolidated financial statements, the Company adopted Statement of Financial Accounting Standards No. 123(R), "Share-Based Payment", effective January 1, 2006.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Rudolph Technologies, Inc.'s internal control over financial reporting as of December 31, 2007, 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 3, 2008, expressed an adverse opinion on the effectiveness of the Company's internal control over financial reporting.

/s/ KPMG LLP

Short Hills, New Jersey
March 3, 2008

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
Rudolph Technologies, Inc.:

We have audited Rudolph Technologies, Inc.'s internal control over financial reporting as of December 31, 2007, based on criteria established in *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Rudolph Technologies, Inc.'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, included in Item 9A.(b) of the accompanying annual report on Form 10-K. Our responsibility is to express an opinion on 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, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included 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.

Rudolph Technologies, Inc. acquired the probe card test and analysis business (PCTA) of Applied Precision Holdings, LLC and Applied Precision, LLC during 2007, and management excluded from its assessment of the effectiveness of Rudolph Technologies, Inc.'s internal control over financial reporting as of December 31, 2007, PCTA's internal control over financial reporting associated with total assets of \$78 million, including \$43 million of goodwill and \$16 million of other intangible assets, and total revenues of \$0.4 million included in the consolidated financial statements of Rudolph Technologies, Inc. and subsidiaries as of and for the year ended December 31, 2007. Our audit of internal control over financial reporting of Rudolph Technologies, Inc. also excluded an evaluation of the internal control over financial reporting of PCTA.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis. The following material weakness has been identified and included in management's assessment: the Company did not have adequate oversight and review controls regarding the preparation and review of the accounting for income taxes as of December 31, 2007. We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated financial statements of Rudolph Technologies, Inc. and subsidiaries listed

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in the accompanying index. This material weakness was considered in determining the nature, timing, and extent of audit tests applied in our audit of the 2007 consolidated financial statements, and this report does not affect our report dated March 3, 2008, which expressed an unqualified opinion on those consolidated financial statements.

In our opinion, because of the effect of the aforementioned material weakness on the achievement of the objectives of the control criteria, Rudolph Technologies, Inc. has not maintained effective internal control over financial reporting as of December 31, 2007, based on criteria established in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

/s/ KPMG LLP

Short Hills, New Jersey
March 3, 2008

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(In thousands, except per share data)

| | December 31, | |
|---|------------------|------------------|
| | 2006 | 2007 |
| ASSETS | | |
| Current Assets: | | |
| Cash and cash equivalents | \$ 72,479 | \$ 57,420 |
| Marketable securities | 33,714 | 16,505 |
| Accounts receivable, less allowance of \$299 in 2006 and \$214 in 2007 | 65,373 | 50,015 |
| Inventories | 55,433 | 70,987 |
| Income taxes receivable | — | 404 |
| Deferred income taxes | 7,950 | 4,665 |
| Prepaid expenses and other current assets | 1,795 | 3,631 |
| Total current assets | 236,744 | 203,627 |
| Property, plant and equipment, net | 16,882 | 16,062 |
| Goodwill | 145,176 | 188,832 |
| Identifiable intangible assets, net | 37,401 | 48,125 |
| Capitalized software | 3,607 | 3,097 |
| Other assets | 676 | 473 |
| Total assets | <u>\$440,486</u> | <u>\$460,216</u> |
| LIABILITIES AND STOCKHOLDERS' EQUITY | | |
| Current liabilities: | | |
| Accounts payable | \$ 8,054 | \$ 7,975 |
| Accrued liabilities: | | |
| Payroll and related expenses | 6,408 | 3,910 |
| Royalties | 1,831 | 780 |
| Warranty | 2,171 | 2,365 |
| Income taxes payable | 2,113 | — |
| Deferred revenue | 11,928 | 5,956 |
| Other current liabilities | 3,297 | 6,343 |
| Total current liabilities | 35,802 | 27,329 |
| Deferred income taxes | 10,647 | 3,556 |
| Other non-current liabilities | 1,161 | 4,853 |
| Total liabilities | <u>47,610</u> | <u>35,738</u> |
| Commitments and contingencies (Note 8) | | |
| Stockholders' equity: | | |
| Preferred stock, \$0.001 par value, 5,000 shares authorized, no shares issued and outstanding at December 31, 2006 and 2007 | — | — |
| Common stock, \$0.001 par value, 50,000 shares authorized, 28,977 and 30,480 issued and outstanding at December 31, 2006 and 2007, respectively | 29 | 30 |
| Additional paid-in capital | 361,128 | 379,886 |
| Accumulated other comprehensive loss | (1,178) | (214) |
| Retained earnings | 32,897 | 44,776 |
| Total stockholders' equity | <u>392,876</u> | <u>424,478</u> |
| Total liabilities and stockholders' equity | <u>\$440,486</u> | <u>\$460,216</u> |

The accompanying notes are an integral part of these consolidated financial statements.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share data)

| | <u>Year Ended December 31,</u> | | |
|--|--------------------------------|------------------|------------------|
| | <u>2005</u> | <u>2006</u> | <u>2007</u> |
| Revenues | \$82,918 | \$201,168 | \$160,129 |
| Cost of revenues | 44,390 | 103,726 | 78,889 |
| Gross profit | <u>38,528</u> | <u>97,442</u> | <u>81,240</u> |
| Operating expenses: | | | |
| Research and development | 11,901 | 29,856 | 29,993 |
| In-process research and development | — | 9,900 | 1,000 |
| Selling, general and administrative | 20,373 | 32,393 | 33,204 |
| Amortization | 876 | 4,048 | 4,487 |
| Total operating expenses | <u>33,150</u> | <u>76,197</u> | <u>68,684</u> |
| Operating income | 5,378 | 21,245 | 12,556 |
| Interest income and other, net | <u>1,388</u> | <u>3,191</u> | <u>4,149</u> |
| Income before provision for income taxes | 6,766 | 24,436 | 16,705 |
| Provision for income taxes | <u>1,789</u> | <u>11,730</u> | <u>4,846</u> |
| Net income | <u>\$ 4,977</u> | <u>\$ 12,706</u> | <u>\$ 11,859</u> |
| Earnings per share: | | | |
| Basic | \$ 0.29 | \$ 0.47 | \$ 0.41 |
| Diluted | \$ 0.29 | \$ 0.46 | \$ 0.40 |
| Weighted average number of shares outstanding: | | | |
| Basic | 16,899 | 27,276 | 29,168 |
| Diluted | 16,942 | 27,574 | 29,312 |

The accompanying notes are an integral part of these consolidated financial statements.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
AND COMPREHENSIVE INCOME
For the years ended December 31, 2005, 2006 and 2007
(In thousands)

| | Common Stock | | Additional Paid-in Capital | Accumulated Other Comprehensive Loss | Unearned Compensation | Retained Earnings | Total | Comprehensive Income |
|--|---------------|-----------|----------------------------------|---|--------------------------|----------------------|----------------|-------------------------|
| | Shares | Amount | | | | | | |
| Balance at December 31, 2004 | 16,817 | \$ 17 | \$ 142,986 | \$ (1,442) | \$ — | \$ 15,214 | \$156,775 | |
| Proceeds from sales of shares through share-based compensation plans | 124 | — | 1,503 | — | — | — | 1,503 | |
| Net income | — | — | — | — | — | 4,977 | 4,977 | \$ 4,977 |
| Share-based compensation | — | — | 75 | — | 556 | — | 631 | |
| Unearned compensation | — | — | 2,580 | — | (2,580) | — | — | |
| Tax benefit for sale of shares through share-based compensation plans | — | — | 134 | — | — | — | 134 | |
| Currency translation | — | — | — | 518 | — | — | 518 | 518 |
| Unrealized loss on investments | — | — | — | (4) | — | — | (4) | (4) |
| Comprehensive income | | | | | | | | \$ 5,491 |
| Balance at December 31, 2005 | 16,941 | 17 | 147,278 | (928) | (2,024) | 20,191 | 164,534 | |
| Proceeds from sales of shares through share-based compensation plans | 738 | 1 | 8,957 | — | — | — | 8,958 | |
| Net income | — | — | — | — | — | 12,706 | 12,706 | \$ 12,706 |
| Share-based compensation | — | — | 1,936 | — | — | — | 1,936 | |
| Adoption of SFAS 123R | — | — | (2,024) | — | 2,024 | — | — | |
| Excess tax benefit for sale of shares through share-based compensation plans | — | — | 1,167 | — | — | — | 1,167 | |
| Common stock issued in merger | 11,298 | 11 | 197,822 | — | — | — | 197,833 | |
| Assumed August Technology options | — | — | 6,040 | — | — | — | 6,040 | |
| Tax benefit on tax deductible transaction costs | — | — | (48) | — | — | — | (48) | |
| Currency translation | — | — | — | (401) | — | — | (401) | (401) |
| Unrealized gain on investments | — | — | — | 151 | — | — | 151 | 151 |
| Comprehensive income | | | | | | | | \$ 12,456 |
| Balance at December 31, 2006 | 28,977 | 29 | 361,128 | (1,178) | — | 32,897 | 392,876 | |
| Proceeds from sales of shares through share-based compensation plans | 196 | — | 1,344 | — | — | — | 1,344 | |
| Net income | — | — | — | — | — | 11,859 | 11,859 | \$ 11,859 |
| Adoption of FIN 48 | — | — | — | — | — | 20 | 20 | |
| Share-based compensation | — | — | 3,119 | — | — | — | 3,119 | |
| Excess tax benefit for sale of shares through share-based compensation plans | — | — | 148 | — | — | — | 148 | |
| Common stock issued in acquisition | 1,307 | 1 | 14,147 | — | — | — | 14,148 | |
| Currency translation | — | — | — | 812 | — | — | 812 | 812 |
| Unrealized gain on investments | — | — | — | 152 | — | — | 152 | 152 |
| Comprehensive income | | | | | | | | \$ 12,823 |
| Balance at December 31, 2007 | <u>30,480</u> | <u>30</u> | <u>379,886</u> | <u>(214)</u> | <u>—</u> | <u>44,776</u> | <u>424,478</u> | |

The accompanying notes are an integral part of these consolidated financial statements.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

| | <u>Year Ended December 31,</u> | | |
|--|--------------------------------|------------------|------------------|
| | <u>2005</u> | <u>2006</u> | <u>2007</u> |
| Cash flows from operating activities: | | | |
| Net income | \$ 4,977 | \$ 12,706 | \$ 11,859 |
| Adjustments to reconcile net income to net cash and cash equivalents provided by operating activities: | | | |
| Amortization | 876 | 4,372 | 5,700 |
| Depreciation | 1,773 | 4,300 | 4,500 |
| In-process research and development | — | 9,900 | 1,000 |
| Foreign currency exchange loss | 885 | 55 | 45 |
| Net loss on sale of marketable securities | 856 | 162 | — |
| Tax benefit for sale of shares through share-based compensation plans | 134 | — | — |
| Share-based compensation | 631 | 1,936 | 3,119 |
| Provision for doubtful accounts and inventory valuation | 394 | 3,497 | 496 |
| Deferred income taxes | (109) | 5,718 | (3,314) |
| Decrease (increase) in assets excluding effects of business combinations: | | | |
| Accounts receivable | (5,669) | (25,096) | 21,401 |
| Income taxes receivable | — | — | (1,089) |
| Inventories | 3,702 | (7,079) | (5,395) |
| Prepaid expenses and other assets | 626 | 323 | (2,339) |
| Increase (decrease) in liabilities excluding effects of business combinations: | | | |
| Accounts payable | (207) | (438) | (3,326) |
| Accrued liabilities | (1,244) | 790 | (3,958) |
| Income taxes payable | (312) | 610 | (537) |
| Deferred revenue | 4 | 7,873 | (6,131) |
| Other current liabilities | (70) | 1,017 | (617) |
| Non-current liabilities | 830 | (1) | 2,168 |
| Net cash and cash equivalents provided by operating activities | <u>8,077</u> | <u>20,645</u> | <u>23,582</u> |
| Cash flows from investing activities: | | | |
| Purchases of marketable securities | (49,965) | (70,803) | (77,748) |
| Proceeds from sales of marketable securities | 70,404 | 93,410 | 95,147 |
| Purchases of property, plant and equipment | (2,677) | (4,664) | (1,007) |
| Capitalized software | (882) | (2,230) | (712) |
| Purchase of business, net of cash acquired | (863) | (12,109) | (56,166) |
| Net cash and cash equivalents provided by (used in) investing activities | <u>16,017</u> | <u>3,604</u> | <u>(40,486)</u> |
| Cash flows from financing activities: | | | |
| Proceeds from sales of shares through share-based compensation plans | 1,503 | 8,957 | 1,344 |
| Tax benefit for sale of shares through share-based compensation plans | — | 1,167 | 148 |
| Net cash and cash equivalents provided by financing activities | <u>1,503</u> | <u>10,124</u> | <u>1,492</u> |
| Effect of exchange rate changes on cash and cash equivalents | (238) | 120 | 353 |
| Net increase (decrease) in cash and cash equivalents | 25,359 | 34,493 | (15,059) |
| Cash and cash equivalents at beginning of year | 12,627 | 37,986 | 72,479 |
| Cash and cash equivalents at end of year | <u>\$ 37,986</u> | <u>\$ 72,479</u> | <u>\$ 57,420</u> |
| Supplemental disclosure of cash flow information: | | | |
| Net cash paid during the period for: | | | |
| Income taxes | \$ 1,959 | \$ 4,097 | \$ 8,170 |
| Non-cash investing activities: | | | |
| Acquisition costs for business combinations | \$ 2,138 | \$ 6,039 | \$ 1,315 |
| Stock issued for business combinations | \$ — | \$ 197,833 | \$ 14,022 |

The accompanying notes are an integral part of these consolidated financial statements.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (In thousands, except per share data)

1. Organization and Nature of Operations:

Rudolph Technologies, Inc. (the "Company") designs, develops, manufactures and supports high-performance process control equipment used in semiconductor device manufacturing. The Company has branch sales and service offices in China, Korea, Taiwan and Singapore and wholly-owned sales and service subsidiaries in Europe, Japan, Washington and Minnesota. The Company operates in a single segment and supports a wide variety of applications in the areas of diffusion, etch, lithography, CVD, PVD, CMP and macro-defect detection and classification.

On February 15, 2006, the Company completed its merger with August Technology Corporation. August Technology was a world-class provider of automated defect detection and product characterization systems for microelectronic device manufacturers. Their systems provided manufacturers with information that enables process-enhancing decisions, ultimately lowering manufacturing costs and decreasing time-to-market. They had 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. In addition, they had introduced new products for edge and backside inspection systems 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.

On December 18, 2007, the Company's wholly-owned subsidiary, Mariner Acquisition Company LLC, entered into, and consummated the transactions contemplated by, an agreement with Applied Precision Holdings, LLC and Applied Precision, LLC (collectively, "Applied"), pursuant to which it purchased substantially all of the assets and assumed certain liabilities of the semiconductor division of Applied to be known as the Rudolph Technologies Probe Card Test and Analysis division ("PCTA"). The PCTA is engaged in the business of designing, developing, manufacturing, marketing, selling and supporting advanced probe card metrology and wafer probe process monitoring equipment and is complementary to the Company's existing business.

2. Summary of Significant Accounting Policies:

A. Consolidation:

The consolidated financial statements reflect the accounts of the Company and its wholly-owned subsidiaries. All intercompany accounts and transactions have been eliminated.

B. Revenue Recognition:

Revenue is recognized upon shipment provided that there is persuasive evidence of an arrangement, delivery has occurred, the sales price is fixed or determinable, and collection of the related receivable is reasonably assured. Certain sales of the Company's products are sold and accounted for as multiple element arrangements, consisting primarily of the sale of the product, software, installation and training services. The Company generally recognizes product revenue upon shipment. When customer acceptance is subjective and not obtained prior to shipment, the Company defers product revenue until such time as positive affirmation of acceptance has been obtained from the customer. Customer acceptance is generally based on the Company's products meeting published performance specifications. The amount of revenue allocated to the shipment of products is done on a residual method basis. Under this method, the total arrangement value is allocated first to undelivered contract elements, based on their fair values, with the remainder being allocated to product revenue. The fair value of installation, training and other services is based upon billable hourly rates and the estimated time to complete the service. Revenue related to undelivered installation services is deferred until such time as installation is

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)
(In thousands, except per share data)

completed at the customer's site. Revenue related to training services is recognized ratably over the training period. 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. If vendor specific objective evidence does not exist for the undelivered elements of an arrangement that includes software, all revenue is deferred and recognized ratably over the period required to deliver the remaining elements.

Revenues from parts sales are recognized at the time of shipment. Revenue from service contracts is recognized ratably over the period of the contract. A provision for the estimated cost of fulfilling warranty obligations is recorded at the time the related revenue is recognized.

License support and maintenance revenue is recognized ratably over the contract period.

C. Estimates:

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Significant estimates made by management include allowance for doubtful accounts, inventory obsolescence, purchase accounting allocations, recoverability and useful lives of property, plant and equipment and identifiable intangible assets, recoverability of goodwill, recoverability of deferred tax assets, liabilities for product warranty, accruals for contingencies and share-based payments, including forfeitures and liabilities for tax uncertainties. Actual results could differ from those estimates.

D. Cash and Cash Equivalents:

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

E. Marketable Securities:

The Company determined that all of its investment securities are to be classified as available-for-sale. Available-for-sale securities are carried at fair value, with the unrealized gains and losses reported in stockholders' equity under the caption "Accumulated other comprehensive loss." Realized gains and losses, interest and dividends on available-for-sale securities are included in interest income and other, net. Available-for-sale securities are classified as current assets regardless of their maturity date if they are available for use in current operations. The Company reviews its investment portfolio to identify and evaluate investments that have indications of possible impairment. Factors considered in determining whether a loss is other-than-temporary include the length of time and extent to which fair value has been less than the cost basis, credit quality and the Company's ability and intent to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value. When a decline in fair value is determined to be other-than-temporary, unrealized losses on available-for-sale securities are charged against earnings. The specific identification method is used to determine the gains and losses on marketable securities.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued) (In thousands, except per share data)

F. Allowance for Doubtful Accounts:

The Company evaluates the collectability of accounts receivable based on a combination of factors. In the cases where the Company is aware of circumstances that may impair a specific customer's ability to meet its financial obligation, the Company records a specific allowance against amounts due, and thereby reduces the net recognized receivable to the amount management reasonably believes will be collected. For all other customers, the Company recognizes allowances for doubtful accounts based on the length of time the receivables are outstanding, industry and geographic concentrations, the current business environment and historical experience.

G. Inventories:

Inventories are stated at the lower of cost (first-in, first-out) or market. Cost includes material, labor and overhead costs. Demonstration units, which are available for sale, are stated at their manufacturing costs and reserves are recorded to adjust the demonstration units to their net realizable value.

H. Property, Plant and Equipment:

Property, plant and equipment are stated at cost. Depreciation of property, plant and equipment is computed using the straight-line method over the estimated useful lives of the assets which are thirty years for buildings, four to seven years for machinery and equipment, seven years for furniture and fixtures, and three years for computer equipment. Leasehold improvements are amortized using the straight-line method over the lesser of the lease term or the estimated useful life of the related asset. Repairs and maintenance costs are expensed as incurred and major renewals and betterments are capitalized.

I. Impairment of Long-Lived Assets:

Long-lived assets, such as property, plant, and equipment, and identifiable acquired intangible assets with definite useful lives, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized by the amount by which the carrying amount of the asset exceeds the fair value of the asset, which is generally based on discounted cash flows.

J. Goodwill and Other Intangible Assets:

Intangible assets with definitive useful lives are amortized using the straight-line method over their estimated useful lives. Goodwill and intangible assets with indefinite useful lives are not amortized but are tested for impairment at least annually and when there are indications of impairment in accordance with the provisions of Statement of Financial Accounting Standards ("SFAS") No. 142, "Goodwill and Other Intangible Assets." Under SFAS No. 142, goodwill impairment is deemed to exist if the net book value of a reporting unit exceeds its estimated fair value. The Company estimates the fair value of its aggregated reporting unit using the market value of its common stock at October 31 multiplied by the number of outstanding common shares (market capitalization) and an implied control premium as if it were to be acquired by a single stockholder. The Company obtains information on completed sales of similar companies in a comparable industry to estimate the implied control premium for the Company. If the results of the initial market capitalization test produce results which are below the reporting unit carrying value, the Company may also perform a discounted cash flow test. The Company tested for goodwill impairment on October 31, 2007. In 2007, the Company changed its annual impairment testing date from December 31 to October 31. The Company believes October 31 is preferable as it provides additional time prior to the Company's year-end of December 31 to complete the impairment testing and report the results of those tests in its annual filing on Form 10-K.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued) (In thousands, except per share data)

K. Concentration of Credit Risk:

Financial instruments, which potentially subject the Company to concentrations of credit risk, consist primarily of accounts receivable, cash and cash equivalents and marketable securities. The Company performs ongoing credit evaluations of its customers and generally does not require collateral for sales on credit. The Company maintains allowances for potential credit losses. The Company maintains cash and cash equivalents and marketable securities with higher credit quality issuers and monitors the amount of credit exposure to any one issuer.

L. Warranties:

The Company generally provides a warranty on its products for a period of twelve to fifteen months against defects in material and workmanship. The Company provides for the estimated cost of product warranties at the time revenue is recognized.

M. Income Taxes:

The Company accounts for income taxes using the asset and liability approach for deferred taxes which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in the Company's consolidated financial statements or tax returns. A valuation allowance is recorded to reduce a deferred tax asset to that portion which more likely than not will be realized. Additionally, taxes are separated into current and non-current amounts based on the classification of the related amounts for financial reporting purposes. The Company does not provide for federal income taxes on the undistributed earnings of its foreign operations as it is the Company's intention to permanently re-invest undistributed earnings.

On July 13, 2006, the Financial Accounting Standards Board ("FASB") issued Interpretation No. 48, "Accounting for Uncertainty in Income Taxes—An Interpretation of FASB Statement No. 109" ("FIN 48"). Under FIN 48, the impact of an uncertain income tax position is recognized at the largest amount that is more-likely-than-not to be sustained upon audit by the relevant taxing authority and includes consideration of interest and penalties. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained. Under FIN 48, the liability for unrecognized tax benefits is classified as non-current unless the liability is expected to be settled in cash within 12 months of the reporting date.

N. Translation of Foreign Currencies:

The Company's international subsidiaries and branch offices operate primarily using local functional currencies. Assets and liabilities are translated at exchange rates in effect at the balance sheet date, and income and expense accounts and cash flow items are translated at average monthly exchange rates during the period.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued) (In thousands, except per share data)

Net exchange gains or losses resulting from the translation of foreign financial statements and the effect of exchange rates on intercompany transactions of a long-term investment nature are recorded directly as a separate component of stockholders' equity under the caption, "Accumulated other comprehensive loss". Any foreign currency gains or losses related to transactions are included in operating results. Net foreign exchange rate gains and losses included in operating results are not material for all periods presented. The Company had accumulated exchange losses resulting from the translation of foreign operation financial statements of \$1,010 and \$198 as of December 31, 2006 and 2007, respectively.

O. Share-based Compensation:

Prior to January 1, 2006, the Company's share-based compensation plans were accounted for in accordance with Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees" and related interpretations. Under this method, no compensation expense for stock options was recognized as long as the exercise price equaled or exceeded the market price of the underlying stock on the date of the grant. Compensation cost for restricted stock units issued to employees and directors was based upon the market value on the date grant. Such compensation costs were charged to unearned compensation in stockholders' equity and amortized to expense over the requisite service period. The Company elected the disclosure-only alternative permitted under SFAS No. 123, "Accounting for Stock-Based Compensation" ("SFAS 123"), as amended by SFAS No. 148, "Accounting for Stock-Based Compensation—Transition and Disclosure" ("SFAS 148"), for fixed stock-based awards to employees.

On January 1, 2006, the Company adopted SFAS No. 123 (revised 2004), "Share-Based Payment" ("SFAS 123R") using the modified prospective method, which requires measurement of compensation cost for all stock awards at fair value on date of grant and recognition of compensation cost over the service period for awards expected to vest. The fair value of stock options is determined using the Black-Scholes valuation model, which is consistent with the Company's valuation model previously utilized for options in footnote disclosures required under SFAS 123, as amended by SFAS 148. The Black-Scholes valuation calculation requires the Company to estimate key assumptions such as future stock price volatility, expected terms, risk-free interest rates and dividend yield. Expected stock price volatility is based on historical volatility of the Company's stock. The Company uses historical data to estimate option exercises and employee terminations within the valuation model. The expected term of options granted is derived from an analysis of historical exercises and remaining contractual life of stock options, and represents the period of time that options granted are expected to be outstanding. The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant. The Company has never paid cash dividends, and does not currently intend to pay cash dividends, and thus has assumed a 0% dividend yield. Such value is recognized as expense over the service period, net of estimated forfeitures. The estimation of stock awards that will ultimately vest requires significant judgment. The Company considers many factors when estimating expected forfeitures, including types of awards, employee class, and historical experience. Actual results, and future changes in estimates, may differ substantially from the Company's current estimates. Prior to the adoption of SFAS 123R, the Company recorded forfeitures as incurred. Upon adoption of SFAS 123R, compensation expense for all share-based payments includes an estimate for forfeitures and is recognized over the expected term of the share-based awards using the straight-line method. The impact of this change on prior period compensation cost was immaterial. Additionally, the unearned compensation of \$2,024 at the SFAS 123R adoption date relating to previous restricted stock unit grants was offset against additional paid-in capital.

Results for prior periods have not been restated to reflect the effects of implementing SFAS 123R. The following table illustrates the effect on net income and earnings per share if the Company had applied the fair value recognition provisions of SFAS 123, as amended by SFAS 148, to stock options granted under the Company's

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stock-based employee compensation plans for year ended December 31, 2005. For purposes of this pro forma disclosure, the value of the stock options was estimated using a Black-Scholes option-pricing formula and amortized to expense over the options' vesting periods, with option forfeitures accounted for as they occurred:

| | <u>Year Ended December 31, 2005</u> |
|--|---|
| Net income, as reported | \$ 4,977 |
| Add: Share-based employee compensation expense included in reported net income, net of related income tax benefits | 396 |
| Deduct: Share-based employee compensation expense determined under fair value based method, net of related income tax benefits | <u>(8,902)</u> |
| Pro forma net loss | <u>\$ (3,529)</u> |
| Net income (loss) per share: | |
| Basic-as reported | \$ 0.29 |
| Basic-pro forma | \$ (0.21) |
| Diluted-as reported | \$ 0.29 |
| Diluted-pro forma | \$ (0.21) |

Effective April 14, 2005, the Company accelerated the vesting of all unvested stock options awarded to employees, officers and other eligible participants under the Company's 1999 Stock Plan. A total of 959 options to purchase shares of Rudolph stock became immediately exercisable as a result of the vesting acceleration, however only 87 of the stock options, or 9% of the total accelerated shares, were "in the money". These options were typically scheduled to incrementally vest beginning on the first anniversary of their respective grant date. The Company recognized a de minimus charge in the second quarter of 2005 as a result of the acceleration. The Company took this action because it produces a more favorable impact on the Company's results of operations following the adoption of SFAS No. 123R, effective January 1, 2006. By accelerating the vesting of these options, the Company believes it will save approximately \$7.0 million in future compensation expense that would have been required to be expensed, beginning January 1, 2006, over the remaining service period. In addition, effective May 1, 2005, the Company amended its ESPP. The amendment removed the "look back" provision, that was previously a part of the ESPP and reduced the discount for purchasing shares of the Company's stock to five percent. These modifications to the ESPP were also made as a result of the Company's anticipated adoption of SFAS No. 123R.

For additional information on the Company's share-based compensation plans, see Note 10 of Notes to the Consolidated Financial Statements.

P. Research and Development and Software Development Costs:

Expenditures for research and development are expensed as incurred. The Company accounts for software development costs in accordance with SFAS No. 86, "Accounting for Costs of Computer Software to Be Sold, Leased or Marketed." SFAS No. 86 requires that certain software product development costs incurred after technological feasibility has been established, be capitalized and amortized, commencing upon the general release of the software product to the Company's customers, over the economic life of the software product. Annual amortization of capitalized costs is computed using the greater of: (i) the ratio of current gross revenues for the software product over the total of current and anticipated future gross revenues for the software product or (ii) the straight-line basis, typically over seven years. Software product development costs incurred prior to the product reaching technological feasibility are expensed as incurred and included in research and development

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costs. At December 31, 2006 and 2007, capitalized software development costs were \$3,607 and \$3,097, respectively. There was no amortization of software development cost during the year ended December 31, 2005. During the years ended December 31, 2006 and 2007, \$345 and \$704 of software development costs were amortized, respectively. During 2007, the Company recorded a write down of capitalized software of \$507 in cost of revenues in the Consolidated Statement of Operations.

Q. Fair Value of Financial Instruments:

The carrying amounts of the Company's financial instruments, including cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities, approximate fair value due to their short maturities.

R. Derivative Instruments and Hedging Activities:

The Company reports derivatives and hedging activities in accordance with SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities." This statement requires that all derivative instruments be recorded on the balance sheet at fair value. Changes in the fair value of derivatives are recorded each period in current earnings or accumulated other comprehensive loss, depending on whether the derivative is designated as part of a hedge transaction, and if it is, depending on the type of hedge transaction.

The Company, when it considers it to be appropriate, enters into forward contracts to hedge the economic exposures arising from foreign currency denominated transactions. At December 31, 2006 and 2007, these contracts included the sale of Japanese Yen to purchase U.S. dollars. The foreign currency forward contracts were entered into by our Japanese subsidiary to hedge a portion of certain intercompany obligations. The forward contracts are not designated as hedges for accounting purposes and therefore, the change in fair value is recorded in selling, general and administrative expenses in the Consolidated Statements of Operations.

The dollar equivalent of the US dollar forward contracts and related fair values as of December 31, 2006 and 2007 were as follows:

| | <u>December 31,</u> | |
|---------------------------------|---------------------|-------------|
| | <u>2006</u> | <u>2007</u> |
| Notional amount | \$6,439 | \$5,706 |
| Fair value of asset (liability) | \$ 144 | \$ (127) |

The Company recognized a gain of \$172, \$106 and \$278 with respect to forward contracts which matured during 2005, 2006 and 2007, respectively. The aggregate notional amount of these contracts was \$1,736, \$6,277 and \$8,802, respectively.

S. Reclassifications:

Certain prior year amounts have been reclassified to conform to the 2007 financial statement presentation.

T. Recent Accounting Pronouncements:

In December 2007, the Financial Accounting Standards Board ("FASB") issued SFAS No. 141R, "Business Combinations" ("SFAS 141R"), which establishes principles and requirements for how an acquirer recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, any

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noncontrolling interest in an acquiree, and the recognition and measurement of goodwill acquired in a business combination or a gain from a bargain purchase. SFAS 141R applies prospectively to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after December 15, 2008.

In November 2007, the Emerging Issues Task Force ("EITF") issued EITF Issue No. 07-1 ("EITF 07-1"), "Accounting for Collaborative Arrangements," which defines collaborative arrangements and establishes reporting and disclosure requirements for such arrangements. EITF 07-1 is effective for fiscal years beginning after December 15, 2008. The Company is continuing to evaluate the impact of adopting the provisions EITF 07-1; however, it does not anticipate that adoption will have a material effect on its financial position or results of operations.

In February 2007, the FASB issued SFAS No. 159 ("SFAS 159"), "The Fair Value Option for Financial Assets and Financial Liabilities- Including an amendment of FASB Statement No. 115." SFAS 159 permits entities to choose to measure many financial instruments and certain other items at fair value. The objective is to improve financial reporting by providing entities with the opportunity to mitigate volatility in reporting earnings caused by measuring related assets and liabilities differently without having to apply complex hedge accounting provisions. SFAS 159 is effective for fiscal years that begin after November 15, 2007. The Company's adoption of SFAS 159 is not expected to impact its financial position or results of operations.

In September 2006, the FASB issued SFAS No. 157 ("SFAS 157"), "Fair Value Measurements." SFAS 157 defines fair value, establishes a framework for measuring fair value and expands disclosures about fair value measurements. SFAS 157 is effective for fiscal years beginning after November 15, 2007. However, on February 12, 2008, the FASB issued FSP FAS 157-2 which defers the effective date of SFAS 157 for one year for nonfinancial assets and nonfinancial liabilities that are not recognized or disclosed at fair value in the financial statements on a recurring basis. Based on the Company's current operations, it does not expect that the adoption of the non-deferred portion of SFAS 157 will have a material impact on its financial position or results of operations. We have not yet evaluated the impact of the adoption of the deferred portion of SFAS 157.

3. Business Combinations:*August Technology*

On February 15, 2006, the merger with August Technology was approved by its shareholders, and the issuance of shares of Rudolph common stock was approved by Rudolph's stockholders, at their respective special meetings. The combined company is known as Rudolph Technologies, Inc. The aggregate purchase price was \$246,739, consisted of \$37,200 in cash, 11,298 shares of common stock valued at \$197,833, the fair value of assumed August Technology options of \$6,040 and transaction costs of \$5,666.

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The transaction was accounted for using the purchase method of accounting for business combinations and, accordingly, the results of operations of August Technology have been included in the Company's consolidated financial statements since the date of merger. The following table summarizes the estimated fair value of the assets acquired and liabilities assumed at the date of merger:

| | |
|--|------------------|
| Cash | \$ 29,893 |
| Marketable securities | 13,418 |
| Accounts receivable | 14,283 |
| Inventories | 23,582 |
| Property, plant and equipment | 6,075 |
| Goodwill | 132,809 |
| Identifiable intangible assets | 42,700 |
| Other assets | 1,585 |
| Accounts payable and accrued liabilities | (11,733) |
| Deferred taxes | (4,279) |
| Other liabilities | (1,594) |
| | <u>\$246,739</u> |

The above purchase price has been allocated based on estimates of the fair values of assets acquired and liabilities assumed. With the exception of future tax adjustments related to the merger, the effects of purchase accounting were completed during 2006. The fair value of inventories included a step-up of \$3,842, of which \$3,699 and \$143 were recognized in cost of revenues for the years ended December 31, 2006 and 2007, respectively. At the merger date, the Company formulated a plan to exit or restructure certain activities. The Company recorded \$173 for these activities, which have occurred during the year ended December 31, 2006.

Factors that contributed to a purchase price that resulted in recognition of goodwill include:

- the combination of August Technology's defect inspection technology with Rudolph's *MetaPULSE* metrology products is expected to improve copper metrology process controls and should allow the combined company to offer a more comprehensive and better integrated set of tools to its customers and enhance its ability to compete more effectively;
- the combination of August Technology's defect inspection experience and technology with Rudolph's complementary defect inspection experience and technology should allow the combined company to offer its customers a more comprehensive suite of tools more quickly, thus enhancing the company's ability to compete more effectively;
- consolidation of territorial sales activities and common marketing programs;
- redeployment or elimination of duplicative functional and facilities costs;
- reduction of customer service costs as a result of the consolidation of the companies' global customer service and regional support networks;
- creation of a larger sales and service organization worldwide, the expansion of the companies' dedicated sales teams and a higher profile with customers, which is expected to present greater opportunities for potential revenue enhancements by marketing and cross-selling the products of the combined company;
- avoidance of incurring certain costs that the companies would expect to incur on a stand-alone basis in furtherance of their growth strategies;

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- the combined company is expected to have greater prominence within the financial community, providing improved access to capital;
- the direct sales and service presence of the combined company in the important Japanese semiconductor manufacturing market (where Rudolph has three offices with over 20 employees) may increase opportunities for product orders;
- the combined experience, financial resources, development expertise, size and breadth of product offerings of the combined company may allow it to respond more quickly and effectively to technological change, increased consolidation and industry demands; and
- the ability of the assembled workforce to continue to deliver value-added solutions and develop new products and industry leading production technologies that solve customer problems.

Approximately \$9.9 million of the acquired identifiable intangible assets represented the estimated fair value of in-process research and development (“IPRD”) projects that had not yet reached technological feasibility and had no alternative future use. Accordingly, this amount was immediately expensed in the Consolidated Statement of Operations at the merger date. The purchased in-process technology projects was comprised of next generation automated macro-defect inspection systems with enhanced defect capture capabilities and software projects which improve the tools’ capabilities. The defect inspection and software projects had a value assigned to them of \$6.9 million and \$3.0 million, respectively. The defect inspection projects related to the next generation of the Company’s AXi defect detection systems with enhanced defect capture capabilities and were completed by the third quarter of 2006. The software projects related to new enhancement features to the Company’s next generation inspection products and were completed in 2007.

PCTA

On December 18, 2007, Rudolph and a wholly-owned subsidiary of the Company entered into, and consummated the transactions contemplated by, an Asset Purchase Agreement with Applied Precision Holdings, LLC and Applied Precision, LLC (collectively, “Applied”), pursuant to which the Company purchased substantially all of the assets and assumed certain liabilities of the semiconductor division of Applied to be known as the Rudolph Technologies Probe Card Test and Analysis division (“PCTA”). The PCTA is engaged in the business of designing, developing, manufacturing, marketing, selling and supporting advanced probe card metrology and wafer probe process monitoring equipment and is complementary to the Company’s existing business.

The closing under the Asset Purchase Agreement occurred on December 18, 2007 and the Company paid \$57,897 in cash and acquisition costs and issued 1,307 shares of common stock for a total purchase price of \$71,919. The purchase price has been preliminarily allocated based on estimates of the fair values of assets acquired and liabilities assumed. With the exception of future tax adjustments related to the acquisition, the final valuation of net assets is expected to be completed during 2008, but no later than one year from the acquisition date. The results of operations of the PCTA have been included in our consolidated financials statements since the date of the acquisition.

The Company has agreed to assume the following liabilities of the PCTA: accounts payable, assigned contracts, licenses and leases, warranty claims and employee liabilities, all as more fully described in the Asset Purchase Agreement. In addition, the Company has agreed to assume the defense of and all obligations relating to certain litigation currently pending against Applied.

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The transaction was accounted for using the purchase method of accounting for business combinations and, accordingly, the results of operations of the PCTA have been included in the Company's consolidated financial statements since the date of acquisition. The following table summarizes the estimated fair value of the assets acquired and liabilities assumed at the date of acquisition:

| | |
|---|-----------------|
| Accounts receivable | 5,660 |
| Inventories | 12,001 |
| Prepaid expenses and other current assets | 157 |
| Property, plant and equipment | 1,123 |
| Goodwill | 43,194 |
| Identifiable intangible assets | 16,200 |
| Accounts payable and accrued liabilities | (3,776) |
| Deferred revenue | (159) |
| Other liabilities | (2,481) |
| | <u>\$71,919</u> |

The fair value of inventories included a step-up of \$2,418, of which none was recognized in cost of revenues for the year ended December 31, 2007. At the acquisition date, the Company formulated a plan to exit or restructure certain activities. The Company recorded \$254 for these activities during the year ended December 31, 2007.

Factors that contributed to a purchase price that resulted in recognition of goodwill include:

- the combination of PCTA and Rudolph products should allow the combined company to offer its customers a more comprehensive suite of tools and a better integrated set of tools, thus enhancing the Company's ability to compete more effectively;
- the ability of the assembled workforce to continue to deliver value-added solutions and develop new products and industry leading production technologies that solve customer problems;
- consolidation of territorial sales activities and common marketing programs;
- redeployment or elimination of duplicative functional and facilities costs;
- reduction of customer service costs as a result of the consolidation of the companies' global customer service and regional support networks; and
- the combined experience, financial resources, development expertise, size and breadth of product offerings of the combined company may allow it to respond more quickly and effectively to technological change, increased consolidation and industry demands

Of the \$16,200 of acquired identifiable assets, the following table reflects the allocation of the acquired identifiable assets and related preliminary estimates of useful lives:

| | | |
|--|------------------|--|
| Developed technology | \$ 11,600 | 8 years estimated useful life |
| Customer and distributor relationships | 2,900 | 7.2 years weighted average estimated useful life |
| Trade names | 700 | 3 years estimated useful life |
| In-process research and development | 1,000 | |
| | <u>\$ 16,200</u> | |

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Approximately \$1.0 million of the acquired identifiable intangible assets represents the estimated fair value of in-process research and development ("IPRD") projects that had not yet reached technological feasibility and had no alternative future use. Accordingly, this amount was immediately expensed in the Consolidated Statement of Operations at the merger date. The purchased in-process technology project was a probe card test project, related to the next generation of the Company's ProbeWoRx systems with enhanced capabilities, and was approximately 20% complete as of the date of acquisition. The estimated costs to complete this project of \$2,100, consist primarily of internal engineering labor costs which will be completed in 2008. If we are not successful in completing the inspection project on a timely basis, the future sales of the Company's inspection products may be adversely affected resulting in erosion of the Company's market share.

Pro Forma Combined Results of Operations

The following unaudited pro forma consolidated financial information presents the combined results of operations of the Company, August Technology and PCTA as if the respective merger and acquisition occurred at the beginning of the period presented, after giving effect to certain adjustments, including interest income and amortization expense. Due to the non-recurring nature of the IPRD and inventory step-up charges, these amounts have not been included in the unaudited pro forma consolidated financial information. The unaudited pro forma consolidated financial information does not necessarily reflect the results of operations that would have occurred had the merger and acquisition been completed as of the date indicated or of the results that may be obtained in the future.

| | Year Ended December 31, | | |
|---------------------|-------------------------|---------------------|-----------|
| | 2005 | 2006 (Unaudited) | 2007 |
| Revenues | \$202,825 | \$249,731 | \$194,262 |
| Net income | \$ 8,728 | \$ 25,526 | \$ 13,213 |
| Earnings per share: | | | |
| Basic | \$ 0.30 | \$ 0.85 | \$ 0.43 |
| Diluted | \$ 0.30 | \$ 0.84 | \$ 0.43 |

RVSI Inspection

On January 22, 2008, the Company announced that it had acquired all intellectual property and selected assets from privately-held RVSI Inspection, LLC, headquartered in Hauppauge, New York. The Company paid cash for this acquisition and will account for it as a business combination.

4. Marketable Securities:

At December 31, 2006, marketable securities are categorized as follows:

| | Amortized Cost | Gross Unrealized Holding Gains | Gross Unrealized Holding Losses | Fair Value |
|---|-------------------|-----------------------------------|------------------------------------|-----------------|
| Treasury notes and obligations of U.S. Government agencies | \$ 8,058 | \$ 2 | \$ (154) | \$ 7,906 |
| Tax-free auction rate securities | 19,675 | — | — | 19,675 |
| Asset-backed securities | 1,654 | — | (28) | 1,626 |
| Corporate bonds | 3,689 | — | (73) | 3,616 |
| Mortgage-backed securities | 913 | 1 | (23) | 891 |
| Total marketable securities | \$33,989 | \$ 3 | \$ (278) | \$33,714 |

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At December 31, 2007, marketable securities are categorized as follows:

| | <u>Amortized Cost</u> | <u>Gross Unrealized Holding Gains</u> | <u>Gross Unrealized Holding Losses</u> | <u>Fair Value</u> |
|---|---------------------------|---|--|-----------------------|
| Treasury notes and obligations of U.S. Government agencies | \$ 2,938 | \$ 25 | \$ (5) | \$ 2,958 |
| Tax-free auction rate securities | 9,227 | — | — | 9,227 |
| Asset-backed securities | 1,132 | — | (7) | 1,125 |
| Corporate bonds | 2,605 | 2 | (125) | 2,482 |
| Mortgage-backed securities | 726 | 2 | (15) | 713 |
| Total marketable securities | <u>\$ 16,628</u> | <u>\$ 29</u> | <u>\$ (152)</u> | <u>\$16,505</u> |

The amortized cost and estimated fair value of marketable securities classified by the maturity date listed on the security, regardless of the Consolidated Balance Sheet classification, is as follows at December 31, 2006 and 2007:

| | <u>December 31, 2006</u> | | <u>December 31, 2007</u> | |
|----------------------------------|---------------------------|-----------------------|---------------------------|-----------------------|
| | <u>Amortized Cost</u> | <u>Fair Value</u> | <u>Amortized Cost</u> | <u>Fair Value</u> |
| Due within one year | \$ 22,358 | \$22,339 | \$ 9,857 | \$ 9,848 |
| Due after one through five years | 9,966 | 9,749 | 4,240 | 4,142 |
| Due after five through ten years | 457 | 447 | 222 | 219 |
| Due after ten years | 1,208 | 1,179 | 2,309 | 2,296 |
| Total marketable securities | <u>\$ 33,989</u> | <u>\$33,714</u> | <u>\$ 16,628</u> | <u>\$16,505</u> |

Net realized losses of \$856, \$162 and \$0 were included in the Consolidated Statement of Operations for 2005, 2006 and 2007, respectively.

The following table summarizes the estimated fair value and gross unrealized holding losses of marketable securities, aggregated by investment instrument and period of time in an unrealized loss position at December 31, 2006:

| | <u>In Unrealized Loss Position for less than 12 Months</u> | | <u>In Unrealized Loss Position for 12 Months or Greater</u> | | <u>Total in Unrealized Loss Position</u> | |
|--|--|--|---|--|--|--|
| | <u>Fair Value</u> | <u>Gross Unrealized Losses</u> | <u>Fair Value</u> | <u>Gross Unrealized Losses</u> | <u>Fair Value</u> | <u>Gross Unrealized Losses</u> |
| Treasury notes and obligations of U.S. Government agencies | \$ — | \$ — | \$ 7,625 | \$ (154) | \$ 7,626 | \$ (154) |
| Tax-free auction rate securities | — | — | — | — | — | — |
| Asset-backed securities | 31 | (1) | 1,506 | (27) | 1,537 | (28) |
| Corporate bonds | — | — | 3,689 | (73) | 3,689 | (73) |
| Mortgage-backed securities | 22 | — | 818 | (23) | 840 | (23) |
| Total marketable securities | <u>\$ 53</u> | <u>\$ (1)</u> | <u>\$ 13,638</u> | <u>\$ (277)</u> | <u>\$13,692</u> | <u>\$ (278)</u> |

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The following table summarizes the estimated fair value and gross unrealized holding losses of marketable securities, aggregated by investment instrument and period of time in an unrealized loss position at December 31, 2007:

| | In Unrealized Loss Position for less than 12 Months | | In Unrealized Loss Position for 12 Months or Greater | | Total in Unrealized Loss Position | |
|--|--|-------------------------------|---|-------------------------------|--------------------------------------|-------------------------------|
| | Fair Value | Gross Unrealized Losses | Fair Value | Gross Unrealized Losses | Fair Value | Gross Unrealized Losses |
| Treasury notes and obligations of U.S. Government agencies | \$ — | \$ — | \$ 996 | \$ (5) | \$ 996 | \$ (5) |
| Tax-free auction rate securities | — | — | — | — | — | — |
| Asset-backed securities | 16 | — | 1,006 | (7) | 1,022 | (7) |
| Corporate bonds | 45 | (1) | 2,203 | (124) | 2,248 | (125) |
| Mortgage-backed securities | — | — | 505 | (15) | 505 | (15) |
| Total marketable securities | <u>\$ 61</u> | <u>\$ (1)</u> | <u>\$ 4,710</u> | <u>\$ (151)</u> | <u>\$ 4,771</u> | <u>\$ (152)</u> |

The gross unrealized losses related to marketable securities are primarily due to a decrease in the fair value of debt securities as a result of current market conditions in mortgage-backed securities and an increase in interest rates since the securities were purchased. The Company has determined that the gross unrealized losses on its marketable securities at December 31, 2006 and 2007 are temporary in nature. The Company reviews its investment portfolio to identify and evaluate investments that have indications of possible impairment. Factors considered in determining whether a loss is other-than-temporary include the length of time and extent to which fair value has been less than the cost basis, credit quality and the Company's ability and intent to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value.

5. Inventories:

Inventories are comprised of the following:

| | December 31, | |
|-------------------|-----------------|-----------------|
| | 2006 | 2007 |
| Materials | \$33,347 | \$34,556 |
| Work-in-process | 12,687 | 20,820 |
| Finished goods | 9,399 | 15,611 |
| Total inventories | <u>\$55,433</u> | <u>\$70,987</u> |

The Company has established reserves of \$2,805 and \$3,394 at December 31, 2006 and 2007, respectively, for slow moving and obsolete inventory. During 2006, the Company recorded a charge of \$3,585 for excess parts, for older product lines and for parts that design and engineering advancements rendered obsolete, of which \$2,567 was written off. During 2007, the Company recorded a charge of \$661 for the write-down of inventory for excess parts, for older product lines and for parts that design and engineering advancements rendered obsolete. In 2007, the Company wrote off \$72 of the inventory reserve.

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6. Property, Plant and Equipment:

Property, plant and equipment, net is comprised of the following:

| | December 31, | |
|------------------------------------|------------------|------------------|
| | 2006 | 2007 |
| Land and building | \$ 5,180 | \$ 5,185 |
| Machinery and equipment | 9,471 | 11,829 |
| Furniture and fixtures | 2,425 | 2,668 |
| Computer equipment | 5,207 | 6,407 |
| Leasehold improvements | 5,945 | 5,791 |
| | <u>28,228</u> | <u>31,880</u> |
| Accumulated depreciation | (11,346) | (15,818) |
| Property, plant and equipment, net | <u>\$ 16,882</u> | <u>\$ 16,062</u> |

Depreciation expense amounted to \$1,773, \$4,300 and \$4,500 for the years ended December 31, 2005, 2006, and 2007, respectively.

7. Identifiable Intangible Assets and Goodwill:

Identifiable intangible assets as of December 31, 2006 are as follows:

| | Gross Carrying Amount | Accumulated Amortization | Net |
|--------------------------------------|--------------------------|-----------------------------|-----------------|
| Developed technology | \$ 37,991 | \$ 7,669 | \$30,322 |
| Customer relationships | 4,400 | 429 | 3,971 |
| Trade names | 3,400 | 292 | 3,108 |
| Total identifiable intangible assets | <u>\$ 45,791</u> | <u>\$ 8,390</u> | <u>\$37,401</u> |

Identifiable intangible assets as of December 31, 2007 are as follows:

| | Gross Carrying Amount | Accumulated Amortization | Net |
|--|--------------------------|-----------------------------|-----------------|
| Developed technology | \$ 49,591 | \$ 11,324 | \$38,267 |
| Customer and distributor relationships | 7,300 | 917 | 6,383 |
| Trade names | 4,100 | 625 | 3,475 |
| Total identifiable intangible assets | <u>\$ 60,991</u> | <u>\$ 12,866</u> | <u>\$48,125</u> |

Intangible asset amortization expense amounted to \$876, \$4,027 and \$4,476 for the years ended December 31, 2005, 2006 and 2007, respectively. Assuming no change in the gross carrying value of identifiable intangible assets and estimated lives, estimated amortization expense amounts to \$6,638 for 2008, \$6,297 for 2009, \$6,081 for 2010, \$5,848 for 2011 and \$5,848 for 2012.

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The changes in the carrying amount of goodwill are as follows:

| | |
|--|------------------|
| Balance as of December 31, 2005 | \$ 13,245 |
| August Technology merger | <u>131,931</u> |
| Balance as of December 31, 2006 | 145,176 |
| PCTA acquisition | 43,194 |
| Tax adjustments related to prior acquisition | <u>462</u> |
| Balance as of December 31, 2007 | <u>\$188,832</u> |

8. Commitments and Contingencies:*Intellectual Property Indemnification Obligations*

The Company has entered into agreements with customers that include limited intellectual property indemnification obligations that are customary in the industry. These guarantees generally require the Company to compensate the other party for certain damages and costs incurred as a result of third party intellectual property claims arising from these transactions. The nature of the intellectual property indemnification obligations prevents the Company from making a reasonable estimate of the maximum potential amount it could be required to pay to its customers. Historically, the Company has not made any indemnification payments under such agreements and no amount has been accrued in the accompanying consolidated financial statements with respect to these indemnification guarantees.

Warranty Reserves

The Company generally provides a warranty on its products for a period of twelve to fifteen months against defects in material and workmanship. The Company estimates the costs that may be incurred during the warranty period and records a liability in the amount of such costs at the time revenue is recognized. The Company's estimate is based primarily on historical experience. The Company periodically assesses the adequacy of its recorded warranty liabilities and adjusts the amounts as necessary. Settlements of warranty reserves are generally associated with sales that occurred during the 12 to 15 months prior to the year-end and warranty accruals are related to sales during the year.

Changes in the Company's warranty reserves are as follows:

| | Year Ended December 31, | | |
|--------------------------------------|-------------------------|-----------------|-----------------|
| | 2005 | 2006 | 2007 |
| Balance, beginning of the year | \$ 1,209 | \$ 1,234 | \$ 2,171 |
| Accruals | 1,945 | 2,298 | 2,669 |
| Warranty liability assumed in merger | — | 1,244 | 532 |
| Settlements | <u>(1,920)</u> | <u>(2,605)</u> | <u>(3,007)</u> |
| Balance, end of the year | <u>\$ 1,234</u> | <u>\$ 2,171</u> | <u>\$ 2,365</u> |

Legal Matters

From time to time the Company is subject to legal proceedings and claims in the ordinary course of business. The Company is not aware of any legal proceedings or claims that management believes would have a material adverse effect on the Company's consolidated financial statements taken as a whole.

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Lease Agreements

The Company rents space for its manufacturing and service operations and sales offices, which expire through 2016. Total rent expense for these facilities amounted to \$1,550, \$2,162 and \$2,264 for the years ended December 31, 2005, 2006 and 2007, respectively.

The Company also leases certain equipment pursuant to operating leases, which expire through 2010. Rent expense related to these leases amounted to \$42, \$165 and \$171 for the years ended December 31, 2005, 2006 and 2007, respectively.

Total future minimum lease payments under noncancelable operating leases as of December 31, 2007 amounted to \$2,527 for 2008, \$1,842 for 2009, \$1,546 for 2010, \$1,533 for 2011, \$1,100 for 2012 and \$2,177 for all periods thereafter.

Royalty Agreements

Under various licensing agreements, the Company is obligated to pay royalties based on net sales of products sold. There are no minimum annual royalty payments. Royalty expense amounted to \$2,071, \$2,990 and \$1,389 for the years ended December 31, 2005, 2006 and 2007, respectively.

Open and Committed Purchase Orders

The Company has open and committed purchase orders of \$21.5 million as of December 31, 2007.

9. Preferred Share Purchase Rights:

On June 27, 2005, the Board of Directors of the Company adopted a Stockholder Rights Plan (the "Rights Plan") and declared a dividend distribution of one Preferred Share Purchase Right (a "Right") on each outstanding share of Company common stock. Each right entitles stockholders to buy one one-thousandth of a share of newly created Series A Junior Participating Preferred Stock of Rudolph at an exercise price of \$120. The Company's Board is entitled to redeem the Rights at \$0.001 per Right at any time before a person has acquired 15% or more of the outstanding Rudolph common stock.

Subject to limited exceptions, the Rights will be exercisable if a person or group acquires 15% or more of Rudolph common stock or announces a tender offer for 15% or more of the common stock. Each Right other than Rights held by the Acquiring Person which will become void entitles its holder to purchase a number of common shares of Rudolph having a market value at that time of twice the Right's exercise price.

The Rights Plan will expire in 2015. The adoption of the Rights Plan had no impact on the financial position or results of operations of the Company.

10. Share-Based Compensation and Employee Benefit Plans:

Share-Based Compensation Plans

The Company's share-based compensation plans are intended to attract and retain employees and to provide an incentive for them to assist the Company to achieve long-range performance goals and to enable them to participate in long-term growth of the Company. The Company settles stock option exercises and restricted stock awards with newly issued common shares.

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In 1996, the Company adopted the 1996 Stock Option Plan (the "Option Plan"). Under the Option Plan, the Company was authorized to grant options to purchase up to 1,070 shares of common stock. All of the outstanding options became 100% vested upon the initial public offering of the Company on November 12, 1999. As of December 31, 2006 and 2007, there were no shares of common stock reserved for future grants under the Option Plan.

The Company established the 1999 Stock Plan (the "1999 Plan") effective August 31, 1999. The 1999 Plan provides for the grant of 2,000 stock options and stock purchase rights, subject to annual increases, to employees, directors and consultants at an exercise price equal to or greater than the fair market value of the common stock on the date of grant. Options granted under the 1999 Plan typically grade vest over a five-year period and expire ten years from the date of grant. Restricted stock units granted under the 1999 Plan typically vest over a five-year period for employees and one year for directors. As of December 31, 2006 and 2007, there were 892 and 1,029 shares of common stock reserved for future grants under the 1999 Plan, respectively.

The Company assumed the August Technology Corporation 1997 Stock Plan (the "1997 Plan") at the merger date. Stock options granted under the 1997 Plan vest over periods that range from immediate to five-years and expire in either seven or ten years from the date of grant. As of December 31, 2006, there were 666 shares of common stock reserved for future grants under the 1997 Plan. In the third quarter of 2007, the 1997 Plan expired and as of December 31, 2007, there were no shares of common stock reserved for future grants under the 1997 Plan.

The following table reflects share-based compensation expense by type of award in accordance with SFAS 123R:

| | <u>Year Ended December 31,</u> | |
|--|--------------------------------|-----------------|
| | <u>2006</u> | <u>2007</u> |
| Share-based compensation expense: | | |
| Stock options | \$ 750 | \$ 721 |
| Restricted stock units | <u>1,186</u> | <u>2,398</u> |
| Total share-based compensation | 1,936 | 3,119 |
| Tax effect on share-based compensation | <u>757</u> | <u>1,279</u> |
| Net effect on net income | <u>\$ 1,179</u> | <u>\$ 1,840</u> |
| Tax effect on: | | |
| Cash flows from financing activities | \$ 1,167 | \$ 148 |
| Effect on earnings per share—basic | \$ (0.04) | \$ (0.06) |
| Effect on earnings per share—diluted | \$ (0.04) | \$ (0.06) |

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Valuation Assumptions for Stock Options

For the year ended December 31, 2005, there were 2 stock options granted. For the year ended December 31, 2006, there were 5 stock options granted and 369 unvested options and 1,049 vested options assumed from the August Technology merger. The fair value of the vested options assumed from the August Technology merger was \$6,040, the fair value at the merger date. For the year ended, December 31, 2007, there were no stock options granted. The fair value of each option was estimated on the date of grant for the granted options and the merger date for the unvested options assumed from the August Technology merger, using the Black-Scholes option-pricing model with the following assumptions:

| | <u>Year Ended December 31,</u> | |
|--|--------------------------------|-------------|
| | <u>2005</u> | <u>2006</u> |
| Expected life (years) | 5.0 | 3.4 |
| Expected volatility | 50.9% | 55.1% |
| Expected dividend yield | 0.0% | 0.0% |
| Risk-free interest rate | 3.9% | 4.6% |
| Weighted average fair value per option | \$ 7.55 | \$ 8.99 |

Stock Option Activity

The following table summarizes stock option activity:

| | <u>Shares</u> | <u>Weighted Average Exercise Price Per Share</u> | <u>Weighted Average Remaining Contractual Term (years)</u> | <u>Aggregate Intrinsic Value</u> |
|---|---------------|--|--|--|
| Outstanding at December 31, 2004 | 2,738 | \$ 22.55 | | |
| Granted | 2 | 15.30 | | |
| Exercised | (61) | 13.13 | | |
| Expired | (106) | 25.85 | | |
| Forfeited | (59) | 21.12 | | |
| Outstanding at December 31, 2005 | 2,514 | 22.67 | | |
| Granted | 5 | 16.72 | | |
| Assumed from August Technology | 1,418 | 14.02 | | |
| Exercised | (674) | 12.84 | | |
| Expired | (113) | 22.27 | | |
| Forfeited | (42) | 13.56 | | |
| Outstanding at December 31, 2006 | 3,108 | \$ 20.98 | | |
| Granted | — | — | | |
| Exercised | (96) | 11.54 | | |
| Expired | (241) | 14.39 | | |
| Forfeited | (16) | 21.93 | | |
| Outstanding at December 31, 2007 | <u>2,755</u> | <u>\$ 21.27</u> | <u>3.9</u> | <u>\$ 577</u> |
| Vested or expected to vest at December 31, 2007 | <u>2,737</u> | <u>\$ 21.31</u> | <u>3.8</u> | <u>\$ 290</u> |
| Exercisable at December 31, 2007 | <u>2,614</u> | <u>\$ 21.66</u> | <u>3.7</u> | <u>\$ 546</u> |

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The total intrinsic value of the stock options exercised during 2005, 2006 and 2007 was \$233, \$3,472 and \$506, respectively. In connection with these exercises, the tax benefits realized by the Company for 2005, 2006 and 2007 were \$134, \$1,167 and \$191, respectively.

The options outstanding and exercisable at December 31, 2007 were in the following exercise price ranges:

| Range of Exercise Prices | Options Outstanding | | | Options Exercisable | |
|--------------------------|---------------------|---|---------------------------------|---------------------|---------------------------------|
| | Shares | Weighted Average Remaining Contractual Life (years) | Weighted Average Exercise Price | Shares | Weighted Average Exercise Price |
| \$ 0.56 - \$ 14.81 | 628 | 5.1 | \$ 12.26 | 518 | \$ 12.02 |
| \$ 14.82 - \$ 16.41 | 871 | 3.2 | \$ 16.12 | 849 | \$ 16.13 |
| \$ 16.49 - \$ 24.20 | 553 | 4.3 | \$ 21.74 | 544 | \$ 21.82 |
| \$ 24.25 - \$ 40.13 | 671 | 3.3 | \$ 34.66 | 671 | \$ 34.66 |
| \$ 41.75 - \$ 50.30 | 32 | 3.2 | \$ 48.68 | 32 | \$ 48.68 |
| \$ 0.56 - \$ 50.30 | <u>2,755</u> | 3.9 | \$ 21.27 | <u>2,614</u> | \$ 21.66 |

As of December 31, 2007, there was \$1,151 of total unrecognized compensation cost related to stock options granted under the plans. That cost is expected to be recognized over a weighted average remaining period of 2.0 years.

The Company recognized a tax benefit of \$569 for stock options exercised during the year ended December 31, 2006, which was assumed in the purchase price of the August Technology merger. This benefit reduced goodwill.

Restricted Stock Unit Activity

The following table summarizes restricted stock unit activity:

A summary of the Company's restricted stock unit activity with respect to the years ended December 31, 2005, 2006 and 2007 follows:

| | Number of Shares | Weighted Average Grant Date Fair Value |
|--------------------------------|------------------|--|
| Nonvested at December 31, 2004 | — | \$ — |
| Granted | 161 | \$ 16.60 |
| Vested | — | \$ — |
| Forfeited | — | \$ — |
| Nonvested at December 31, 2005 | 161 | \$ 16.60 |
| Granted | 228 | \$ 16.61 |
| Vested | (48) | \$ 16.23 |
| Forfeited | (5) | \$ 14.97 |
| Nonvested at December 31, 2006 | 336 | \$ 16.68 |
| Granted | 463 | \$ 15.69 |
| Vested | (86) | \$ 16.24 |
| Forfeited | (33) | \$ 16.24 |
| Nonvested at December 31, 2007 | <u>680</u> | \$ 16.08 |

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As of December 31, 2007, there was \$7,852 of total unrecognized compensation cost related to restricted stock units granted under the plans. That cost is expected to be recognized over a weighted average period of 3.7 years.

Employee Stock Purchase Plan

The Company established an Employee Stock Purchase Plan (the "ESPP") effective August 31, 1999 and amended on May 1, 2005. Under the terms of the ESPP, eligible employees may have up to 15% of eligible compensation deducted from their pay and applied to the purchase of shares of Rudolph common stock. The price the employee must pay for each share of stock will be 95% of the fair market value of the Rudolph common stock at the end of the applicable six-month purchase period. The ESPP is intended to qualify under Section 423 of the Internal Revenue Code and is a non-compensatory plan as defined by SFAS 123R. No stock-based compensation expense for the ESPP was recorded for the year ended December 31, 2006 and 2007. As of December 31, 2006 and 2007, there were 1,727 and 2,010 shares available for issuance under the ESPP, respectively.

401(k) Savings Plan

The Company has a 401(k) savings plan to provide retirement and incidental benefits for its employees. As allowed under Section 401(k) of the Internal Revenue Code, the Plan provides tax-deferred salary deductions for eligible employees. Employees may contribute up to 100% of their annual compensation to the Plan, limited to a maximum annual amount as set periodically by the Internal Revenue Service. The Plan provides a 50% match of all employee contributions up to 6 percent of the employee's salary. Company matching contributions to the Plan totaled \$393, \$693 and \$746 for the years ended December 31, 2005, 2006 and 2007, respectively.

Profit Sharing Program

The Company has a profit sharing program, wherein a percentage of pre-tax profits, at the discretion of the Board of Directors, is provided to all employees who have completed a stipulated employment period. The Company did not make contributions to this program for the years ended December 31, 2005, 2006 and 2007.

11. Interest Income and Other, Net:

| | Year Ended December 31, | | |
|--|-------------------------|----------------|----------------|
| | 2005 | 2006 | 2007 |
| Interest income | \$2,234 | \$3,345 | \$4,143 |
| Realized losses on sale of marketable securities | (856) | (162) | — |
| Rental income | 10 | 8 | 6 |
| Total interest income and other, net | <u>\$1,388</u> | <u>\$3,191</u> | <u>\$4,149</u> |

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12. Income Taxes:

The components of income tax expense are as follows:

| | <u>Year Ended December 31,</u> | | |
|--------------------------|--------------------------------|-----------------|-----------------|
| | <u>2005</u> | <u>2006</u> | <u>2007</u> |
| Current: | | | |
| Federal | \$ (89) | \$ 2,253 | \$ 3,827 |
| State | 387 | 1,840 | 939 |
| Foreign | <u>1,536</u> | <u>1,920</u> | <u>3,395</u> |
| | <u>1,834</u> | <u>6,013</u> | <u>8,161</u> |
| Deferred: | | | |
| Federal | (349) | 5,456 | (2,507) |
| State | (53) | 173 | (674) |
| Foreign | <u>357</u> | <u>88</u> | <u>(134)</u> |
| | <u>(45)</u> | <u>5,717</u> | <u>(3,315)</u> |
| Total income tax expense | <u>\$1,789</u> | <u>\$11,730</u> | <u>\$ 4,846</u> |

Income before income tax of \$1,988 and \$4,778 was generated by domestic and foreign operations, respectively, in 2005. Income before income tax of \$13,532 and \$10,904 was generated by domestic and foreign operations, respectively, in 2006. Income before income tax of \$2,856 and \$13,849 was generated by domestic and foreign operations, respectively, in 2007.

Deferred tax assets and liabilities are comprised of the following:

| | <u>December 31,</u> | |
|---|---------------------|-----------------|
| | <u>2006</u> | <u>2007</u> |
| Research and development credit carryforward | \$ 3,387 | \$ 3,709 |
| Reserves and accruals not currently deductible | 1,489 | 1,199 |
| Deferred revenue | 1,004 | 2,190 |
| Domestic net operating loss carryforwards | 49 | 280 |
| Foreign net operating loss and credit carryforwards | — | 2,288 |
| Amortization of intangibles | 2,956 | 2,293 |
| Tax deductible transaction costs | 780 | 704 |
| Share-based compensation | 573 | 196 |
| Inventory obsolescence reserve | 2,455 | 1,370 |
| Other | <u>667</u> | <u>823</u> |
| Gross deferred tax assets | 13,360 | 15,052 |
| Valuation allowance for deferred tax assets | <u>(964)</u> | <u>(1,295)</u> |
| Deferred tax assets after valuation allowance | <u>12,396</u> | <u>13,757</u> |
| Amortization of intangibles | (14,592) | (12,436) |
| Other | <u>(501)</u> | <u>(212)</u> |
| Total deferred tax liabilities | <u>(15,093)</u> | <u>(12,648)</u> |
| Net deferred tax assets (liabilities) | <u>\$ (2,697)</u> | <u>\$ 1,109</u> |

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The provision for income taxes differs from the amount of income tax determined by applying the applicable U.S. federal income tax rate of 34% for the year ended December 31, 2005 and 35% for the years ended December 31, 2006 and 2007 to income before provision for income taxes as follows:

| | <u>Year Ended December 31,</u> | | |
|---|--------------------------------|-----------------|-----------------|
| | <u>2005</u> | <u>2006</u> | <u>2007</u> |
| Federal income tax provision at statutory rate | \$2,310 | \$ 8,553 | \$ 5,847 |
| State taxes, net of federal effect | 351 | 1,290 | 306 |
| In-process research and development write-off | — | 3,465 | 350 |
| Research tax credit | (566) | (765) | (1,262) |
| Extraterritorial income exclusion | (174) | (296) | — |
| Domestic manufacturing benefit | — | (185) | (279) |
| Change in valuation allowance for deferred tax assets | (106) | (524) | 331 |
| Other | (26) | 192 | (447) |
| Provision for income taxes | <u>\$1,789</u> | <u>\$11,730</u> | <u>\$ 4,846</u> |
| Effective tax rate | <u>26%</u> | <u>48%</u> | <u>29%</u> |

In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities, projected future taxable income, and tax planning strategies in making this assessment. Based upon the level of historical taxable income and projections for future taxable income over the periods in which the deferred tax assets are deductible, management believes unless otherwise noted by a valuation allowance that it is more likely than not that the Company will realize the benefits of its deferred tax assets at December 31, 2007. At December 31, 2007, the Company had state and foreign net operating loss carryforwards of approximately \$431 and \$133, respectively. The net operating loss carryforwards expire on various dates through December 31, 2014. At December 31, 2007, the Company had federal and state research & development credits and foreign tax credit carryforwards of \$1,711, \$3,102 and \$2,154, respectively. The federal research & development credits are set to expire at various dates through December 31, 2027. The state research & development credits are set to expire at various dates through December 21, 2022. The foreign tax credit is set to expire at various dates through December 31, 2017.

The Company adopted the provisions of FIN 48, as amended by FSP 48-1, effective January 1, 2007. As a result of the implementation of FIN 48, as amended, the Company recognized increases in the liability for unrecognized tax benefits of \$2,173, non-current deferred tax assets of \$1,948 and goodwill of \$245. The adoption of FIN 48, as amended, resulted in a cumulative effect adjustment to retained earnings of \$20 as of January 1, 2007.

The following table is a reconciliation of beginning and ending balances of unrecognized tax benefits:

| | |
|---|-----------------|
| Unrecognized tax benefits, opening balance | \$ 4,552 |
| Gross increases—tax positions in prior period | 635 |
| Gross increases—current-period tax positions | 1,301 |
| Lapse of statute of limitations | (613) |
| Unrecognized tax benefits, ending balance | <u>\$ 5,875</u> |

The total amount of unrecognized tax benefits as of the date of adoption was \$4,552. Included in the balance of unrecognized tax benefits at January 1, 2007, are \$2,359 of tax benefits that, if recognized, would affect the effective tax rate. Also included in the balance of unrecognized tax benefits at January 1, 2007, are \$245 of tax

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benefits that, if recognized, would result in a decrease to goodwill recorded in business combinations, and \$1,948 of tax benefits that, if recognized, would result in adjustments to other tax accounts, primarily deferred taxes and non-current receivables. As of December 31, 2007, the total amount of unrecognized tax benefits is \$5,875, of which \$3,610 would impact the effective tax rate if recognized. Additional adjustments to goodwill arising from the August merger and the PCTA acquisition may be recorded as accounting for pre-acquisition tax positions is finalized. There are no known tax positions which are reasonably possible to change over the next twelve months necessitating a significant change in the Company's unrecognized tax benefits.

The Company recognizes accrued interest and penalties related to unrecognized tax benefits in income tax expense. Upon adoption of FIN 48 on January 1, 2007, the Company increased its accrual for interest and penalties to \$96. During the year ended December 31, 2007, the Company recognized approximately \$33 in interest and penalties expense associated with uncertain tax positions. As of December 31, 2007, the Company had accrued interest and penalties expense related to unrecognized tax benefits of \$129.

The Company is subject to U.S. federal income tax as well as income tax in multiple state and foreign jurisdictions. Presently, the Company has not been contacted by the Internal Revenue Service for examination of income tax returns for open periods, December 31, 2003 through December 31, 2006. The Company has also not been contacted by any U.S. state, local or foreign tax authority for all open tax periods beginning after December 31, 2002.

13. Segment Reporting and Geographic Information:

Operating segments are business units that have separate financial information and are separately reviewed by the Company's chief decision maker. The Company's chief decision maker is the Chief Executive Officer. The Company and its subsidiaries currently operate in a single reportable segment: the design, development, manufacture, sale and service of process control metrology systems used in semiconductor device manufacturing. The chief operating decision maker allocates resources and assesses performance of the business and other activities at the operating segment level.

The following table lists the different sources of revenue:

| | Year Ended December 31, | | | | | |
|--------------------|-------------------------|-------------|------------------|-------------|------------------|-------------|
| | 2005 | | 2006 | | 2007 | |
| Systems: | | | | | | |
| Metrology | \$52,596 | 63% | \$ 68,035 | 34% | \$ 34,738 | 22% |
| Inspection | 11,644 | 14 | 100,666 | 50 | 85,012 | 53 |
| Parts | 9,188 | 11 | 14,217 | 7 | 13,678 | 9 |
| Services | 8,205 | 10 | 11,457 | 6 | 14,121 | 8 |
| Software licensing | 1,285 | 2 | 6,793 | 3 | 12,580 | 8 |
| Total revenue | <u>\$82,918</u> | <u>100%</u> | <u>\$201,168</u> | <u>100%</u> | <u>\$160,129</u> | <u>100%</u> |

For geographical reporting, revenues are attributed to the geographic location in which the customer is located. Revenue by geographic region is as follows:

| | Year Ended December 31, | | |
|------------------------------|-------------------------|------------------|------------------|
| | 2005 | 2006 | 2007 |
| Revenues from third parties: | | | |
| United States | \$18,675 | \$ 59,097 | \$ 36,710 |
| Asia | 46,666 | 120,472 | 93,631 |
| Europe | 17,577 | 21,599 | 29,788 |
| Total | <u>\$82,918</u> | <u>\$201,168</u> | <u>\$160,129</u> |

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| | Year Ended December 31, | | |
|---|-------------------------|-------|-------|
| | 2005 | 2006 | 2007 |
| Customers comprising 10% or more of the Company's total revenue for the period indicated: | | | |
| A | 20.3% | 14.0% | 11.5% |
| B | 10.1% | 2.9% | 7.0% |

| | Year Ended December 31, | | |
|--|-------------------------|---------|---------|
| | 2005 | 2006 | 2007 |
| Accounts receivable of customers comprising 10% or more of the Company's total revenue for the period indicated: | | | |
| A | \$2,151 | \$7,094 | \$1,680 |
| B | \$5,600 | \$4,454 | \$5,621 |

The majority of the Company's assets are within the United States of America.

14. Earnings Per Share:

Basic earnings per share is computed by dividing net income by the weighted average number of common shares outstanding during the period. Diluted earnings gives effect to all potential dilutive common shares outstanding during the period. The computation of diluted earnings per share does not assume conversion, exercise or contingent exercise of securities that would have an anti-dilutive effect.

The computations of basic and diluted earnings per share for the years ended December 31, 2005, 2006 and 2007 are as follows:

| | Income (Numerator) | Shares (Denominator) | Per- Share Amount |
|---|-----------------------|-------------------------|-------------------------|
| For the year ended December 31, 2005 | | | |
| Basic earnings per share: | | | |
| Net income | \$ 4,977 | 16,899 | \$ 0.29 |
| Effect of dilutive stock options and restricted stock units | — | 43 | — |
| Diluted earnings per share: | | | |
| Net income | <u>\$ 4,977</u> | <u>16,942</u> | <u>\$ 0.29</u> |
| For the year ended December 31, 2006 | | | |
| Basic earnings per share: | | | |
| Net income | \$ 12,706 | 27,276 | \$ 0.47 |
| Effect of dilutive stock options and restricted stock units | — | 298 | (0.01) |
| Diluted earnings per share: | | | |
| Net income | <u>\$ 12,706</u> | <u>27,574</u> | <u>\$ 0.46</u> |
| For the year ended December 31, 2007 | | | |
| Basic earnings per share: | | | |
| Net income | \$ 11,859 | 29,168 | \$ 0.41 |
| Effect of dilutive stock options and restricted stock units | — | 144 | (0.01) |
| Diluted earnings per share: | | | |
| Net income | <u>\$ 11,859</u> | <u>29,312</u> | <u>\$ 0.40</u> |

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)
(In thousands, except per share data)

For the year ended December 31, 2005, the weighted average number of stock options and restricted stock units excluded from the computation of diluted earnings per share were 2,092 and 126, respectively. For the year ended December 31, 2006, the weighted average number of stock options and restricted stock units excluded from the computation of diluted earnings per share were 2,008 and 12, respectively. For the year ended December 31, 2007, the weighted average number of stock options and restricted stock units excluded from the computation of diluted earnings per share were 2,185 and 129, respectively.

15. Quarterly Consolidated Financial Data (unaudited):

The following tables present certain unaudited consolidated quarterly financial information for each of the eight quarters ended December 31, 2007. In the opinion of the Company's management, this quarterly information has been prepared on the same basis as the consolidated financial statements and includes all adjustments (consisting only of normal recurring adjustments) necessary to present fairly the information for the periods presented. The results of operations for any quarter are not necessarily indicative of results for the full year or for any future period.

Year-over-year quarterly comparisons of the Company's results of operations may not be as meaningful as the sequential quarterly comparisons set forth below tend to reflect the cyclical activity of the semiconductor industry as a whole, for the 2006 quarters reflect the August Technology merger effective February 15, 2006, and for the 2007 fourth quarter reflects the PCTA acquisition effective December 18, 2007. Quarterly fluctuations in expenses are related directly to sales activity and volume and may also reflect the timing of operating expenses incurred throughout the year and the purchase accounting effects of business combinations.

| | Quarters Ended | | | | Total |
|--|-------------------|------------------|-----------------------|----------------------|-----------|
| | March 31, 2006 | June 30, 2006 | September 30, 2006 | December 31, 2006 | |
| Revenues | \$ 31,848 | \$56,692 | \$ 58,166 | \$ 54,462 | \$201,168 |
| Gross profit | 9,249 | 29,691 | 30,567 | 27,935 | 97,442 |
| Income (loss) before income taxes | (12,907) | 12,996 | 13,352 | 10,995 | 24,436 |
| Net income (loss) | (11,746) | 7,991 | 8,071 | 8,390 | 12,706 |
| Earnings (loss) per share: | | | | | |
| Basic | \$ (0.52) | \$ 0.28 | \$ 0.28 | \$ 0.29 | \$ 0.47 |
| Diluted | \$ (0.52) | \$ 0.28 | \$ 0.28 | \$ 0.29 | \$ 0.46 |
| Weighted average number of shares outstanding: | | | | | |
| Basic | 22,545 | 28,638 | 28,849 | 28,954 | 27,276 |
| Diluted | 22,545 | 28,943 | 29,119 | 29,342 | 27,574 |

| | Quarters Ended | | | | Total |
|--|-------------------|------------------|-----------------------|----------------------|-----------|
| | March 31, 2007 | June 30, 2007 | September 30, 2007 | December 31, 2007 | |
| Revenues | \$ 48,356 | \$47,730 | \$ 31,461 | \$ 32,582 | \$160,129 |
| Gross profit | 26,250 | 24,850 | 15,540 | 14,600 | 81,240 |
| Income (loss) before income taxes | 8,705 | 7,749 | 1,203 | (952) | 16,705 |
| Net income (loss) | 5,564 | 5,451 | 1,388 | (544) | 11,859 |
| Earnings (loss) per share: | | | | | |
| Basic | \$ 0.19 | \$ 0.19 | \$ 0.05 | \$ (0.02) | \$ 0.41 |
| Diluted | \$ 0.19 | \$ 0.19 | \$ 0.05 | \$ (0.02) | \$ 0.40 |
| Weighted average number of shares outstanding: | | | | | |
| Basic | 29,031 | 29,108 | 29,152 | 29,371 | 29,168 |
| Diluted | 29,224 | 29,312 | 29,250 | 29,371 | 29,312 |

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)
(In thousands, except per share data)

SCHEDULE OF VALUATION AND QUALIFYING ACCOUNTS

| <u>Column A</u> | <u>Column B</u> | <u>Column C</u> | | <u>Column D</u> | <u>Column E</u> |
|----------------------------------|---------------------|-------------------------------|-------------------------|-------------------|-----------------------|
| <u>Description</u> | <u>Balance at</u> | <u>Charged to (Recovery</u> | <u>Charged to Other</u> | <u>Deductions</u> | <u>Balance at End</u> |
| | <u>Beginning of</u> | <u>of) Costs and Expenses</u> | <u>Accounts (net)</u> | | <u>of Period</u> |
| | <u>Period</u> | | | | |
| Year 2005: | | | | | |
| Allowance for doubtful accounts | \$ 323 | \$ (68) | \$ — | \$ 25 | \$ 230 |
| Inventory valuation | 1,307 | 480 | — | — | 1,787 |
| Warranty | 1,209 | 1,945 | — | 1,920 | 1,234 |
| Deferred tax valuation allowance | 629 | 258 | — | 363 | 524 |
| Year 2006: | | | | | |
| Allowance for doubtful accounts | \$ 230 | \$ 69 | \$ — | \$ — | \$ 299 |
| Inventory valuation | 1,787 | 3,585 | — | 2,567 | 2,805 |
| Warranty | 1,234 | 2,298 | 1,244 | 2,605 | 2,171 |
| Deferred tax valuation allowance | 524 | 964 | — | 524 | 964 |
| Year 2007: | | | | | |
| Allowance for doubtful accounts | \$ 299 | \$ (85) | \$ — | \$ — | \$ 214 |
| Inventory valuation | 2,805 | 661 | — | 72 | 3,394 |
| Warranty | 2,171 | 2,669 | 532 | 3,007 | 2,365 |
| Deferred tax valuation allowance | 964 | 331 | — | — | 1,295 |

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SIGNATURES

PURSUANT TO THE REQUIREMENTS OF SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934, THE REGISTRANT HAS DULY CAUSED THIS REPORT TO BE SIGNED ON ITS BEHALF BY THE UNDERSIGNED, THEREUNTO DULY AUTHORIZED.

RUDOLPH TECHNOLOGIES, INC.

By: /s/ PAUL F. McLAUGHLIN
 Paul F. McLaughlin
 Chairman and Chief Executive Officer

Date: March 3, 2008

PURSUANT TO THE REQUIREMENTS OF THE SECURITIES EXCHANGE ACT OF 1934, THIS REPORT HAS BEEN SIGNED BELOW BY THE FOLLOWING PERSONS ON BEHALF OF THE REGISTRANT AND IN THE CAPACITIES AND ON THE DATES INDICATED.

| <u>Signature</u> | <u>Title</u> | <u>Date</u> |
|---|---|---------------|
| <u>/s/ PAUL F. McLAUGHLIN</u> Paul F. McLaughlin | Chairman and Chief Executive Officer | March 3, 2008 |
| <u>/s/ STEVEN R. ROTH</u> Steven R. Roth | Senior Vice President, Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer) | March 3, 2008 |
| <u>/s/ DANIEL H. BERRY</u> Daniel H. Berry | Director | March 3, 2008 |
| <u>/s/ PAUL CRAIG</u> Paul Craig | Director | March 3, 2008 |
| <u>/s/ THOMAS G. GREIG</u> Thomas G. Greig | Director | March 3, 2008 |
| <u>/s/ JEFF L. O'DELL</u> Jeff L. O'Dell | Director | March 3, 2008 |
| <u>/s/ CARL E. RING, JR.</u> Carl E. Ring, Jr. | Director | March 3, 2008 |
| <u>/s/ RICHARD F. SPANIER</u> Richard F. Spanier | Director | March 3, 2008 |
| <u>/s/ AUBREY C. TOBEY</u> Aubrey C. Tobey | Director | March 3, 2008 |
| <u>/s/ JOHN R. WHITTEN</u> John R. Whitten | Director | March 3, 2008 |
| <u>/s/ MICHAEL W. WRIGHT</u> Michael W. Wright | Director | March 3, 2008 |

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EXHIBIT INDEX

| <u>Exhibit No.</u> | <u>Description</u> |
|--------------------|--|
| 2.1 | Agreement and Plan of Merger, dated as of June 27, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation (incorporated by reference to Exhibit 99.2 to the Company's Schedule 13D filed with the SEC on July 7, 2005). |
| 2.2 | Amendment No. 1, dated as of December 8, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation, to the Agreement and Plan of Merger, dated as of June 27, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation. (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 9, 2005). |
| 2.3 | Asset Purchase Agreement dated as of December 18, 2007, by and among the Registrant, Mariner Acquisition Company LLC, Applied Precision Holding, LLC and Applied Precision, LLC (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 21, 2007). |
| 3.1 | Restated Certificate of Incorporation of Registrant (incorporated herein by reference to Exhibit (3.1(b)) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871 filed on September 9, 1999). |
| 3.2 | Amended and Restated Bylaws of Registrant (incorporated herein by reference to Exhibit (3.2(b)) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999. |
| 3.3 | Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on February 15, 2006, No. 000-27965). |
| 3.4 | Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on August 1, 2007, No. 000-27965). |
| 4.1 | Rights Agreement (incorporated by reference to Exhibit 4.1 of the Registrant's Registration Statement on Form 8-A, filed with the Commission on June 28, 2005, No 000-27965). |
| 4.2 | August Technology Corporation 1997 Stock Incentive Plan (incorporated by reference to the Appendix to August Technology Corporation's Proxy Statement for its 2004 Annual Shareholders Meeting, filed with the Commission on March 11, 2004, No. 000-30637). |
| 10.1+ | License Agreement, dated June 28, 1995, between the Registrant and Brown University Research Foundation (incorporated herein by reference to Exhibit (10.1) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.2 | Form of Indemnification Agreement (incorporated herein by reference to Exhibit (10.3) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.3 | Amended 1996 Non-Qualified Stock Option Plan (incorporated herein by reference to Exhibit 10.15 to Registrant's quarterly report on Form 10-Q, filed on November 14, 2001). |
| 10.4 | Form of 1999 Stock Plan (incorporated herein by reference to Exhibit (10.4) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.5 | Form of 1999 Employee Stock Purchase Plan (incorporated herein by reference to Exhibit (10.5) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |

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| <u>Exhibit No.</u> | <u>Description</u> |
|--------------------|--|
| 10.6 | Management Agreement, dated as of July 24, 2000, by and between Rudolph Technologies, Inc. and Paul F. McLaughlin (incorporated herein by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000) |
| 10.7 | Management Agreement, dated as of July 24, 2000 by and between Rudolph Technologies, Inc. and Steven R. Roth (incorporated herein by reference to Exhibit 10.14 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000). |
| 10.8 | Registration Agreement, dated June 14, 1996 by and among the Registrant, 11, L.L.C., Riverside Rudolph, L.L.C., Dr. Richard F. Spanier, Paul F. McLaughlin (incorporated herein by reference to Exhibit (10.9) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.9 | Stockholders Agreement, dated June 14, 1996 by and among the Registrant, Administration of Florida, Liberty Partners Holdings 11, L.L.C., Riverside Rudolph, L.L.C., Dr. Richard F. Spanier, Paul McLaughlin, Dale Moorman, Thomas Cooper and (incorporated herein by reference to Exhibit (10.10) to the Registrant's Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999). |
| 10.10 | Form of option agreement under 1999 Stock Plan (incorporated herein by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 5, 2004). |
| 10.11 | Form of Restricted Stock Award pursuant to the Rudolph Technologies, Inc. 1999 Stock Plan (filed with Rudolph Technologies, Inc.'s Current Report on Form 8-K filed on June 21, 2005 and incorporated herein by reference). |
| 10.12 | Form of Company Shareholder Voting Agreement (incorporated by reference to Exhibit 99.2 to the Company's Schedule 13D filed with the SEC on July 7, 2005). |
| 14.1 | Rudolph Technologies Code of Business Conduct and Ethics (incorporated herein by reference to Exhibit 14.1 to Registrant's annual report on Form 10-K, filed on March 16, 2006). |
| 14.2 | Rudolph Technologies Financial Code of Ethics (incorporated herein by reference to Exhibit 14.1 to Registrant's annual report on Form 10-K, filed on March 16, 2006). |
| 18.1 | Preferability letter of KPMG LLP, Independent Registered Public Accounting Firm, filed herewith. |
| 21.1 | Subsidiaries. |
| 23.1 | Consent of KPMG LLP, Independent Registered Public Accounting Firm. |
| 31.1 | Certification of Paul F. McLaughlin, Chief Executive Officer, pursuant to Securities Exchange Act Rule 13a-14 (a). |
| 31.2 | Certification of Steven R. Roth, Chief Financial Officer, pursuant to Securities Exchange Act Rule 13a-14(a). |
| 32.1 | Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Paul F. McLaughlin, Chief Executive Officer of Rudolph Technologies, Inc. |
| 32.2 | Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Steven R. Roth, Chief Financial Officer of Rudolph Technologies, Inc. |

+ Confidential treatment has been granted with respect to portions of this exhibit.

Preferability Letter of Independent Registered Public Accounting Firm

March 3, 2008

Rudolph Technologies, Inc.
One Rudolph Road
Flanders, NJ 07836

Ladies and Gentlemen:

We have audited the consolidated balance sheets of Rudolph Technologies, Inc. and subsidiaries (the "Company") as of December 31, 2007 and 2006, and the related consolidated statements of operations, stockholders' equity and comprehensive income, and cash flows for each of the years in the three-year period ended December 31, 2007, and have reported thereon under date of March 3, 2008. The aforementioned consolidated financial statements and our audit report thereon are included in the Company's annual report on Form 10-K for the year ended December 31, 2007. As stated in Note 2 to those financial statements, the Company changed its annual goodwill impairment test date from December 31 to October 31 and states that the newly adopted accounting principle is preferable in the circumstances because it provides the Company additional time to complete the impairment testing and report the results of those tests in the Company's annual filing on Form 10-K. In accordance with your request, we have reviewed and discussed with Company officials the circumstances and business judgment and planning upon which the decision to make this change in the method of accounting was based.

With regard to the aforementioned accounting change, authoritative criteria have not been established for evaluating the preferability of one acceptable method of accounting over another acceptable method. However, for purposes of the Company's compliance with the requirements of the Securities and Exchange Commission, we are furnishing this letter.

Based on our review and discussion, with reliance on management's business judgment and planning, we concur that the newly adopted method of accounting is preferable in the Company's circumstances.

Very truly yours,
/s/ KPMG LLP

EX-21.1 3 dex211.htm SUBSIDIARIES

Exhibit 21.1

SUBSIDIARIES

Name

Rudolph Technologies Europe, B.V.
Rudolph Technologies Japan KK
August Technology Corporation
Mariner Acquisition Company LLC

Jurisdiction

Netherlands
Japan
Minnesota
Delaware

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Rudolph Technologies, Inc.:

We consent to the incorporation by reference in the registration statement (No. 333-132283) on Form S-8 and registration statement (No. 333-54860) on Form S-3 of Rudolph Technologies, Inc. of our reports dated March 3, 2008, with respect to the consolidated balance sheets of Rudolph Technologies, Inc. and subsidiaries as of December 31, 2007 and 2006 and the related consolidated statements of operations, stockholders' equity and comprehensive income, and cash flows for each of the years in the three-year period ended December 31, 2007, and the related consolidated financial statement schedule, and the effectiveness of internal control over financial reporting as of December 31, 2007, which reports appear in this December 31, 2007 annual report on Form 10-K of Rudolph Technologies, Inc.

Our report with respect to the consolidated balance sheets of Rudolph Technologies, Inc. and subsidiaries as of December 31, 2007 and 2006 and the related consolidated statements of operations, stockholders' equity and comprehensive income, and cash flows for each of the years in the three-year period ended December 31, 2007, and the related consolidated financial statement schedule dated March 3, 2008 refers to Rudolph Technologies, Inc.'s adoption of Financial Accounting Standards Board Interpretation No. 48, "Accounting for Uncertainties in Income Taxes", effective January 1, 2007, and Statement of Financial Accounting Standards No. 123(R), "Share-Based Payment", effective January 1, 2006.

Our report dated March 3, 2008, on the effectiveness of internal control over financial reporting as of December 31, 2007, expresses our opinion that Rudolph Technologies, Inc. did not maintain effective internal control over financial reporting as of December 31, 2007 because of the effect of a material weakness on the achievement of the objectives of the control criteria and contains explanatory paragraphs that state a) Rudolph Technologies, Inc. did not have adequate oversight and review controls regarding the preparation and review of the accounting for income taxes as of December 31, 2007, and b) management of Rudolph Technologies, Inc. excluded the probe card test and analysis business (PCTA) acquired in December 2007 from its assessment of the effectiveness of Rudolph Technologies, Inc.'s internal control over financial reporting as of December 31, 2007, and our audit of internal control over financial reporting of Rudolph Technologies, Inc. as of December 31, 2007 also excluded an evaluation of the internal control over financial reporting of PCTA.

/s/ KPMG LLP

Short Hills, New Jersey
March 3, 2008

EX-31.1 5 dex311.htm CERTIFICATION OF PAUL F. MCLAUGHLIN, CHIEF EXECUTIVE OFFICER

Exhibit 31.1

Certification of Chief Executive Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Paul F. McLaughlin, certify that:

1. I have reviewed this annual report on Form 10-K of Rudolph Technologies, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 3, 2008

By: /s/ PAUL F. MCLAUGHLIN
Paul F. McLaughlin
Chairman and Chief Executive Officer

EX-32.1 7 dex321.htm CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350 BY CHIEF EXECUTIVE OFFICER

Exhibit 32.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Paul F. McLaughlin, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Rudolph Technologies, Inc. on Form 10-K for the year ended December 31, 2007 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of Rudolph Technologies, Inc.

Date: March 3, 2008

By: /s/ PAUL F. MCLAUGHLIN
Paul F. McLaughlin
Chairman and Chief Executive Officer

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Steven R. Roth, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Rudolph Technologies, Inc. on Form 10-K for the year ended December 31, 2007 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of Rudolph Technologies, Inc.

Date: March 3, 2008

By: /s/ STEVEN R. ROTH
Steven R. Roth
Senior Vice President and Chief Financial Officer

RUDOLPH

TECHNOLOGIES

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS

To be held May 20, 2008

TO THE STOCKHOLDERS:

NOTICE IS HEREBY GIVEN that the 2008 Annual Meeting of Stockholders of Rudolph Technologies, Inc. (the "Company"), a Delaware corporation, will be held on May 20, 2008 at 9:00 a.m., local time, at the Company's corporate headquarters, located at One Rudolph Road, Flanders, New Jersey, 07836, for the following purposes:

1. To elect three Class III directors to serve for three-year terms expiring upon the 2011 Annual Meeting of Stockholders or until their successors are elected;
2. To ratify the appointment of Ernst & Young LLP as our independent registered public accountants for the year ending December 31, 2008; and
3. To transact such other business as may properly come before the meeting and any adjournment or postponement thereof.

The foregoing items of business are more fully described in the Proxy Statement accompanying this Notice. Included in the mailing of this Proxy Statement is a copy of our Annual Report to Stockholders for the fiscal year ended December 31, 2007.

Only stockholders of record at the close of business on March 31, 2008 are entitled to notice of and to vote at the meeting and any adjournment thereof.

All stockholders are cordially invited to attend the meeting in person. However, to ensure your representation at the meeting, you are urged to mark, sign, date and return the enclosed proxy card as promptly as possible in the postage-prepaid envelope enclosed for that purpose. Any stockholder attending the meeting may vote in person even if such stockholder has returned a proxy.

FOR THE BOARD OF DIRECTORS

STEVEN R. ROTH
Secretary

Flanders, New Jersey
April 21, 2008

RUDOLPH TECHNOLOGIES, INC.

PROXY STATEMENT

INFORMATION CONCERNING SOLICITATION AND VOTING

General

The enclosed Proxy is solicited on behalf of the Board of Directors of Rudolph Technologies, Inc. (the "Company") for use at the 2008 Annual Meeting of Stockholders to be held May 20, 2008 at 9:00 a.m., local time (the "Annual Meeting"), or at any adjournment thereof, for the purposes set forth herein and in the accompanying Notice of Annual Meeting of Stockholders. The Annual Meeting will be held at the Company's corporate headquarters, located at One Rudolph Road, Flanders, New Jersey, 07836. The Company's telephone number is (973) 691-1300.

These proxy solicitation materials and the Company's Annual Report to Stockholders for the year ended December 31, 2007, including financial statements, were mailed on or about April 21, 2008 to stockholders entitled to vote at the meeting.

Record Date and Voting Securities

Stockholders of record at the close of business on March 31, 2008 (the "Record Date") are entitled to notice of and to vote at the meeting. At the Record Date, 30,559,982 shares of the Company's Common Stock, \$0.001 par value, were issued and outstanding.

Revocability of Proxies

Any proxy given pursuant to this solicitation may be revoked by the person giving it at any time before its use by delivering to the Secretary of the Company at the Company's principal executive offices a written notice of revocation or a duly executed proxy bearing a later date or by attending the meeting and voting in person.

Voting and Solicitation

Each stockholder of record is entitled to one vote for each share of Common Stock owned by such stockholder on all matters presented at the Annual Meeting. Stockholders do not have the right to cumulate their votes in the election of directors.

The Company will bear the cost of soliciting proxies. In addition, the Company may reimburse brokerage firms and other persons representing beneficial owners of shares for their expenses in forwarding solicitation material to such beneficial owners. Solicitation of proxies by mail may be supplemented by telephone, facsimile or personal solicitation by directors, officers or regular employees of the Company. No additional compensation will be paid to such persons for such services.

Quorum; Abstentions; Broker Non-votes

The required quorum for the transaction of business at the Annual Meeting is a majority of the votes eligible to be cast by holders of shares of Common Stock issued and outstanding on the Record Date. Shares that are voted "FOR", "AGAINST" or "WITHHOLD AUTHORITY" with respect to a matter are treated as being present at the meeting for purposes of establishing a quorum and are also treated as shares entitled to vote at the Annual Meeting (the "Votes Cast") with respect to such matter.

While there is no definitive statutory or case law authority in Delaware as to the proper treatment of abstentions, the Company believes that abstentions should be counted for purposes of determining both (i) the presence or absence of a quorum for the transaction of business and (ii) the total number of Votes Cast with respect to a proposal (other than the election of directors). In the absence of controlling precedent to the contrary, the Company intends to treat abstentions in this manner. Accordingly, abstentions will have the same effect as a vote against the proposal.

Under current Delaware case law, while broker non-votes (i.e. the votes of shares held of record by brokers as to which the underlying beneficial owners have given no voting instructions) should be counted for purposes of determining the presence or absence of a quorum for the transaction of business, broker non-votes should not be counted for purposes of determining the number of Votes Cast with respect to the particular proposal on which the broker has expressly not voted. Accordingly, the Company intends to treat broker non-votes in this manner.

Deadlines for Submission of Stockholder Proposals for 2009 Annual Meeting

Stockholders of the Company are entitled to present proposals for consideration at forthcoming stockholder meetings provided that they comply with the proxy rules promulgated by the Securities and Exchange Commission (the "SEC") and the Bylaws of the Company. Stockholders wishing to present a proposal at the Company's 2009 Annual Stockholder Meeting must submit such proposal in writing to the Company no later than by December 22, 2008 if they wish for it to be eligible for inclusion in the proxy statement and form of proxy relating to that meeting. In addition, under the Company's Bylaws, a stockholder wishing to make a proposal at the 2009 Annual Stockholder Meeting must submit such a proposal in writing to the Company no later than March 12, 2009.

No Appraisal Rights

Stockholders have no dissenters' rights of appraisal with respect to any of the matters to be voted upon at the Annual Meeting.

CORPORATE GOVERNANCE PRINCIPLES AND PRACTICES

Rudolph Technologies is committed to sound and effective corporate governance practices. Having such principles is essential to running our business efficiently and to maintaining our integrity in the marketplace. The major components of our corporate governance practices are described below.

Codes of Ethics

We have adopted a Code of Business Conduct and Ethics and a Financial Code of Ethics that set forth principles to guide all employees, executive officers and directors and establish procedures for reporting any violations of these principles. These may be found on our website at <http://www.rudolphtech.com/CodesEthics.aspx> or may be requested by writing to Rudolph Technologies, Inc., Attention: Investor Relations, One Rudolph Road, P.O. Box 1000, Flanders, New Jersey 07836. The Company will disclose any amendment to its codes of ethics or waiver of a provision of its codes of ethics applicable to its officers, including the name of the officer to whom the waiver was granted, on our website at www.rudolphtech.com, on the Investor Relations page.

Board Meetings and Committees

The Board of Directors of the Company held a total of four meetings during 2007. No director attended fewer than 75% of the meetings of the Board of Directors or 70% of the committee meetings upon which such director served. While the Company does not currently have a formal policy regarding the attendance of directors at the annual meeting of stockholders, directors are encouraged to attend. All then current members of the Board

of Directors attended the 2007 Annual Meeting of Stockholders. The Board of Directors has an Audit Committee, a Compensation Committee and a Nominating and Governance Committee, each of which has adopted a written charter. The charters of these committees are in compliance with rules adopted by the SEC and the NASDAQ stock market on which our stock is listed ("Nasdaq").

Board Independence

The Board makes an annual determination as to the independence of each of our Board members under the current standards for "independence" established by Nasdaq and the SEC. The Board has determined that the following members of the Board, consisting of a majority of the Board, satisfy these independence standards: Daniel H. Berry, Paul Craig, Carl E. Ring, Jr., Richard F. Spanier, Thomas G. Greig, Aubrey C. Tobey, John R. Whitten and Michael W. Wright. In addition, on four occasions during 2007, our Board met in executive sessions in which solely the independent Board members were present.

Audit Committee

We have an Audit Committee that assists the Board in fulfilling its responsibilities for general oversight of the integrity of our financial statements and with our compliance with legal and regulatory requirements. Specifically, the Audit Committee approves and authorizes engagement of the Company's independent registered public accountants, and is primarily responsible for approving the services performed by the Company's independent registered public accountants and for reviewing and evaluating the Company's accounting principles and its system of internal accounting controls. The report of our Audit Committee is found below under the caption "Audit Committee Report."

The Audit Committee is governed by its own charter that sets forth its specific responsibilities and the qualifications for membership to the committee. The charter of the Audit Committee is available on our website at www.rudolphtech.com, on the Investor Relations page. The Audit Committee held ten meetings in 2007. In January 2008, there was a change to the composition to the Audit Committee and Paul Craig was appointed to the Audit Committee to replace Daniel H. Berry, so that the Audit Committee is currently composed of Directors Paul Craig, Carl E. Ring, Jr., Aubrey C. Tobey and John R. Whitten. The Board has determined that Paul Craig, Carl E. Ring, Jr., Aubrey C. Tobey and John R. Whitten meet the requirements for membership to the Audit Committee set forth by Nasdaq and the SEC, including that they be "independent."

The Board has determined that John R. Whitten meets the definition of an "Audit Committee Financial Expert" under SEC rules, and also has the level of financial sophistication required of at least one member of the Audit Committee under Nasdaq rules.

Compensation Committee

The Compensation Committee has its own charter that sets forth its specific responsibilities, including the establishment of the policies upon which compensation of and incentives for the Company's executive officers will be based, the review and approval of the compensation of the Company's executive officers, and the administration of the Company's stock and stock purchase plans. The charter of the Compensation Committee is available on our website at www.rudolphtech.com, on the Investor Relations page.

The Compensation Committee held four meetings during the last year. This Committee is currently composed of Directors Daniel H. Berry, Paul Craig and Carl E. Ring, Jr. The Board has determined that Daniel H. Berry, Paul Craig and Carl E. Ring, Jr. meet the requirements for membership on the Compensation Committee, including the independence requirements of Nasdaq. For a complete discussion of the Compensation Committee, please refer to the Executive Compensation section of the Compensation, Discussion and Analysis ("CD&A").

Nominating and Governance Committee

Like the other committees of the Board, the Nominating and Governance Committee has its own charter that outlines its responsibilities. These responsibilities include identifying prospective director nominees and recommending to the Board director nominees for the next annual meeting of stockholders and replacements of a director in the event a director steps down. The Nominating and Governance Committee also recommends to the Board director nominees for the Audit and Compensation Committees. The charter of the Nominating and Governance Committee is available on our website at www.rudolphtech.com, on the Investor Relations page.

The Nominating and Governance Committee is currently composed of Directors Thomas G. Greig, Richard F. Spanier, Aubrey C. Tobey and Michael W. Wright and held four meetings during the last year. The Board has determined that all of these directors meet the requirements for membership to the Nominating and Governance Committee, including the independence requirements of Nasdaq.

The Nominating and Governance Committee determines the required selection criteria and qualifications of director nominees based upon the needs of the Company at the time nominees are considered. A candidate must possess the ability to apply good business judgment and must be in a position to properly exercise his or her duties of loyalty and care. Candidates should also exhibit proven leadership capabilities, high integrity and experience with a high level of responsibilities within their chosen fields, and have the ability to grasp complex principles of business, finance, international transactions and semiconductor inspection and metrology technologies. When current Board members are considered for nomination for reelection, the Nominating and Governance Committee also takes into consideration their prior contributions to and performance on the Board and their record of attendance.

The Nominating and Governance Committee will consider the above criteria for nominees identified by the Nominating and Governance Committee itself, by stockholders, or through some other source. The Nominating and Governance Committee uses the same process for evaluating all nominees, regardless of the original source of nomination. The Nominating and Governance Committee may use the services of a third party search firm to assist in the identification or evaluation of Board member candidates.

The Nominating and Governance Committee has a formal policy with regard to consideration of director candidates recommended by the Company's stockholders. In accordance with the policy, the Committee will consider recommendations and nominations for candidates to the Board of Directors from stockholders of the Company holding no less than 1% of the Company's securities for at least twelve months prior to the date of the submission of the recommendation or nomination. Stockholders wishing to recommend persons for consideration by the Nominating and Governance Committee as nominees for election to the Company's Board of Directors can do so by writing to the Office of the General Counsel of the Company at its principal executive offices giving each such person's name, biographical data and qualifications. Any such recommendation should be accompanied by a written statement concerning the eligibility and qualifications from the person recommended and of his or her consent to be named as a nominee and, if nominated and elected, to serve as a director. The Company's Bylaws also contain a procedure for stockholder nomination of directors.

Communications with the Board of Directors

We have a formal policy regarding communications with the Board of Directors. Stockholders may communicate with the Board of Directors by writing to them at c/o Rudolph Technologies, Inc., Office of the General Counsel, One Rudolph Road, P.O. Box 1000, Flanders, New Jersey 07836 and such communications will be forwarded to the Board of Directors. Stockholders who would like their submission directed to a member of the Board of Directors may so specify, and the communication will be forwarded to such specific directors, as appropriate.

PROPOSAL 1
ELECTION OF DIRECTORS

Nominees

The authorized number of directors is currently established at ten. The Company's Certificate of Incorporation provides that the directors shall be divided into three classes, with the classes serving for staggered, three-year terms. Currently there are three directors in each of Class I and Class II and four directors in Class III. Three of the four Class III directors are to be elected at this Annual Meeting and will hold office until the 2011 Annual Meeting or until their successors have been duly elected and qualified. One of the Class III directors will resign from the Board of Directors at the end of his term and will not seek re-election at this Annual Meeting reducing the number of board members to nine. Each of the three Class I directors will hold office until the 2009 Annual Meeting or until their successors have been duly elected and qualified and each of the three Class II directors will hold office until the 2010 Annual Meeting or until their successors have been duly elected and qualified. These directors were approved by the Board for inclusion on this Proxy Statement based on the recommendation of the Nominating and Governance Committee.

Unless otherwise instructed, the proxy holders will vote the proxies received by them for the Company's three nominees named below, each of whom is currently a director of the Company. In the event that any nominee of the Company becomes unable or declines to serve as a director at the time of the Annual Meeting, the proxy holders will vote the proxies for any substitute nominee who is designated by the current Board of Directors to fill the vacancy. It is not expected that any nominee listed below will be unable or will decline to serve as a director.

The names of the three Class III nominees for director and certain information about each of them are set forth below. The name of, and certain information about, the non-continuing Class III director, is also set forth below. The names of, and certain information about, the current Class I and Class II directors with unexpired terms are also set forth below. All information is as of the Record Date.

| <u>Name</u> | <u>Age</u> | <u>Position</u> | <u>Director Since</u> |
|---|------------|---|-----------------------|
| <i>Nominees Class III Directors:</i> | | | |
| Jeff L. O'Dell | 47 | Chief Executive Officer, Bewiki, Inc. | 2006 |
| Aubrey C. Tobey | 82 | President, ACT International | 1998 |
| John R. Whitten | 61 | Former Chief Financial Officer, Vice President and Treasurer, Applied Industrial Technologies, Inc. | 2006 |
| <i>Non-Continuing Class III Director:</i> | | | |
| Michael W. Wright(1) | 61 | President and Chief Executive Officer, Advanced Inquiry Systems, Inc. | 2006 |
| <i>Continuing Class I Directors:</i> | | | |
| Paul Craig | 51 | President, Riverside Partners, Inc. | 1996 |
| Paul F. McLaughlin | 62 | Chairman and Chief Executive Officer, Rudolph Technologies, Inc. | 1996 |
| Carl E. Ring, Jr. | 70 | Former Managing Director, Liberty Capital Partners, Inc. | 1996 |
| <i>Continuing Class II Directors:</i> | | | |
| Daniel H. Berry | 62 | Operating Partner, Riverside Partners, LLC | 1998 |
| Thomas G. Greig | 60 | Managing Director, Liberty Capital Partners, Inc. | 2003 |
| Richard F. Spanier | 68 | Retired, Chairman Emeritus | 1966 |

(1) Mr. Wright's term will expire and he will not seek re-election.

Except as indicated below, each nominee or incumbent director has been engaged in the principal occupation set forth above during the past five years. There are no family relationships between any directors or executive officers of the Company.

Paul F. McLaughlin has served as the Company's Chairman since January 2000 and Chief Executive Officer and as a director of the Company since June 1996. Mr. McLaughlin holds a B.S. in Metallurgical Engineering from Rensselaer Polytechnic Institute, an M.S. in Metallurgy and Materials Science from Lehigh University and an M.B.A. from Harvard University Graduate School of Business Administration.

Daniel H. Berry has served as one of the Company's directors since October 1998. Since January 2002, Mr. Berry has been an Operating Partner of Riverside Partners, LLC, a private equity investment firm. From July 2004 to August 2007, Mr. Berry also served as Executive Vice President of Applied Precision, a Riverside portfolio company. He was employed by Ultratech Stepper, Inc. (presently Ultratech, Inc.), an equipment supplier to the semiconductor industry, from 1990 to 2001 in various positions including President and Chief Operating Officer from May 1999 to November 2001. Prior to this, Mr. Berry held positions at General Signal, Perkin Elmer and Bell Laboratories. Mr. Berry holds a B.S. in Electrical Engineering from the Polytechnic Institute of Brooklyn.

Paul Craig has served as one of the Company's directors since June 1996. Since February 1988, Mr. Craig has served as President of Riverside Partners, Inc., a private equity investment firm. Mr. Craig holds a B.A. from Harvard University.

Thomas G. Greig has served as one of the Company's directors since January 2003. Since July 1998, Mr. Greig has been a Managing Director of Liberty Capital Partners, Inc., a private equity investment firm. From December 1985 to July 1998, Mr. Greig was a Managing Director of Donaldson, Lufkin, & Jenrette, Inc., an investment banking firm. Mr. Greig holds a B.S. in Engineering from Princeton University, an M.S.E. in Electrical Engineering from New York University and an M.B.A. from Harvard University Graduate School of Business Administration. Mr. Greig is currently the Non-Executive Chairman of the Board of Black Box Corporation.

Jeff L. O'Dell has served as one of the Company's directors since February 2006 when the Company merged with August Technology Corporation. Since March 2007, Mr. O'Dell has been the Chief Executive Officer and a co-founder of Bewiki, Inc., an internet information discovery software company. From February 2006 to April 2007, Mr. O'Dell served as the Company's Strategic Business Fellow. Mr. O'Dell co-founded August Technology in September 1992 and served as its Chief Executive Officer from July 2001 to February 2006 and also served as the Chairman of the Board of August Technology from 1994 to February 2006. Mr. O'Dell holds a B.S. in Engineering from the University of Minnesota.

Carl E. Ring, Jr. has served as one of the Company's directors since June 1996. He was a founding partner of Liberty Partners, L.P., whose general partner is Liberty Capital Partners, Inc., a New York investment management firm, where he served as a Managing Director from September 1992 to October 2001. From June 1991 to September 1992, he was President of Eden, Miller & Co., Incorporated, an investment-banking firm. For more than five years prior thereto, Mr. Ring was a Managing Director of Lehman Brothers Inc., an investment banking and brokerage firm. Mr. Ring holds a B.A. in Mathematics from George Washington University and an M.B.A. from Harvard University Graduate School of Business Administration. Mr. Ring served as a director of Monaco Coach Corporation until May 2005.

Richard F. Spanier has served as Chairman Emeritus of the Company's Board of Directors since January 2000 and prior to that as the Company's Chairman of the Board of Directors since September 1966. From September 1966 to June 1996, Dr. Spanier served as the Company's President and Chief Executive Officer. Dr. Spanier holds a B.S. in Physics, an M.S. in Physical Chemistry and a Ph.D. in Chemical Physics from Stevens Institute of Technology.

Aubrey C. Tobey has served as one of the Company's directors since October 1998. Since May 1987, Mr. Tobey has served as President of ACT International, a company which provides marketing and management services for high technology companies. Mr. Tobey holds a B.S. in Mechanical Engineering from Tufts University and an M.S. in Mechanical Engineering from the University of Connecticut. Mr. Tobey served as a director of Chartered Semiconductor Manufacturing, Ltd. until May 2003.

John R. Whitten has served as one of the Company's directors since July 2006 upon his appointment to the Company's Board of Directors. From November 1995 to December 2003, Mr. Whitten served as Chief Financial Officer, Vice President and Treasurer of Applied Industrial Technologies, Inc., an industrial supply distributor. Mr. Whitten is a C.P.A. and holds a B.B.A. in Accounting from Cleveland State University.

Michael W. Wright has served as one of the Company's directors since February 2006 when the Company merged with August Technology Corporation. Since August 2006, Mr. Wright has served as the President and Chief Executive Officer of Advanced Inquiry Systems, Inc., a supplier to semiconductor manufacturers. From August 2005 to August 2006, he had been the Senior Advisor to the CEO of Entegris, Inc., a supplier to semiconductor manufacturers. From May 2002 to February 2005, he held the position of President and Chief Operating Officer of Entegris, Inc. Mr. Wright is a graduate of the U.S. Navy Nuclear Power Program. Mr. Wright served as a director of August Technology from March 2000 until February 2006.

Compensation of Directors

Directors who are employees of the Company receive no compensation for their services as members of the Board of Directors. In 2007, directors were not paid to serve on the committees of the Board of Directors with the exception of John R. Whitten who received cash compensation of \$2,500 each quarter for his services as the Chairman of the Audit Committee. From time to time directors may be compensated for work performed as members of special subcommittees of the Board of Directors. Fees paid to directors for special subcommittee work in 2007 totaled \$9,000.

Directors who are not employees of the Company received cash compensation of \$5,000 for attendance at each quarterly meeting of the Board of Directors in 2007. As new non-employee directors commence serving on the Board of Directors, they are first awarded an initial grant ("Initial Grant") of 10,000 stock options at an exercise price equal to the fair market value per share of the Common Stock on the date of the Board meeting at which the Initial Grant was awarded or the equivalent in restricted stock units subject to the terms of the Rudolph Technologies, Inc. 1999 Stock Plan ("1999 Plan"). Annually, each non-employee director who continues to serve as a non-employee director through the anniversary date of the Initial Grant will automatically be granted an option to purchase 5,000 shares of Common Stock at an exercise price equal to the fair market value per share of the Common Stock on the date of the Board meeting following such anniversary or will be awarded the Board determined equivalent in restricted stock units subject to the terms of the 1999 Plan. Since 2005, the above mentioned share-based compensation grants have been restricted stock units instead of stock option awards.

For the year ended December 31, 2007, the directors, excluding the director who is a named executive officer, of the Company (nine individuals) received the following total compensation:

| <u>Name</u> | <u>Fees Earned or Paid in Cash</u> | <u>Stock Awards (1)</u> | <u>Option Awards (2)</u> | <u>All Other Compensation</u> | <u>Total</u> |
|-----------------------------|--|-------------------------|--------------------------|-----------------------------------|--------------|
| Daniel H. Berry | \$15,000 | \$36,135 | \$— | \$ — | \$51,135 |
| Paul Craig | \$20,000 | \$36,135 | \$— | \$ — | \$56,135 |
| Thomas G. Greig | \$22,000 | \$36,135 | \$— | \$ — | \$58,135 |
| Jeff L. O'Dell(3) | \$10,000 | \$17,430 | \$— | \$47,731 | \$75,161 |
| Carl E. Ring, Jr. | \$22,000 | \$36,135 | \$— | \$ — | \$58,135 |
| Richard F. Spanier(4) | \$20,000 | \$36,135 | \$— | \$10,000 | \$66,135 |
| Aubrey C. Tobey | \$25,000 | \$36,135 | \$— | \$ — | \$61,135 |
| John R. Whitten | \$30,000 | \$63,017 | \$— | \$ — | \$93,017 |
| Michael W. Wright | \$15,000 | \$58,648 | \$— | \$ — | \$73,648 |

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- (1) The amounts in this column reflect the dollar amounts recognized for financial statement reporting purposes for the fiscal year ended December 31, 2006, in accordance with Statement of Financial Accounting Standards No. 123(R), *Share-based Payments* (SFAS No. 123R). For more information regarding the Company's assumptions made in the valuation of restricted stock units, see Note 10 to the financial statements included in the Company's Form 10-K for the year ended December 31, 2007. For stock awards granted to non-employee directors in 2007, the total grant date fair value of these awards was as follows: Mr. Berry (\$40,375), Mr. Craig (\$40,375), Mr. Greig (\$40,375), Mr. O'Dell (\$40,375), Mr. Ring (\$40,375), Mr. Spanier (\$40,375), Mr. Tobey (\$40,375), Mr. Whitten (\$40,375) and Mr. Wright (\$40,375).
 - (2) As of December 31, 2007 directors had the following stock options outstanding and exercisable: Mr. Berry (16,783 shares), Mr. Craig (15,000 shares), Mr. Greig (15,000 shares), Mr. O'Dell (5,337 shares), Mr. Ring (15,000 shares), Mr. Spanier (15,000 shares), Mr. Tobey (15,000 shares), Mr. Whitten (0 shares) and Mr. Wright (21,071 shares). As these directors were fully vested in their options prior to 2007, no expense is shown in this column.
 - (3) Mr. O'Dell was an employee director of the Company until April 6, 2007 and received other compensation consisting of salary paid to Mr. O'Dell in 2007 of \$46,154, amounts contributed by the Company under the Company's 401(k) Saving and Retirement Plan for 2007 of \$1,385 and life insurance premiums paid by the Company for 2007 of \$192.
 - (4) Mr. Spanier is paid \$10,000 per year under a 10 year deferred compensation plan, related to his sale of the Company in 1996, that commenced in January 1999.

Vote Required

The three nominees receiving the highest number of votes of the shares entitled to be voted for them shall be elected as Class III directors. Votes withheld from any director will be counted for purposes of determining the presence or absence of a quorum for the transaction of business at the meeting, but have no other legal effect upon election of directors under Delaware law.

The Company's Board of Directors unanimously recommends voting "FOR" the nominees set forth herein.

PROPOSAL 2

RATIFICATION OF APPOINTMENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTANTS

Although ratification by stockholders is not required by law, the Board of Directors is submitting the selection of Ernst & Young LLP for ratification as a matter of good corporate governance. The Audit Committee of the Board of Directors has authorized, and the Board of Directors has approved, the selection of Ernst & Young LLP as independent registered public accountants, to audit the financial statements of the Company for the year ending December 31, 2008 and recommends that the stockholders vote for ratification of such appointment. In the event of a negative vote on such ratification, the Board of Directors may reconsider its selection. Even if the selection is ratified, the Audit Committee may appoint a new independent registered public accounting firm at any time during the year if they believe that such a change would be in the best interests of the Company and its stockholders.

KPMG LLP had served as the Company's independent registered public accounting firm since 2002. Effective March 18, 2008, the Company, pursuant to the approval of the Company's Audit Committee, dismissed KPMG LLP as the Company's independent registered public accounting firm and effective March 19, 2008, engaged Ernst & Young LLP as the Company's independent registered public accounting firm.

The reports of KPMG LLP on the Company's financial statements for the years ended December 31, 2006 and 2007 do not contain an adverse opinion or a disclaimer of opinion and are not qualified or modified as to uncertainty, audit scope or accounting principles, except as follows: KPMG LLP's report on the consolidated financial statements of the Company as of and for the years ended December 31, 2006 and 2007 contained the following separate paragraphs: (i) As discussed in Note 12 to the consolidated financial statements, the Company adopted Financial Accounting Standards Board Interpretation No. 48, "Accounting for Uncertainties in Income Taxes", effective January 1, 2007; and (ii) As discussed in Note 2 to the consolidated financial statements, the Company adopted Statement of Financial Accounting Standards No. 123(R), "Share-Based Payment", effective January 1, 2006.

During the years ended December 31, 2006 and 2007 and through March 18, 2008, there were no disagreements with KPMG LLP on any matters of accounting principles or practices, financial statement disclosure, or auditing scope or procedure, which disagreements, if not resolved to KPMG LLP's satisfaction, would have caused KPMG LLP to make reference to the subject matter of the disagreement in connection with its audit report on the Company's financial statements for such year, and there were no reportable events as defined in Item 304(a)(1)(v) of Regulation S-K, except as follows:

As previously reported in the Company's Annual Report on Form 10-K filed on March 3, 2008, the Company's Management's Report on the Internal Control over Financial Reporting stated, and KPMG LLP's report on internal controls stated, that the process and procedures surrounding the preparation and review of the income tax provision did not include adequate management oversight and review controls as of December 31, 2007. Specifically, the Company did not ensure that effective oversight of the work performed by their outside tax advisor, Deloitte Tax LLP was exercised. Management is re-evaluating the design of the income tax accounting process and controls, implementing new and improved processes and controls, and increasing the level of review and discussion of significant tax matters and supporting documentation with the Company's outside advisor and senior finance management to address the material weakness identified and to enhance its internal controls.

During the years ended December 31, 2006 and December 31, 2007 and through March 18, 2008, the Company did not consult with Ernst & Young LLP regarding any of the matters or events set forth in Item 304(a)(2)(i) and (ii) of Regulation S-K.

The Company provided KPMG LLP with a copy of its Current Report on Form 8-K filed on March 24, 2008 and requested that KPMG LLP furnish it with a letter addressed to the Securities and Exchange Commission

stating whether it agrees with the statements made by the Company herein and, if not, stating the respects in which it does not agree. The letter from KPMG LLP to the Securities and Exchange Commission dated as of March 24, 2008 was attached as Exhibit 16.1 to the Company's Current Report on Form 8-K filed on March 24, 2008.

Representatives of both Ernst & Young LLP and KPMG LLP are not expected to be present at the Annual Meeting and therefore will not have the opportunity to make a statement or be available to respond to any questions.

Policy on Audit Committee Pre-Approval of Audit and Permissible Non-Audit Services of Independent Registered Public Accountants

The Audit Committee pre-approves all audit and permissible non-audit services provided by the Company's independent registered public accountants. These services may include audit services, audit-related services, tax and other services. Pre-approval is generally provided for up to one year, and any pre-approval is detailed as to the particular service or category of services and is generally subject to a specific budget. The independent registered public accountants and management are required to periodically report to the Audit Committee regarding the extent of services provided by the independent registered public accountants in accordance with this pre-approval and the fees for the services performed to date. The Audit Committee may also pre-approve particular services on a case-by-case basis. During 2006 and 2007, all services provided by KPMG LLP were pre-approved by the Audit Committee in accordance with this policy.

Fees billed to the Company by KPMG LLP for the years 2007 and 2006

The following table sets forth the approximate aggregate fees billed to the Company for services related to or provided during the years ending December 31, 2007 and 2006 by KPMG LLP:

| | <u>2007</u> | <u>2006</u> |
|-----------------------------|-------------------------|-------------------------|
| Audit Fees(1) | \$785,600 | \$935,000 |
| Audit-Related Fees(2) | 18,500 | 28,450 |
| Tax Fees(3) | 12,000 | 12,500 |
| All Other Fees | — | — |
| Total Fees | <u>\$816,100</u> | <u>\$975,950</u> |

- (1) This category consists of aggregate fees billed for the audit of our annual financial statements, review of the financial statements included in our quarterly reports on Form 10-Q and services that are normally provided by the independent registered public accountants in connection with statutory and regulatory filings or engagements for those calendar years.
- (2) This category consists of aggregate fees billed for assurance and related services that are reasonably related to the performance of the audit or review of the Company's annual financial statements and are not reported under "Audit Fees." These services included fees for accounting consultations, an employee benefit plan audit and services related to acquisition matters and merger due diligence.
- (3) This category consists of aggregate fees billed for professional services for federal, state and international tax compliance, tax advice and tax planning.

All of the fees listed in the chart above were pre-approved by the Audit Committee, which concluded that the provisions of such services by KPMG LLP was compatible with the maintenance of that firm's independence in the conduct of its audit functions.

Vote Required

The affirmative vote of a majority of the Votes Cast will be required to ratify Ernst & Young LLP as the Company's independent registered public accountants.

The Company's Board of Directors unanimously recommends voting "FOR" the ratification of the appointment of Ernst & Young LLP as the Company's independent registered public accountants for the year ending December 31, 2008.

AUDIT COMMITTEE REPORT

The following is the Audit Committee's report submitted to the Board of Directors for the year ended December 31, 2007.

The Audit Committee of the Board of Directors has:

- reviewed and discussed with management and the independent registered public accounting firm, together and separately, the Company's audited consolidated financial statements contained in its Annual Report on Form 10-K for the year ended December 31, 2007;
- discussed with KPMG LLP, the Company's independent registered public accountants, the matters required to be discussed by Statement on Auditing Standards No. 61;
- received the written disclosures and the letter from KPMG LLP required by Independence Standards Board Standard No. 1 and has discussed with KPMG LLP its independence; and
- considered whether the provision of non-audit services as noted under Proposal 2 is compatible with maintaining the independence of KPMG LLP, and has determined that such provision of non-audit services is compatible.

Based on the foregoing review and discussion, the Audit Committee recommended to the Board of Directors that the audited financial statements be included in the Company's 2007 Annual Report on Form 10-K.

THE AUDIT COMMITTEE

JOHN R. WHITTEN (CHAIRMAN)

PAUL CRAIG

CARL E. RING, JR.

AUBREY C. TOBEY

EXECUTIVE COMPENSATION

Compensation Discussion and Analysis

Introduction / Corporate Governance

Compensation Committee Members and Charter

The Compensation Committee of the Rudolph Technologies' Board of Directors was established in 1996 and is comprised solely of outside directors. In general, the Compensation Committee is responsible for reviewing and recommending for approval by the Board of Directors the Company's compensation practices, including executive salary levels and variable compensation programs, both cash-based and equity-based. With respect to the compensation of the Company's Chief Executive Officer, the Compensation Committee reviews and approves the various elements of the Chief Executive Officer's compensation. With respect to other executive officers, the Compensation Committee reviews the recommendations for compensation for such individuals presented to the Committee by the Chief Executive Officer and the reasons thereof and approves such recommendations or, in its discretion, modifies the compensation packages for any such individuals. Base salary levels for executive officers of the Company have been generally established at or near the start of each year, and final bonuses for executive officers have been determined subsequent to the end of the fiscal year based upon such individual's performance and the audited financial performance of the Company.

The Compensation Committee of Rudolph Technologies, Inc. is currently composed of Directors Daniel Berry who is the Chairman of the Committee, Paul Craig and Carl E. Ring, Jr., each of whom meet the requirements for membership on the Compensation Committee, including the independence requirements of Nasdaq.

The members of the Company's Compensation Committee have developed their knowledge and experience in compensation matters through a variety of avenues which may include, among others, participating as directors and providing services in related areas on boards of other companies, developing operational experience while serving as officers of other companies and reviewing and analyzing company compensation plans as partners with investment firms. None of the Directors of the Company's Compensation Committee has any interlocking relationships, as defined by the SEC, with the Company. The Chairman of the Committee establishes the agenda and meeting schedule, conducts the meetings and reports on their proceedings to the Board, including any recommendations for approval by the Board.

The Compensation Committee has its own charter that sets forth its specific responsibilities, including the establishment of the policies upon which compensation of and incentives for the Company's executive officers will be based, the review and approval of the performance and compensation of the Company's executive officers, and review and approval of compensation for the Company's Directors. In addition, the charter designates that the Compensation Committee has the authority to secure the services of both internal and external advisers and consultants, including budgetary oversight thereof, establish subcommittees and administrate any of the Company's equity compensation plans adopted by the Board.

The Committee is entitled to delegate its authority as it deems appropriate to subcommittees as well as to establish a Non-Officer Stock Option Committee with the authority to grant options or stock purchase rights to purchase up to a certain number of shares as set forth in a resolution of the Compensation Committee to each new non-officer employee of the Company. In 2006, the Compensation Committee delegated to the Nominating and Governance Committee, the task of reviewing and making recommendations for possible changes to the compensation package for Directors. The Nominating and Governance Committee completed this review, reported its findings to the Compensation Committee which in turn reviewed the results and recommended to the full Board that no adjustments to Director compensation be made at that time other than the establishment of an additional stipend of \$2,500 payable quarterly to the Chairperson of the Audit Committee for the additional responsibilities and functions associated with this role. The Board approved this stipend. In 2007, also pursuant to the delegation received from the Compensation Committee, the Nominating and Governance Committee recommended to the Board and the Board approved a \$1,000 per meeting fee to any director attending in person a committee meeting, including any special subcommittee, which is not contemporaneously held with a Board of

Directors meeting with the exception of the Audit Committee Chairman who receives an additional stipend for his efforts in that role. Fees paid to directors for special subcommittee work in 2007 totaled \$9,000. At this time, the Compensation Committee has not established a Non-Officer Stock Option Committee.

In accordance with the charter, the Compensation Committee annually reviews and reassesses the adequacy of its charter and recommends any proposed changes to the Board for approval. The Compensation Committee charter was last reviewed in February 2007 at which time no changes to the charter were proposed. The charter is scheduled for review at the Compensation Committee's meeting in May of 2008. The charter of the Compensation Committee is available on the Company's website at www.rudolphtech.com, on the Investor Relations page.

Compensation Consultants

From time to time the Compensation Committee has engaged the services of outside compensation consultants to provide advice on compensation plans and issues related to the Company's executive and non-executive employees. In 2003, Deloitte Compensation Services, a part of Deloitte & Touche USA, L.L.P., was retained by the Company's Compensation Committee as a compensation consultant. Further, at the end of March 2006, the compensation consulting firm of Upstart Solutions, Inc. was engaged by the Compensation Committee for the purposes explained below. It is the determination of the Company that the foregoing compensation consultants were considered independent due to the facts that: 1) neither firm provided work other than compensation services to the Company during the course of their engagement; 2) the Compensation Committee had the full right to retain and/or terminate either consultant in its discretion; 3) all of the work by Deloitte Compensation Services was commissioned by the Compensation Committee and the project for which Upstart Solutions was engaged was commissioned by the Compensation Committee; 4) the Compensation Committee was copied on reports and work product prepared by the consultants related to their engagement; and 5) each consultant's engagement was budgeted on a project basis approved by the Compensation Committee with all costs paid by the Company. In each instance, the Company's Chairman and CEO served as the contact person with the consulting firm and as the liaison with the Compensation Committee.

For each of the compensation consultants, the Compensation Committee was responsible for determining the nature and scope of the related commissioned assignments. In general, the role of each of the compensation consultants was to provide competitive data and business and technical considerations with regard to the Company's compensation plans and to make recommendations as to pay programs and/or pay level changes, recognizing that the Compensation Committee and the executive management of the Company retained the final right to decide whether to implement the consultants' recommendations in their discretion. Specifically with regard to Deloitte Compensation Services, the firm was retained to provide a review of the total direct compensation packages for the Company's top five executive positions and two additional executive positions as compared to the comparable position in a series of peer group companies both inside and outside of the semiconductor industry. In addition, the firm was engaged to review the executive perquisite and benefits provided at the peer group companies and provide an analysis of the target annual incentives, where available, and calculation of total cash compensation at the target level performance on a position-by-position basis at these companies. Mr. Scott M. Ross was the Company's primary contact at Deloitte Compensation Services.

Subsequent to the completion of the merger of August Technology Corporation and the Company, Upstart Solutions, Inc. was retained to review and compare the executive compensation plans of the two companies in order to offer guidance for the integration of the two plans. This review project included a comparison of the base salary levels, incentive compensation, equity grants and perquisites afforded by each company with the intent to equitably merge the programs over time into a single plan. Mr. Douglas Binning was the Company's primary contact at Upstart Solutions.

In addition to the foregoing, the Company's Human Resources department engaged the services of Upstart Solutions from April until June 2006 to assist in the development of pay grade structures for employees other than executives of the merged Company. Mr. Douglas Binning was again the Company's primary contact with this consultant during the course of this project. Ms. Kim Latham, the Director of Human Resources for the Company, engaged the consultant and was responsible for determining the scope of the project and the related

assignments. Meetings were held with the compensation consultant, Ms. Latham and Company managers to determine job matching of positions throughout the Company to the Radford Salary Survey, a compensation survey developed by a leading provider of compensation market intelligence to high-tech industries. The consultant analyzed the salary survey data and made recommendations for a pay grade structure. Further, he also made recommendations regarding the placement of individuals into the pay grade structure and assisted the Company in determining the compensation ratios for these positions.

Role of Executives in Establishing Compensation

During 2006 and 2007, the principal executive of the Company who had a role in the assessment, design and recommendation of compensation programs, plans and awards for Company executives was the Chairman and CEO, Paul McLaughlin. Mr. McLaughlin served as the Compensation Committee's liaison with Upstart Solutions in order to provide information and insight to the compensation consultant regarding the compensation plans of the two merged companies. Upon completion of the consultant's report it was provided to the Compensation Committee for their review, consideration and implementation.

Mr. McLaughlin also was responsible in 2006 and 2007 for the preparation of the framework for the Company's annual Key Executive Bonus Plan at the direction of the Compensation Committee. This directive included the development of the focus of the program as well as the business and personal objectives for consideration by the participants. Policies regarding participation in and payout under the plan were also reviewed to determine if changes in the program were necessary. Personal and corporate objectives were established for each of the executives included in this plan. These objectives were then reviewed and agreed upon by Mr. McLaughlin and the executive subject to the approval of the Compensation Committee. In addition, as part of the annual performance review of the Company's executives, Mr. McLaughlin assessed the performance of his direct reports and determined the merit increase, if any, that would be proposed for each individual. These merit increase proposals, along with each executive's personal and corporate objectives and their bonus target levels (based on a percentage of their fiscal year compensation), were then compiled by Mr. McLaughlin and submitted to the Compensation Committee for their review and consideration for approval. At the Compensation Committee meeting during which the executive compensation plans (bonuses and merit increases) were to be reviewed, Mr. McLaughlin attended the initial session to present the proposed plans and to answer questions that arose. Thereafter, the Compensation Committee met without Mr. McLaughlin being present to review, discuss and approve all executive compensation plans for 2006 and 2007 subject to any modifications made by the Compensation Committee.

With respect to director compensation, in 2006 and continuing into 2007, the Compensation Committee delegated to the Nominating and Governance Committee, the task of reviewing and making recommendations for possible changes to the compensation package for Directors. Mr. McLaughlin was requested to and did attend the meetings of the Nominating and Governance Committee during which the issue of director compensation was discussed. In addition, Robert Koch, the Company's Vice President and General Counsel, attended these meetings as secretary of the proceedings.

Other than set forth above, no other executives attended the Compensation Committee meetings in 2006 or 2007. Further, no executives of the Company attended any of the Board's Executive sessions.

Compensation Committee Activity

During 2007, the Compensation Committee of the Company met four (4) times. As discussed above, the Company's Chairman and CEO, Paul McLaughlin met with the Compensation Committee once in early 2007 in order to present the proposed compensation plans for each of the Company's executives as well as the Employee Cash Bonus Program for the non-executive employees. At each of its meetings held during 2007, the Compensation Committee met in executive session, without the presence of Mr. McLaughlin, any other Company executives or advisors, to review the relevant compensation matters at such times.

In 2007, the Compensation Committee took a number of actions. These included:

- Reviewing and approving the annual compensation of the Company CEO;
- Reviewing and approving the annual compensation for each executive of the Company;
- Reviewing and approving the Key Executive Bonus Plan;
- Reviewing and approving the Employee Cash Bonus Program;
- Reviewing and approving the equity incentive awards issued to the Company's executives;
- Reviewing and providing direction as to the integration of the compensation programs of August Technology Corporation and the Company into a single program; and
- Identifying the need to assess the compensation of the Company's Directors and delegating the review to the Nominating and Governance Committee.

In reviewing and setting the annual compensation for each executive of the Company, the Compensation Committee reviewed the amounts payable under each of the elements of their respective compensation plans including their base salary, annual bonus and perquisites, as well as the equity grants for the individuals. In doing so, the Committee took into consideration both the Company's internal pay equity as well as the competitive environment within which the Company operates. In each instance, the Committee determined that the base salary for the individual executives was at an acceptable level, the bonus objectives were measurable and their achievement would result in appropriate value to the Company and that the perquisites were suitable for the related positions. The Compensation Committee assessed the contribution to the Company of each executive and made determinations of equity incentive awards for the executives consistent with their conclusions.

At the direction of the Compensation Committee, the Nominating and Governance Committee performed the delegated review of the compensation of the Company's Directors and concluded that from time to time directors may be compensated for work performed as members of special subcommittees of the Board of Directors in an amount of \$1,000 per meeting. In addition, this Committee determined that no additional changes to the compensation for the Board of Directors should be enacted at that time. Upon completion of this review, the Compensation Committee evaluated and accepted this proposal and recommended that the Company Board of Directors approve the proposal, which it did. Subsequently, in 2007, also pursuant to the delegation received from the Compensation Committee, the Nominating and Governing Committee recommended to the Board and the Board approved a \$1,000 per meeting fee to any director attending in person a committee meeting, including any special subcommittee, which is not contemporaneously held with a Board of Directors meeting with the exception of the Audit Committee Chairman who receives an additional stipend for his efforts in that role.

In 2008, prior to the filing hereof, the Compensation Committee met to review the annual compensation of the Company CEO, the annual compensation for each executive officer, the Key Executive Bonus Plan, and the Employee Cash Bonus Program. In addition, the Committee reviewed the equity incentive awards for the Company's executives and other personnel. However, as of the filing hereof, no conclusion had been reached by the Compensation Committee related to annual compensation, bonus plans, or equity incentive awards.

In 2006 and 2007, no new compensation plans or programs were adopted by the Compensation Committee. It did, however, review and amend the Company's Key Executive Bonus Plan in 2006 to include those individuals from August Technology who were to be included in the plan after the merger of the two companies. Further in 2006, the Compensation Committee reviewed and implemented several of the recommendations set forth in the report issued by Upstart Solutions, its compensation consultant, to facilitate the integration of the compensation plans for the combined Company executives. These actions were taken to align the compensation of the executives of the Company into a single, coherent program. The Compensation Committee did not institute any new or amend any existing compensation policies of the Company in 2007.

Objectives of Compensation Programs

Compensation Philosophy

The Company's Compensation Committee believes that the most effective executive compensation program is one that is designed to reward the achievement of specific annual, long-term and strategic goals by the Company, and which aligns executives' interests with those of the stockholders by compensating executives based on specified financial performance, with the objective of improving stockholder value. The Compensation Committee evaluates both performance and compensation to ensure that the Company maintains its ability to attract and retain superior employees in key positions and that compensation provided to key employees remains competitive relative to the compensation paid to similarly situated executives. This is accomplished by obtaining third party compensation studies from time to time and by reviewing executive compensation programs of comparable, publicly held, high technology companies at the start of each year.

The Compensation Committee believes executive compensation packages provided by the Company to its executives, including the named executive officers, should include cash, selected perquisites and stock-based compensation that reward performance as measured against established goals. In addition, the Company strives to promote an ownership mentality among its key leadership and the Board of Directors; the Company's corporate policy provides that all directors and executives are required to maintain an outright investment in the Company equal to at least 1,000 shares within one year of the assumption of his or her position with the Company.

Benchmarking

As discussed in foregoing sections, the Company has engaged compensation consultants at various times in the development of its compensation programs. As part of one of these engagements, Deloitte Compensation Services performed a benchmarking review of a series of peer group companies both inside and outside of the semiconductor industry. Such benchmarking was performed to ensure that the Company's compensation packages were competitive and attractive in order to recruit the best possible talent to the Company and further enhance shareholder value.

In 2003, Deloitte Compensation Services provided compensation consulting services to the Company which included an analysis of the compensation packages of the Company's top five executive positions compared to the top five executives of selected peer group companies. These peer group companies were comprised of eleven public companies in the semiconductor industry and included an expanded group containing two additional companies for further analysis. The companies included in the analysis represented companies with which the Company believes it competes for talent and for stockholder investment. Included in the eleven member peer group were the following companies:

- FSI International
- Cohu, Inc.
- ADE Corporation
- August Technology Corporation
- Semitool Inc.
- Helix Technology
- Therma-Wave, Inc.
- Nanometrics, Inc.
- Zygo Corp.
- Emcore
- In-Test Corporation

In 2003, the revenue of these small cap companies ranged from \$34.7 million to \$143.4 million as compared to the Company's revenue of \$57.4 million. The number of employees in 2003 at these peer group companies ranged from 168 to 800 with the Company employing approximately 290 at that time. From a business performance standpoint, the Company's total return to shareholders in 2000 and 2002, was above the median for these companies while in 2001, it was above the 75th percentile. Further, for the three years preceding the review, the Company's compounded annual revenue growth rate placed it in the 75th percentile of the peer group companies.

The two companies included for purposes of the expanded peer group included KLA Tencor Corp. and Veeco Instruments, Inc. Both of these companies, while operating in the semiconductor industry, represented significantly greater 2003 revenues and employee populations than the Company and so were included only in the expanded peer group.

As a result of this benchmark review, it was determined that the base salaries of the Company's top five executives in 2003 were, overall, above the peer group medians, being slightly over the 75th percentile in comparison to the 11 company peer group and slightly less than the 75th percentile in comparison to the 13 company expanded peer group. Overall, the total cash compensation for the Company's top five executives in 2003 was consistent with the market median of both peer groups.

In 2006, the Company performed an internal benchmark review of its executive compensation program. In this analysis, the Company utilized a peer group of companies that included the following characteristics: domestic, public semiconductor capital equipment companies with revenue run rates of between \$150 million and \$800 million, market capitalization between \$250 million and \$1.5 billion and employee populations between 400 and 2,000. This information was derived from the 2005 annual reports filed by each company. For purposes of comparison, the Company reported revenue for the 2006 fiscal year of \$201.2 million, has a market cap of over \$460 million and ended the year with approximately 620 employees. The companies included in this peer group were:

- Brooks Automation, Inc.
- FEI Company
- Zygo Corp.
- Mattson Technology Inc.
- Veeco Instruments, Inc.

In addition to the five companies above, Nanometrics, Inc. was included in the comparative peer group, even though the company did not meet the criteria set forth above. Nanometrics was included because they are a competitor closest in size to the Company within the semiconductor market space that the Company currently operates. Data on the compensation of the top five earning executives from each of these peer group companies was compiled from the most recently filed proxy statements by the respective companies.

In addition to the foregoing, the Company requested from the executive recruiting firm of Christian and Timbers, which it had retained for an executive search, a listing of the annual compensation of five of the top executives of companies within its technical client database. Such companies, it is believed, represent entities with which the Company would compete in the hiring of technical executives and therefore would provide additional relevant executive compensation benchmarking data for the Company's comparative review. The companies for which information was supplied by Christian and Timbers included the following:

- Wind River Systems Inc.
- Broadwing Corp.
- Cray Inc.
- Foundry Networks, Inc.
- Juniper Networks, Inc.
- Cree, Inc.
- LSI Logic Corporation
- Mentor Graphics Corp.
- Komag, Inc.
- ON Semiconductor Corp.
- RF Micro Devices, Inc.
- Zoran Corporation
- Silicon Laboratories Inc.
- Standard Microsystems Corp.
- AMIS Holdings, Inc.

The foregoing companies reported 2005 revenues ranging from \$201.1 million to \$2.1 billion, had market capitalizations ranging from \$257.0 million to \$11.3 billion, and employee populations between 651 and 10,539.

The data from the Company's peer group and that compiled by Christian and Timbers was then presented to the Company's Compensation Committee along with the proposed compensation for the Company's executives in order to allow the Committee to make relative comparisons in determining the final compensation packages to be offered during 2007. As a result of this comparison, it was determined that the 2007 compensation package for the Company's executives was appropriate and was, therefore, approved.

Compensation Policies

The Company has not established formal written policies regarding its compensation programs or the elements thereof with the exception of a set of guidelines that address stock ownership by executives and directors. These guidelines, which are discussed in detail below, were adopted to further align the interest of the

directors and executives with the interests of shareholders, establish a stake in the long-term financial future of the Company for these individuals and further promote the Company's commitment to sound corporate governance. The Nominating and Governance Committee of the Company proposed the establishment of these guidelines which were approved and adopted by the Board of Directors.

Compensation Programs Design

Based on the objectives discussed in the foregoing section, the Compensation Committee has structured the Company's annual cash and long-term incentive-based non-cash executive compensation to motivate executives to achieve the business goals set by the Company and reward the executives for achieving such goals. Compensation of the Company's executive officers is comprised of four parts: base salary, annual cash incentive bonuses, fringe benefits (including perquisites), and long-term incentives in the form of stock option and/or restricted stock unit ("RSU") grants.

In establishing these components of the executive compensation package, it is the Compensation Committee's intention to set total executive cash compensation at a sufficient level to attract and retain a strong motivated leadership team, but while remaining reasonable and in line with stockholder perception of overall fairness of executive compensation. The cash incentive bonus is included in compensation to align the financial incentives of the executives with the interests of the shareholders.

The Company's annual executive cash incentive bonuses are administered through its Key Executive Cash Bonus Plan program. The program provides guidelines for the calculation of annual non-equity incentive based compensation, subject to Compensation Committee oversight and modification. At its first meeting of each year, the Compensation Committee reviews the plan established for the succeeding year and approves the group of employees eligible to participate in the plan for that year.

In addition to the foregoing, each of the Company's executive officers is eligible to receive equity compensation in the form of stock option and/or RSU grants under the Company's 1999 Stock Plan. All full-time and part-time employees are eligible for stock option or RSU grants. It is believed that through the Company's broad-based plan, the economic interests of all employees, including the executives, are more closely aligned to those of the shareholders. It is also believed that this approach will allow the Company to use equity as an incentive in a balanced manner that supports the recruitment and retention of top talent. With the implementation of stock option expensing under SFAS No. 123R, the Company shifted its equity compensation grants away from stock options and toward RSU's, in accordance with the provisions set forth later herein. In doing so, the Company has retained the employee incentive associated with such grants while lessening the dilution to the Company's stock in light of the reduced number of shares granted.

Impact of Performance on Compensation

The performance of an executive has a direct impact on the compensation which he/she receives at the Company. On an annual basis, the Company's CEO reviews the performance and compensation for the Company's executive employees to determine any potential salary adjustment for the individual. This assessment takes into consideration a number of factors, including the Company's profitability; the business unit's performance, as applicable; the executive's individual performance and measurable contribution to the Company's success; and pay levels of similar positions with comparable companies in the industry. The CEO's recommendations for salary adjustments are reviewed by the Compensation Committee and presented to and approved by the Board of Directors prior to their implementation typically in the first quarter of each year.

At this same time, the Company's and the individual's performance to the Key Executive Cash Bonus Plan targets for the preceding year are assessed by the CEO and a proposed bonus payout, if any, is prepared. The Key Executive Cash Bonus Plan includes various incentive levels based on the participant's accountability and impact on Company operations, with target award opportunities that are established as a percentage of base salary. In 2007, as it was in 2006, these targets range from 10% of base salary to 60% of base salary for the executives in

the plan. Payout is based upon achievement of the corporate and personal objectives with no payout being awarded unless the Company meets 50% of Board approved earnings per share ("EPS") target established as part of the plan. Personal objectives are awarded on an "all or nothing" basis. Failure to meet the personal objectives thereby has a negative impact on the ultimate bonus payout. In addition to a review of the prior year's objectives, the CEO and the executive also confer to propose new individual performance bonus targets for the coming year which are combined with the projected corporate targets into a discretionary incentive bonus proposal. The personal targets which are established are designed to ensure the addition of incremental value to the Company if they are achieved and are of sufficient challenge that the executive must dedicate focused effort to achieve them. The corporate component to the bonus goals are set based on the Company's then current strategic and financial plans. The preparation of these goals is performed annually to meet the changing nature of the Company's business. In 2007, the corporate performance targets were established based on the Company's 2007 EPS target and the Company's 2007 revenues.

Upon completion of the prior year's results and the upcoming year's proposed Key Executive Cash Bonus Plan for each participating executive employee, they are then submitted to and reviewed by the Compensation Committee. Thereafter, they are presented to and approved by the Board of Directors in order to issue the payment of the bonus, if any, and implement the new plans for the coming year. If, during the year, there are changes to the Key Executive Cash Bonus Plan that may be proposed, such are presented to the Compensation Committee to render a decision as to their implementation. The Compensation Committee may exercise positive or negative discretion in relation to an individual's compensation based upon their review.

For 2006, since the Company met the Board approved EPS target, 50% of a named executive officer's plan award was based upon achievement of corporate financial objectives relating to revenue growth and EPS. The remaining 50% of a named executive's plan award was based upon individual performance. In 2006, the named executive officers participating in the Key Executive Cash Bonus Plan achieved from 55% to 100% of their personal goals and 100% of their corporate goals. Therefore, for 2006, these named executive officers achieved from 77.5% to 100% of their combined goals. It is believed that the performance metrics that are utilized by the Company are appropriate in relation to the industry.

For 2007, the Key Executive Cash Bonus Plan was established such that 50% of a named executive officer's plan award was based upon achievement of corporate financial objectives relating to Company revenue and EPS. The remaining 50% of a named executive's plan award was based upon individual performance. During the third quarter of 2007, the Compensation Committee modified the performance targets for all participants in the Key Executive Cash Bonus Plan, including the named executives, due to a severe downturn in the industry. The Board modified the executive's plan awards to a maximum of 25% of the original award amount provided that the Company met certain fourth quarter corporate goals related to revenue and backlog. Individual performance goals were removed as a component of the 2007 bonus calculation at this time. These changes were implemented in order to incentivize and focus all employees to achieve the Company's near term goals for 2007 in light of the challenging industry conditions that were being faced. The Company achieved 50% of the modified target and the amounts due for 2007 were paid out in 2008. Therefore, for 2007, the named executive officers realized 12.5% of their original targeted bonus payout amount per the modified plan.

Finally, an executive's individual performance is a factor in the size of any discretionary equity grant that may be awarded by the Compensation Committee and Board of Directors as further long term incentive to the individual.

Based upon the foregoing, the compensation which an executive may realize in the course of a year can be impacted by the positive or negative performance of such individual. This relationship between performance and compensation is the objective with regard to the Key Executive Cash Bonus Plan under which the individual's compensation is proportionate to their performance to established, measurable goals. However, this relationship is more subjective when applied to salary adjustments and equity grants. In these cases, the executive's performance is evaluated by taking into consideration their contribution to the Company, the significance of the individual's achievements in relation to the overall corporate goals and mission, and their effectiveness in their

roles and then weighed against the performance of other executives. Thus, there is no formula per se which is applied in determining relative salary adjustments or equity grants, however, industry norms and reference to comparative company data are considered as appropriate.

Elements of Compensation Section

Elements of In-Service Compensation

Compensation for the Company's executives, including its named executive officers, includes the following basic components: base salary, discretionary incentive bonus and discretionary equity awards as well as a benefit package and certain perquisites. This design was adopted for executives by the Compensation Committee taking into consideration a number of parameters including the Company's compensation consultant's advice, comparable practices within the industry and the desire to achieve the goals discussed herein underlying the compensation plan. It is believed that as a result of this program the Company can attract, retain and motivate employees and reward the achievement of strategic corporate goals, thereby enhancing shareholder value.

Annually, the Compensation Committee reviews the elements of the compensation package as well as the overall package afforded to the executives. At this time, the Compensation Committee, in its discretion, can recommend adjustments to the elements of the program to the Board of Directors for their review and approval. This review would typically be performed coincident with the evaluation of the individual executive's performance in relation to their Key Executive Cash Bonus Plan goals, salary adjustment and equity grants, if any, as discussed above.

It is believed that each of the elements as well as the entire compensation package for Company executives is appropriate for the Company given its performance, industry, current challenges and environment. A discussion of the individual components of the Company's executive compensation package follows.

Base Salary

The Compensation Committee believes that the annual cash compensation paid to executives should be commensurate with both the executive's and the Company's performance. For this reason, the Company's executive cash compensation consists of base compensation (salary) and variable incentive compensation (annual bonus and equity awards).

The Company provides executives and other employees with base salary to compensate them for services rendered during the fiscal year. Base salaries for executive officers are established considering a number of factors, including the Company's profitability; the executive's individual performance and measurable contribution to the Company's success; and pay levels of similar positions with comparable companies in the industry. The Compensation Committee supports the Company's compensation philosophy of moderation for elements such as base salary and benefits. Base salary decisions are made as part of the Company's formal annual review process.

Executives whose functions are related to sales are compensated in accordance with a traditional sales compensation plan which includes both salary and commission components. Commission targets for such executives are set annually consistent with the Company's revenue targets approved by the Board of Directors and utilized in establishing the Company's discretionary bonus plan targets discussed below.

When an executive position is opened at the Company, the salary for this role is established. In determining the salary, the CEO, Human Resources representative and hiring manager, if applicable, consult with relevant resources, including a recruitment firm if one is hired to assist in the job search, in order to receive recommendations as to the range of salaries and other compensation typically earned by individuals holding such a position. From time to time, the Company engages independent consultants to perform a review of the Company's overall executive compensation structure, including the CEO's compensation. The results of such reviews are utilized in establishing executive compensation levels. For the CFO, COO and senior level

executives, the CEO presents the proposed compensation package to the Compensation Committee of the Board of Directors for review and approval prior to offering the position to the candidate. For all other executive positions, the CEO determines the compensation package to be offered. Each executive employee candidate is presented with the details of the job offer including the prospective starting salary and equity award package, with the package being subject to Board of Director's approval at the next scheduled Board meeting.

On an annual basis, the CEO reviews the performance and compensation for the Company's executive employees to determine any salary adjustment for the individual. This assessment takes into consideration a number of factors, including the Company's profitability; the executive's individual performance and measurable contribution to the Company's success; and pay levels of similar positions with comparable companies in the industry and within similar tech industries. The CEO's recommendations for salary adjustments are reviewed by the Compensation Committee and presented to and approved by the Board of Directors prior to their implementation typically in the first quarter of each year.

Discretionary Bonus

An executive's annual performance award generally depends on the financial performance of the Company relative to profit, revenue or other financial targets and the executive's individual performance. These targets are reviewed at least annually to meet the changing nature of the Company's business. The incentive portion is generally set at a higher percentage for more senior officers, with the result that such officers have a higher percentage of their potential total cash compensation at risk.

Most executive employees participate in the Company's discretionary Key Executive Cash Bonus Plan which is designed to generate additional incentive for maximizing the employee's performance in realizing the corporate strategic goals and mission. This plan is individualized to each participating executive employee and generally is based upon the financial performance of the Company relative to profit and revenue targets and the executive's individual performance. These targets are reviewed and proposed at least annually to meet the changing nature of the Company's business. The Key Executive Bonus Plan of each participating executive employee is submitted to and reviewed by the Compensation Committee and then presented to and approved by the Board of Directors prior to their implementation each year.

During the course of the year, the Company accrues for the Key Employee Cash Bonus. If, during the year, there are changes to the plan that may be proposed, such are presented to the Compensation Committee and then the Board or the Compensation Committee, as appropriate, renders a decision as to their implementation. Upon completion of the year, the individual's and the Company's results with respect to the performance targets are then assessed and presented to the Compensation Committee of the Board of Directors along with the proposed Plans for the next year. The Compensation Committee reviews the submitted payouts and suggests changes if necessary. Key Executive Cash Bonus Plan awards are paid out following completion of the annual audit by the Company's independent registered public accountants. This occurs usually in the first quarter of each year and an executive must still be on the payroll to receive payment.

Discretionary Equity Awards

The Compensation Committee administers the Company's 1999 Stock Plan which was adopted by the Board of Directors on August 31, 1999 and approved by shareholder vote on November 6, 1999. Pursuant to this plan, employees and members of management, including the Company's executive officers, may receive annual grants of incentive stock options, non-qualified stock options and/or RSU's (collectively, "Grants") at or about the time of their performance reviews each year from a pool of shares previously approved by Rudolph shareholders. The purpose of the Grant program is to provide additional short term and long term incentive to executives and other key employees of the Company to work to maximize long-term return to the Company's stockholders. The allocation of the Grant pool, other than the shares allocated to the CEO and other than option shares allocated in amounts of more than 10,000 per recipient (or more than 5,000 in the case of RSU grants), is recommended by the CEO for approval by the Compensation Committee. The allocation of option shares from the Grant pool in amounts of 10,000 or less (5,000 or less in the case of RSU grants) per recipient is made by the

CEO and reviewed by the Board of Directors at the first Board meeting following such allocation. The number of Grants awarded to each executive officer is made on a discretionary rather than formula basis by the Compensation Committee. Similarly, the allocation of shares from the Grant pool to the CEO is determined by the Compensation Committee. Regarding the Grant process, the Compensation Committee does not delegate any related function, and the named executive officers are not treated differently from other executive members.

In awarding Grants to the executive officers, the CEO and the Compensation Committee consider a number of subjective factors, including the executive's position and responsibilities at the Company, such executive's individual performance, the number of Grants held (if any) and other factors that they may deem relevant. Grants generally vest over a five-year period to encourage holders to build shareholder value for the long term and to continue in the employ of the Company.

Regarding equity grants to the Company's executives, the timing of each Grant typically coincides with each year's first scheduled meeting of the Board of Directors and its Compensation Committee or upon completion of the Compensation Committee's review and approval process. Except in highly unusual circumstances or in the case of a newly hired executive, the Company does not engage in making Grants at other dates. The Grant date is established when the Company's Compensation Committee approves the Grant and all key terms have been determined which is typically the first Board meeting date of the calendar year. The exercise price of stock option grants is the closing market price of the Company's stock on the date of the option grant, ensuring that the Grant will acquire value only to the extent that the price of the Company's common stock increases relative to the market price at the date of grant. The value of an RSU grant is based on the closing market price of the Company's stock on the date of such grant. All Grants are subject to the terms of the Company's 1999 Stock Plan.

Personal Benefits and Perquisites

All employees of the Company, including its executives, receive a benefit package ("Benefit Package") which includes the following components: health and dental insurance, elective vision care program, life insurance and accidental death and dismemberment coverage, 401(k) savings plan, short and long term disability insurance with supplemental income continuation, health care and dependant care flexible spending account programs, employee assistance program (EAP), tuition reimbursement plan, employee stock purchase plan, employee referral bonus program, and length of service awards. These benefits are consistent with industry practice and are necessary in recruiting and retaining qualified employees. In addition to the Benefit Package, executive employees receive the following perquisites: a car allowance of \$500 per month, Company paid tax preparation services and Company paid membership in one airline executive club. The foregoing perquisites were determined based on a review of comparable company offerings performed by the Company and its compensation consultant and are evaluated annually as part of the Company's compensation review. It is believed that these perquisites are reasonable and consistent with the Company's overall compensation program to better enable the Company to attract and retain superior employees for key positions.

Employee Stock Purchase Plan

The Company established an Employee Stock Purchase Plan (the "ESPP") which was adopted by the Board of Directors on August 31, 1999 and approved by shareholder vote on November 6, 1999 effective as of August 31, 1999 and was amended on May 1, 2005. Under the terms of the ESPP, eligible employees may elect to have up to 15% of eligible compensation deducted from their pay and applied to the purchase of shares of Company common stock. The price the employee must pay for each share of stock is 95% of the fair market value of the Company common stock at the end of the applicable six month purchase period. The ESPP qualifies as a non-compensatory plan under section 423 of the Internal Revenue Code. The amendments to the ESPP of May 1, 2005 removed the "look back" provision that was previously a part of the ESPP and reduced the discount for purchasing shares of the Company's stock to five percent. These modifications to the ESPP were made at the time as a result of the Company's anticipated adoption of SFAS No. 123R. The Company does not offer an Employee Stock Ownership Plan.

Other Material Elements

The Company does not have any deferred compensation plans and there are no other material elements related to the Company's compensation of its executives that are not otherwise specified herein.

Employment Agreements

The Company utilizes employment agreements on a limited basis. In 2000, the Company entered into management agreements with Paul F. McLaughlin and Steven R. Roth each effective as of July 24, 2000. These individuals previously had employment agreements with the Company at the time when it was a private entity. Then, at the time the Company went public, each executive's respective agreement was redrafted to reflect terms consistent with a public company (e.g. rights in equity holdings) and were executed. The management agreement with Roth provide for a term of one year with automatic renewals for additional one-year terms unless the Company or the executive delivers a notice of non-renewal to the other party. Mr. McLaughlin's management agreement provides for an initial term of two years with automatic renewals for additional two-year terms. The management agreement with Mr. Roth prohibits the executive from competing with the Company in any way or soliciting its employees during their terms of employment and for one year after termination of their employment. Mr. McLaughlin's management agreement prohibits him from competing with the Company in any way or soliciting its employees during the term of his employment and for two years after termination of his employment.

The management agreements provide that if the Company terminates an executive's employment without cause or if the executive terminates with good cause, the Company will be required to pay Mr. Roth his base salary for one year and two years in the case of Mr. McLaughlin as well as any bonus, should it become payable after the date of termination. Good cause is defined in the agreements as: a) a material reduction in the duties and responsibilities of the executive; b) the relocation of the executive outside of the Flanders, New Jersey area; c) requiring the executive to make a material misstatement or omission in any financial report or governmental filing; or d) a material breach of the agreement that is not corrected within fifteen (15) days of notice to the Board. The agreements also provide that in the event of the termination of an executive's employment upon a change in control, which results in the executive not being offered a management agreement on comparable terms, the executive will be entitled to receive his base salary for one year, or two years in the case of Mr. McLaughlin. In this context, a change of control would occur if, among other events, the Company was sold to an independent third party and that independent third party acquired enough of the Company's stock to elect a majority of the Company's Board of Directors, or that independent third party acquired all, or substantially all, of the Company's assets. The management agreements with these executives provide that in the event the individual is terminated without cause or for good cause by the executive, the executive is entitled to continue group health or other group benefits as allowed by the Consolidated Omnibus Budget Reconciliation Act (COBRA) after the individual's termination.

Upon the merger with August Technology Corporation, the Company assumed certain executive employment agreements into which August Technology had entered. These included the agreements with following executives currently employed by the Company: D. Mayson Brooks effective March 1, 2002, Ardelle Johnson effective August 18, 2003, Jeffrey Nelson effective January 17, 2005 and Michael Plisinski effective

April 22, 2005. Pursuant to these agreements, each executive has a set annual base salary that may be adjusted upward or downward by the Chief Executive Officer or Board of Directors. Further, the agreements set forth that the employment of each of these executives may be terminated by mutual written agreement, by either party with thirty days written notice, or by the Company for cause as defined therein. In the event the Company terminates the executive's employment without cause, or by mutual agreement, the individual is entitled to severance equal to a standard severance period, except where change in control provisions are met whereby the severance is equal to a change in control severance period. All of the agreements are identical in nature except for the specific terms set forth in the exhibit to the respective employment agreements defining employee title, manager, base salary, severance period, change in control severance and other special provisions. The severance period for Messrs. Brooks and Johnson is twelve months of base salary and the change in control severance is eighteen months of base salary. For Mr. Plisinski, the severance period is six months of base salary and the change in control severance is six months of base salary, while for Mr. Nelson they are three months and three months, respectively. The employment agreements with each of these executives provide that in the event the individual is terminated with or without cause upon thirty (30) days notice or upon a change in control, the executive may elect to continue group health or other group benefits as allowed by COBRA, and the Company shall make the COBRA payments for the duration of the individual's severance period.

In addition to the foregoing, upon the hiring of Nathan Little and of Alex Oscilowski, the Company agreed to include a severance stipulation as part of their respective employment packages. Neither Mr. Little nor Mr. Oscilowski has entered into an employment agreement with the Company. However, upon hiring Mr. Little it was agreed that in the event of his termination without cause or a change in control of the Company after which he did not receive an offer of equivalent job, title, responsibility, salary, benefits including no change in residency, he would receive severance in the amount of six months of his base salary. Additionally, upon hiring Mr. Oscilowski, it was agreed that in the event of a change in control of the Company and a material reduction in his reporting responsibility, duties or job responsibilities, he would receive severance in the amount of twelve months of his base salary. This stipulation was agreed to as an additional incentive negotiated by Mr. Little and Mr. Oscilowski and the Company prior to commencing their respective employment.

Elements of Post-Termination Compensation

The Company does not have a practice of providing retirement benefits, including any supplemental executive retirement plans (SERPs), to its executives. Further, the Company does not have any policy which obligates it to provide severance benefits to its executives or directors. As discussed above, however, for the executives who have entered into employment agreements with the Company, these agreements each contain a severance and change-in-control provision. In addition, the Company retains the discretion to utilize the offer of severance and/or change-in-control protection as an incentive in its hiring of executives.

The Company maintains a policy of entering into an agreement with each of its new employees, including executives which contain both non-solicitation and non-competition provisions. The non-solicitation provisions apply for one (1) year after termination of the individual's employment while the non-competition provisions are in effect during the individual's employment and for one (1) year thereafter. Each of the Company's executives has entered into these covenants on the stated terms with the Company except Mr. McLaughlin whose non-solicitation and non-competition provisions are in place during and extend for two (2) years after the end of his employment with the Company. In each case, these covenants have been implemented to protect the confidential information, goodwill and other assets of the Company that are transferred to the individual during his/her employment and to preclude possible unfair competition against the Company through the use of such information. For those individuals with employment agreements, should a breach of the non-solicitation or non-competition terms of their agreements occur, this could give rise to the Company declaring a breach under the agreement and terminating all severance payments thereunder.

Upon termination of an executive's employment with the Company, the individual is entitled to receive his or her base salary earned through the termination date, prorated on a daily basis, along with a payout for all accrued but unused vacation time earned through such date. Thereafter, further cash compensation to the

executives is discontinued, except to the extent that severance or change-in-control payments must be made per the discussions above. This includes the removal of any obligation by the Company to pay any unpaid bonuses, except in the cases of Messrs. McLaughlin and Roth per their management agreements. In addition to the foregoing, upon termination, all perquisites and benefits cease. As discussed above, certain executives with the Company who have entered into employment agreements are entitled to elect to continue group health or other group benefits as allowed by COBRA. The Company retains the right to offer severance and/or payment of COBRA benefits to any individual who is terminated from the Company at its discretion.

In the event an individual who has received RSU grants from the Company ceases in their employment or engagement to provide services to the Company, under the Company's Restricted Stock Purchase Agreement and in accordance with the Company's 1999 Stock Plan, any RSU grants which are not vested as of the individual's termination date are forfeited immediately, without any further action by the Company. As Administrator of the Company's 1999 Stock Plan, the Compensation Committee retains the right to waive or amend such forfeiture of any unvested RSU grants at its discretion.

Stock Ownership/Retention Guidelines

The Company has established guidelines related to stock ownership and retention for its executives and its outside directors. The guidelines require that each executive, including the named executive officers, own at least 1,000 shares of Company common stock within one year of their date of hire and thereafter maintain such ownership status during the course of their employment with the Company. Similarly, each outside director of the Company is required to own at least 1,000 shares of Company common stock within one year of their date of their election to the Board of Directors and thereafter maintain such ownership status during their service as a Director of the Company. For those executives employed by the Company and outside directors serving on the Board at the time of the enactment of these policies, the one year timeframe extended from the date of the Board approval of the subject resolution. The Company has no other stock retention policies applicable to its employees, including the named executive officers and other executives, or directors. The Company adopted these policies in order to further align the interest of the executives and outside directors with the interests of shareholders, have a stake in the long-term financial future of the Company and to further promote the Company's commitment to sound corporate governance while allowing them to prudently manage their personal financial affairs.

In assessing compliance with the foregoing guidelines, the Company takes into consideration only the ownership of common stock in the Company. To that end, restricted stock units and vested stock options do not qualify as shares in meeting the Company's stock ownership and retention guidelines.

The Company's stock ownership and retention guidelines are reviewed annually by the Nominating and Governance Committee of the Company. At their last review on January 31, 2007, the guidelines were found to continue to be appropriate and acceptable, both in the required number of shares to be owned and retention period, and no changes to the policies were recommended by this Committee. At this same time, the Nominating and Governance Committee also reviewed the compliance of the Company's executives and directors with the terms of the policies. It was determined that all executives and directors who were with the Company and acting in their executive/ director capacities for over one year were in compliance with the ownership requirement of 1,000 shares of Company common stock. In the event that an individual were to not meet or drop below the requisite number of shares, the Company would inform the individual of the discrepancy and thereafter he/she would be required to acquire sufficient shares to reach the threshold amount. Should such individual continue to not own the required number of shares, additional action, including possible removal from the executive/director role would be considered by the Board. The Nominating and Governance Committee has scheduled review of the Company's stock ownership and retention guidelines for its May 2008 meeting.

The Company has no other policies regarding stock ownership or retention and does not have a policy which addresses hedging of company stock ownership by executives except for the Company's policy relating to insider trading.

Impact of Regulatory Requirements

The Company's stock option grant policies have been impacted by the implementation of SFAS No. 123R, which was adopted on January 1, 2006. Under this accounting pronouncement, the Company is generally required to value stock options granted and stock options granted after adoption of SFAS No. 123R under the fair value method and expense those amounts in the income statement over the stock option's vesting period. Because of the financial impact of SFAS No. 123R, the current intent of the Company is to limit the number of shares granted. It is believed that this strategy is best aligned with the Company's stakeholder philosophy because it is intended to limit future earnings dilution from options while at the same time retains the broad-based stock option plan, which the Company believes is important to employee commitment.

The Company's compensation program is structured to comply with Internal Revenue Code Sections 162(m). Under Section 162(m) of the Internal Revenue Code, a limitation was placed on tax deductions of any publicly-held corporation for individual compensation to certain executives of such corporation exceeding \$1,000,000 in any taxable year, unless the compensation is performance-based. The Company has no individuals with non-performance based compensation paid in excess of the Internal Revenue Code Section 162(m) tax deduction limit.

Inasmuch as the Company does not employ nonqualified deferred compensation plans, Internal Revenue Code Section 409A does not play any role in the decisions related to its compensation decisions and design.

Finally, the Company's compensation program was developed in advance of the implementation of the new proxy disclosure rules and has remained unchanged even with the advent of these rules. The decisions made in administering to the Company's compensation programs are based on sound business practices and are not predicated on the issuance of the disclosure rules. Further, the determination of the named executive officers under the new proxy disclosure rules have not had any impact on the Company's decisions regarding and designs of the individual's related compensation. Other than as outlined above, no other regulatory requirements have a significant impact on the Company's compensation programs, decisions or designs.

Conclusion

In reviewing its compensation programs, the Company has concluded that each element of compensation as well as the total compensation delivered to its named executive officers as well as its other executives are reasonable, appropriate and in the best interests of the Company and its shareholders. This is due to the fact that the programs meet the Company's goals of establishing a compensation package that attracts and retains a strong motivated leadership team, aligns the financial incentives of the executives with the interests of the shareholders, and rewards the achievement of specific annual, long-term and strategic goals by the Company. At the same time, the compensation package remains consistent with those offered by competitive companies within the industry. It is believed that the compensation programs established by the Company have enabled it to recruit and secure a talented and motivated leadership team by which the Company drives toward the ultimate objective of improving stockholder value.

COMPENSATION COMMITTEE REPORT ON EXECUTIVE COMPENSATION

We, the Compensation Committee of the Board of Directors, have reviewed and discussed the Compensation Discussion and Analysis ("CD&A") within the Executive Compensation section of this Proxy Statement with the management of the Company. Based on such review and discussion, we are of the opinion that the executive compensation policies and plans provide appropriate compensation to properly align Rudolph Technologies, Inc.'s performance and the interests of its stockholders through the use of competitive and equitable executive compensation in a balanced and reasonable manner, for both the short and long-term. Accordingly, we have recommended to the Board of Directors that the CD&A be included as part of this proxy filing.

THE COMPENSATION COMMITTEE

DANIEL H. BERRY (CHAIRMAN)

PAUL CRAIG

CARL E. RING, JR.

Summary Compensation Table

The table below sets forth information for the most recently completed year concerning the compensation of the Chief Executive Officer, the Chief Financial Officer, the three other most highly compensated executive officers and the most highly compensated non-executive officer of the Company who were serving as such at the end of the fiscal year ended December 31, 2007 (together, the "Named Executive Officers"):

| Name and Principal Position | Year | Salary | Stock Awards (1) | Option Awards (1) | Non-Equity Incentive Plan Compensation (2) | All Other Compensation (3) | Total |
|--|------|-----------|------------------|-------------------|--|----------------------------|-------------|
| Paul F. McLaughlin Chairman and Chief Executive Officer | 2007 | \$532,980 | \$540,803 | — | \$ 40,541 | \$18,889 | \$1,133,213 |
| | 2006 | \$480,496 | \$274,510 | — | \$196,560 | \$19,289 | \$ 970,855 |
| Steven R. Roth Senior Vice President, Finance and Administration and Chief Financial Officer | 2007 | \$257,465 | \$132,672 | — | \$ 13,013 | \$17,714 | \$ 420,864 |
| | 2006 | \$236,389 | \$ 73,078 | — | \$ 65,367 | \$17,264 | \$ 392,098 |
| Nathan H. Little Executive Vice President and General Manager of Inspection Business Unit | 2007 | \$245,023 | \$169,272 | — | \$ 14,068 | \$18,708 | \$ 447,071 |
| | 2006 | \$210,400 | \$ 99,337 | — | \$ 68,387 | \$21,053 | \$ 399,177 |
| Michael P. Plisinski Vice President and General Manager of Data, Analysis & Review Business Unit | 2007 | \$233,192 | \$ 84,171 | \$ 79,675 | \$ 13,303 | \$ 6,710 | \$ 417,051 |
| | 2006 | \$177,789 | \$ 20,072 | \$141,768 | \$ 56,438 | \$19,596 | \$ 415,663 |
| Alexander A. Oscilowski . . . Chief Operating Officer | 2007 | \$300,000 | \$ 42,296 | — | \$ 18,750 | \$13,439 | \$ 374,485 |
| | 2006 | \$ 17,308 | — | — | \$ 8,750 | \$ 72 | \$ 26,130 |
| D. Mayson Brooks Vice President, Global Sales | 2007 | \$307,149 | \$ 45,610 | \$ 34,125 | — | \$ 5,595 | \$ 392,479 |
| | 2006 | \$298,087 | \$ 10,036 | \$ 55,666 | — | \$ 9,014 | \$ 372,803 |

- (1) For more information regarding the Company's assumptions made in the valuation of restricted stock units and stock options, see Note 10 to the financial statements included in the Company's Form 10-K for the year ended December 31, 2007.
- (2) Represents performance bonus awards under the key executive cash bonus plan. With respect to the 2006 amounts, the performance bonus awards were earned in 2006, but paid in 2007. With respect to the 2007 amounts, the performance bonus awards were earned in 2007, but paid in 2008.
- (3) The table below details the 2007 components of this column.

| Name | Matching Contribution to 401(k) | Insurance (a) | Perquisites | Total "All Other Compensation" |
|-----------------------------------|---------------------------------|---------------|-------------|--------------------------------|
| Paul F. McLaughlin | \$6,750 | \$864 | \$11,275(b) | \$18,889 |
| Steven R. Roth | \$6,750 | \$864 | \$10,100(c) | \$17,714 |
| Nathan H. Little | \$6,750 | \$864 | \$11,094(d) | \$18,708 |
| Michael P. Plisinski | \$5,846 | \$864 | \$ — * | \$ 6,710 |
| Alexander A. Oscilowski | \$ — | \$864 | \$12,575(e) | \$13,439 |
| D. Mayson Brooks | \$4,731 | \$864 | \$ — * | \$ 5,595 |

* Less than \$10,000 of perquisites in the aggregate, and therefore, zero perquisites disclosed.

- (a) Insurance is defined as the premium associated with coverage under the group term life insurance and accidental death and dismemberment insurance plans provided by the Company to its employees. Coverage is equal to the lesser of two times salary or \$450,000.
- (b) Perquisites include automobile allowance (\$6,000), tax return preparation (\$5,000), the premium associated with an extra \$450,000 of coverage under the group term life insurance and accidental death and dismemberment insurance plans provided by the Company to its employees and reimbursement of executive airline club membership.
- (c) Perquisites include automobile allowance (\$6,000), tax return preparation (\$3,800) and reimbursement of executive airline club membership.
- (d) Perquisites include automobile allowance (\$6,000), tax return preparation (\$4,000), amount paid by the Company for opting out of health insurance coverage and reimbursement of executive airline club membership.
- (e) Perquisites include automobile allowance (\$6,500), reimbursement for relocation expenses (\$5,650) and reimbursement of executive airline club membership.

Grants of Plan-Based Awards

The following table sets forth information with respect to plan-based restricted stock awards granted in 2007 to the Named Executive Officers. The dollar amounts indicated under the "Grant Date Fair Value" is the full fair value of each grant, in accordance with the applicable accounting literature, which is greater than the amortization costs the Company recognized on its fiscal year 2007 financial statements with respect to such grant.

| Name | Grant Date | Estimated Future Payouts Under Non-Equity Incentive Plan Awards | | | All Other Stock Awards: Number of Units (1) | Grant Date Fair Value |
|--------------------------------|------------------|---|-----------|-----------|--|-----------------------|
| | | Threshold | Target | Maximum | | |
| Paul F. McLaughlin | | | | | | |
| Performance-based | February 1, 2007 | — | \$324,324 | \$432,432 | — | — |
| Time-based | February 1, 2007 | — | — | — | 80,000 | \$1,275,200 |
| Steven R. Roth | | | | | | |
| Performance-based | February 1, 2007 | — | \$104,103 | \$104,103 | — | — |
| Time-based | February 1, 2007 | — | — | — | 17,500 | \$ 278,950 |
| Nathan H. Little | | | | | | |
| Performance-based | February 1, 2007 | — | \$112,545 | \$112,545 | — | — |
| Time-based | February 1, 2007 | — | — | — | 20,000 | \$ 318,800 |
| Michael P. Plisinski | | | | | | |
| Performance-based | February 1, 2007 | — | \$106,425 | \$106,425 | — | — |
| Time-based | February 1, 2007 | — | — | — | 17,500 | \$ 278,950 |
| Alexander A. Oscilowski | | | | | | |
| Performance-based | February 1, 2007 | — | \$150,000 | \$150,000 | — | — |
| Time-based | February 1, 2007 | — | — | — | 15,000 | \$ 239,100 |
| D. Mayson Brooks | | | | | | |
| Performance-based | February 1, 2007 | — | — | — | — | — |
| Time-based | February 1, 2007 | — | — | — | 10,000 | \$ 159,400 |

(1) These restricted stock units will vest 20% on each of the subsequent five anniversaries of the grant date. For additional information, see "Compensation Discussion and Analysis."

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth information with respect to outstanding equity awards held by the Named Executive Officers as of December 31, 2007. The aggregate dollar values indicated in the table below for equity incentive plan awards are the market or payout values and not the SFAS No. 123R values or the compensation expense recognized by the Company on its financial statements for fiscal year 2007 with respect to its long-term equity incentive plan awards. Such compensation expenses amounts, or the amortization pursuant to the applicable accounting literature is provided in the "Summary Compensation Table" and the table under "Grants of Plan Based Awards" above.

| Name | Grant Date (1) | Option Awards (2) | | | | Stock Awards | |
|-------------------------|----------------|---|---|-----------------------|------------------------|---|---|
| | | Number of Securities Underlying Unexercised Options Exercisable | Number of Securities Underlying Unexercised Options Unexercisable | Option Exercise Price | Option Expiration Date | Number of Units of Stock That Have Not Vested (3) | Market Value of Units of Stock That Have Not Vested (4) |
| Paul F. McLaughlin | 11/11/1999 | 125,000 | — | \$16.00 | 11/10/2009 | | |
| | 1/26/2001 | 125,000 | — | \$40.13 | 1/25/2011 | | |
| | 10/19/2001 | 30,000 | — | \$23.40 | 10/18/2011 | | |
| | 10/18/2002 | 35,000 | — | \$14.62 | 10/17/2012 | | |
| | 1/29/2003 | 150,000 | — | \$16.41 | 1/28/2013 | | |
| | 1/29/2004 | 75,000 | — | \$26.20 | 1/28/2014 | | |
| | 1/27/2005 | | | | | 30,000 | \$339,600 |
| | 2/16/2006 | | | | | 28,000 | \$316,960 |
| | 2/1/2007 | | | | | 80,000 | \$905,600 |
| Steven R. Roth | 11/11/1999 | 75,000 | — | \$16.00 | 11/10/2009 | | |
| | 1/26/2001 | 50,000 | — | \$40.13 | 1/25/2011 | | |
| | 10/19/2001 | 15,000 | — | \$23.40 | 10/18/2011 | | |
| | 10/18/2002 | 10,000 | — | \$14.62 | 10/17/2012 | | |
| | 1/29/2003 | 45,000 | — | \$16.41 | 1/28/2013 | | |
| | 1/29/2004 | 25,000 | — | \$26.20 | 1/28/2014 | | |
| | 1/27/2005 | | | | | 8,700 | \$ 98,484 |
| | 2/16/2006 | | | | | 6,400 | \$ 72,448 |
| | 2/1/2007 | | | | | 17,500 | \$198,100 |
| Nathan H. Little | 5/22/2001 | 25,000 | — | \$50.30 | 5/21/2011 | | |
| | 10/19/2001 | 15,000 | — | \$23.40 | 10/18/2011 | | |
| | 1/29/2003 | 75,000 | — | \$16.41 | 1/28/2013 | | |
| | 1/29/2004 | 35,000 | — | \$26.20 | 1/28/2014 | | |
| | 1/27/2005 | | | | | 12,300 | \$139,236 |
| | 2/16/2006 | | | | | 8,000 | \$ 90,560 |
| | 2/1/2007 | | | | | 20,000 | \$226,400 |
| Michael P. Plisinski(5) | 7/3/2003 | 30,500 | — | \$ 9.32 | 8/1/2010 | | |
| | 2/6/2004 | 1,324 | — | \$24.20 | 2/6/2014 | | |
| | 10/22/2004 | 921 | — | \$10.00 | 10/22/2014 | | |
| | 12/30/2004 | 7,624 | — | \$13.62 | 12/30/2014 | | |
| | 3/7/2005 | 2,329 | — | \$15.87 | 3/7/2015 | | |
| | 4/29/2005 | 26,687 | — | \$15.48 | 4/29/2015 | | |
| | 7/21/2005 | 735 | — | \$16.71 | 7/21/2015 | | |
| | 1/25/2006 | 4,767 | 7,147 | \$14.81 | 1/25/2016 | | |
| | 5/23/2006 | | | | | 8,000 | \$ 90,560 |
| | 2/1/2007 | | | | | 17,500 | \$198,100 |
| Alexander A. Oscilowski | 2/1/2007 | — | — | — | — | 15,000 | \$169,800 |
| D. Mayson Brooks(6) | 1/5/2001 | 1,525 | — | \$17.55 | 1/5/2008 | | |
| | 7/12/2001 | 9,530 | — | \$17.37 | 7/12/2008 | | |
| | 4/5/2002 | 5,718 | — | \$18.68 | 4/5/2009 | | |
| | 2/6/2004 | 4,766 | — | \$24.20 | 2/6/2014 | | |
| | 4/30/2004 | 1,467 | — | \$17.19 | 4/30/2014 | | |
| | 3/7/2005 | 1,926 | — | \$15.87 | 3/7/2015 | | |
| | 7/21/2005 | 377 | — | \$16.71 | 7/21/2015 | | |
| | 1/25/2006 | — | 8,108 | \$14.81 | 1/25/2016 | | |
| | 5/23/2006 | | | | | 4,000 | \$ 45,280 |
| | 2/1/2007 | | | | | 10,000 | \$113,200 |

- (1) For better understanding of this table, we have included an additional column showing the grant date of stock options and restricted stock units.
- (2) Stock options became exercisable in accordance with the vesting schedule below:

| <u>Grant Date</u> | <u>Vesting</u> |
|-------------------|--|
| 11/11/1999 | 1/5 per year on the anniversary of the grant date |
| 1/5/2001 | Full vesting at grant date |
| 1/26/2001 | 1/5 per year on the anniversary of the grant date |
| 5/22/2001 | 1/5 per year on the anniversary of the grant date |
| 7/12/2001 | Full vesting at grant date |
| 10/19/2001 | 1/5 per year on the anniversary of the grant date |
| 4/5/2002 | Full vesting at grant date |
| 10/18/2002 | 1/5 per year on the anniversary of the grant date |
| 1/29/2003 | 1/5 per year on the anniversary of the grant date |
| 7/3/2003 | 1/5 per year on the anniversary of the grant date and vesting accelerated on 2/15/06 |
| 1/29/2004 | 1/5 per year on the anniversary of the grant date |
| 2/6/2004 | Full vesting at grant date |
| 4/30/2004 | Full vesting at grant date |
| 10/22/2004 | Full vesting at 120 days |
| 12/30/2004 | 1/3 at grant date and in years 2 and 3 |
| 3/7/2005 | Full vesting at grant date |
| 4/29/2005 | 1/3 at grant date and in years 2 and 3 |
| 7/21/2005 | Full vesting at grant date |
| 1/25/2006 | 1/5 at grant date and in years 2, 3, 4 and 5 |

- (3) Restricted stock units vest in accordance with the schedule below:

| <u>Grant Date</u> | <u>Vesting</u> |
|-------------------|---|
| 1/27/2005 | 1/5 per year on the anniversary of the grant date |
| 2/16/2006 | 1/5 per year on the anniversary of the grant date |
| 2/1/2007 | 1/5 per year on the anniversary of the grant date |

- (4) Based on the Company's common stock closing price of \$11.32 on December 31, 2007.
- (5) Mr. Plisinski's outstanding stock options were assumed through the merger of the Company with August Technology on February 15, 2006.
- (6) Mr. Brooks' outstanding stock options were assumed through the merger of the Company with August Technology on February 15, 2006.

Option Exercises and Stock Vested

The Company has not granted stock option awards to the Named Executive Officers with respect to a fiscal year after 2004, excluding the stock options assumed in the August Technology merger on February 15, 2006. No other options were granted in 2005 or any subsequent year. The following table sets forth information with respect to the exercise of stock options and vesting of restricted stock by the Named Executive Officers during 2007:

| <u>Name</u> | <u>Number of Shares Acquired on Exercise</u> | <u>Value Realized on Exercise</u> | <u>Number of Shares Acquired on Vesting</u> | <u>Value Realized on Vesting</u> |
|-------------------------------|--|-----------------------------------|---|----------------------------------|
| Paul F. McLaughlin | — | \$ — | 17,000 | \$267,780 |
| Steven R. Roth | — | \$ — | 4,500 | \$ 70,673 |
| Nathan H. Little | — | \$ — | 6,100 | \$ 95,661 |
| Michael P. Plisinski | — | \$ — | 2,000 | \$ 31,620 |
| Alexander A. Oscilowski | — | \$ — | — | \$ — |
| D. Mayson Brooks | 42,714 | \$231,313 | 1,000 | \$ 15,810 |

The Company does not have a pension program nor does it offer non-qualified deferred compensation.

Executive Officers

Set forth below is certain information regarding the executive officers of the Company and their ages as of March 31, 2007. Information relating to Paul F. McLaughlin is set forth above under the caption "PROPOSAL 1—ELECTION OF DIRECTORS—Nominees."

Nathan H. Little, age 56, has served as the Company's Executive Vice President and General Manager, Inspection Business Unit since February 2006. From July 2004 to February 2006, Mr. Little served as Executive Vice President responsible for global sales, marketing and new business development. From January 2003 to July 2004, Mr. Little served as the Company's Senior Vice President of Operations responsible for engineering and manufacturing. Mr. Little has been a Vice President since he joined the Company in May 2001. From 1986 through 2001, Mr. Little held various positions with Philips Electronics where he last served as Vice President, NPR Purchasing for Philips Electronics North America. Mr. Little received a B.S. in Mechanical Engineering from Northwestern University, an M.S. in Mechanical Engineering from the University of Minnesota and an M.B.A. from Harvard University Graduate School of Business.

Alexander A. Oscilowski, age 48, has served as the Company's Chief Operating Officer since November 2006. From February 2005 to November 2006, Mr. Oscilowski served as Vice President of Strategy for SEMATECH, Inc., a semiconductor research and development consortium. Prior to that, he served as President and Chief Executive Officer for DFT Microsystems, Inc., a supplier of test instruments for the semiconductor industry. From June 1999 to September 2002, Mr. Oscilowski served as President for Kulicke & Soffa Industries, an assembly equipment and materials supplier for the semiconductor industry. Mr. Oscilowski holds a B.S. in Materials Engineering from Drexel University and an M.B.A. from Boston University.

Steven R. Roth, age 47, has served as the Company's Senior Vice President, Finance and Administration and Chief Financial Officer since February 2002. From September 1996 to February 2002, Mr. Roth served as the Company's Vice President, Finance and Administration and Chief Financial Officer. From August 1991 to August 1996, Mr. Roth served as a Director of Corporate Finance for Bell Communications Research, now called Telcordia, a research and development company serving the telecommunications industry. Mr. Roth is a C.P.A. and holds a B.S. in Accounting from Villanova University.

D. Mayson Brooks, age 49, has served as the Company's Vice President of Global Sales since December 2006 and prior to that as the Company's Vice President of Global Sales, Inspection from February 2006 when the

Company merged with August Technology Corporation to December 2006. From January 2002 to February 2006, Mr. Brooks served as Vice President of Sales and Field Operations for August Technology and also served as Vice President of Sales and Marketing from July 1999 to January 2002. Mr. Brooks holds a B.S. in Engineering from the United States Naval Academy and an M.B.A. from the University of North Carolina.

Scott Danciak, age 38, has served as the Company's Vice President of Engineering for the Inspection Business Unit since June 2006. From March 2005 to June 2006, Mr. Danciak served as the Company's Director of Thin Film Development and from September 2004 to March 2005 he served as the Senior Manager for Thin Film Development. From September 2003 to September 2004, Mr. Danciak served as the Company's Manager of Hardware Engineering. Prior to that, he served the Company in various engineering management and staff positions since 1997. Mr. Danciak holds a B.S. in Electrical Engineering from Johns Hopkins University.

Robert DiCrosta, age 60, has served as the Company's Vice President of Global Customer Support since February 2002. From July 2000 to February 2002, Mr. DiCrosta served as the Director of Global Customer Support. Prior to that, he served in various positions in Customer Support and Finance with other high tech equipment manufacturers. Mr. DiCrosta received a B.S. in Marketing from the University of Bridgeport and an M.B.A. in Finance and International Finance from New York University.

Ajay Khanna, age 48, has served as the Company's Vice President of International Accounts since December 2006 and prior to that as the Company's Vice President of International Sales, Metrology from February 2006 to December 2006. Mr. Khanna also served as Vice President of International Sales from February 2002 to February 2006. Prior to that, he served in various international sales positions and has been with the Company since 1986. Mr. Khanna received a B.S. in Electrical Engineering from Clarkson University and an M.B.A. from the University of Michigan Business School.

Robert A. Koch, age 46, has served as the Company's Vice President and General Counsel since May 2003. From April 1986 to May 2003, Mr. Koch was employed by Howmedica Osteonics Corp., the orthopaedic implant subsidiary of Stryker Corporation, where he was their in-house counsel for 12 years and last served as their Director of Legal Affairs. Mr. Koch holds a B.S. in Chemical Engineering and an M.S. in Biomedical Engineering, both from Rutgers University. Mr. Koch earned his J.D. from Rutgers School of Law—Newark in 1991 and is admitted to practice in New Jersey and New York.

John R. Kurdock, age 63, has served as the Company's Vice President and General Manager, Metrology Business Unit since July 2007. From November 2006 to July 2007, Mr. Kurdock served as the Company's Assistant General Manager and Vice President, Metrology Business Unit and prior to that as the Company's Vice President of Manufacturing, Metrology from February 2006 to November 2006. Mr. Kurdock joined the Company as Vice President of Manufacturing in January 2005. From June 2003 to January 2005, Mr. Kurdock was an independent consultant specializing in the semiconductor capital equipment industry. From January 1997 to June 2003, Mr. Kurdock was the Vice President of Operations for Electro Scientific Industries, a semiconductor capital equipment manufacturer. Mr. Kurdock holds a B.S. in Mechanical Engineering from Carnegie Mellon University.

Ardelle R. Johnson, age 53, has served as the Company's Vice President of Corporate Marketing since February 2006 when the Company merged with August Technology Corporation. From August 2003 to February 2006, Mr. Johnson served as Vice President of Marketing for August Technology. From June 1980 to April 2003, Mr. Johnson was employed by FSI International Inc., a semiconductor capital equipment company, serving most recently as Vice President of Sales and Marketing. He holds a B.S. in Chemistry from the University of Minnesota and an M.S. from the University of Wisconsin.

Christopher J. Morath, age 39, has served as the Company's Vice President of Operations, Metrology Business Unit, since August 2007. From November 2006 to August 2007, Mr. Morath served as the Company's Director of Manufacturing Operations, Metrology Business Unit. From January 2004 to November 2006,

Mr. Morath served as the Company's Director of Marketing and prior to that served for three years as Director of Product Development in Engineering. Mr. Morath received a B.A. in Physics from Boston University, an M.S. and Ph.D. in Condensed Matter Physics from Brown University, and an M.B.A. from the Wharton School of the University of Pennsylvania.

Jeffrey T. Nelson, age 52, has served as the Company's Vice President of Manufacturing, Inspection since February 2006 when the Company merged with August Technology Corporation. From August 2004 to February 2006, Mr. Nelson served as August Technology's Vice President of Manufacturing. From September 1998 to March 2004, he served as Director of Manufacturing at Elkay Corp, a supplier of sinks, plumbing and cabinetry to retailers. Mr. Nelson received a B.S. in Business Administration from the University of Minnesota.

Michael P. Plisinski, age 38, has served as the Company's Vice President and General Manager, Data Analysis and Review Business Unit since February 2006 when the Company merged with August Technology Corporation. From February 2004 to February 2006, he was August Technology's Vice President of Engineering and its Director of Strategic Marketing for review and analysis products from July 2003 to February 2004. Mr. Plisinski joined August Technology as part of the acquisition of Counterpoint Solutions, a semiconductor review and analysis company, where he was both President and sole founder from June 1999 to July 2003. Mr. Plisinski has a B.S. in Computer Science from the University of Massachusetts.

Compensation Committee Interlocks and Insider Participation

The Compensation Committee consists of Directors Daniel H. Berry, Paul Craig and Carl E. Ring, Jr., none of whom has interlocking relationships as defined by the SEC.

SECURITY OWNERSHIP

The following table sets forth certain information with respect to beneficial ownership of the Company's Common Stock as of March 31, 2008 (except as otherwise indicated), by: (i) each person who is known by the Company to own beneficially more than five percent of the Common Stock, (ii) each of the Named Executive Officers, (iii) each of the Company's directors, and (iv) all directors and executive officers as a group. Except as indicated in the footnotes to this table, the persons named in the table have sole voting and investment power with respect to all shares of Common Stock shown as beneficially owned by them, subject to community property laws where applicable.

| <u>Beneficial Owner</u> | <u>Number of Shares (1)</u> | <u>Percentage (2)</u> |
|---|-----------------------------|-----------------------|
| FMR Corp.(3) | 3,724,293 | 12.19% |
| 82 Devonshire Street Boston, MA 02109 | | |
| Artisan Investment Corporation(4) | 3,041,800 | 9.95% |
| 875 East Wisconsin Avenue, Suite 800 Milwaukee, WI 53202 | | |
| Wellington Management Company, LLP(5) | 2,441,564 | 7.99% |
| 75 State Street Boston, MA 02109 | | |
| Dimensional Fund Advisors LP(6) | 2,308,871 | 7.56% |
| 1299 Ocean Avenue Santa Monica, CA 90401 | | |
| The Bank of New York Mellon Corporation(7) | 1,645,990 | 5.39% |
| One Wall Street, 31 st Floor New York, New York 10286 | | |
| Paul F. McLaughlin | 751,581 | 2.42% |
| Steven R. Roth | 239,987 | * |
| Nathan H. Little | 172,414 | * |
| Michael P. Plisinski | 165,555 | * |
| Alexander A. Oscilowski | 3,000 | * |
| D. Mayson Brooks | 33,521 | * |
| Daniel H. Berry | 27,283 | * |
| Paul Craig | 205,785 | * |
| Thomas G. Greig(8) | 1,239,540 | 4.05% |
| c/o Liberty Capital Partners, Inc. 1370 Avenue of the Americas New York, NY 10019 | | |
| Jeff L. O'Dell(9) | 73,732 | * |
| Carl E. Ring, Jr. | 20,500 | * |
| Richard F. Spanier(10) | 84,434 | * |
| Aubrey C. Tobey | 19,500 | * |
| John R. Whitten | 7,500 | * |
| Michael W. Wright | 40,084 | * |
| All directors and executive officers as a group (twenty-three persons)(11) | 3,429,737 | 10.72% |

* Less than 1%.

(1) Includes the number of shares subject to options which are exercisable and restricted stock units vesting within 60 days of March 31, 2007 by the following persons: Mr. McLaughlin, (540,000 shares), Mr. Roth (213,269 shares), Mr. Little (150,000 shares), Mr. Plisinski (79,270 shares), Mr. Oscilowski (0 shares), Mr. Brooks (27,488), Mr. Berry (16,783 shares), Mr. Craig (15,000 shares), Mr. Greig (15,000 shares),

- Mr. O'Dell (5,337 shares), Mr. Ring (15,000 shares), Mr. Spanier (15,000 shares), Mr. Tobey (15,000 shares), Mr. Wright (17,853 shares) and all directors and executive officers as a group (1,439,240 shares).
- (2) Applicable percentage ownership is based on 30,559,982 shares of Common Stock outstanding as of March 31, 2008. Beneficial ownership of shares is determined in accordance with the rules of the SEC and generally includes shares as to which a person holds sole or shared voting or investment power. Shares of Common Stock subject to options that are presently exercisable or exercisable within 60 days of March 31, 2008 are deemed to be beneficially owned by the person holding such options for the purpose of computing the percentage ownership of such person, but are not treated as outstanding for the purpose of computing the percentage ownership of any other person. Unless otherwise noted the address for the stockholders named in this table is c/o Rudolph Technologies, Inc., One Rudolph Road, P.O. Box 1000, Flanders, NJ 07836.
 - (3) Information provided herein is based on the Schedule 13G that was filed on February 14, 2008 by FMR Corp.
 - (4) Information provided herein is based on the Schedule 13G/A that was filed on February 8, 2008 by Artisan Partners Limited Partnership, Artisan Investment Corporation, ZFIC, Inc., Andrew A. Ziegler and Artisan Funds, Inc.
 - (5) Information provided herein is based on the Schedule 13G that was filed on February 14, 2008 by Wellington Management Company, LLP.
 - (6) Information provided herein is based on the Schedule 13G that was filed on February 6, 2008 by Dimensional Fund Advisors LP.
 - (7) Information provided herein is based on the Schedule 13G that was filed on February 14, 2008 by The Bank of New York Mellon Corporation.
 - (8) The number of shares of Common Stock beneficially owned by Mr. Greig includes 1,219,040 shares of Rudolph Technologies Common Stock held by Liberty Partners Holdings 11, L.L.C. Liberty Partners, L.P. is the managing member of Liberty Partners Holdings 11, L.L.C. and PEB Associates, Inc. d/b/a Liberty Capital Partners, Inc. is the general partner of Liberty Partners, L.P. Mr. Greig is an officer, director and shareholder of Liberty Capital Partners, Inc. Mr. Greig disclaims beneficial ownership of all shares to the extent it exceeds his pecuniary interest in the securities.
 - (9) Includes 21,574 shares held by the O'Dell Family Limited Partnership.
 - (10) Includes 7,671 shares held by Dr. Spanier's wife.
 - (11) The number of shares of Common Stock beneficially owned by our directors and executive officers as a group includes 1,219,040 shares of our Common Stock held by Liberty Partners Holdings 11, L.L.C.

EQUITY COMPENSATION PLAN INFORMATION

The following table sets forth information with respect to the Company's equity compensation plans as of December 31, 2007.

| <u>Plan Category</u> | <u>(a)</u> | <u>(b)</u> | <u>(c)</u> |
|--|---|---|---|
| | Number of securities to be issued upon exercise of outstanding options, warrants and rights (1) | Weighted-average exercise price of outstanding options, warrants and rights | Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) |
| Equity compensation plans approved by security holders | 1,742,882 | \$21.75 | 1,028,539 |
| Equity compensation plans not approved by security holders | N/A | N/A | N/A |
| Total | <u>1,742,882</u> | <u>\$21.75</u> | <u>1,028,539</u> |

- (1) Includes only options outstanding under the 1996 Stock Plan, 1997 Stock Plan and the 1999 Stock Plan. Excludes 680,110 shares issuable upon vesting of outstanding Restricted Stock Units.

SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

Section 16(a) of the Securities Exchange Act of 1934 requires the Company's executive officers and directors and persons who own more than ten percent of a registered class of the Company's equity securities to file an initial report of ownership on Form 3 and changes in ownership on Form 4 or Form 5 with the SEC. Such persons are also required by SEC rules to furnish the Company with copies of all Section 16(a) forms they file. Based solely on its review of the copies of such forms received by it, or written representations from certain reporting persons, the Company believes that, during the year ended December 31, 2007, all officers, directors and greater than ten percent beneficial owners complied with all Section 16(a) filing requirements, except Paul F. McLaughlin filed a late Form 4 with respect to one transaction on October 15, 2007.

OTHER MATTERS

The Company knows of no other matters to be submitted to the Annual Meeting. If any other matters properly come before the Annual Meeting, it is the intention of the persons named in the enclosed Proxy to vote the shares they represent as the Board of Directors may recommend.

BY ORDER OF THE BOARD OF DIRECTORS

STEVEN R. ROTH
Secretary

Dated: April 21, 2008

| BOARD OF DIRECTORS

Paul F. McLaughlin

Chairman of the Board and
Chief Executive Officer

John R. Whitten

Former Chief Financial Officer,
Vice President and Treasurer
Applied Industrial Technologies, Inc.

Daniel H. Berry

Operating Partner
Riverside Partners, LLC

Paul Craig

President
Riverside Partners, LLC

Thomas G. Greig

Managing Director
Liberty Capital Partners, Inc.

Jeff L. O'Dell

Co-Founder and Chief Executive Officer
Bewiki, Inc.

Carl E. Ring, Jr.

Former Managing Director
Liberty Capital Partners, Inc.

Richard F. Spanier

Retired, Chairman Emeritus

Aubrey C. Tobey

President
ACT International

Michael W. Wright

President and Chief Executive Officer
Advanced Inquiry Systems, Inc.

| EXECUTIVE OFFICERS

Paul F. McLaughlin

Chairman of the Board and
Chief Executive Officer

Alexander A. Oscilowski

Chief Operating Officer

Nathan H. Little

Executive Vice President and General
Manager, Inspection Business Unit

Steven R. Roth

Senior Vice President, Finance and
Administration and Chief Financial Officer

| CORPORATE HEADQUARTERS

Rudolph Technologies, Inc.

One Rudolph Road
P.O. Box 1000
Flanders, New Jersey 07836
Phone: 973 691 1300
www.rudolphtech.com

| WORLDWIDE OFFICES

**Rudolph Technologies
Metrology Business Unit**
Budd Lake, New Jersey

**Rudolph Technologies
Inspection Business Unit**
Bloomington, Minnesota
Richardson, Texas
Issaquah, Washington
Bohemia, New York

**Rudolph Technologies Data Analysis
& Review Business Unit**
Lowell, Massachusetts

Rudolph Technologies Europe B.V.
Scotland, United Kingdom

Rudolph Technologies Japan KK
Takastu, Japan

Rudolph Technologies China
Shanghai, China

Rudolph Technologies Korea
Seoul, Korea

Rudolph Technologies Singapore
Singapore

Rudolph Technologies Taiwan
Hsin-Chu City, Taiwan

| KEY EMPLOYEES

D. Mayson Brooks
Vice President, Global Sales

Scott R. Danciak
Vice President of Engineering,
Inspection Business Unit

Robert DiCrosta
Vice President, Global Customer Support

Ajay Khanna
Vice President, International Accounts

Robert A. Koch
Vice President and General Counsel

John R. Kurdock
Vice President and General Manager,
Metrology Business Unit

Ardelle R. Johnson
Vice President, Corporate Marketing

Christopher J. Morath
Vice President of Operations,
Metrology Business Unit

Jeffrey T. Nelson
Vice President of Manufacturing,
Inspection Business Unit

Michael P. Plisinski
Vice President and General Manager, Data
Analysis & Review Business Unit

| SHAREHOLDER INFORMATION

General Shareholder and Investor**Questions may be Directed to:**

Steven R. Roth
Chief Financial Officer
Rudolph Technologies, Inc.
One Rudolph Road
P.O. Box 1000
Flanders, New Jersey 07836
Phone: 973 691 1300

**Independent Registered Public
Accounting Firm**

Ernst & Young, LLP
Iselin, New Jersey

Registrar and Transfer Agent

American Stock Transfer &
Trust Company
59 Maiden Lane
New York, New York 10038
Phone: 212 936 5100
www.amstock.com

Stock Symbol

Common Stock is traded on the NASDAQ
National Market* under the symbol, RTEC.

Annual Meeting

Stockholders are invited to attend
the Annual Meeting at 9:00 AM on
Tuesday, May 20, 2008 at our corporate
headquarters, located at One Rudolph Road,
Flanders, New Jersey 07836.

Form 10-K

The Annual Report on Form 10-K filed with
the Securities and Exchange Commission
is available without charge upon written
request to Investor Relations at our
corporate headquarters address.

Rudolph Technologies, Inc.
One Rudolph Road
P.O. Box 1000
Flanders, NJ 07836

973 691 1300

www.rudolphtech.com

END