

RUDOLPH TECHNOLOGIES INC

Form 10-K

March 05, 2010

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

FORM 10-K

(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, 2009

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	22-3531208
(State or other jurisdiction of incorporation or organization)	(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:

Title of Each Class	Name of Exchange on Which Registered
Common Stock, \$0.001 par value per share	The NASDAQ Stock Market LLC (NASDAQ Global Select Market)

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

None

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

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

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

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

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company
(Do not check if a 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, 2009 of \$5.52 was approximately \$149,785,675.

The registrant had 31,037,307 shares of Common Stock outstanding as of February 22, 2010.

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 19, 2010.

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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, cash requirements and anticipated trends and developments in and management plans for, our business and the markets in which we operate. 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. 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, except as required by law. 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 Annual Report on Form 10-K. 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 we make with the Securities and Exchange Commission.

PART I

Item 1. Business.

General

Rudolph Technologies, Inc. is a worldwide leader in the design, development, and manufacture of high-performance process control defect inspection, metrology, and process control software 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 for both macro-defect inspection and transparent and opaque thin film measurements. All of these systems feature sophisticated software and production-worthy automation. Rudolph systems are backed by worldwide customer service and applications support.

The acquisition of Adventa Control Technologies, Inc. was announced on August 3, 2009, and has been successfully integrated into the Company. As a result, multiple software systems have been added to our software portfolio, making Rudolph the No. 2 supplier of process control software solutions for device manufacturers, according to Gartner Dataquest.

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 AXitm and NSX[®] 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 Explore[®] Cluster

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incorporates wafer edge and backside inspection in one integrated platform to enhance productivity and continuously improve fab yield.

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.

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.

Data Analysis & Review Systems. Rudolph has a comprehensive offering of total process control software solutions for both front-end fabs, back-end packaging facilities as well as the rapidly maturing photovoltaic market. The vast amount of data gathered through automated inspection can be analyzed to determine trends that ultimately affect yield. In addition, Rudolph now provides a wide range of Advanced Process Control (APC) technologies specifically for tool automation, run-to-run control and fault detection and classification, all designed to improve factory profitability.

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.

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.

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All-surface Inspection. All-surface refers to inspection of the wafer frontside, edge, and backside as well as post-fab die. 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.

In addition to the wafer processing floor, Rudolph automated inspection systems are used in several post-fab processes such as bump inspection, wafer probe, wafer saw and quality control.

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 defects that cause catastrophic failure of a device, or 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.

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.

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 (Brown) 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 one percent 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

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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.

Process Control. Advanced Process Control (APC) employs software to automatically detect or predict tool failure (fault detection) as well as calculate recipe settings for a process that will drive the process output to target despite variations in the incoming material and disturbances within the process equipment. Process control software enables the factory to increase capacity and yield and to decrease rework and scrap. It enables reduced production costs by lowering consumables, process engineering time and manufacturing cycle time.

Products

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

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Product	Introduced	Functionality	Type of Fab	
			Wafer Processing	Final Manufacturing
		Inspection & Test Systems		
AXi tm Module	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 and waferless recipe creation 	X	
E30 tm Module	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
B30 tm Module	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
Explorer [®] Inspection Cluster	2009	<p>A family of multi surface inspection tools, using one or more inspection modules</p> <ul style="list-style-type: none"> - Automated handling platform - Intelligent wafer scheduling 	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
Wafer Scanner tm Series	1999	<ul style="list-style-type: none"> - 2D/3D bump dimensional inspection - 2D bump/surface defect inspection - In line, high-speed, 100% inspection 		X
PrecisionWoRx [®]	2008	<ul style="list-style-type: none"> - Probe card test & analysis - Configurable channels 		

		- High load forces	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	Type of Fab	
			Wafer Processing	Final Manufacturing
<i>MetaPULSE®</i> Series	1997	Metrology Systems - Non-contact system for thin opaque films - Patented Picosecond Ultrasonic Laser Sonar Technology (PULSE™)		
		- Designed for advanced copper and non-copper applications - Improved throughput and repeatability	X	
<i>S3000™</i> Series	2006	- Superior accuracy for transparent film measurements - 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
		Process Control Software		
ARTIST®	2003	<ul style="list-style-type: none"> - Real-time monitoring software - Enables development of human-readable models - Frees users from manual monitoring - Minimize scrap and rework 	X	
AutoShell®	1998	<ul style="list-style-type: none"> - Equipment automation software that interfaces to both tools and external resources 	X	
ControlWORKS®	1994	<ul style="list-style-type: none"> - Designed to control process equipment - Minimizes the expense and time-to-market associated with developing control applications 	X	
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
Discover Solar™	2008	<ul style="list-style-type: none"> - Helps photovoltaic (PV) cell manufacturers reduce manufacturing costs and increase average cell efficiencies - Designed for high volume c-Si cell and thin film production - Controls and optimizes the performance of the line 	X	X
Gamma2™	2004	<ul style="list-style-type: none"> - Connects applications to tools - Add applications to factory control architecture without changing host software 	X	
GateWay™	2003	<ul style="list-style-type: none"> - Intercepts message traffic between the equipment and the host - 		

		<ul style="list-style-type: none"> - Preserves value of existing automation investments - Increases reliability and function with zero development time - Diagnostic tool for solving communication problems 	X	
HarmonyASR™	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
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	
ProcessWORKS®	1998	<ul style="list-style-type: none"> - Advanced process control software deployed in CMOS, high-mix ASIC, memory and disk head fabs - Proven in all major process areas 	X	
RecipeWORKS™	1998	<ul style="list-style-type: none"> - Reduces impact on tool time - Stores recipes in a central repository - Enables engineers to manage recipes remotely - Allows users to setup security - Accepts settings from any run-to-run control application 	X	
TrackWORKS®	1998	<ul style="list-style-type: none"> - Configures and schedules preventive maintenance - View factory entities using operator-defined parameters 	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
TrueADC™		<ul style="list-style-type: none"> - Serving the entire fab - Defect classification with a high level of accuracy 		
Enterprise	2007	<ul style="list-style-type: none"> - 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 tools and software 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. See Note 15 to our consolidated financial statements in this Annual Report on Form 10-K for information concerning our geographic information.

We depend on a relatively small number of customers and end users for a large percentage of our revenues. In the years 2007, 2008 and 2009, sales to end user customers that individually represented at least five percent of our revenues accounted for 37.1%, 36.3% and 44.8% of our revenues, respectively. In 2007, 2008 and 2009, sales to Intel Corporation accounted for 11.5%, 10.9% and 13.6% of our revenues, respectively. No other individual end user customer accounted for more than 10% of our revenues in 2007, 2008 and 2009. We do not have purchase contracts with any of our customers that obligate them to continue to purchase our products.

Research and Development

The macro-defect inspection, thin film transparent and opaque process control 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 2007, 2008 and 2009 were \$30.0 million, \$31.6 million and \$26.0 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, New York, 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 Budd Lake, 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 Minnesota and New Jersey. During the three months ended December 31, 2009, we initiated a consolidation of a portion of our facility in Budd Lake, NJ and will move the New Jersey manufacturing operations to our facility in Bloomington, MN. Our core manufacturing competencies include electrical, optical and mechanical assembly and testing as well as the management of new product

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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. To date, we have not experienced any significant delivery delays. 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, 2009, we have been granted, or hold exclusive licenses to, 165 U.S. and foreign patents. The patents we own, jointly own or exclusively license have expiration dates ranging from 2010 to 2025. We also have 97 pending regular and provisional applications in the U.S. and other countries. Our patents and applications principally cover various aspects of macro-defect detection and classification, transparent thin film measurement and altered material characterization.

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 to 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 the same degree 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.

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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, 2009, we had a backlog of approximately \$54.1 million compared with a backlog of approximately \$20.4 million at December 31, 2008.

Employees

As of December 31, 2009, we had 497 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;

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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 customers may be unable to pay us for our products and services

Our customers include some companies that may from time to time encounter financial difficulties, especially in light of the current economic environment and the turmoil in the credit markets. If a customer's financial difficulties become severe, the customer may be unwilling or unable to pay our invoices in the ordinary course of business, which could adversely affect collections of both our accounts receivable and unbilled services. The bankruptcy of a customer with a substantial account receivable could have a material adverse effect on our financial condition and results of operations. In addition, if a customer declares bankruptcy after paying us certain invoices, a court may determine that we are not properly entitled to that payment and may require repayment of some or all of the amount we received, which could adversely affect our financial condition and results of operations.

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 macro-defect inspection and probe card and test analysis systems range in selling price from approximately \$250,000 to \$1.4 million per system, our transparent film measurement systems range in selling price from approximately \$250,000 to \$1.0 million per system and our opaque film measurement systems range in selling price from approximately \$1.0 million to \$2.0 million per system. Accordingly, a small change in the number of systems we sell may 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

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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 and receive payment, if ever, 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 the 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:

Compliance with foreign laws. Our business is subject to risks inherent in doing business internationally, including compliance with, inconsistencies among, and unexpected changes in, a wide variety of foreign laws and regulatory environments with which we are not familiar, including, among other issues, with respect to employees, protection of our intellectual property, and a wide variety of operational regulations and trade and export controls under domestic, foreign, and international law.

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

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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. Language and other cultural differences may also inhibit our sales and marketing efforts and create internal communication problems among our U.S. and foreign research and development teams, increasing the difficulty of managing multiple, remote locations performing various development, quality assurance, and yield ramp analysis projects.

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. Additionally, in the event a larger portion of our revenue becomes denominated in foreign currencies, we would be subject to a potentially significant exchange rate risk.

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. Defects may be created during probing, bumping, dicing or general handling, and can have a major impact on device and process quality. 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 \$14.0 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.

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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.

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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. Even though these agreements are in place there can be no assurances that trade secrets and proprietary information will not be disclosed, that others will not independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets, or that we can fully protect our trade secrets and proprietary information. Violations by others of our confidentiality agreements and the loss of employees who have specialized knowledge and expertise could harm our competitive position and cause our sales and operating results to decline as a result of increased competition. Costly and time-consuming litigation might be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection might adversely affect our ability to continue our research or bring products to market.

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. There can be no assurance that any patents issued to or licensed by us will not be challenged, invalidated or circumvented or that the rights granted thereunder will provide us with a competitive advantage.

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.

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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, which could have a material adverse effect on our business. 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.

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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.

Our ability to fulfill our backlog may have an effect on our long term ability to procure contracts and fulfill current contracts

Our ability to fulfill our backlog may be limited by our ability to devote sufficient financial and human capital resources and limited by available material supplies. If we do not fulfill our backlog in a timely manner, we may experience delays in product delivery which would postpone receipt of revenue from those delayed deliveries. Additionally, if we are consistently unable to fulfill our backlog, this may be a disincentive to customers to award large contracts to us in the future until they are comfortable that we can effectively manage our backlog.

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,

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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.

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

Over the long-term 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,

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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.

Turmoil in the credit markets and the financial services industry may negatively impact our business, results of operations, financial condition or liquidity

The credit markets and the financial services industry have been experiencing a period of unprecedented turmoil and upheaval characterized by the bankruptcy, failure, collapse or sale of various financial institutions and an unprecedented level of intervention from the United States federal government. While the ultimate outcome of these events cannot be predicted, they may have a material adverse effect on our liquidity and financial condition if our ability to obtain credit from trade creditors were to be impaired. In addition, the economic crisis could also adversely impact our customers' ability to finance the purchase of systems from us or our suppliers' ability to provide us with product, either of which may negatively impact our business and results of operations.

Risks Related to the Semiconductor Device Industry

Cyclical nature of 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 stockholder 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;

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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 Stockholder Rights Plan. Such a Shareholder 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.

Our stock price is volatile

The market price of our common stock has fluctuated widely. From the beginning of fiscal year 2008 through the end of fiscal year 2009, our stock price fluctuated between a high of \$11.45 per share and a low of \$1.95 per share. Consequently, the current market price of our common stock may not be indicative of future market prices, and we may be unable to sustain or increase the value of an investment in our common stock. Factors affecting our stock price may include:

variations in operating results from quarter to quarter;

changes in earnings estimates by analysts or our failure to meet analysts' expectations;

changes in the market price per share of our public company customers;

market conditions in the semiconductor and other industries into which we sell products;

general economic conditions;

political changes, hostilities or natural disasters such as hurricanes and floods;

low trading volume of our common stock; and

the number of firms making a market in our common stock.

In addition, the stock market has recently experienced significant price and volume fluctuations. These fluctuations have particularly affected the market prices of the securities of high technology companies like ours. These market fluctuations could adversely affect the market price of our common stock.

Item 1B. Unresolved Staff Comments.

None.

Table of Contents**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 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.

Location	Facility Purpose	Approximate Square Footage	Lease Expiration Year, Unless Owned
Flanders, New Jersey	Executive Office	20,000	Owned
Budd Lake, New Jersey	Engineering, Manufacturing and Service	61,500	2016
Bloomington, Minnesota	Engineering, Manufacturing and Service	78,500	2012
Lowell, Massachusetts	Engineering and Service	9,500	2010
Richardson, Texas	Engineering	21,000	Owned
Bohemia, New York	Engineering	6,000	2011
Snoqualmie, Washington	Engineering and Service	27,000	2018
Hsin-Chu, Taiwan	Sales and Service	10,500	2010
Takatsu, Japan	Sales and Service	5,000	2010
Sungnam-si, Korea	Sales and Service	9,500	2011
Shanghai, China	Sales and Service	3,500	2011
Singapore	Sales and Service	2,000	2012
Scotland, United Kingdom	Sales and Service	1,000	2010

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 currently believes would have a material adverse effect on our consolidated financial statements taken as a whole if determined adversely to the Company.

Item 4. (Removed and Reserved).

Table of Contents**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 Global Select 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 a custom peer group for the period commencing on December 31, 2004 and ending on December 31, 2009. The peer group is comprised of capital equipment manufacturers for the semiconductor industry with relatively comparable revenues and market capitalizations to that of the Company. The peer group was recommended by a global management consulting firm. The companies included in the peer group are MKS Instruments, Inc., FEI Co., Brooks Automation, Inc., Cymer, Inc., Veeco Instruments, Inc., Cabot Microelectronics Corp., ATMI, Inc., FormFactor, Inc., Axcelis Technologies, Inc., Advanced Energy Industries, Inc., Cohu, Inc., EMCORE Corp., Mattson Technology, Inc., LTX-Credence, Corp., Nanometrics, Inc., Ultratech, Inc., PDF Solutions, Inc., and AXT, Inc.

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, 2004 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.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*

Among Rudolph Technologies, Inc., The NASDAQ Composite Index
And A Peer Group

* \$100 invested on 12/31/04 in stock or index, including reinvestment of dividends.
Fiscal year ending December 31.

	12/04	12/05	12/06	12/07	12/08	12/09
Rudolph Technologies, Inc.	100.0	75.01	92.72	65.93	20.56	39.14
NASDAQ Composite	100.0	101.41	114.05	123.94	73.43	105.89
Peer Group	100.0	93.28	109.59	101.51	50.90	81.14

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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 Global Select Market.

	Price Range of Common Stock	
	High	Low
Year Ended December 31, 2008		
First Quarter	\$ 11.45	\$ 8.11
Second Quarter	\$ 10.99	\$ 7.70
Third Quarter	\$ 11.02	\$ 7.22
Fourth Quarter	\$ 8.44	\$ 2.03
Year Ended December 31, 2009		
First Quarter	\$ 4.27	\$ 1.95
Second Quarter	\$ 6.18	\$ 2.96
Third Quarter	\$ 8.46	\$ 5.27
Fourth Quarter	\$ 8.25	\$ 5.70

As of February 11, 2010, there were 90 stockholders of record of our common stock and approximately 5,723 beneficial stockholders. The closing market value of our common stock on February 11, 2010 was \$8.18.

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.

In July 2008, our Board of Directors approved a stock repurchase program of up to 3 million shares. As of the time of filing this Annual Report on Form 10-K, we have not purchased any shares under this program.

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 2010 Annual Meeting of Stockholders.

Table of Contents**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 Annual Report on Form 10-K, and under Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations. The balance sheet data as of December 31, 2008 and 2009 and the statement of operations data for the years ended December 31, 2007, 2008 and 2009 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, 2005, 2006 and 2007, and the statement of operations data for the years ended December 31, 2005 and 2006 were derived from our audited consolidated financial statements not included herein.

	Year Ended December 31,				
	2005	2006(1)	2007(2)	2008(3)	2009(4)
	(In thousands, except per share data)				
Statement of Operations Data:					
Revenues	\$ 82,918	\$ 201,168	\$ 160,129	\$ 131,040	\$ 78,657
Cost of revenues	44,390	103,726	78,889	87,388	49,805
Gross profit	38,528	97,442	81,240	43,652	28,852
Operating expenses:					
Research and development	11,901	29,856	29,993	31,644	25,991
In-process research and development		9,900	1,000		
Selling, general and administrative	20,373	32,393	33,204	33,965	33,640
Impairment charge for goodwill and identifiable intangible assets				227,105	
Amortization	876	4,048	4,487	5,890	1,358
Total operating expenses	33,150	76,197	68,684	298,604	60,989
Operating income (loss)	5,378	21,245	12,556	(254,952)	(32,137)
Interest income and other, net	1,388	3,191	4,149	1,151	270
Income (loss) before provision for income taxes	6,766	24,436	16,705	(253,801)	(31,867)
Provision (benefit) for income taxes	1,789	11,730	4,846	(4,115)	(2,239)
Net income (loss)	\$ 4,977	\$ 12,706	\$ 11,859	\$ (249,686)	\$ (29,628)
Earnings (loss) per share:					
Basic	\$ 0.29	\$ 0.47	\$ 0.41	\$ (8.16)	\$ (0.96)
Diluted	\$ 0.29	\$ 0.46	\$ 0.40	\$ (8.16)	\$ (0.96)
Weighted average shares outstanding:					
Basic	16,899	27,276	29,168	30,614	30,888
Diluted	16,942	27,574	29,312	30,614	30,888

	2005	2006	December 31, 2007	2008	2009
Balance Sheet Data:					
Cash and cash equivalents	\$ 37,986	\$ 72,479	\$ 57,420	\$ 67,735	\$ 57,839
Marketable securities	42,821	33,714	16,505	10,549	3,080
Working capital	125,678	200,942	176,298	147,688	126,781
Total assets	180,001	440,486	460,216	197,432	178,203
Retained earnings (accumulated deficit)	20,191	32,897	44,776	(204,910)	(234,538)
Total stockholders' equity	164,534	392,876	424,478	176,088	151,131

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- (1) Effective January 1, 2006, we adopted the provisions prescribed by the Financial Accounting Standards Board (FASB) in Accounting Standards Codification (ASC) 718. 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 reflects the results of operations of August Technology since February 15, 2006.
- (2) Statement of Operations data reflects the results of operations of PCTA since December 18, 2007.
- (3) Statement of Operations data reflects the results of operations of WSPG since January 22, 2008.
- (4) Statement of Operations data reflects the results of operations of PCG since August 3, 2009.

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 defect inspection, process control metrology 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 for both macro-defect inspection and transparent and opaque thin film measurements. All of these systems feature production-worthy automation and are backed by worldwide customer support.

On December 18, 2007, Rudolph and a wholly-owned subsidiary 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). We paid \$59.1 million in cash and acquisition costs and issued 1.3 million shares of Rudolph common stock for a total purchase price of \$73.2 million. 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.

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. The acquired business is currently known as the Rudolph Technologies Wafer Scanner Product Group (WSPG). On August 3, 2009, we announced that we had acquired Adventa Control Technologies, Inc. (Adventa), headquartered in Plano, Texas. The acquired business is currently known as the Rudolph Technologies Process Control Group (PCG). The impact of the acquisitions was not material to our consolidated financial position or results of operations. However, as a result of the Adventa acquisition, multiple software systems have been added to our software portfolio, making Rudolph the second largest supplier of process control software solutions for device manufacturers, according to Gartner Dataquest, a leading technology and research advisory firm.

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 increase in capital spending of 50-60% for 2010. 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 ratio above 1.0 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 1.0 for the month of December 2009, decreasing from the September 2009 book-to-bill ratio of 1.2.

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, 2007, 2008 and 2009, sales to customers that individually represented at least five percent of our revenues accounted for 37.1%,

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36.3%, and 44.8% of our revenues, respectively. For the years ended December 31, 2007, 2008 and 2009, sales to Intel Corporation accounted for 11.5%, 10.9% and 13.6% 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 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, our transparent film measurement systems range in average selling price from approximately \$250,000 to \$1.0 million per system and our opaque film measurement systems range in average selling price from approximately \$1.0 million to \$2.0 million per system.

A significant portion of our revenues has been derived from customers outside of the United States. 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. In 2008, approximately 76.5% of our revenues were derived from customers outside of the United States, of which 57.0% were derived from customers in Asia and 19.5% were derived from customers in Europe. In 2009, approximately 72.4% of our revenues were derived from customers outside of the United States, of which 60.8% were derived from customers in Asia and 11.6% 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.

During the three months ended December 31, 2009, the Company initiated a consolidation of a portion of its facility in Budd Lake, NJ and will move the New Jersey manufacturing operations to its facility in Bloomington, MN. In connection with this consolidation, the Company recorded a total charge of \$6,449, including \$4,312 for asset write-downs, \$1,949 for lease termination charges and \$188 for employee termination costs, related to the Company's manufacturing facility. These charges were recorded in cost of revenues and selling, general and administrative expenses for \$2,860 and \$3,589, respectively.

Table of Contents**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,		
	2007	2008	2009
Revenues	100.0%	100.0%	100.0%
Cost of revenues	49.3	66.7	63.3
Gross profit	50.7	33.3	36.7
Operating expenses:			
Research and development	18.7	24.2	33.0
In-process research and development	0.6		
Selling, general and administrative	20.8	25.9	42.8
Impairment charge for goodwill and identifiable intangible assets		173.3	
Amortization	2.8	4.5	1.7
Total operating expenses	42.9	227.9	77.5
Operating income (loss)	7.8	(194.6)	(40.8)
Interest income and other, net	2.6	0.9	0.3
Income before provision (benefit) income taxes	10.4	(193.7)	(40.5)
Provision (benefit) for income taxes	3.0	(3.1)	(2.8)
Net income (loss)	7.4%	(190.6)%	(37.7)%

Results of Operations 2007, 2008 and 2009

Revenues. Our revenues are derived from the sale of our systems, services, spare parts and software licensing. Our revenues were \$160.1 million, \$131.0 million and \$78.7 million in the years 2007, 2008 and 2009. This represents a decrease of 18.2% from 2007 to 2008 and a decrease of 40.0% from 2008 to 2009. The decreases in revenue from 2007 through 2009 are primarily due to continued 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,					
	2007		2008		2009	
Systems:						
Inspection	\$	86,196	53%	\$	73,465	56%
				\$	38,027	48%

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Metrology	34,738	22	21,118	16	8,921	11
Parts	15,261	10	20,801	16	15,428	20
Services	11,354	7	11,246	9	9,590	12
Software licensing	12,580	8	4,410	3	6,691	9
Total revenue	\$ 160,129	100%	\$ 131,040	100%	\$ 78,657	100%

Systems revenue decreased from 2007 through 2009 due to continued weakness in the overall semiconductor equipment manufacturing sector and reflects a decrease in inspection systems revenue of \$12.7 million, a decrease in metrology systems revenue of \$13.6 million from 2007 to 2008, a decrease in inspection systems revenue of \$35.4 million and a decrease in metrology systems revenue of \$12.2 million from 2008 to 2009. Systems revenue generated by our latest product releases and major enhancements in each of our product families amounted to 29% of total revenue for 2007 compared to 40% of total revenue for 2008 and 35% of total revenue for 2009. The

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year-over-year increase in parts and service revenues in absolute dollars from 2007 to 2008 reflects additional parts and service revenues from the PCTA and WSPG acquisitions. The year-over-year decrease in parts and service revenues in absolute dollars from 2008 to 2009 is primarily due to overall weakness in the semiconductor market. The year-over-year decrease in software licensing revenues of \$8.2 million from 2007 to 2008 reflects the sale of certain technology rights to Tokyo Electron in 2007 not occurring in 2008 and weakness in the semiconductor market. The year-over-year increase in software licensing revenues of \$2.3 million from 2008 to 2009 reflects additional software licensing revenues from the acquisition of PCG.

Deferred revenues of \$6.9 million are recorded in other current liabilities at December 31, 2009 and primarily consist of \$2.4 million for deferred maintenance agreements and \$4.5 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, production volume, customization and reconfiguration of systems, international and domestic sales mix, and parts and service margins. Our gross profit was \$81.2 million, \$43.7 million and \$28.9 million in 2007, 2008 and 2009, respectively. The decrease in gross profit as a percentage of revenue from 2007 to 2008 is primarily due to an inventory write down of \$14.1 million. The increase in gross profit as a percentage of revenue from 2008 to 2009 is primarily due to an inventory write down of \$4.8 million in 2009 which had less of an impact on gross profit than the inventory write down in 2008. We do not track gross margin by the sources of revenue.

Operating Expenses

The operating expenses consist of:

Research and Development. The macro-defect inspection, thin film transparent, opaque process control, 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, wafer level packaging, 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 \$30.0 million, \$31.6 million and \$26.0 million in 2007, 2008 and 2009, respectively. The year-over-year dollar increase from 2007 to 2008 is primarily due to the addition of the engineering teams from the PCTA and WSPG acquisitions in 2008, partially offset by headcount reductions and lower project costs as part of our cost reduction efforts. The year-over-year dollar decrease from 2008 to 2009 primarily reflects reduced compensation cost and lower project costs as part of our continued cost reduction efforts, offset by an increase in litigation expenses and expenses related to the activities of the acquisition of PCG. We continue to maintain our commitment to investing in new product development and enhancement to existing products in order to position ourselves for future growth.

In-Process Research and Development (IPRD). In 2007, the acquisition of the PCTA resulted in the write-off of \$1.0 million. 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 IPRD 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 costs to complete this project

consisted primarily of internal engineering labor costs. The project was completed in the first half of 2009. In accordance with FASB ASC 805, IPRD is no longer written off at the acquisition date, but instead capitalized as an intangible asset.

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 \$33.2 million, \$34.0 million and \$33.6 million in 2007, 2008 and 2009, respectively. The

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year-over-year dollar increase from 2007 to 2008 in selling, general and administrative expense was primarily due to administrative costs associated with the merged activities of the PCTA and WSPG being included for 2008, partially offset by foreign exchange gains from our international operations. The year-over-year dollar decrease from 2008 to 2009 in selling, general and administrative expense was primarily due to the elimination of administrative costs associated with prior business combinations, and lower compensation costs in the 2009 period, offset by expenses as a result of the Adventa acquisition, manufacturing consolidation costs and foreign exchange losses from our international operations.

Impairment Charge for Goodwill and Identifiable Intangible Assets. Goodwill is tested for impairment annually or more frequently if an event or circumstance indicates that an impairment loss may have been incurred. Impairment charge for goodwill and identifiable intangible assets was \$0 for both 2007 and 2009, and was \$227.1 million for 2008. We perform our annual goodwill impairment test on October 31st of every year. As of December 31, 2009, the entire goodwill balance is related to the Adventa acquisition completed in 2009. As of October 31, 2009, it was determined that the carrying value of this reporting unit was not less than fair value; therefore, there was no impairment of goodwill. During our annual goodwill impairment test in October 2008, we experienced a significant decline in our stock price. As a result of the decline in stock price, our market capitalization plus an implied control premium fell significantly below the recorded value of our consolidated net assets as of October 31, 2008. In performing the goodwill impairment test, we used current market capitalization, control premiums, discounted cash flows and other factors as the best evidence of fair value. The impairment test resulted in no value attributable to our goodwill and accordingly, we wrote off all of our \$192.9 million of goodwill as of October 31, 2008.

In connection with the goodwill impairment test, we determined that our identifiable acquired intangible assets were impaired. The determination was based on the carrying values exceeding the future undiscounted cash flows and fair value attributable to such intangible assets. As a result, we recorded an impairment charge of \$34.2 million as of October 31, 2008, which represents the difference between the estimated fair values of these long-lived assets as compared to their carrying values. Fair values were determined based upon market conditions, the relief from royalty approach which utilized cash flow projections, and other factors.

Interest Income and Other, Net. Interest income and other, net was \$4.1 million, \$1.2 million and \$0.3 million in 2007, 2008 and 2009, 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 decrease in interest income and other, net of \$2.9 million from 2007 to 2008 and \$0.9 million from 2008 to 2009 is primarily due to lower average invested cash balances and lower average interest rates.

Income Taxes. Income tax expense was \$4.8 million in 2007. There was an income tax benefit of \$4.1 million and \$2.2 million, respectively, in 2008 and 2009. Income tax expense for the year ended December 31, 2007 was 29.0% of income before provision for income taxes. This differs from the federal statutory income tax rate of 35%, primarily as a result of state income taxes offset by benefits from research and development tax credits, the domestic manufacturing production deduction and tax exempt interest. In addition, our effective tax rate was impacted by the non-deductibility of the IPRD charges for tax purposes of \$1.0 million.

The income tax benefit for the year ended December 31, 2008 was \$4.1 million or 1.6% of loss before benefit for income taxes. The income tax benefit differs from the amount that would result from applying the federal statutory income tax rate of 35% to our loss before benefit for income taxes, primarily due to our inability to record a full income tax benefit for the impairments of the goodwill and long-lived assets and valuation allowances in taxable jurisdictions.

The income tax benefit for the year ended December 31, 2009 was \$2.2 million or 7.0% of loss before benefit for income taxes. The income tax benefit differs from the amount that would result from applying the federal statutory income tax rate of 35% to our loss before benefit for income taxes, primarily due to valuation allowances in taxable jurisdictions.

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We evaluate the recoverability of deferred tax assets from future taxable income and establish valuation allowances if recovery is deemed not likely. The valuation allowance increased \$35.2 million and \$6.8 million in 2008 and 2009, respectively.

Liquidity and Capital Resources

At December 31, 2007, we had \$73.9 million of cash, cash equivalents and marketable securities and \$176.3 million in working capital. At December 31, 2008, we had \$78.3 million of cash, cash equivalents and marketable securities and \$147.7 million in working capital. At December 31, 2009, our cash, cash equivalents and marketable securities totaled \$60.9 million, while working capital amounted to \$126.8 million.

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, for the year ended December 31, 2008 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 acceleration of the slowdown in the semiconductor industry. Additionally, for the year ended December 31, 2009, as our revenue declined from \$131.0 million to \$78.7 million, our change in accounts receivables represented a use of cash. This was primarily due to increasing sales in the fourth quarter of 2009, offset by significantly lower sales in the fourth quarter of 2008.

Net cash and cash equivalents provided by operating activities for the years ended December 31, 2007 and 2008 totaled \$23.6 million and \$15.4 million, respectively. Net cash and cash equivalents used by operating activities for the year ended December 31, 2009 totaled \$12.1 million. During the year ended December 31, 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 million, 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. During the year ended December 31, 2008, cash provided by operating activities was primarily due to a decrease in accounts receivable of \$31.3 million, net loss, adjusted to exclude the effect of non-cash charges, of \$2.2 million, partially offset by a decrease in accounts payable of \$5.6 million, an increase in income taxes receivable of \$4.2 million, an increase in inventories of \$4.3 million, a decrease in accrued liabilities of \$2.5 million and a decrease in deferred revenue of \$1.6 million. During the year ended December 31, 2009, cash used by operating activities was primarily due to net loss, adjusted to exclude the effect of non-cash charges, of \$11.8 million, an increase in accounts receivable of \$13.2 million, a decrease in other current liabilities of \$1.3 million and a decrease in accrued liabilities of \$1.2 million, partially offset by a decrease in inventories of \$6.9 million, an increase in accounts payable of \$3.2 million, an increase in non-current liabilities of \$2.0 million, an increase in deferred revenue of \$1.6 million and a decrease in income taxes receivable \$1.0 million.

Net cash and cash equivalents used in investing activities for the years ended December 31, 2007 and 2008 totaled \$40.5 million and \$5.7 million, respectively. The net cash and cash equivalents provided by investing activities for the year ended December 31, 2009 totaled \$1.7 million. During the year ended December 31, 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. During the year ended December 31, 2008, net cash used by investing activities included purchases of marketable securities of \$15.5 million, acquisition costs for business combinations of \$8.5 million, capital expenditures of \$3.0 million, partially offset by proceeds from sales of marketable securities of \$21.3 million. During the year ended December 31, 2009, net cash provided by investing activities included proceeds from sales of marketable securities of \$19.4 million, partially offset

by purchases of marketable securities of \$12.2 million, acquisition costs for a business combination of \$5.0 million and purchase of property, plant and equipment of \$0.6 million. Capital expenditures over the next twelve months are expected to be approximately \$3.0 million to \$5.5 million.

Net cash provided by financing activities was \$1.5 million, \$0.2 million and \$0.2 million in 2007, 2008 and 2009, respectively. In 2007, net cash provided by financing activities was a result of proceeds received from sales of

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shares through share-based compensation plans of \$1.3 million and tax benefit from share-based compensation plans of \$0.1 million. In both the 2008 and 2009 periods, net cash provided by financing activities was a result of proceeds received from sales of shares through share-based compensation plans of \$0.2 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 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 \$59.1 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 and on August 3, 2009, we announced that we had acquired Adventa Control Technologies, Inc., headquartered in Plano, Texas. We accounted for these acquisitions as business combinations.

In July 2008, our Board of Directors approved a stock repurchase program of up to 3 million shares. As of the time of filing this Annual Report on Form 10-K, we have not purchased any shares under this program.

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 next twelve months. 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, 2009, 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 \$5.5 million at December 31, 2009. We are currently unable to provide a reasonably reliable estimate of the amount or periods when cash settlement of this liability may occur.

	Total	Payments due by period			
		Less than 1 year	1-3 years	3-5 years	More than 5 years
Operating lease obligations	\$ 13,306	\$ 2,791	\$ 4,048	\$ 2,946	\$ 3,521
Open and committed purchase orders	16,868	16,868			
Total	\$ 30,174	\$ 19,659	\$ 4,048	\$ 2,946	\$ 3,521

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

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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. In the limited circumstances where 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 if 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.

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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. The goodwill impairment test is a two-step process which requires us to make judgmental assumptions regarding fair value. The first step consists of estimating the fair value of our aggregated reporting unit using the market value of our common stock at October 31st, 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.

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. 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, 2009, we had a valuation allowance of \$43.3 million on most of our deferred tax assets to reflect the deferred tax asset at the net amount that is more likely than not to be realized.

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We recognize liabilities for uncertain tax positions based on a two-step process. 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 October 2009, the Financial Accounting Standards Board (FASB) issued Accounting Standard Update (ASU) No. 2009-14 on FASB Accounting Standards Codification (ASC) 985, Software Certain Revenue Arrangements That Include Software Elements—a consensus of the FASB Emerging Issues Task Force. The objective of this ASU is to clarify which revenue allocation and measurement guidance should be used for arrangements that contain both tangible products and software, in cases where the software is more than incidental to the tangible product as a whole. More specifically, if the software sold with or embedded within the tangible product is essential to the functionality of the tangible product, then this software as well as undelivered software elements that relate to this software are excluded from the scope of existing software revenue guidance, which is expected to decrease the amount of revenue deferred in these cases. This ASU is to be applied prospectively for revenue arrangements entered into or materially modified in fiscal years beginning on or after June 15, 2010, which for us is the year 2011. Early adoption is permitted, but this ASU must be adopted in the same period as, and use the same transition method that is used for, the ASU described in the following paragraph. We are currently evaluating the impact, if any, of this new accounting update on or consolidated financial statements.

In October 2009, the FASB issued ASU No. 2009-13 on FASB ASC 605, Revenue Recognition Multiple Deliverable Revenue Arrangements a consensus of the FASB Emerging Issues Task Force. The objective of this ASU is to address the accounting for multiple-deliverable arrangements to enable vendors to account for products or services (deliverables) separately rather than as a combined unit. Vendors often provide multiple products or services to their customers. Those deliverables are often provided at different points in time or over different time periods. This ASU provides amendments to the criteria in FASB ASC 605-25 for separating consideration in multiple-deliverable arrangements. The amendments in this ASU establish a selling price hierarchy for determining the selling price of a deliverable. The selling price used for each deliverable will be based on vendor specific objective evidence if available, third-party evidence if vendor-specific objective evidence is not available, or estimated selling price if neither vendor specific objective evidence nor third-party evidence is available. The amendments in this ASU also will replace the term fair value in the revenue allocation guidance with selling price to clarify that the allocation of revenue is based on entity-specific assumptions rather than assumptions of a marketplace participant. This update is effective for fiscal years beginning on or after June 15, 2010. We are currently evaluating the impact, if any, of this new accounting update on our consolidated financial statements.

In June 2009, the FASB issued ASC 105 (formerly, SFAS No. 168, Accounting Standards Codification and the Hierarchy of Generally Accepted Accounting Principles a replacement of FASB Statement No. 162), which states that

the ASC will become the source of authoritative accounting principles generally accepted in the United States of America (GAAP) recognized by the FASB to be applied by nongovernmental entities. Rules and interpretive releases of the SEC under authority of federal securities laws are also sources of authoritative GAAP for SEC registrants. FASB ASC 105 is effective for interim and annual periods ending after September 15, 2009. We

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adopted FASB ASC 105 during the quarter ended September 30, 2009 and the adoption did not have any effect on our financial condition or results of operations.

In May 2009, the FASB issued ASC 855 (formerly SFAS No. 165, *Subsequent Events*). FASB ASC 855 is effective for interim and annual periods ending after June 15, 2009. FASB ASC 855 establishes general standards of accounting for, and disclosure of, events that occur after the balance sheet date but before financial statements are issued or are available to be issued. In particular, FASB ASC 855 establishes (i) the period after the balance sheet date during which management of a reporting entity should evaluate events or transactions that may occur for potential recognition or disclosure in the financial statements, (ii) the circumstances under which an entity should recognize events or transactions occurring after the balance sheet date in its financial statements and (iii) the disclosures that an entity should make about events or transactions that occurred after the balance sheet date. We have evaluated all subsequent events through the date of issuance of our financial statements. We adopted FASB ASC 855 during the quarter ended June 30, 2009 and the adoption did not have any effect on our financial condition or results of operations.

In April 2009, the FASB issued ASC 820 (formerly, FASB Staff Position (*FSP*) No. 157-4, *Determining Fair Value When the Volume and Level of Activity for the Asset or Liability Have Significantly Decreased and Identifying Transactions That Are Not Orderly*). FASB ASC 820 provides additional guidance for estimating fair value in accordance with FASB ASC 820 when the volume and level of activity for the asset or liability have significantly decreased and requires that companies provide interim and annual disclosures of the inputs and valuation techniques used to measure fair value. FASB ASC 820 is effective for interim and annual reporting periods ending after June 15, 2009 and is to be applied prospectively. We adopted FASB ASC 820 during the quarter ended June 30, 2009 and the adoption did not have a significant impact on our consolidated financial position and results of operations.

In April 2009, the FASB issued ASC 825 (formerly FSP No. 107-b and Accounting Principle Board Opinion No. 28-a, *Interim Disclosures about Fair Value of Financial Instruments*). FASB ASC 825 requires disclosures about fair value of financial instruments for interim reporting periods of publicly traded companies as well as in annual financial statements. FASB ASC 825 is effective for interim and annual periods ending after June 15, 2009, but entities may early adopt the FSP for the interim and annual periods ending after March 15, 2009. We adopted FASB ASC 825 during the quarter ended June 30, 2009 and the adoption did not have a significant impact on our consolidated financial position and results of operations.

In April 2009, the FASB issued ASC 320 (formerly FSP No. 115-2, *Recognition and Presentation of Other-Than-Temporary Impairments*). FASB ASC 320 amends the other-than-temporary impairment guidance to improve the presentation and disclosure of other-than-temporary impairments on debt and equity securities in the financial statements. FASB ASC 320 is effective for interim and annual periods ending after June 15, 2009, but entities may early adopt the FSP for the interim and annual periods ending after March 15, 2009. We adopted FASB ASC 320 during the quarter ended June 30, 2009 and the adoption did not have a significant impact on our consolidated financial position and results of operations.

In April 2009, the FASB issued ASC 805 (formerly FSP No. 141(R)-1, *Accounting for Assets Acquired and Liabilities Assumed in a Business Combination That Arise from Contingencies*). FASB ASC 805 amends and clarifies previous authoritative guidance, to address application issues on initial recognition and measurement, subsequent measurement and accounting, and disclosure of assets and liabilities arising from contingencies in a business combination. Under FASB ASC 805, an acquirer is required to recognize at fair value an asset acquired or liability assumed in a business combination that arises from a contingency if the acquisition date fair value can be determined during the measurement period. If the acquisition date fair value cannot be determined, the acquirer applies the recognition criteria in FASB ASC 450, (formerly SFAS No. 5, *Accounting for Contingencies*, and FIN 14, *Reasonable Estimation of the Amount of a Loss*), to determine whether the contingency should be recognized as of the acquisition

date or after it. We adopted FASB ASC 805 in the quarter ended March 31, 2009 and the adoption did not have a significant impact on our consolidated financial position and results of operations.

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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, 2009, an immediate adverse change of 10% in interest rates (e.g. 3.00% to 3.30%) would result in an immaterial decrease in the fair value of our available-for-sale securities.

Foreign Currency Risk

We have branch operations in Taiwan, Singapore and Korea and wholly-owned subsidiaries in Europe, Japan and China. 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, 2008 and 2009, we had sixteen and four forward contracts outstanding, respectively. The total notional contract value of these outstanding forward contracts at December 31, 2008 and 2009 was \$2.3 million and \$1.0 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.

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 Securities Exchange Act of 1934, as amended (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, 2009. Based on that evaluation, our

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management, including our principal executive and principal financial officers, concluded that our disclosure controls and procedures were effective as of December 31, 2009 at the reasonable assurance level.

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 our evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2009.

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.

Our consolidated financial statements as of and for the year ended December 31, 2009 have been audited by Ernst & Young LLP, our independent registered public accounting firm, in accordance with the standards of the Public Company Accounting Oversight Board (United States). Ernst & Young LLP has also audited our internal control over financial reporting as of December 31, 2009, as stated in its attestation report included elsewhere in this Annual Report on Form 10-K.

There have been no changes in the Company's internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) that occurred during the Company's quarter ended December 31, 2009 that have materially affected, or are reasonably likely to materially affect, its 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 19, 2010, 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.

Table of Contents**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 Firms appear on pages F-2 through F-4 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.

Exhibit No.	Description
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 Registrant's Schedule 13D filed 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 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 on December 21, 2007).
3.1	Restated Certificate of Incorporation of Registrant (incorporated 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 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 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 on August 1, 2007, No. 000-27965).
3.5	Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed on February 2, 2009, 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 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 on March 11, 2004, No. 000-30637).
- 10.1+ License Agreement, dated June 28, 1995, between the Registrant and Brown University Research Foundation (incorporated 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 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 by reference to Exhibit 10.15 to Registrant's quarterly report on Form 10-Q (SEC File No. 000-27965), filed on November 14, 2001).
- 10.4* Form of 1999 Stock Plan (incorporated 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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Exhibit No.	Description
10.5*	Form of 1999 Employee Stock Purchase Plan (incorporated by reference to Exhibit (10.6) 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 by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000) as amended August 20, 2009 (incorporated by reference to Exhibit 10.1 to Registrant's quarterly report on Form 10-Q, filed on November 6, 2009).
10.7*	Management Agreement, dated as of July 24, 2000 by and between Rudolph Technologies, Inc. and Steven R. Roth (incorporated by reference to Exhibit 10.14 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000) as amended August 20, 2009 (incorporated by reference to Exhibit 10.2 to Registrant's quarterly report on Form 10-Q, filed on November 6, 2009).
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 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 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 by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q (SEC File No. 000-27965), filed on November 5, 2004).
10.11*	Form of Restricted Stock Award pursuant to the Rudolph Technologies, Inc. 1999 Stock Plan (incorporated by reference to the Registrant's Current Report on Form 8-K filed on June 21, 2005).
10.12	Form of Company Shareholder Voting Agreement (incorporated by reference to Exhibit 99.2 to the Registrant's Schedule 13D filed on July 7, 2005).
10.13*	Rudolph Technologies, Inc. 2009 Stock Plan (incorporated by reference to Appendix A of the Registrant's revised Proxy Statement on Form DEFR14A, filed on May 8, 2009).
10.14*	Rudolph Technologies, Inc. 2009 Employee Stock Purchase Plan, as amended (incorporated by reference to Appendix B of the Registrant's revised Proxy Statement on Form DEFR14A, filed on May 8, 2009).
10.15*	Executive Change of Control Agreement, dated as of August 20, 2009, by and between Rudolph Technologies, Inc. and Nathan H. Little (incorporated by reference to Exhibit 10.3 to Registrant's quarterly report on Form 10-Q, filed on November 6, 2009).
14.1	Rudolph Technologies Code of Business Conduct and Ethics (incorporated 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 by reference to Exhibit 14.1 to Registrant's annual report on Form 10-K, filed on March 16, 2006).
21.1	Subsidiaries.
23.1	Consent of KPMG LLP, Independent Registered Public Accounting Firm.
23.2	Consent of Ernst & Young 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	

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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.

* Management contract, compensatory plan or arrangement.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

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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 accompanying consolidated statements of operations, stockholders' equity and comprehensive income (loss), and cash flows of Rudolph Technologies, Inc. and subsidiaries for the year ended December 31, 2007. In connection with our audit of the consolidated financial statements, we also have audited the consolidated financial statement schedule for the year ended December 31, 2007. 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 audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes 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 audit provides a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the results of operations and cash flows of Rudolph Technologies, Inc. and subsidiaries for the year 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.

/s/ KPMG LLP

Short Hills, New Jersey
March 3, 2008

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Report of Independent Registered Public Accounting Firm

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

We have audited the accompanying consolidated balance sheets of Rudolph Technologies, Inc. as of December 31, 2009 and 2008, and the related consolidated statements of operations, stockholder's equity and comprehensive income (loss), and cash flows for the two years in the period then ended December 31, 2009 and 2008. Our audit also included the financial statement schedule listed in the index at Item 15(a). These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and 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 from 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 audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Rudolph Technologies, Inc. at December 31, 2009 and 2008, and the consolidated results of its operations and its cash flows for each of the two years in the period ended December 31, 2009, 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 financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

As of January 1, 2009, Rudolph Technologies, Inc. adopted Accounting Standards Codification No. 805, Business Combinations, as discussed in Note 2 to the consolidated financial statements.

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, 2009, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 5, 2010, expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Metropark, New Jersey
March 5, 2010

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Report of Independent Registered Public Accounting Firm

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

We have audited Rudolph Technologies, Inc.'s internal control over financial reporting as of December 31, 2009, based on criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (the COSO criteria). 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 the accompanying Management's Report on Internal Control Over Financial Reporting. 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, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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

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

In our opinion, Rudolph Technologies, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2009, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Rudolph Technologies, Inc. as of December 31, 2009 and 2008, and the related consolidated statements of operations, stockholders equity and comprehensive income (loss), and cash flows for the two years in the period then ended December 31, 2009 and 2008 of Rudolph Technologies, Inc. and our report dated March 5, 2010 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Metropark, NJ

March 5, 2010

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

	December 31,	
	2008	2009
ASSETS		
Current Assets:		
Cash and cash equivalents	\$ 67,735	\$ 57,839
Marketable securities	10,549	3,080
Accounts receivable, less allowance of \$659 in 2008 and \$602 in 2009	21,764	35,312
Inventories	57,076	45,534
Income taxes receivable	4,698	3,501
Prepaid expenses and other current assets	1,626	1,125
Total current assets	163,448	146,391
Property, plant and equipment, net	19,053	12,841
Goodwill		3,282
Identifiable intangible assets, net	9,654	10,821
Capitalized software	1,774	1,237
Deferred income taxes	2,903	3,098
Other assets	600	533
Total assets	\$ 197,432	\$ 178,203
LIABILITIES AND STOCKHOLDERS EQUITY		
Current liabilities:		
Accounts payable	\$ 2,354	\$ 5,683
Accrued liabilities:		
Payroll and related expenses	2,805	3,163
Royalties	197	247
Warranty	1,813	700
Deferred revenue	4,422	6,877
Other current liabilities	4,169	2,940
Total current liabilities	15,760	19,610
Non-current liabilities	5,584	7,462
Total liabilities	21,344	27,072
Commitments and contingencies (Note 9)		
Stockholders' equity:		
Preferred stock, \$0.001 par value, 5,000 shares authorized, no shares issued and outstanding at December 31, 2008 and 2009		

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Common stock, \$0.001 par value, 50,000 shares authorized, 30,703 and 30,997 issued and outstanding at December 31, 2008 and 2009, respectively	31	31
Additional paid-in capital	383,510	387,486
Accumulated other comprehensive loss	(2,543)	(1,848)
Accumulated deficit	(204,910)	(234,538)
Total stockholders' equity	176,088	151,131
Total liabilities and stockholders' equity	\$ 197,432	\$ 178,203

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

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

	Year Ended December 31,		
	2007	2008	2009
Revenues	\$ 160,129	\$ 131,040	\$ 78,657
Cost of revenues	78,889	87,388	49,805
Gross profit	81,240	43,652	28,852
Operating expenses:			
Research and development	29,993	31,644	25,991
In-process research and development	1,000		
Selling, general and administrative	33,204	33,965	33,640
Impairment charge for goodwill and identifiable intangible assets		227,105	
Amortization	4,487	5,890	1,358
Total operating expenses	68,684	298,604	60,989
Operating income (loss)	12,556	(254,952)	(32,137)
Interest income and other, net	4,149	1,151	270
Income (loss) before provision (benefit) for income taxes	16,705	(253,801)	(31,867)
Provision (benefit) for income taxes	4,846	(4,115)	(2,239)
Net income (loss)	\$ 11,859	\$ (249,686)	\$ (29,628)
Earnings (loss) per share:			
Basic	\$ 0.41	\$ (8.16)	\$ (0.96)
Diluted	\$ 0.40	\$ (8.16)	\$ (0.96)
Weighted average number of shares outstanding:			
Basic	29,168	30,614	30,888
Diluted	29,312	30,614	30,888

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

Table of Contents**RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES****CONSOLIDATED STATEMENTS OF STOCKHOLDERS EQUITY
AND COMPREHENSIVE INCOME (LOSS)****For the years ended December 31, 2007, 2008 and 2009
(In thousands)**

	Common Stock		Additional	Accumulated Other	Retained Earnings	Total	Comprehensive Income (Loss)
	Shares	Amount	Paid-in Capital	Comprehensive Loss	(Accumulated Deficit)		
Balance at December 31, 2006	28,977	\$ 29	\$ 361,128	\$ (1,178)	\$ 32,897	\$ 392,876	
Issuance of shares through share-based compensation plans	196		1,344			1,344	
Net income					11,859	11,859	\$ 11,859
Adoption of ASC 740					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	
Issuance of shares through share-based compensation plans	223	1	219			220	
Net loss					(249,686)	(249,686)	\$ (249,686)
Share-based compensation			3,405			3,405	
Currency translation				(2,198)		(2,198)	(2,198)
Unrealized loss on investments				(131)		(131)	(131)
Comprehensive loss							\$ (252,015)
	30,703	31	383,510	(2,543)	(204,910)	176,088	

Balance at December 31, 2008							
Issuance of shares through share-based compensation plans	294		217			217	
Net loss				(29,628)		(29,628)	\$ (29,628)
Share-based compensation			3,759			3,759	
Currency translation				786		786	786
Unrealized loss on investments				(91)		(91)	(91)
Comprehensive loss							\$ (28,933)
Balance at December 31, 2009	30,997	\$ 31	\$ 387,486	\$ (1,848)	\$ (234,538)	\$ 151,131	

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

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

	Year Ended December 31,		
	2007	2008	2009
Cash flows from operating activities:			
Net income (loss)	\$ 11,859	\$ (249,686)	\$ (29,628)
Adjustments to reconcile net income (loss) to net cash and cash equivalents provided by operating activities:			
Impairment of goodwill and identifiable intangible assets		227,105	
Amortization	5,700	7,243	1,895
Depreciation	4,500	4,500	6,751
In-process research and development	1,000		
Foreign currency exchange (gain) loss	45	(2,547)	822
Net loss on sale of marketable securities		79	1
Share-based compensation	3,119	3,405	3,759
Provision for doubtful accounts and inventory valuation	496	14,569	4,775
Deferred income taxes	(3,314)	(2,449)	(217)
Change in operating assets and liabilities excluding effects of business combinations:			
Accounts receivable	21,401	31,290	(13,196)
Income taxes receivable	(1,089)	(4,164)	969
Inventories	(5,395)	(4,287)	6,922
Prepaid expenses and other assets	(2,339)	815	707
Accounts payable	(3,326)	(5,571)	3,232
Accrued liabilities	(3,958)	(2,471)	(1,227)
Income taxes payable	(537)		
Deferred revenue	(6,131)	(1,581)	1,619
Other current liabilities	(617)	(1,501)	(1,252)
Non-current liabilities	2,168	640	2,009
Net cash and cash equivalents provided by (used in) operating activities	23,582	15,389	(12,059)
Cash flows from investing activities:			
Purchases of marketable securities	(77,748)	(15,541)	(12,161)
Proceeds from sales of marketable securities	95,147	21,302	19,446
Purchases of property, plant and equipment	(1,007)	(2,966)	(587)
Capitalized software	(712)	(30)	
Purchase of business, net of cash acquired	(56,166)	(8,474)	(5,011)
Net cash and cash equivalents provided by (used in) investing activities	(40,486)	(5,709)	1,687
Cash flows from financing activities:			
Issuance of shares through share-based compensation plans	1,344	220	217

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Tax benefit for sale of shares through share-based compensation plans	148		
Net cash and cash equivalents provided by financing activities	1,492	220	217
Effect of exchange rate changes on cash and cash equivalents	353	415	259
Net increase (decrease) in cash and cash equivalents	(15,059)	10,315	(9,896)
Cash and cash equivalents at beginning of year	72,479	57,420	67,735
Cash and cash equivalents at end of year	\$ 57,420	\$ 67,735	\$ 57,839
Supplemental disclosure of cash flow information:			
Net cash paid (received) during the year for:			
Income taxes	\$ 8,170	\$ 1,945	\$ (3,062)
Non-cash investing activities:			
Acquisition costs for business combinations	\$ 1,315	\$	\$
Stock issued for business combinations	\$ 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 Korea, Taiwan and Singapore and wholly-owned sales and service subsidiaries in Europe, Japan, China and Minnesota. The Company operates in a single segment and supports a wide variety of applications in the areas of macro-defect detection and classification, diffusion, etch, lithography, CVD, PVD and CMP.

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. In the limited circumstances where 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 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 manufacturing

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

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

consolidation, 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.

For additional information on the Company's marketable securities, see Note 5 of Notes to the Consolidated Financial Statements.

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, if lower than cost.

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.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

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

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. 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 our 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, 2009.

For additional information on the Company's goodwill and other intangible assets, see Note 8 of Notes to the Consolidated Financial Statements.

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.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

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

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. 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.

For additional information on the Company's income taxes, see Note 13 of Notes to the Consolidated Financial Statements.

N. Translation of Foreign Currencies:

The Company has branch operations in Taiwan, Singapore and Korea and wholly-owned subsidiaries in Europe, Japan and China. Its 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 the Company's international systems sales are denominated in U.S. dollars with the exception of Japan and, as a result, it has relatively little exposure to foreign currency exchange risk with respect to these sales.

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. 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. The Company had accumulated exchange losses resulting from the translation of foreign operation financial statements of \$2,396 and \$1,610 as of December 31, 2008 and 2009, respectively.

O. Share-based Compensation:

The fair value of stock options is determined using the Black-Scholes valuation model. 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. 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.

For additional information on the Company's share-based compensation plans, see Note 11 of Notes to the Consolidated Financial Statements.

P. Research and Development and Software Development Costs:

Expenditures for research and development are expensed as incurred. Certain software product development costs incurred after technological feasibility has been established are capitalized and amortized, commencing upon

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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 costs. At December 31, 2008 and 2009, capitalized software development costs were \$1,774 and \$1,237, respectively. During the years ended December 31, 2007, 2008 and 2009, software development cost amortization totaled \$704, \$689 and \$537, respectively. During 2007 and 2008, the Company recorded write-downs of capitalized software of \$507 and \$664, respectively, in research and development expenses 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, 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, 2008 and 2009, these contracts included the future 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 U.S. dollar forward contracts and related fair values as of December 31, 2008 and 2009 were as follows:

	December 31,	
	2008	2009
Notional amount	\$ 2,322	\$ 1,042
Fair value of liability	\$ 226	\$ 3

The Company recognized a gain of \$278 with respect to forward contracts which matured during 2007. The Company recognized a loss of \$720 and \$116 with respect to forward contracts which matured during 2008 and 2009, respectively. The aggregate notional amount of these contracts was \$8,802, \$6,964 and \$2,469, for 2007, 2008 and 2009, respectively.

S. Recent Accounting Pronouncements:

In October 2009, the Financial Accounting Standards Board (FASB) issued Accounting Standard Update (ASU) No. 2009-14 on FASB Accounting Standards Codification (ASC 985), Software Certain Revenue Arrangements That

Include Software Elements-a consensus of the FASB Emerging Issues Task Force. The objective of this ASU is to clarify which revenue allocation and measurement guidance should be used for arrangements that contain both tangible products and software, in cases where the software is more than incidental to the tangible product as a whole. More specifically, if the software sold with or embedded within the tangible product is essential to the functionality of the tangible product, then this software as well as undelivered software elements that relate to this software are excluded from the scope of existing software revenue guidance, which is expected to decrease the amount of revenue deferred in these cases. This ASU is to be applied prospectively for revenue arrangements entered into or materially modified in fiscal years beginning on or after June 15, 2010, which for the Company is its fiscal year 2011. Early adoption is permitted, but this ASU must be adopted in the same

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period as, and use the same transition method that is used for, the ASU described in the following paragraph. The Company is currently evaluating the impact, if any, of this new accounting update on its consolidated financial statements.

In October 2009, the FASB issued ASU No. 2009-13 on FASB ASC 605, Revenue Recognition Multiple Deliverable Revenue Arrangements a consensus of the FASB Emerging Issues Task Force. The objective of this ASU is to address the accounting for multiple-deliverable arrangements to enable vendors to account for products or services (deliverables) separately rather than as a combined unit. Vendors often provide multiple products or services to their customers. Those deliverables are often provided at different points in time or over different time periods. This ASU provides amendments to the criteria in FASB Accounting Standards Codification (ASC) 605-25 for separating consideration in multiple-deliverable arrangements. The amendments in this ASU establish a selling price hierarchy for determining the selling price of a deliverable. The selling price used for each deliverable will be based on vendor specific objective evidence if available, third-party evidence if vendor-specific objective evidence is not available, or estimated selling price if neither vendor specific objective evidence nor third-party evidence is available. The amendments in this ASU also will replace the term fair value in the revenue allocation guidance with selling price to clarify that the allocation of revenue is based on entity-specific assumptions rather than assumptions of a marketplace participant. This update is effective for fiscal years beginning on or after June 15, 2010. The Company is currently evaluating the impact, if any, of this new accounting update on its consolidated financial statements.

In June 2009, the FASB issued ASC 105 (formerly, SFAS No. 168, Accounting Standards Codification and the Hierarchy of Generally Accepted Accounting Principles a replacement of FASB Statement No. 162), which states that the FASB ASC will become the source of authoritative accounting principles generally accepted in the United States of America (GAAP) recognized by the FASB to be applied by nongovernmental entities. Rules and interpretive releases of the SEC under authority of federal securities laws are also sources of authoritative GAAP for SEC registrants. FASB ASC 105 is effective for interim and annual periods ending after September 15, 2009. The Company adopted FASB ASC 105 during the quarter ended September 30, 2009 and the adoption did not have any effect on the Company s financial condition or results of operations.

In May 2009, the FASB issued ASC 855 (formerly SFAS No. 165, Subsequent Events). FASB ASC 855 is effective for interim and annual periods ending after June 15, 2009. FASB ASC 855 establishes general standards of accounting for, and disclosure of, events that occur after the balance sheet date but before financial statements are issued or are available to be issued. In particular, FASB ASC 855 establishes (i) the period after the balance sheet date during which management of a reporting entity should evaluate events or transactions that may occur for potential recognition or disclosure in the financial statements, (ii) the circumstances under which an entity should recognize events or transactions occurring after the balance sheet date in its financial statements and (iii) the disclosures that an entity should make about events or transactions that occurred after the balance sheet date. The Company has evaluated all subsequent events through the date of issuance of the Company s financial statements. The Company adopted FASB ASC 855 during the quarter ended June 30, 2009 and the adoption did not have any effect on the Company s financial condition or results of operations.

In April 2009, the FASB issued ASC 820 (formerly, FASB Staff Position (FSP) No. 157-4, Determining Fair Value When the Volume and Level of Activity for the Asset or Liability Have Significantly Decreased and Identifying Transactions That Are Not Orderly). FASB ASC 820 provides additional guidance for estimating fair value in

accordance with FASB ASC 820 when the volume and level of activity for the asset or liability have significantly decreased and requires that companies provide interim and annual disclosures of the inputs and valuation techniques used to measure fair value. FASB ASC 820 is effective for interim and annual reporting periods ending after June 15, 2009 and is to be applied prospectively. The Company adopted FASB ASC 820 during the quarter ended June 30, 2009 and the adoption did not have a significant impact on its consolidated financial position and results of operations.

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In April 2009, the FASB issued ASC 825 (formerly FSP No. 107-b and Accounting Principle Board Opinion No. 28-a, Interim Disclosures about Fair Value of Financial Instruments). FASB ASC 825 requires disclosures about fair value of financial instruments for interim reporting periods of publicly traded companies as well as in annual financial statements. FASB ASC 825 is effective for interim and annual periods ending after June 15, 2009, but entities may early adopt the FSP for the interim and annual periods ending after March 15, 2009. The Company adopted FASB ASC 825 during the quarter ended June 30, 2009 and the adoption did not have a significant impact on its consolidated financial position and results of operations.

In April 2009, the FASB issued ASC 320 (formerly FSP No. 115-2, Recognition and Presentation of Other-Than-Temporary Impairments). FASB ASC 320 amends the other-than-temporary impairment guidance to improve the presentation and disclosure of other-than-temporary impairments on debt and equity securities in the financial statements. FASB ASC 320 is effective for interim and annual periods ending after June 15, 2009, but entities may early adopt the FSP for the interim and annual periods ending after March 15, 2009. The Company adopted FASB ASC 320 during the quarter ended June 30, 2009 and the adoption did not have a significant impact on its consolidated financial position and results of operations.

In April 2009, the FASB issued ASC 805 (formerly FSP No. 141(R)-1, Accounting for Assets Acquired and Liabilities Assumed in a Business Combination That Arise from Contingencies). FASB ASC 805 amends and clarifies previous authoritative guidance, to address application issues on initial recognition and measurement, subsequent measurement and accounting, and disclosure of assets and liabilities arising from contingencies in a business combination. Under FASB ASC 805, an acquirer is required to recognize at fair value an asset acquired or liability assumed in a business combination that arises from a contingency if the acquisition date fair value can be determined during the measurement period. If the acquisition date fair value cannot be determined, the acquirer applies the recognition criteria in FASB ASC 450, (formerly SFAS No. 5, Accounting for Contingencies, and FIN 14, Reasonable Estimation of the Amount of a Loss), to determine whether the contingency should be recognized as of the acquisition date or after it. The Company adopted ASC 805 in the quarter ended March 31, 2009 and the adoption did not have a significant impact on its consolidated financial position and results of operations.

3. Business Combinations:

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 \$59,134 in cash and acquisition costs, of which \$57,897 was paid during 2007, and issued 1,307 shares of Company common stock for a total purchase price of \$73,168. The measurement date was determined to be the date the acquisition was

consummated since the number of shares to be distributed was not determinable until that date. The market price used to value the Rudolph shares issued as consideration for PCTA was \$10.73, which represents the average closing market price of Rudolph's common stock for the three day period ended December 18, 2007.

The Company 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

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(In thousands, except per share data)

Agreement. In addition, the Company agreed to assume the defense of and all obligations relating to certain litigation currently pending against Applied.

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 fair value of the assets acquired and liabilities assumed at the date of acquisition:

Accounts receivable	\$ 5,659
Inventories	9,631
Prepaid expenses and other current assets	61
Property, plant and equipment	1,122
Goodwill	46,175
Identifiable assets	16,200
Accounts payable and accrued liabilities	(5,521)
Deferred revenue	(159)
	\$ 73,168

The fair value of inventories included a step-up of \$2,252, of which \$1,691 was recognized in cost of revenues for the year ended December 31, 2009. 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	Expensed at acquisition date
	\$ 16,200	

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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 costs to complete this project consisted primarily of internal engineering labor costs and the project was completed in the first half of 2009.

Pro Forma Combined Results of Operations

The following unaudited pro forma consolidated financial information presents the combined results of operations of the Company 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, 2007 (Unaudited)
Revenues	\$ 194,262
Net income	\$ 13,213
Earnings per share:	
Basic	\$ 0.43
Diluted	\$ 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 acquired business is currently known as the Rudolph Technologies Wafers Scanner Product Group. The impact of the acquisition was not material to the Company s consolidated financial position or results of operations.

Adventa

On August 3, 2009, the Company announced that it had acquired Adventa Control Technologies, Inc. (Adventa), headquartered in Plano, Texas. The acquired business is currently known as the Rudolph Technologies Process Control Group. The impact of the acquisition was not material to the Company s consolidated financial position or results of operations.

4. Fair Value Measurements:

The Company applies a three-level valuation hierarchy for fair value measurements. This hierarchy prioritizes the inputs into three broad levels as follows. Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities. Level 2 inputs are quoted prices for similar assets and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the asset or liability. Level 3 inputs are unobservable inputs based on management's assumptions used to measure assets and liabilities at fair value. A financial asset or liability's fair value

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measurement classification within the hierarchy is determined based on the lowest level input that is significant to the fair value measurement.

The following tables provide the assets carried at fair value measured on a recurring basis as of December 31, 2008 and December 31, 2009:

	Carrying Value	Fair Value Measurements Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
December 31, 2008				
U.S. Treasury notes	\$ 219	\$ 219	\$	\$
Auction rate securities	361			361
All other marketable securities	9,969		9,969	
Foreign currency forward contracts	(226)	(226)		
Total	\$ 10,323	\$ (7)	\$ 9,969	\$ 361
December 31, 2009				
U.S. Treasury notes	\$ 212	\$ 212	\$	\$
Auction rate securities	248			248
All other marketable securities	2,620		2,620	
Foreign currency forward contracts	(3)	(3)		
Total	\$ 3,077	\$ 209	\$ 2,620	\$ 248

The Company's investments classified as Level 1 are based on quoted prices that are available in active markets. The forward foreign currency exchange contracts are primarily measured based on the foreign currency spot and forward rates quoted by the banks or foreign currency dealers. The U.S. Treasury Notes are measured based on quoted market prices.

Level 2 investments are valued using observable inputs to quoted market prices, benchmark yields, reported trades, broker/dealer quotes or alternative pricing sources with reasonable levels of price transparency. These investments, which are held by a custodian, include: corporate debt securities, government-sponsored enterprise and asset-backed securities. Investment prices are obtained from third party pricing providers, which models prices utilizing the above observable inputs, for each asset class.

Level 3 investments consist of auction rate securities for which the Company uses a discounted cashflow model to value these investments. This table presents a reconciliation for all assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (Level 3) for the year ended December 31, 2009:

	Fair Value Measurements Using Significant Unobservable Inputs (Level 3)
Balance at December 31, 2008	\$ 361
Unrealized losses in accumulated other comprehensive loss	(113)
Purchases, issuances, and settlements, net	
Balance at December 31, 2009	\$ 248

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(In thousands, except per share data)

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

See Note 5 for additional discussion regarding the fair value of the Company's marketable securities.

5. Marketable Securities:

The Company has evaluated its investment policies and 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. Net realized losses of \$0, \$79 and \$1 were included in the Consolidated Statement of Operations for 2007, 2008 and 2009, respectively. The Company records other-than-temporary impairment charges for its available-for-sale investments when it intends to sell the securities, it is more likely than not that it will be required to sell the securities before a recovery, or when it does not expect to recover the entire amortized cost basis of the securities. The cost of securities sold is based on the specific identification method.

As of December 31, 2009, the Company held one auction-rate security with a fair value of \$248. The underlying asset of the Company's auction-rate security consisted of a municipal bond with an auction reset feature. Due to auction failures in the marketplace, the Company will not have access to these funds unless (a) future auctions occur and are successful, (b) the security is called by the issuer, (c) the Company sells the security in an available secondary market, or (d) the underlying note matures. Currently, there are no active secondary markets. As of December 31, 2009, the Company has recorded a cumulative temporary unrealized impairment loss of \$252 within Accumulated other comprehensive loss based upon its assessment of the fair value of these securities. The Company believes that this impairment is temporary as it does not intend to sell these securities, the Company will not be required to sell these securities before recovery, and the Company expects to recover the amortized cost basis of these securities.

The Company has determined that the gross unrealized losses on its marketable securities at December 31, 2008 and 2009 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.

At December 31, 2008 and 2009, marketable securities are categorized as follows:

	Amortized Cost	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Fair Value
December 31, 2008				
Treasury notes and obligations of agencies	\$ 9,941	\$ 15	\$ (27)	\$ 9,929

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Tax-free auction rate securities	500			(139)	361
Asset-backed securities	257	2			259
Total marketable securities	\$ 10,698	\$ 17	\$ (166)	\$ 10,549	
December 31, 2009					
Treasury notes and obligations of agencies	\$ 2,819	\$ 13	\$	\$ 2,832	
Tax-free auction rate securities	500		(252)	248	
Total marketable securities	\$ 3,319	\$ 13	\$ (252)	\$ 3,080	

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(In thousands, except per share data)

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, 2008 and 2009:

	December 31, 2008		December 31, 2009	
	Amortized Cost	Fair Value	Amortized Cost	Fair Value
Due within one year	\$ 9,401	\$ 9,379	\$ 2,452	\$ 2,456
Due after one through five years	797	809	367	376
Due after five through ten years				
Due after ten years	500	361	500	248
Total marketable securities	\$ 10,698	\$ 10,549	\$ 3,319	\$ 3,080

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, 2008 and 2009.

	In Unrealized Loss Position for less than 12 Months		In Unrealized Loss Position for greater than 12 Months	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
December 31, 2008				
Treasury notes and obligations of agencies	\$ 6,301	\$ (27)	\$	\$
Tax-free auction rate securities	361	(139)		
Total marketable securities	\$ 6,662	\$ (166)	\$	\$
December 31, 2009				
Treasury notes and obligations of agencies	\$	\$	\$	\$
Tax-free auction rate securities			248	(252)
Total marketable securities	\$	\$	\$ 248	\$ (252)

See Note 4 for additional discussion regarding the fair value of the Company's marketable securities.

6. Inventories:

Inventories are comprised of the following:

	December 31,	
	2008	2009
Materials	\$ 23,821	\$ 19,343
Work-in-process	15,202	14,577
Finished goods	18,053	11,614
Total inventories	\$ 57,076	\$ 45,534

The Company has established reserves of \$11,631 and \$9,474 at December 31, 2008 and 2009, respectively, for slow moving and obsolete inventory. During 2008, the Company recorded a charge of \$14,124 for the write-down of inventory for excess parts, for older product lines and for parts that design and engineering advancements rendered obsolete. In 2008, the Company disposed of \$5,887 of inventory. During 2009, the Company recorded a

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(In thousands, except per share data)

charge in cost of revenues of \$4,832 for the write-down of inventory for excess parts, for older product lines and for parts that design and engineering advancements rendered obsolete. In 2009, the Company disposed of \$6,989 of inventory.

7. Property, Plant and Equipment:

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

	December 31,	
	2008	2009
Land and building	\$ 4,927	\$ 4,927
Machinery and equipment	16,647	13,382
Furniture and fixtures	2,710	2,730
Computer equipment	6,262	6,089
Leasehold improvements	6,986	6,102
	37,532	33,230
Accumulated depreciation	(18,479)	(20,389)
Total property, plant and equipment, net	\$ 19,053	\$ 12,841

Depreciation expense amounted to \$4,500, \$4,500 and \$6,751 for the years ended December 31, 2007, 2008, and 2009, respectively.

8. Identifiable Intangible Assets and Goodwill:*Identifiable Intangible Assets*

Identifiable intangible assets as of December 31, 2008 and 2009 are as follows:

	Gross Carrying Amount	Accumulated Amortization	Impairment	Net
December 31, 2008				
Developed technology	\$ 51,243	\$ 15,858	\$ 28,259	\$ 7,126
Customer and distributor relationships	7,300	1,766	4,810	724
Trade names	4,100	1,132	1,164	1,804

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Total identifiable intangible assets	\$	62,643	\$	18,756	\$	34,233	\$	9,654
December 31, 2009								
Developed technology	\$	53,390	\$	16,894	\$	28,259	\$	8,237
Customer and distributor relationships		7,436		1,864		4,810		762
Trade names		4,342		1,356		1,164		1,822
Total identifiable intangible assets	\$	65,168	\$	20,114	\$	34,233	\$	10,821

Intangible asset amortization expense amounted to \$4,476, \$5,890 and \$1,358 for the years ended December 31, 2007, 2008 and 2009, respectively. Assuming no change in the gross carrying value of identifiable intangible assets and estimated lives, estimated amortization expense amounts to \$1,651 for 2010, \$1,548 for 2011, \$1,548 for 2012, \$1,548 for 2013, and \$1,338 for 2014.

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(In thousands, except per share data)*Identifiable Intangible Assets Impairment*

In connection with the goodwill impairment test as of October 31, 2008, the Company determined that its identifiable acquired intangible assets were impaired. The determination was based on the carrying values exceeding the future undiscounted cash flows and fair value attributable to such intangible assets. As a result, the Company recorded an impairment charge of \$34.2 million, which represents the difference between the estimated fair values of these long-lived assets as compared to their carrying values. Fair values were determined based upon market conditions, the relief from royalty approach which utilized cash flow projections, and other factors.

Goodwill

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

Balance as of December 31, 2007	\$ 188,832
PCTA acquisition	2,981
Tax adjustments related to prior acquisition	1,059
Goodwill impairment	(192,872)
Balance as of December 31, 2008	
Adventa acquisition	3,282
Balance as of December 31, 2009	\$ 3,282

Goodwill Impairment

The Company tests goodwill for impairment annually and when an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying value.

During October 2008, the Company experienced a significant decline in its stock price. As a result of the decline in stock price, the Company's market capitalization plus an implied control premium fell significantly below the recorded value of its consolidated net assets as of October 31, 2008. In performing the goodwill impairment test, the Company used current market capitalization, control premiums, discounted cash flows and other factors as the best evidence of fair value. The impairment test resulted in no value attributable to the Company's goodwill and accordingly, the Company wrote off all of its \$192.9 million of goodwill as of October 31, 2008.

9. 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.

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Table of Contents**RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES****NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)**
(In thousands, except per share data)*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,		
	2007	2008	2009
Balance, beginning of the year	\$ 2,171	\$ 2,365	\$ 1,813
Accruals	2,669	1,868	894
Warranty liability assumed in merger	532	215	
Usage	(3,007)	(2,635)	(2,007)
Balance, end of the year	\$ 2,365	\$ 1,813	\$ 700

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.

Lease Agreements

The Company rents space for its manufacturing and service operations and sales offices, which expire through 2018. Total rent expense for these facilities amounted to \$2,264, \$2,821 and \$2,720 for the years ended December 31, 2007, 2008 and 2009, respectively.

The Company also leases certain equipment pursuant to operating leases, which expire through 2013. Rent expense related to these leases amounted to \$171, \$148 and \$122 for the years ended December 31, 2007, 2008 and 2009, respectively.

Total future minimum lease payments under noncancelable operating leases as of December 31, 2009 amounted to \$2,791 for 2010, \$2,305 for 2011, \$1,743 for 2012, \$1,453 for 2013, \$1,493 for 2014 and \$3,521 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 \$1,389, \$838 and \$279 for the years ended December 31, 2007, 2008 and 2009, respectively.

Open and Committed Purchase Orders

The Company has open and committed purchase orders of \$16,868 as of December 31, 2009.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

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

10. 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.

11. 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.

The Company established the 1999 Stock Plan (the 1999 Plan) effective August 31, 1999. The 1999 Plan provided 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 vested over a five-year period and expired ten years from the date of grant. Restricted stock units granted under the 1999 Plan typically vested over a five-year period for employees and one year for directors. Restricted stock units granted to employees had time based vesting or performance and time based vesting. In the fourth quarter of 2009, the 1999 Plan expired and as of December 31, 2008 and 2009, there were 1,562 and no shares of common stock reserved for future grants under the 1999 Plan, respectively.

The Company established the 2009 Stock Plan (the 2009 Plan) effective November 1, 2009. The 2009 Plan provides for the grant of 3,300 stock options and stock purchase rights 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. As the 1999 Plan expired in the fourth quarter of 2009, shares of common stock reserved for future grants of 753 from the 1999 Plan were carried forward into the allocated balance of the 2009 Plan. Options granted under the 2009 Plan typically grade vest over a five-year period and expire ten years from the date of grant. Restricted stock units granted under the 2009 Plan typically vest over a five-year period for employees and one year for directors. Restricted stock units granted to

employees have time based vesting or performance and time based vesting. As of December 31, 2009, there were 4,050 shares of common stock reserved for future grants under the 2009 Plan.

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

The following table reflects share-based compensation expense by type of award:

	Year Ended December 31,		
	2007	2008	2009
Share-based compensation expense:			
Stock options	\$ 721	\$ 508	\$ 453
Restricted stock units	2,398	2,897	3,306
Total share-based compensation	3,119	3,405	3,759
Tax effect on share-based compensation	1,279	1,396	1,541
Net effect on net income	\$ 1,840	\$ 2,009	\$ 2,218
Tax effect on:			
Cash flows from financing activities	\$ 148	\$	\$
Effect on earnings per share basic	\$ (0.06)	\$ (0.07)	\$ (0.07)
Effect on earnings per share diluted	\$ (0.06)	\$ (0.07)	\$ (0.07)

Valuation Assumptions for Stock Options

For the years ended, December 31, 2007 and 2008, there were no stock options granted. For year ended, December 31, 2009, there were 397 stock options granted. The fair value of each option was estimated on the date of grant using the Black-Scholes option-pricing model with the following assumptions:

	Year Ended
	December 31, 2009
Expected life (years)	4.9
Expected volatility	82.0%
Expected dividend yield	0.0%
Risk-free interest rate	2.0%
Weighted average fair value per option	\$ 4.50

Table of Contents**RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES****NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)**
(In thousands, except per share data)*Stock Option Activity*

A summary of the Company's stock option activity with respect to the years ended December 31, 2007, 2008 and 2009 follows:

	Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
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	2,755	21.27		
Granted				
Exercised	(11)	1.95		
Expired	(425)	22.52		
Forfeited	(12)	15.96		
Outstanding at December 31, 2008	2,307	21.16		
Granted	397	6.88		
Exercised	(14)	3.07		
Expired	(485)	16.68		
Forfeited	(17)	11.96		
Outstanding at December 31, 2009	2,188	\$ 19.75	4.0	\$ 36
Vested or expected to vest at December 31, 2009	2,163	\$ 19.89	4.0	\$ 36
Exercisable at December 31, 2009	1,773	\$ 22.64	2.8	\$ 36

The total intrinsic value of the stock options exercised during 2007, 2008 and 2009 was \$506, \$87 and \$41, respectively. In connection with these exercises, the tax benefits realized by the Company for 2007, 2008 and 2009 were \$191, \$0 and \$0, respectively.

The options outstanding and exercisable at December 31, 2009 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
\$ 3.55 - \$ 9.32	446	8.5	\$ 6.97	56	\$ 7.58
\$10.00 - \$15.48	460	4.1	\$ 13.51	439	\$ 13.44
\$15.55 - \$21.13	449	3.5	\$ 17.38	445	\$ 17.39
\$21.78 - \$26.20	451	2.7	\$ 24.41	451	\$ 24.41
\$26.75 - \$50.30	382	1.0	\$ 39.41	382	\$ 39.41
\$ 3.55 - \$50.30	2,188	4.0	\$ 19.75	1,773	\$ 22.64

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

As of December 31, 2009, there was \$1,497 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 3.1 years.

Restricted Stock Unit Activity

A summary of the Company's restricted stock unit activity with respect to the years ended December 31, 2007, 2008 and 2009 follows:

	Number of Shares	Weighted Average Grant Date Fair Value
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	680	\$ 16.08
Granted	334	\$ 7.53
Vested	(185)	\$ 14.77
Forfeited	(100)	\$ 14.60
Nonvested at December 31, 2008	729	\$ 12.70
Granted	919	\$ 4.86
Vested	(237)	\$ 11.48
Forfeited	(39)	\$ 10.40
Nonvested at December 31, 2009	1,372	\$ 7.72

As of December 31, 2009, there was \$7,183 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 2.8 years.

Employee Stock Purchase Plan

The Company established an Employee Stock Purchase Plan (the "ESPP") effective November 1, 2009. The Company's prior employee stock purchase plan, effective August 31, 1999, expired in the fourth quarter of 2009. 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 Company common stock. The price the employee must pay for each share of stock will be 95% of the fair market value of Company 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 FASB ASC 718. No stock-based compensation expense for the ESPP was recorded for the years ended

December 31, 2007, 2008 and 2009. As of December 31, 2008 and 2009, there were 2,273 and 300 shares available for issuance under the ESPP, respectively.

401(k) Savings Plan

The Company has a 401(k) savings plan that allows employees to contribute up to 100% of their annual compensation to the Plan on a pre-tax or after tax basis, 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. The Company temporarily suspended its matching contributions to the plan for the six months ended December 31, 2009. The Company reinstated the matching contributions to the plan effective January 1,

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

2010. Company matching contributions to the plan totaled \$746, \$899 and \$340 for the years ended December 31, 2007, 2008 and 2009, 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, 2007, 2008 and 2009.

12. Interest Income and Other, Net:

	Year Ended December 31,		
	2007	2008	2009
Interest income	\$ 4,143	\$ 1,230	\$ 271
Realized losses on sale of marketable securities		(79)	(1)
Rental income	6		
Total interest income and other, net	\$ 4,149	\$ 1,151	\$ 270

13. Income Taxes:

The components of income tax expense are as follows:

	Year Ended December 31,		
	2007	2008	2009
Current:			
Federal	\$ 3,827	\$ (3,985)	\$ (2,640)
State	939	11	(46)
Foreign	3,395	2,308	230
	8,161	(1,666)	(2,456)
Deferred:			
Federal	(2,507)	(3,155)	157
State	(674)	572	37
Foreign	(134)	134	23
	(3,315)	(2,449)	217

Total income tax expense (benefit)	\$ 4,846	\$ (4,115)	\$ (2,239)
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Income before income tax of \$2,856 and \$13,849 was generated by domestic and foreign operations, respectively, in 2007. Income (loss) before income tax of \$(263,081) and \$9,280 was generated by domestic and foreign operations, respectively, in 2008. Income (loss) before income tax of \$(32,123) and \$256 was generated by domestic and foreign operations, respectively, in 2009.

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

Deferred tax assets and liabilities are comprised of the following:

	December 31,	
	2008	2009
Research and development credit carryforward	\$ 6,066	\$ 7,445
Reserves and accruals not currently deductible	1,149	1,493
Deferred revenue	1,507	1,015
Domestic net operating loss carryforwards	358	7,393
Depreciation	468	759
Capital losses	493	497
Foreign net operating loss and credit carryforwards	899	3,935
Intangibles	23,045	17,379
Tax deductible transaction costs	648	601
Share-based compensation	1,238	114
Inventory obsolescence reserve	5,754	5,098
Other	563	668
Gross deferred tax assets	42,188	46,397
Valuation allowance for deferred tax assets	(36,491)	(43,267)
Deferred tax assets after valuation allowance	5,697	3,130
Intangibles	(2,593)	
Other	(201)	(32)
Gross deferred tax liabilities	(2,794)	(32)
Net deferred tax assets	\$ 2,903	\$ 3,098

At December 31, 2008 and 2009, we had valuation allowances of \$36,491 and \$43,267 on certain of our deferred tax assets to reflect the deferred tax asset at the net amount that is more likely than not to be realized. Valuation allowances have been recorded on substantially all of the Company's deferred tax assets as of December 31, 2008 and 2009, except for \$2,896 and \$3,094 of research and development credits which are reserved for in the Company's ASC 740 provision and \$7 and \$4 for alternative minimum tax credits, as the Company has incurred cumulative losses. The Company computes cumulative losses for these purposes by adjusting pretax results for permanent items.

Table of Contents**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 35% for the years ended December 31, 2007, 2008 and 2009 to income before provision for income taxes as follows:

	Year Ended December 31,		
	2007	2008	2009
Federal income tax provision at statutory rate	\$ 5,847	\$ (88,830)	\$ (11,154)
State taxes, net of federal effect	306	(1,789)	(904)
Non-deductible goodwill impairment charges		50,440	
Foreign taxes net of federal effect		1,342	525
In-process research and development write-off	350		
Research tax credit	(992)	(419)	(37)
Domestic manufacturing benefit	(279)		
Change in valuation allowance for deferred tax assets	331	35,196	8,312
True up of prior year benefit	(531)	(45)	580
Other	(186)	(10)	439
Provision (benefit) for income taxes	\$ 4,846	\$ (4,115)	\$ (2,239)
Effective tax rate	29%	2%	7%

In assessing the realizability of deferred tax assets, the Company uses a more likely than not standard. If it is determined that it is more likely than not that deferred tax assets will not be realized, a valuation allowance must be established against the deferred tax assets. The ultimate realization of the assets is dependent on the generation of future taxable income during the periods in which the associated temporary differences become deductible. Management considers the scheduled reversal of deferred income tax liabilities, projected future taxable income and tax planning strategies when making this assessment.

At December 31, 2009, the Company had federal, state and foreign net operating loss carryforwards of \$16,738, \$26,919 and \$1,631, respectively. The net operating loss carryforwards expire on various dates through December 31, 2029. Utilization of the net operating loss carry forwards may be subject to an annual limitation in the event of a change in ownership in future years as defined by Section 382 of the Internal Revenue Code and similar state provisions. At December 31, 2009, the Company had federal and state research & development credits and foreign tax credit carryforwards of \$5,601, \$2,860 and \$3,243, respectively. The federal research & development credits are set to expire at various dates through December 31, 2029. The state research & development credits are set to expire at various dates through December 21, 2023. The foreign tax credit is set to expire at various dates through December 31, 2017.

The total amount of unrecognized tax benefits were as follows:

	2007	December 31, 2008	2009
Unrecognized tax benefits, opening balance	\$ 4,552	\$ 5,875	\$ 5,967
Gross increases tax positions in prior period	635	700	(71)
Gross increases current-period tax positions	1,301	225	68
Lapse of statute of limitations	(613)	(833)	(433)
Unrecognized tax benefits, ending balance	\$ 5,875	\$ 5,967	\$ 5,531

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

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

Included in the balance of unrecognized tax benefits at December 31, 2008 and 2009 are unrecognized tax benefits of \$5,967 and \$5,531, of which \$3,306 and \$3,245, would be reflected as an adjustment to income tax expense if recognized, respectively. It is expected that the amount of unrecognized tax benefits will change in the next 12 months; however, we do not expect the change to have a significant impact on our results of operations or financial position.

The Company recognizes accrued interest and penalties related to unrecognized tax benefits in income tax expense. During the years ended December 31, 2007, 2008 and 2009, the Company recognized approximately \$33, \$37 and \$16 in interest and penalties expense associated with uncertain tax positions, respectively. As of December 31, 2008 and 2009, the Company had accrued interest and penalties expense related to unrecognized tax benefits of \$143 and \$170, respectively.

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, 2006 through December 31, 2008. The Company is currently under examination by the State of Minnesota for tax years 2005 through 2007. In 2009, the State of New Jersey closed its audit for the years 2005 through 2007 without any material adjustments. The Company has not been contacted by any other U.S. state, local or foreign tax authority for all open tax periods beginning after December 31, 2004.

The Workers, Homeownership, and Business Assistance Act of 2009 was signed on November 6, 2009, under which, the Company is able to carryback its 2009 net operating loss five years to previously profitable years that were not available to the Company for carryback prior to the new tax legislation. The Company intends to carry a portion of its 2009 federal loss back and expects to receive refunds totaling \$3,120 in 2010.

14. Manufacturing Consolidation:

Budd Lake, New Jersey, Facility

During the three months ended December 31, 2009, the Company initiated a consolidation of a portion of its facility in Budd Lake, NJ and will move the New Jersey manufacturing operations to its facility in Bloomington, MN. In connection with this consolidation, the Company recorded a total charge of \$6,449, including \$4,312 for asset write-downs, \$1,949 for lease termination charges and \$188 for employee termination costs, related to the Company's manufacturing facility. These charges were recorded in cost of revenues and selling, general and administrative expenses for \$2,860 and \$3,589, respectively.

The Company expects the total cost of this manufacturing consolidation to range between \$7,000 to \$9,000 through its expected completion in 2010. The following table sets forth the Company's reserve as of December 31, 2009 relating to its consolidation of its manufacturing operations in Budd Lake, NJ, and reflects the activity affecting the reserve for the year then ended.

Year Ended December 31, 2009
Payments

	Beginning Reserve Balance	Charged to Costs and Expenses	and Other	Ending Reserve Balance
Asset write-down	\$	\$ 4,312	\$ (4,312)	\$
Employee terminations		188	(29)	159
Manufacturing capacity		1,949		1,949
	\$	\$ 6,449	\$ (4,341)	\$ 2,108

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Table of Contents**RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES****NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)**
(In thousands, except per share data)**15. Segment Reporting and Geographic Information:**

The Company reports one reportable segment. 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 is engaged in the design, development, and manufacture of high-performance control metrology, defect inspection and data analysis systems used by semiconductor device manufacturers. The Company and its subsidiaries currently operate in a single reportable segment: the design, development, manufacture, sale and service of process control systems used in semiconductor device manufacturing. The chief operating decision maker allocates resources and assesses performance of the business and other activities at the reporting segment level.

The following table lists the different sources of revenue:

	Year Ended December 31,					
	2007		2008		2009	
Systems:						
Inspection	\$ 86,196	53%	\$ 73,465	56%	\$ 38,027	48%
Metrology	34,738	22	21,118	16	8,921	11
Parts	15,261	10	20,801	16	15,428	20
Services	11,354	7	11,246	9	9,590	12
Software licensing	12,580	8	4,410	3	6,691	9
Total revenue	\$ 160,129	100%	\$ 131,040	100%	\$ 78,657	100%

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,		
	2007	2008	2009
Revenues from third parties:			
United States	\$ 36,710	\$ 30,744	\$ 21,673
Asia	93,631	74,661	47,883
Europe	29,788	25,635	9,101
Total	\$ 160,129	\$ 131,040	\$ 78,657

One customer represented 12%, 11% and 14% of revenue for the years ended December 31, 2007, 2008 and 2009, respectively. The accounts receivable of that customer totaled \$1,680, \$1,258 and \$2,582 at December 31, 2007, 2008 and 2009, respectively. No other customer was above 10% of revenue for the years ended December 31, 2007, 2008 or 2009.

Substantially all of the Company's assets are within the United States of America.

16. Earnings (Loss) Per Share:

Basic earnings (loss) per share is calculated using the weighted average number of shares of common stock outstanding during the period. Diluted earnings (loss) per share is computed in the same manner and also gives effect to all dilutive common equivalent shares outstanding during the period. 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. For the year ended December 31, 2008, all outstanding stock options and restricted stock units totaling 2,307 and 729, respectively, were excluded from the computation of

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(In thousands, except per share data)

diluted loss per share because the effect in the period would be anti-dilutive. For the year ended December 31, 2009, all outstanding stock options and restricted stock units totaling 2,188 and 1,372, respectively, were excluded from the computation of diluted loss per share because the effect in the period would be anti-dilutive

The computations of basic and diluted loss per share for the years ended December 31, 2007, 2008, and 2009 are as follows:

	Income (Numerator)	Shares (Denominator)	Per-Share Amount
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
For the year ended December 31, 2008			
Basic loss per share:			
Net loss	\$ (249,686)	30,614	\$ (8.16)
Effect of dilutive stock options and restricted stock units			
Diluted loss per share:			
Net loss	\$ (249,686)	30,614	\$ (8.16)
For the year ended December 31, 2009			
Basic loss per share:			
Net loss	\$ (29,628)	30,888	\$ (0.96)
Effect of dilutive stock options and restricted stock units			
Diluted loss per share:			
Net loss	\$ (29,628)	30,888	\$ (0.96)

17. Share Repurchase Program

In July 2008, the Board of Directors authorized a share repurchase program of up to 3,000 shares of the Company's common stock. As of the time of filing this Annual Report on Form 10-K, the Company has not purchased any shares under this program.

18. Subsequent Events

The Company has evaluated all subsequent events through March 5, 2010, which represents the filing date of this Form 10-K with the Securities and Exchange Commission, to ensure that this Form 10-K includes appropriate disclosure of events both recognized in the financial statements as of December 31, 2009, and events which occurred subsequent to December 31, 2009 but were not recognized in the financial statements. As of March 5, 2010, there were no subsequent events which required recognition or disclosure.

19. Quarterly Consolidated Financial Data (unaudited):

The following tables present certain unaudited consolidated quarterly financial information for each of the eight quarters ended December 31, 2009. In the opinion of the Company's management, this quarterly information

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(In thousands, except per share data)

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. The 2008 fourth quarter reflects a charge of \$227,105 for the impairment of goodwill and identifiable intangible assets. Other 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, 2008	June 30, 2008	September 30, 2008	December 31, 2008	
Revenues	\$ 37,210	\$ 38,416	\$ 38,986	\$ 16,428	\$ 131,040
Gross profit	15,115	17,721	16,806	(5,990)	43,652
Loss before income taxes	(3,063)	(2,814)	(878)	(247,046)	(253,801)
Net loss	(1,646)	(1,985)	(448)	(245,607)	(249,686)
Loss per share:					
Basic	\$ (0.05)	\$ (0.06)	\$ (0.01)	\$ (7.96)	\$ (8.16)
Diluted	\$ (0.05)	\$ (0.06)	\$ (0.01)	\$ (7.96)	\$ (8.16)
Weighted average number of shares outstanding:					
Basic	30,533	30,669	30,781	30,842	30,614
Diluted	30,533	30,669	30,781	30,842	30,614

	Quarters Ended				Total
	March 31, 2009	June 30, 2009	September 30, 2009	December 31, 2009	
Revenues	\$ 11,061	\$ 15,341	\$ 23,330	\$ 28,925	\$ 78,657
Gross profit	2,284	5,406	9,473	11,689	28,852
Loss before income taxes	(10,958)	(8,669)	(5,574)	(6,666)	(31,867)
Net loss	(10,054)	(8,625)	(4,835)	(6,114)	(29,628)
Loss per share:					
Basic	\$ (0.33)	\$ (0.28)	\$ (0.16)	\$ (0.20)	\$ (0.96)
Diluted	\$ (0.33)	\$ (0.28)	\$ (0.16)	\$ (0.20)	\$ (0.96)
Weighted average number of shares outstanding:					
Basic	30,788	30,957	31,109	30,990	30,888

Diluted	30,788	30,957	31,109	30,990	30,888
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Table of Contents**RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES****SCHEDULE OF VALUATION AND QUALIFYING ACCOUNTS**

(In thousands)

Column A	Column B	Column C		Column D	Column E
Description	Balance at Beginning of Period	Charged to (Recovery of) Costs and Expense	Charged to Other Accounts (net)	Deductions	Balance at End of Period
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
Year 2008:					
Allowance for doubtful accounts	\$ 214	\$ 445	\$	\$	\$ 659
Inventory valuation	3,394	14,124		5,887	11,631
Warranty	2,365	1,868	215	2,635	1,813
Deferred tax valuation allowance	1,295	35,196			36,491
Year 2009:					
Allowance for doubtful accounts	\$ 659	\$ (57)	\$	\$	\$ 602
Inventory valuation	11,631	4,832		6,989	9,474
Warranty	1,813	894		2,007	700
Deferred tax valuation allowance	36,491	8,312	(853)	683	43,267

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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 5, 2010

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.

Signature	Title	Date
<i>/s/ Paul F. Mclaughlin</i> Paul F. Mclaughlin	Chairman and Chief Executive Officer	March 5, 2010
<i>/s/ Steven R. Roth</i> Steven R. Roth	Senior Vice President, Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	March 5, 2010
<i>/s/ Leo Berlinghieri</i> Leo Berlinghieri	Director	March 5, 2010
<i>/s/ Daniel H. Berry</i> Daniel H. Berry	Director	March 5, 2010
<i>/s/ Thomas G. Greig</i> Thomas G. Greig	Director	March 5, 2010
<i>/s/ Richard F. Spanier</i> Richard F. Spanier	Director	March 5, 2010
<i>/s/ Aubrey C. Tobey</i> Aubrey C. Tobey	Director	March 5, 2010

/s/ John R. Whitten

Director

March 5, 2010

John R. Whitten

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Exhibit No.	Description
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 Registrant's Schedule 13D filed 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 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 on December 21, 2007).
3.1	Restated Certificate of Incorporation of Registrant (incorporated 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 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 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 on August 1, 2007, No. 000-27965).
3.5	Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed on February 2, 2009, 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 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 on March 11, 2004, No. 000-30637).
10.1+	License Agreement, dated June 28, 1995, between the Registrant and Brown University Research Foundation (incorporated 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 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 by reference to Exhibit 10.15 to Registrant's quarterly report on Form 10-Q (SEC File No. 000-27965), filed on November 14, 2001).
10.4*	Form of 1999 Stock Plan (incorporated 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)
10.5*	Form of 1999 Employee Stock Purchase Plan (incorporated by reference to Exhibit (10.6) 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 by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000) as amended August 20, 2009 (incorporated by reference to

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- Exhibit 10.1 to Registrant's quarterly report on Form 10-Q, filed on November 6, 2009).
- 10.7* Management Agreement, dated as of July 24, 2000 by and between Rudolph Technologies, Inc. and Steven R. Roth (incorporated by reference to Exhibit 10.14 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000) as amended August 20, 2009 (incorporated by reference to Exhibit 10.2 to Registrant's quarterly report on Form 10-Q, filed on November 6, 2009).
- 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 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).
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Exhibit No.	Description
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 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 by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q (SEC File No. 000-27965), filed on November 5, 2004).
10.11*	Form of Restricted Stock Award pursuant to the Rudolph Technologies, Inc. 1999 Stock Plan (incorporated by reference to the Registrant's Current Report on Form 8-K filed on June 21, 2005).
10.12	Form of Company Shareholder Voting Agreement (incorporated by reference to Exhibit 99.2 to the Registrant's Schedule 13D filed on July 7, 2005).
10.13*	Rudolph Technologies, Inc. 2009 Stock Plan (incorporated by reference to Appendix A of the Registrant's revised Proxy Statement on Form DEF14A, filed on May 8, 2009).
10.14*	Rudolph Technologies, Inc. 2009 Employee Stock Purchase Plan, as amended (incorporated by reference to Appendix B of the Registrant's revised Proxy Statement on Form DEF14A, filed on May 8, 2009).
10.15*	Executive Change of Control Agreement, dated as of August 20, 2009, by and between Rudolph Technologies, Inc. and Nathan H. Little (incorporated by reference to Exhibit 10.3 to Registrant's quarterly report on Form 10-Q, filed on November 6, 2009).
14.1	Rudolph Technologies Code of Business Conduct and Ethics (incorporated 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 by reference to Exhibit 14.1 to Registrant's annual report on Form 10-K, filed on March 16, 2006).
21.1	Subsidiaries.
23.1	Consent of KPMG LLP, Independent Registered Public Accounting Firm.
23.2	Consent of Ernst & Young 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.

* Management contract, compensatory plan or arrangement.