RUDOLPH TECHNOLOGIES INC
Form 10-K/A
June 24, 2011
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K/A
Amendment No. 1

(MARK ONE)

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

For the Fiscal Year Ended December 31, 2010

OR

o 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 o No x
Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes o No x
Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No o
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 o No o

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

Indicate by check mark whether the registrant is 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 o	Accelerated filer x	Non-accelerated filer o (Do not check if a smaller reporting company)	Smaller reporting company o

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

The aggregate market value of the voting stock held by non-affiliates of the registrant based on the closing price of the registrant's stock price on June 30, 2010 of $7.55 was approximately $218,505,448.

The registrant had 31,443,540 shares of Common Stock outstanding as of February 11, 2011.

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 25, 2011.

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Explanatory Note

This amendment to the Rudolph Technologies, Inc. Annual Report on Form 10-K for the year ended December 31, 2010 filed with the Securities and Exchange Commission on February 28, 2011 (the "Original Filing") is being filed solely to revise each Report of Independent Registered Public Accounting Firm, set forth on pages F-2 and F-3 of the Original Filing (together, the "Reports"), contained in the Original Filing, and Exhibit 23.1 to the Original Filing (Consent of Independent Registered Public Accounting Firm), to correct the references therein to the date of the Reports from February 25, 2011 to February 28, 2011. As a result of this amendment, the Company is filing as exhibits to this amendment updated certifications required under Sections 302 and 906 of the Sarbanes-Oxley Act of 2002, dated as of the date of this amendment.

Other than as described above, there have been no changes to any of the financial or other information contained in, or any of the exhibits to, the Original Filing, nor have the disclosures contained therein been updated to reflect any events which occurred at a date subsequent to the date of the Original Filing.

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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. You 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 microelectronics device manufacturers. We provide yield management solutions used in both wafer processing and final manufacturing through a family of standalone systems for macro-defect inspection, test systems, and transparent and opaque thin film measurements. All of these systems feature sophisticated software and production-worthy automation. In addition, our advanced process control portfolio includes powerful solutions to enhance productivity and achieve significant cost savings. Rudolph systems are backed by worldwide customer service and applications support.

The acquisition of selected assets related to MKS Instruments' Yield Dynamics software business was announced on August 11, 2010. The products and technology included patented analytical techniques for yield improvement that are complementary to Rudolph's existing yield management and process control portfolio. Over 30 engineering and applications personnel joined Rudolph following the closing of the transaction.

In March 2010, the John P. Kummer Group became Rudolph's distribution partner for our probe card test and analysis products in Europe. This followed with our appointment of STAr Technologies as an authorized vendor for probe card interfaces in Asia. Both of these companies have increased our presence in these growing markets.

Inspection Systems. Chip manufacturers deploy advanced macro-defect inspection throughout the fab to monitor key process steps, gather process-enhancing information and ultimately, lower manufacturing costs. Field-established tools such as the AXi™ and NSX® inspection systems 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 and multiple inspection resolutions. In addition to wafer frontside inspection, Rudolph's innovative Explorer® Inspection Cluster incorporates wafer edge and backside inspection in one integrated platform to enhance productivity and continuously improve fab yield. Using products such as Discover® and Genesis® software, the vast amount of data gathered through automated inspection can be analyzed and classified to determine trends that ultimately affect yield.

Metrology Systems. Rudolph's patented transparent film technology uses up to four lasers operating simultaneously at multiple angles and multiple wavelengths, providing powerful analysis and measurement capabilities. 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.

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Rudolph's S3000S™ System employs 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, the MetaPULSE® System gives customers the ability 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 Software. Rudolph has a comprehensive offering of total process control software solutions for semiconductor, solar and LED manufacturing. We provide a wide range of advanced process control solutions, all designed to improve factory profitability, including run-to-run control, fault detection, classification and tool automation. Rudolph is the #1 provider of Process Control Software in the semiconductor industry.

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.

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's 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

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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 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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INSPECTION & TEST SYSTEMS

Product	First Introduced	Functionality	Type of Fab Wafer Processing	Final Manufacturing
AXi™ Inspection Module	2003	— 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™ Inspection Module	2003	— 2D defect detection of the wafer's edge — Metrology of edge feature — Incorporated into the Explorer Cluster	X	X
B30™ Inspection Module	2003	— 2D defect detection of the wafer's backside — Darkfield, brightfield and color imaging — Incorporated into the Explorer Cluster	X	X
Explorer® Inspection Cluster	2009	— A family of multi surface inspection tools, using one or more inspection modules — Automated handling platform — Intelligent wafer scheduling — Fully automated defect detection >0.5 micron	X	
NSX® Inspection System	1997	— 2D wafer, die & bump inspection — In line, high-speed, 100% inspection		X
Wafer Scanner™ Inspection System	1999	— 2D/3D bump dimensional inspection — 2D bump/surface defect inspection — In line, high-speed, 100% inspection		X
PrecisionWoRx® System	2008	— Probe card test & analysis — Configurable channels — High load forces — Probe card production metrology		X
ProbeWoRx® System	2003	— 3D Optical Comparative Metrology — High-speed test times — Automated, one-touch measurements — Probing process analysis		X
WaferWoRx® System	2006	— 3D probe tip analysis — Proprietary, advanced software		X

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METROLOGY SYSTEMS

Product	First Introduced	Functionality	Type of Fab Wafer Processing	Final Manufacturing
MetaPULSE® System	1997	— 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	
S3000™ System	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	

DATA ANALYSIS & REVIEW SOFTWARE

Product	First Introduced	Functionality	Type of Fab Wafer Processing	Final Manufacturing
ARTIST® Software	2003	— Real-time monitoring software — Enables development of human-readable models — Frees users from manual monitoring — Minimize scrap and rework	X	
AutoShell® Software	1998	— Equipment automation software that interfaces to both tools and external resources	X	
ControlWORKS® Software	1994	— Designed to control process equipment — Minimizes the expense and time-to-market associated with developing control applications	X	
Discover® Software	2007	— Fabwide software for archival and retrieval of process related data — Facilitates root cause analysis, yield enhancement and yield learning	X	
Discover® Enterprise Software	2005	— 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™ Software	2008	—	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

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DATA ANALYSIS & REVIEW SOFTWARE (continued)

Product	First Introduced	Functionality	Type of Fab Wafer Processing	Final Manufacturing
Gamma2™ Software	2004	— Connects applications to tools — Add applications to factory control architecture without changing host software	X	
GateWay™ Software	2003	— Intercepts message traffic between the equipment and the host — Preserves value of existing automation investments — Increases reliability and function with zero development time — Diagnostic tool for solving communication problems	X	
HarmonyASR™ Software	2005	— 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™ Software	2006	— 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® Software	1998	— Advanced process control software deployed in CMOS, high-mix ASIC, memory and disk head fabs — Proven in all major process areas — Reduces impact on tool time — Stores recipes in a central repository	X	
RecipeWORKS™ Software	1998	— Enables engineers to manage recipes remotely — Allows users to setup security — Accepts settings from any run-to-run control application	X	
TrackWORKS® Software	1998	— Configures and schedules preventive maintenance — View factory entities using operator-defined parameters	X	
TrueADC™ Software	2005	— Automatic defect classification — High accuracy, consistency and scalability — Patented feature-based defect matching technology — Utilizes dynamic defect library method	X	X

		—	Serving the entire fab		
TrueADC™ Enterprise	2007	—	Defect classification with a high level of accuracy		
Software		—	Ensures database lookup, classification and timely response to the tool		
		—	Minimum impact to throughput	X	X
		—	Builds predictive models		
Yield Optimizer™	2006	—	Optimizes yield and reduces excursions		
Software		—	Identifies the most critical metrology measurements for controlling yield	X	X
		—	Data acquisition and intregration		
Genesis® Software	1997	—	Data mining		
		—	Parametric analysis	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 16 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 2008, 2009 and 2010, sales to end user customers that individually represented at least five percent of our revenues accounted for 36.3%, 44.8% and 44.4% of our revenues, respectively. In 2008 and 2009, sales to Intel Corporation accounted for 10.9% and 13.6 % of our revenues, respectively. In 2010, sales to Taiwan Semiconductor Manufacturing Co. and, Samsung Semiconductor Inc. accounted for 13.9% and 11.2% of our revenues, respectively. No other individual end user customer accounted for more than 10% of our revenues in 2008, 2009 and 2010. 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 2008, 2009 and 2010 were $31.6 million, $26.0 million and $33.4 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, Scotland, Israel, South 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. During the fourth quarter of 2009, we initiated a consolidation of a portion of our facility in Budd Lake, NJ and in 2010 we moved 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 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

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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, 2010, we have been granted, or hold exclusive licenses to, 192 U.S. and foreign patents. The patents we own, jointly own or exclusively license have expiration dates ranging from 2011 to 2029. We also have 101 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.

Significant competitive factors in the market for inspection and 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 is anticipated 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, 2010, we had a backlog of approximately $49.7 million compared with a backlog of approximately $54.1 million at December 31, 2009.

Employees

As of December 31, 2010, we had 550 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

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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;
- a significant portion of our revenue may be derived from the sale of a relatively small number of systems and accordingly, a small change in the number of systems we sell may cause significant changes in our operating results;
- 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 could 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 could significantly decline. We expect that we will continue to depend on a small number of large customers for a significant portion of our revenues. 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

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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.

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

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

- the efforts of our sales force;
- the complexity of the customer's fabrication processes;
- the internal technical capabilities and sophistication of the customer;
- the customer's budgetary constraints; and
- the quality and sophistication of the customer's current metrology and/or inspection equipment.

Because of the number of factors influencing the sales process, the period between our initial contact with a customer and the time when we recognize revenue from that customer 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.

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

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negatively impacted.

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

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

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

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

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

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

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

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

In addition, the patents that we do own or that have been issued or licensed to us may not provide us with competitive advantages and may be challenged by third parties. Further, third parties may also design around these patents. In addition to patent protection, we rely upon trade secret protection for our confidential and proprietary information and technology. We routinely enter into confidentiality agreements with our employees and other third parties. 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

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to protracted and costly litigation, which could require us to pay substantial damages or have the sale of our products or systems stopped by an injunction. Infringement claims could also cause product or system delays or require us to redesign our products or systems, and these delays could result in the loss of substantial revenues. We may also be required to obtain a license from the third party or cease activities utilizing the third party's proprietary rights. We may not be able to enter into such a license or such a license may not be available on commercially reasonable terms. Accordingly, the loss of important intellectual property rights could hinder our ability to sell our systems, or make the sale of these systems more expensive.

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

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

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

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

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

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

We believe that once a semiconductor device manufacturer has selected one vendor's capital equipment for a production-line application, the manufacturer generally relies upon that capital equipment and, to the extent possible, subsequent generations of the same vendor's equipment, for the life of the application. Once a vendor's equipment has

been installed in a production line application, a semiconductor device manufacturer must often make substantial technical modifications and may experience production-line downtime in order to switch to another vendor's equipment. Accordingly, unless our systems offer performance or cost advantages that outweigh a customer's expense of switching to our systems, it will be difficult for us to achieve significant sales to that customer once it has selected another vendor's capital equipment for an application.

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

Our success depends to a significant degree upon the continued contributions of our key management, engineering, sales

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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.

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 facility 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 facility, 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, 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

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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, 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.

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Risks Related to the Semiconductor Device Industry

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

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

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

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

Risks Related to our Stock

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

Provisions of our certificate of incorporation and bylaws, as well as our 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;
- 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 2009 through the end of fiscal year 2010, our stock price fluctuated between a high of $10.98 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;

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- 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.

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, South 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 and Service	61,500	2016
Bloomington, Minnesota	Engineering, Manufacturing and Service	78,500	2012
Tewksbury, Massachusetts	Engineering and Service	7,000	2017
Richardson, Texas	Engineering	21,000	Owned
Bohemia, New York	Engineering	6,000	2016
Snoqualmie, Washington	Engineering and Service	27,000	2018
Tianjin, China	Engineering	11,000	2011
Hsin-Chu, Taiwan	Sales and Service	10,500	2012
Takatsu, Japan	Sales and Service	5,000	2012
Sungnam-si, South Korea	Sales and Service	9,500	2011
Shanghai, China	Sales and Service	2,500	2011
Singapore	Sales and Service	2,000	2012
Scotland, United Kingdom	Sales and Service	1,000	2011

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. In December 2007, we completed our acquisition of specific assets and liabilities of the semiconductor division of Applied Precision LLC (“Applied”). As a result of the acquisition, we assumed certain liabilities of Applied including a lawsuit filed by Integrated Technology Corporation (“ITC”) against Applied alleging infringement on two of ITC's patents. While this litigation is currently ongoing, the Company believes that it has meritorious defenses and is vigorously defending the action. In the event that we are ultimately found liable, damage estimates related to this case, which have not been accrued for as of December 31, 2010, range from approximately $25 thousand to $9 million, depending on multiple factors presented by the parties.

Item 4. (Removed and Reserved).

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PART II

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

Our common stock is traded on the NASDAQ 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, 2005 and ending on December 31, 2010. 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 Company, Brooks Automation, Inc., Cymer, Inc., Veeco Instruments, Inc., Cabot Microelectronics Corporation, ATMI, Inc., FormFactor, Inc., Axcelis Technologies, Inc., Advanced Energy Industries, Inc., Cohu, Inc., EMCORE Corporation, Mattson Technology, Inc., LTX-Credence, Corporation, Nanometrics, Incorporated, 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, 2005 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.

ASSUMES $100 INVESTED ON DEC. 31 2005
ASSUMES DIVIDEND REINVESTED
FISCAL YEAR ENDING DEC. 31 2010

	12/05	12/06	12/07	12/08	12/09	12/10
Rudolph Technologies, Inc.	100.0	123.60	87.89	27.41	52.17	63.90
NASDAQ Composite	100.0	112.46	122.22	72.41	104.42	123.23
Peer Group	100.0	117.48	108.82	54.57	86.99	99.30

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.

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	Price Range of Common Stock	
	High	Low
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
Year Ended December 31, 2010		
First Quarter	$9.53	$6.14
Second Quarter	$10.98	$7.49
Third Quarter	$9.71	$7.02
Fourth Quarter	$8.54	$7.01

As of February 3, 2011, there were 87 stockholders of record of our common stock and approximately 5,129 beneficial stockholders. The closing market value of our common stock on February 3, 2011 was $10.46.

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 authorized a share repurchase program of up to 3 million shares of our common stock. As of the time of filing this Annual Report on Form 10-K, we have not purchased any shares under this program.

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Item 6. Selected Financial Data.

The following selected financial data should be read in conjunction with our Consolidated Financial Statements and the related Notes thereto appearing elsewhere in this 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, 2009 and 2010 and the statement of operations data for the years ended December 31, 2008, 2009 and 2010 set forth below were derived from our audited consolidated financial statements included elsewhere in this Form 10-K. The balance sheet data as of 2006, 2007 and 2008, and the statement of operations data for the years ended December 31, 2006 and 2007 were derived from our audited consolidated financial statements not included herein.

	Year Ended December 31,				
	2006	2007	2008	2009	2010
	(In thousands, except per share data)				
Statement of Operations Data:					
Revenues	$201,168	$160,129	$131,040	$78,657	$195,305
Cost of revenues	103,726	78,889	87,388	49,805	91,405
Gross profit	97,442	81,240	43,652	28,852	103,900
Operating expenses:					
Research and development	29,856	29,993	31,644	25,991	33,387
In-process research and development	9,900	1,000	—	—	—
Selling, general and administrative	32,338	33,159	36,512	32,703	38,173
Impairment charge for goodwill and identifiable intangible assets	—	—	227,105	—	—
Amortization	4,048	4,487	5,890	1,358	1,715
Total operating expenses	76,142	68,639	301,151	60,052	73,275
Operating income (loss)	21,300	12,601	(257,499)	(31,200)	30,625
Interest income	3,345	4,143	1,230	271	167
Other income (expense)	(209)	(39)	2,468	(938)	(255)
Income (loss) before provision for income taxes	24,436	16,705	(253,801)	(31,867)	30,537
Provision (benefit) for income taxes	11,730	4,846	(4,115)	(2,239)	3,522
Net income (loss)	$12,706	$11,859	$(249,686)	$(29,628)	$27,015
Earnings (loss) per share:					
Basic	$0.47	$0.41	$(8.16)	$(0.96)	$0.86
Diluted	$0.46	$0.40	$(8.16)	$(0.96)	$0.86
Weighted average shares outstanding:					
Basic	27,276	29,168	30,614	30,888	31,286
Diluted	27,574	29,312	30,614	30,888	31,492

	December 31,				
	2006	2007	2008	2009	2010
Balance Sheet Data:					
Cash and cash equivalents	$72,479	$57,420	$67,735	$57,839	$71,120
Marketable securities	33,714	16,505	10,549	3,080	629
Working capital	200,942	176,298	147,688	126,781	159,745
Total assets	440,486	460,216	197,432	178,203	219,053
Retained earnings (accumulated deficit)	32,897	44,776	(204,910)	(234,538)	(207,523)
Total stockholders’ equity	392,876	424,478	176,088	151,131	185,034

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

Overview

We are a worldwide leader in the design, development, manufacture and support of high-performance 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 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") and has been integrated into our Inspection product offerings.

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") and has been integrated into our Data Analysis and Review group product offerings

On August 11, 2010, we announce that we had acquired selected assets of the Yield Dynamics software business from MKS Instruments, headquartered in Andover, Massachusetts. The acquired business has been integrated into our Data Analysis and Review group product offerings.

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 similar year-over-year capital spending plus or minus 5% for 2011. 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 0.9 for the month of December 2010, decreasing from the September 2010 book-to-bill ratio of 1.0.

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, 2008, 2009 and 2010, sales to customers that individually represented at least five percent of our revenues accounted for 36.3%, 44.8%, and 44.4% of our revenues, respectively. For the years ended December 31, 2008 and 2009, sales to Intel Corporation accounted for 10.9% and 13.6% of our revenues, respectively. In 2010, sales to Taiwan Semiconductor Manufacturing Co. and Samsung Semiconductor, Inc. accounted for 13.9% and 11.2% 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 $1.6 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 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. In 2010, approximately 76.8% of our revenues were derived from customers outside of the United States, of which 65.7% were derived from customers in Asia and 11.1%

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 nine 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.

Results of Operations

The following table sets forth, for the periods indicated, our statements of operations data as percentages of our revenues.

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Our results of operations are reported as one business segment.

	Year Ended December 31,		
	2008	2009	2010
Revenues	100.0 %	100.0 %	100.0 %
Cost of revenues	66.7	63.3	46.8
Gross profit	33.3	36.7	53.2
Operating expenses:			
Research and development	24.2	33.0	17.1
Selling, general and administrative	27.8	41.6	19.5
Impairment charge for goodwill and identifiable intangible assets	173.3	—	—
Amortization	4.5	1.7	0.9
Total operating expenses	229.8	76.3	37.5
Operating income (loss)	(196.5)	(39.6)	15.7
Interest income	0.9	0.3	0.1
Other income (expense)	1.9	(1.2)	(0.2)
Income before provision (benefit) income taxes	(193.7)	(40.5)	15.6
Provision (benefit) for income taxes	(3.1)	(2.8)	1.8
Net income (loss)	(190.6)%	(37.7)%	13.8 %

Results of Operations 2008, 2009 and 2010

Revenues. Our revenues are derived from the sale of our systems, services, spare parts and software licensing. Our revenues were $131.0 million, $78.7 million and $195.3 million in the years ended 2008, 2009 and 2010. This represents a decrease of 40.0% from 2008 to 2009 and a increase of 148.3% from 2009 to 2010. The decrease in revenue from 2008 to 2009 is primarily due to weakness in the overall semiconductor equipment manufacturing sector. The increase in revenue from 2009 to 2010 is primarily due to improving economic conditions leading to increased capital spending in the semiconductor industry.

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

	Year Ended December 31,								
	2008			2009			2010		
Systems and Software:									
Inspection	$73,465	56	%	$38,027	48	%	$105,904	54	%
Metrology	21,118	16		8,921	11		39,428	20	
Data Analysis and Review	4,410	3		6,691	9		19,417	10	
Parts	20,801	16		15,428	20		19,266	10	
Services	11,246	9		9,590	12		11,290	6	
Total revenue	$131,040	100	%	$78,657	100	%	$195,305	100	%

Systems revenue decreased for the year ended December 31, 2008 as compared to the year ended December 31, 2009 due to the decrease in the number of inspection and metrology systems sold during this period. These changes in systems revenue reflect 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. The average selling price of similarly configured systems has been consistent and therefore did not have a material impact on our revenue for the same period. The year-over-year increase in data analysis and review software revenues of $2.3 million from 2008 to 2009 is primarily due to revenue from PCG, which is part of our Data Analysis and Review products, and which was acquired in the third quarter of 2009. Systems revenue generated by our latest product releases and major enhancements in each of our product families amounted to 40% of total revenue for 2008 compared to 35% of total revenue for 2009. 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 during 2009. Parts and services revenues are generated from part sales, maintenance service

contracts, system upgrades, as well as time and material billable service calls.

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Systems revenue increased for the year ended December 31, 2009 as compared to the year ended December 31, 2010 due to improving economic conditions leading to increased capital spending in the semiconductor industry. This contributed to an increase in the number of systems sold from 2009 to 2010. These changes in systems revenue reflect an increase in inspection systems revenue of $67.9 million and an increase in metrology systems revenue of $30.5 million. The average selling price of similarly configured systems has been consistent and therefore did not have a material impact on our revenue for the same period. The year-over-year increase in data analysis and review software revenues of $12.7 million from 2009 to 2010 is primarily due to revenue from PCG. Systems revenue generated by our latest product releases and major enhancements in each of our product families amounted to 35% of total revenue for 2009 compared to 59% of total revenue for 2010. The year-over-year increase in parts and service revenues in absolute dollars from 2009 to 2010 is primarily due to increased spending by our customers on repairs of existing systems. Parts and services revenues are generated from part sales, maintenance service contracts, system upgrades, as well as time and material billable service calls.

Deferred revenues of $8.7 million at December 31, 2010 primarily consist of $4.1 million for deferred maintenance agreements and $4.6 million for systems awaiting acceptance and outstanding deliverables.

Gross Profit. Our gross profit has been and is anticipated 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 $43.7 million, $28.9 million and $103.9 million for the years ended December 31, 2008, 2009 and 2010, respectively. 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 of $14.1 million in 2008. The increase in gross profit as a percentage of revenue from 2009 to 2010 is primarily due to higher revenues, including an increase in software sales, higher average selling prices and lower reserves due to better inventory utilization. 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 $31.6 million, $26.0 million and $33.4 million in 2008, 2009 and 2010, respectively. The year-over-year dollar decrease from 2008 to 2009 primarily reflects reduced compensation costs and lower project costs as part of cost reduction efforts, partially offset by an increase in litigation expenses and the inclusion of expenses related to the activities of the acquisition of PCG in the 2009 period. The year-over-year dollar increase from 2009 to 2010 is primarily due to higher costs related to compensation, projects and litigation, as well as, the inclusion of engineering costs associated with the YDI acquisition in the third quarter of 2010. 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.
- 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 $36.5 million, $32.7 million and $38.2 million in 2008, 2009 and 2010, respectively. 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 and manufacturing consolidation costs. The year-over-year increase in selling, general and administrative

expense from 2009 to 2010 was primarily due to higher compensation and corporate litigation expenses in the 2010 period.

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 $227.1 million for 2008 and $0 for both 2009 and 2010. As of October 31, 2010 we performed our annual goodwill impairment test and determined that the fair value was not less than carrying 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,

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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.

Other income (expense). In 2008, other income totaled $2.5 million. Other expense was $0.9 million and $0.3 million in 2009 and 2010, respectively. The year-over-year dollar changes in other income (expense) were primarily due to fluctuations in foreign currency exchange rates.

Interest income. Interest income was $1.2 million, $0.3 million, and $0.2 million in 2008, 2009 and 2010, respectively. The year-over-year dollar changes in interest income is primarily due to lower average interest rates.

Income Taxes. We recorded income tax benefit of $4.1 million and $2.2 million, respectively, in 2008 and 2009. Income tax expense was $3.5 million in 2010.

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.

Income tax expense for the year ended December 31, 2010 was $3.5 million or 11.5% of income before provision for income taxes. This differs from the federal statutory income tax rate of 35%, primarily as a result of projected tax payments in U.S. and foreign locations, offset by valuation allowances.

We evaluate the recoverability of deferred tax assets from future taxable income and establish valuation allowances if recovery is deemed not likely. We consider available evidence, both positive and negative, including historical levels of income, expectations and risks associated with estimates of future taxable income and ongoing prudent and feasible tax planning strategies in assessing the need for the valuation allowance. As a result of our analysis, we concluded that it is more likely than not that substantially all of our net deferred tax assets will not be realized. Therefore, we continue to provide a valuation allowance against these net deferred tax assets. A portion of our net deferred tax assets relate to R&D credits which are reserved for in our FASB ASC 740 provision. We closely monitor available evidence, and may reverse some or all of the valuation allowance in future periods, if appropriate. The valuation allowance increased $6.8 million in 2009 and decreased $6.0 million in 2010, respectively.

Liquidity and Capital Resources

At December 31, 2009, we had $60.9 million of cash, cash equivalents and marketable securities and $126.8 million in working capital. At December 31, 2010, our cash, cash equivalents and marketable securities totaled $71.7 million, while working capital amounted to $159.7 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, 2008 and 2010 totaled $15.4 million and $16.3 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, 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

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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 $11.7 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. During the year ended December 31, 2010, cash provided by operating activities was primarily due to net income, adjusted to exclude the effect of non-cash charges, of $37.1 million, an increase in accrued liabilities of $2.7 million, a decrease in income tax receivable of $2.3 million, an increase in accounts payable of $2.2 million, an increase in deferred revenue of $0.9 million, and increase in other current liabilities of $0.8 million, partially offset by an increase of accounts receivable of $24.1 million and an increase of inventories of $5.6 million.

Net cash and cash equivalents used in investing activities for the years ended December 31, 2008 and 2010 totaled $5.7 million and $2.8 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, 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. During the year ended December 31, 2010, net cash used by investing activities included purchases of marketable securities of $7.8 million, capital expenditures of $4.4 million, acquisition costs for business combinations of $0.8 million, partially offset by proceeds from sales of marketable securities of $10.3 million. Capital expenditures over the next twelve months are expected to be approximately $3.0 million to $5.0 million.

Net cash provided by financing activities was $0.2 million, $0.2 million and $0.5 million in 2008, 2009 and 2010, respectively. In 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. In the 2010 period, net cash provided by financing activities comprised proceeds received from sales of shares through share-based compensation plans of $0.3 million and tax benefit from 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, stock, or a combination of cash and stock.

In July 2008, our Board of Directors approved a stock repurchase program of up to 3 million shares of Company common stock. 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, 2010, 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 $6.7 million at December 31, 2010. We are currently unable to provide a reasonably reliable estimate of the amount or periods when cash settlement of this liability may occur.

	Payments due by period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Operating lease obligations	$12,377	$2,929	$3,831	$3,432	$2,185
Open and committed purchase orders	21,994	21,994	—	—	—
Total	$34,371	$24,923	$3,831	$3,432	$2,185

Off-Balance Sheet Arrangements

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

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Critical Accounting Policies

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

Revenue Recognition. Revenue is recognized when there is persuasive evidence of an arrangement, delivery has occurred, the sales price is fixed or determinable, and collection of the related receivable is reasonably assured. Certain sales of our products are sold and accounted for as multiple element arrangements, consisting primarily of the sale of the product, software, installation and training services. We generally recognize product revenue upon shipment. 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 acquisitions, 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.

Goodwill. Our formal annual impairment testing date for goodwill is October 31st or prior to the next annual testing date if

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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. No such indicators were noted in 2010.

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, 2010, we had a valuation allowance of $37.2 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.

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

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that the final outcome of these matters will not be different than what is reflected in the historical income tax provisions and accruals. If additional taxes are assessed as a result of an audit or litigation, it could have a material effect on our income tax provision and net income in the period or periods for which that determination is made.

Impact of Recent Accounting Pronouncements

In December 2010, the FASB issued amended guidance related to Business Combinations. The amendments affect any public entity that enters into business combinations that are material on an individual or aggregate basis. The amendments specify that if a public entity presents comparative financial statements, the entity should disclose revenue and earnings of the combined entity as though the business combination(s) that occurred during the current year had occurred as of the beginning of the comparable prior annual reporting period only. The amendments also expand the supplemental pro forma disclosures to include a description of the nature and amount of material, nonrecurring pro forma adjustments directly attributable to the business combination included in the reported pro forma revenue and earnings. The amendments are effective prospectively for business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after December 15, 2010. Early adoption is permitted. We will assess the impact of these amendments on our consolidated financial position and results of operations if and when an acquisition occurs.

In December 2010, the FASB issued amended guidance related to Intangibles - Goodwill and Other. The amendments modify Step 1 of the goodwill impairment test for reporting units with zero or negative carrying amounts. For those reporting units, an entity is required to perform Step 2 of the goodwill impairment test if it is more likely than not that a goodwill impairment exists. In determining whether it is more likely than not that a goodwill impairment exists, an entity should consider whether there are any adverse qualitative factors indicating that an impairment may exist. The qualitative factors are consistent with the existing guidance and examples, which require that goodwill of a reporting unit be tested for impairment between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. For public entities, the amendments are effective for fiscal years, and interim periods within those years, beginning after December 15, 2010. Early adoption is not permitted. We do not believe that this guidance will have a material impact on our consolidated financial position and results of operations.

In July 2010, the FASB issued ASU No. 2010-20, "Disclosures about the Credit Quality of Financing Receivables and the Allowance for Credit Losses (Topic 310)." ASU No. 2010-20 requires increased disclosures about the credit quality of financing receivables and allowances for credit losses, including disclosure about credit quality indicators, past due information and modifications of finance receivables. The guidance is generally effective for reporting periods ending after December 15, 2010. The adoption of ASU No. 2010-20 did not have a significant impact on our consolidated financial position and results of operations.

In April 2010, the FASB issued ASU No. 2010-17, "Revenue Recognition- Milestone Method (Topic 605)," which provides guidance on the criteria that should be met for determining whether the milestone method of revenue recognition is appropriate. This ASU is effective in fiscal years, and interim periods within those years, beginning on or after June 15, 2010. We do not expect the adoption of ASU No. 2010-17 to have a significant impact on our consolidated financial position and results of operations.

In April 2010, the FASB issued ASU No. 2010-13, "Compensation - Stock Compensation (Topic 718)," which provides guidance on the classification of a share-based payment award as either equity or a liability. A share-based payment award that contains a condition that is not a market, performance, or service condition is required to be classified as a liability. This ASU is effective for fiscal years, and interim periods within those fiscal years, beginning on or after December 15, 2010. We do not expect the adoption of ASU No. 2010-13 to have a significant impact on our consolidated financial position and results of operations.

In February 2010, the FASB issued ASU No. 2010-09, "Subsequent Events (Topic 855) - Amendments to Certain Disclosure Requirements." The objective of this ASU was to remove the requirement for an SEC filer to disclose a date through which subsequent events have been evaluated in both issued and revised financial statements. This ASU is to be applied immediately upon issuance. We have adopted this ASU in the first quarter of 2010 and the adoption of this ASU did not have an effect on our consolidated financial position and results of operations.

In January 2010, the FASB issued ASU No. 2010-06, "Fair Value Measurements and Disclosures (Topic 820) - Improving Disclosures about Fair Value Measurements." This ASU requires new disclosures regarding significant transfers in and out of Levels 1 and 2, and information about activity in Level 3 fair value measurements. In addition, this ASU clarifies existing disclosures regarding input and valuation techniques, as well as the level of disaggregation for each class of assets and liabilities. This ASU was effective for interim and annual reporting periods beginning after December 15, 2009, except for certain Level 3 activity disclosure requirements, which are effective for reporting periods beginning after December 15, 2010. We adopted the new guidance in the first quarter of 2010, except for the disclosures related to purchases, sales, issuance and settlements, which will be effective for us beginning in the first quarter of 2011. Because these new standards are related primarily to disclosures, their adoption has not had and is not expected to have a significant impact on our consolidated financial position and results of operations.

In October 2009, the Financial Accounting Standards Board (“FASB”) issued Accounting Standard Update (“ASU”)

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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 do not expect the adoption of ASU No. 2009-14 to have a significant impact on our consolidated financial position and results of operations.

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.

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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 a sensitivity analysis performed on our financial investments held as of December 31, 2010, 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 South 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 hypothetical 10% appreciation or depreciation in the U.S. dollar relative to the reporting currencies of our foreign subsidiaries at December 31, 2010 would have affected the foreign-currency-denominated non-operating expenses of our foreign subsidiaries by approximately $0.9 million. We cannot accurately predict future exchange rates or the overall impact of future exchange rate fluctuations on our business, results of operations and financial condition. 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, 2009 and 2010, we had four and twenty forward contracts outstanding, respectively. The total notional contract value of these outstanding forward contracts at December 31, 2009 and 2010 was $1.0 million and $2.2 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, 2010. Based on that evaluation, our management, including our principal executive and principal financial officers, concluded that our disclosure controls and procedures were effective as of December 31, 2010 at the reasonable assurance level.

Management's Report on Internal Control Over Financial Reporting

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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, 2010. 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, 2010 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, 2010, 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, 2010 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 25, 2011, 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, see "Proposal One: Election of Directors" and "Corporate Governance Principles and Practices" in the Proxy Statement, which is incorporated herein by reference. 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, see "Executive Compensation" and "Compensation of Directors" in the Proxy Statement, which is incorporated herein by reference.

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

The information required by this Item, see "Security Ownership" and "Equity Compensation" in the Proxy Statement, which is incorporated herein by reference.

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

The information required by this Item, see "Related Persons Transactions Policy" and "Board Independence" in the Proxy Statement, which is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services.

The information required by this Item, see "Proposal 4: Ratification of Appointment of Independent Registered Public Accountants" in the Proxy Statement, which is incorporated herein by reference.

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PART IV

Item 15. Exhibits and Financial Statement Schedule.

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

1. Financial Statements

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

2. Financial Statement Schedule

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

3. Exhibits

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

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 (SEC File No. 005-58091) 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 (SEC File No. 000-27965) 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	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).
3.3	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 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 (SEC File No. 000-27965), 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), and as amended May 19, 2010 (incorporated by reference to Exhibit 10.1 to Registrant's quarterly report on Form 10-Q, filed on August 4, 2010).
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 (SEC File No. 000-27965), 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 SEC File No. 005-58091) 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).
21.1	Subsidiaries.
23.1	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.

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

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

We have audited the accompanying consolidated balance sheets of Rudolph Technologies, Inc. and Subsidiaries as of December 31, 2010 and 2009, and the related consolidated statements of operations, stockholder's equity and comprehensive income (loss), and cash flows for each of the three years in the period ended December 31, 2010. Our audits also included the financial statement schedule listed in the index at Item 15. 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 audits provide 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. and Subsidiaries at December 31, 2010 and 2009, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2010, 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.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Rudolph Technologies, Inc. and Subsidiaries' internal control over financial reporting as of December 31, 2010, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 28, 2011 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP
Metropark, New Jersey
February 28, 2011

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Report of Independent Registered Public Accounting Firm

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

We have audited Rudolph Technologies, Inc. and Subsidiaries' internal control over financial reporting as of December 31, 2010, 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. and Subsidiaries' 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. and Subsidiaries maintained, in all material respects, effective internal control over financial reporting as of December 31, 2010, 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. and Subsidiaries as of December 31, 2010 and 2009, and the related consolidated statements of operations, stockholders' equity and comprehensive income (loss), and cash flows for the three years in the period ended December 31, 2010 of Rudolph Technologies, Inc. and Subsidiaries and our report dated February 28, 2011 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP
Metropark, New Jersey

February 28, 2011

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

	December 31, 2009	2010
ASSETS		
Current Assets:		
Cash and cash equivalents	$57,839	$71,120
Marketable securities	3,080	629
Accounts receivable, less allowance of $602 in 2009 and $306 in 2010	35,312	59,758
Inventories	45,534	52,311
Income taxes receivable	3,501	1,141
Prepaid expenses and other current assets	1,125	1,570
Total current assets	146,391	186,529
Property, plant and equipment, net	12,841	13,677
Goodwill	3,282	4,492
Identifiable intangible assets, net	10,821	9,571
Capitalized software	1,237	895
Deferred income taxes	3,098	3,217
Other assets	533	672
Total assets	$178,203	$219,053
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$5,683	$7,864
Accrued liabilities:		
Payroll and related expenses	3,163	4,651
Royalties	247	517
Warranty	700	1,654
Deferred revenue	6,877	8,662
Other current liabilities	2,940	3,436
Total current liabilities	19,610	26,784
Non-current liabilities	7,462	7,235
Total liabilities	27,072	34,019
Commitments and contingencies (Note 10)		
Stockholders' equity:		
Preferred stock, $0.001 par value, 5,000 shares authorized, no shares issued and outstanding at December 31, 2009 and 2010	—	—
Common stock, $0.001 par value, 50,000 shares authorized, 30,997 and 31,417 issued and outstanding at December 31, 2009 and 2010, respectively	31	31
Additional paid-in capital	387,486	393,456
Accumulated other comprehensive loss	(1,848)	(930)
Accumulated deficit	(234,538)	(207,523)
Total stockholders' equity	151,131	185,034
Total liabilities and stockholders' equity	$178,203	$219,053

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

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

	Year Ended December 31,		
	2008	2009	2010
Revenues	$131,040	$78,657	$195,305
Cost of revenues	87,388	49,805	91,405
Gross profit	43,652	28,852	103,900
Operating expenses:			
Research and development	31,644	25,991	33,387
Selling, general and administrative	36,512	32,703	38,173
Impairment charge for goodwill and identifiable intangible assets	227,105	—	—
Amortization	5,890	1,358	1,715
Total operating expenses	301,151	60,052	73,275
Operating income (loss)	(257,499)	(31,200)	30,625
Interest income	1,230	271	167
Other income (expense)	2,468	(938)	(255)
Income (loss) before provision (benefit) for income taxes	(253,801)	(31,867)	30,537
Provision (benefit) for income taxes	(4,115)	(2,239)	3,522
Net income (loss)	$(249,686)	$(29,628)	$27,015
Earnings (loss) per share:			
Basic	$(8.16)	$(0.96)	$0.86
Diluted	$(8.16)	$(0.96)	$0.86
Weighted average number of shares outstanding:			
Basic	30,614	30,888	31,286
Diluted	30,614	30,888	31,492

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

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
AND COMPREHENSIVE INCOME (LOSS)
For the years ended December 31, 2008, 2009 and 2010
(In thousands)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Retained Earnings (Accumulated Deficit)	Total	Comprehensive Income (Loss)
	Shares	Amount					
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)
Balance at December 31, 2008	30,703	31	383,510	(2,543)	(204,910)	176,088	
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	
Issuance of shares through share-based compensation plans	420	—	289	—	—	289	
Net income	—	—	—	—	27,015	27,015	$ 27,015
Share-based compensation	—	—	5,439	—	—	5,439	
Tax benefit for share-based compensation	—	—	242	—	—	242	
Currency translation	—	—	—	914	—	914	914
Unrealized gain on investments	—	—	—	4	—	4	4
Comprehensive income							$ 27,933

Balance at December 31, 2010	31,417	$31	$393,456	$ (930)	$ (207,523)	$185,034

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

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

	Year Ended December 31,		
	2008	2009	2010
Cash flows from operating activities:			
Net income (loss)	$(249,686)	$(29,628)	$27,015
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	7,243	1,895	2,069
Depreciation	4,500	6,751	3,706
Foreign currency exchange (gain) loss	(2,547)	937	255
Net loss on sale of marketable securities	79	1	—
Share-based compensation	3,405	3,759	5,439
Provision for (recovery of) doubtful accounts and inventory valuation	14,569	4,775	(1,188)
Deferred income taxes	(2,449)	(217)	(152)
Change in operating assets and liabilities excluding effects of business combinations:			
Accounts receivable	31,290	(13,196)	(24,115)
Income taxes receivable	(4,164)	969	2,300
Inventories	(4,287)	6,922	(5,577)
Prepaid expenses and other assets	815	592	574
Accounts payable	(5,571)	3,232	2,183
Accrued liabilities	(2,471)	(1,227)	2,671
Deferred revenue	(1,581)	1,619	948
Other current liabilities	(1,501)	(1,252)	802
Non-current liabilities	640	2,009	(608)
Net cash and cash equivalents provided by (used in) operating activities	15,389	(12,059)	16,322
Cash flows from investing activities:			
Purchases of marketable securities	(15,541)	(12,161)	(7,823)
Proceeds from sales of marketable securities	21,302	19,446	10,261
Purchases of property, plant and equipment	(2,966)	(587)	(4,363)
Capitalized software	(30)	—	—
Purchase of business, net of cash acquired	(8,474)	(5,011)	(849)
Net cash and cash equivalents provided by (used in) investing activities	(5,709)	1,687	(2,774)
Cash flows from financing activities:			
Issuance of shares through share-based compensation plans	220	217	289
Tax benefit for sale of shares through share-based compensation plans	—	—	242
Net cash and cash equivalents provided by financing activities	220	217	531
Effect of exchange rate changes on cash and cash equivalents	415	259	(798)
Net increase (decrease) in cash and cash equivalents	10,315	(9,896)	13,281
Cash and cash equivalents at beginning of year	57,420	67,735	57,839
Cash and cash equivalents at end of year	$67,735	$57,839	$71,120
Supplemental disclosure of cash flow information:			
Net cash paid (received) during the year for:			
Income taxes	$1,945	(3,062)	$916

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 South 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 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.

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, 2010. No impairments were noted.

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.

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 14 of Notes to the Consolidated Financial Statements.

N. Translation of Foreign Currencies:

The Company has branch operations in Taiwan, Singapore and South 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 $1,610 and $696 as of December 31, 2009 and 2010, 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 12 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 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, 2009 and 2010, capitalized software development costs were $1,237 and $895, respectively. During the years ended December 31, 2008, 2009 and 2010, software development cost amortization totaled $689, $537 and $354, respectively. During 2008, the Company recorded write-downs of capitalized software of $664, 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, 2009 and 2010, 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, 2009 and 2010 were as follows:

	December 31,	
	2009	2010
Notional amount	$1,042	$2,247
Fair value of liability	$3	$163

The Company recognized a loss of $720, $116, and $93 with respect to forward contracts which matured during 2008, 2009 and 2010, respectively. The aggregate notional amount of these contracts was $6,964, $2,469 and $1,200, for 2008, 2009 and 2010, respectively.

S. Recent Accounting Pronouncements:

In December 2010, the FASB issued amended guidance related to Business Combinations. The amendments affect any public entity that enters into business combinations that are material on an individual or aggregate basis. The amendments specify that if a public entity presents comparative financial statements, the entity should disclose revenue and earnings of the combined entity as though the business combination(s) that occurred during the current year had occurred as of the beginning of the comparable prior annual reporting period only. The amendments also expand the supplemental pro forma disclosures to include a description of the nature and amount of material, nonrecurring pro forma adjustments directly attributable to the business combination included in the reported pro

forma revenue and earnings. The amendments are effective prospectively for business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after December 15, 2010. Early

adoption is permitted. The Company will assess the impact of these amendments on its consolidated financial position and results of operations if and when an acquisition occurs.

In December 2010, the FASB issued amended guidance related to Intangibles - Goodwill and Other. The amendments modify Step 1 of the goodwill impairment test for reporting units with zero or negative carrying amounts. For those reporting units, an entity is required to perform Step 2 of the goodwill impairment test if it is more likely than not that a goodwill impairment exists. In determining whether it is more likely than not that a goodwill impairment exists, an entity should consider whether there are any adverse qualitative factors indicating that an impairment may exist. The qualitative factors are consistent with the existing guidance and examples, which require that goodwill of a reporting unit be tested for impairment between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. For public entities, the amendments are effective for fiscal years, and interim periods within those years, beginning after December 15, 2010. Early adoption is not permitted. The Company does not believe that this guidance will have a material impact on its consolidated financial position and results of operations.

In July 2010, the FASB issued ASU No. 2010-20, "Disclosures about the Credit Quality of Financing Receivables and the Allowance for Credit Losses (Topic 310)." ASU No. 2010-20 requires increased disclosures about the credit quality of financing receivables and allowances for credit losses, including disclosure about credit quality indicators, past due information and modifications of finance receivables. The guidance is generally effective for reporting periods ending after December 15, 2010. The adoption of ASU No. 2010-20 did not have a significant impact on the Company's consolidated financial position and results of operations.

In April 2010, the FASB issued ASU No. 2010-17, "Revenue Recognition- Milestone Method (Topic 605)," which provides guidance on the criteria that should be met for determining whether the milestone method of revenue recognition is appropriate. This ASU is effective in fiscal years, and interim periods within those years, beginning on or after June 15, 2010. We do not expect the adoption of ASU No. 2010-17 to have a significant impact on the Company's consolidated financial position and results of operations.

In April 2010, the FASB issued ASU No. 2010-13, "Compensation - Stock Compensation (Topic 718)," which provides guidance on the classification of a share-based payment award as either equity or a liability. A share-based payment award that contains a condition that is not a market, performance, or service condition is required to be classified as a liability. This ASU is effective for fiscal years, and interim periods within those fiscal years, beginning on or after December 15, 2010. The Company does not expect the adoption of ASU No. 2010-13 to have a significant impact on the Company's consolidated financial position and results of operations.

In February 2010, the FASB issued ASU No. 2010-09, "Subsequent Events (Topic 855) - Amendments to Certain Disclosure Requirements." The objective of this ASU was to remove the requirement for an SEC filer to disclose a date through which subsequent events have been evaluated in both issued and revised financial statements. This ASU is to be applied immediately upon issuance. The Company adopted this ASU in the first quarter of 2010 and the adoption of this ASU did not have an effect on the Company's consolidated financial position and results of operations.

In January 2010, the FASB issued ASU No. 2010-06, "Fair Value Measurements and Disclosures (Topic 820) - Improving Disclosures about Fair Value Measurements." This ASU requires new disclosures regarding significant transfers in and out of Levels 1 and 2, and information about activity in Level 3 fair value measurements. In addition, this ASU clarifies existing disclosures regarding input and valuation techniques, as well as the level of disaggregation for each class of assets and liabilities. This ASU was effective for interim and annual reporting periods beginning after December 15, 2009, except for certain Level 3 activity disclosure requirements, which are effective for reporting periods beginning after December 15, 2010. The Company adopted the new guidance in the first quarter of 2010, except for the disclosures related to purchases, sales, issuance and settlements, which will be effective for the Company beginning in the first quarter of 2011. Because these new standards are related primarily to disclosures, their adoption has not had and is not expected to have a significant impact on the Company's consolidated financial position

and results of operations.

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 period as, and use the same transition method that is used for, the ASU described in the following paragraph. The Company does not expect the adoption of ASU No. 2009-14 to have a significant impact on the Company's consolidated financial position and results of operations.

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.

3. Business Combinations:

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.

Yield Dynamics

On August 11, 2010, the Company announced that it had acquired selected assets of the Yield Dynamics software business from MKS Instruments, headquartered in Andover, Massachusetts. The acquired business has been integrated into our Data Analysis and Review group product offerings. 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. 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 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, 2009 and December 31, 2010:

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	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, 2009				
Available-for-sale debt securities:				
U.S. Treasury notes	$212	$212	$—	$—
Auction rate securities	248	—	—	248
Municipal bonds	2,620	—	2,620	—
Total available-for-sale debt securities	3,080	212	2,620	248
Derivatives:				
Foreign currency forward contracts	(3)	(3)	—	—
Total derivatives	(3)	(3)	—	—
Total	$3,077	$209	$2,620	$248
December 31, 2010				
Available-for-sale debt securities:				
U.S. Treasury notes	$362	$362	$—	$—
Auction rate securities	267	—	—	267
Total available-for-sale debt securities	629	362	—	267
Derivatives:				
Foreign currency forward contracts	(163)	(163)	—	—
Total derivatives	(163)	(163)	—	—
Total	$466	$199	$—	$267

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: municipal bonds and government-sponsored enterprise 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 cash flow 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, 2010:

	Fair Value Measurements Using Significant Unobservable Inputs (Level 3)
Balance at December 31, 2009	$248

Unrealized gains in accumulated other comprehensive loss	19
Purchases, issuances, and settlements, net	—
Transfers into (out of) Level 3	—
Balance at December 31, 2010	$267

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.

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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 on available-for-sale securities are included in "Other income (expense)." Net realized losses of $79, $1 and $0 were included in the Consolidated Statement of Operations for 2008, 2009 and 2010, 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, 2010, the Company held one auction-rate security with a fair value of $267. 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, 2010, the Company has recorded a cumulative temporary unrealized impairment loss of $233 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, 2009 and 2010 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, 2009 and 2010, marketable securities are categorized as follows:

	Amortized Cost	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Fair Value
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
December 31, 2010				
Treasury notes and obligations of agencies	$359	$3	$—	$362
Tax-free auction rate securities	500	—	(233)	267
Total marketable securities	$859	$3	$(233)	$629

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, 2009 and 2010:

	December 31, 2009		December 31, 2010	
	Amortized Cost	Fair Value	Amortized Cost	Fair Value

Due within one year	$2,452	$2,456	$359	$362
Due after one through five years	367	376	—	—
Due after five through ten years	—	—	—	—
Due after ten years	500	248	500	267
Total marketable securities	$3,319	$3,080	$859	$629

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, 2009 and 2010. No amounts have been in an unrealized loss position for less than 12 months.

	In Unrealized Loss Position For Greater Than 12 Months	
	Fair Value	Gross Unrealized Losses
December 31, 2009		
Tax-free auction rate securities	248	(252)
Total marketable securities	$248	$(252)
December 31, 2010		
Tax-free auction rate securities	267	(233)
Total marketable securities	$267	$(233)

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,	
	2009	2010
Materials	$19,343	$25,579
Work-in-process	14,577	13,480
Finished goods	11,614	13,252
Total inventories	$45,534	$52,311

The Company has established reserves of $9,474 and $7,536 at December 31, 2009 and 2010, respectively, for slow moving and obsolete inventory. During 2009, the Company recorded a 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 were rendered obsolete by design and engineering advancements. In 2009, the Company disposed of $6,989 of inventory. During 2010, the Company recorded a recovery of cost of revenues of $1,046 for the write-down of inventory for excess parts, for older product lines and for parts that were rendered obsolete by design and engineering advancements. In 2010, the Company disposed of $892 of inventory.

7. Property, Plant and Equipment:

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

	December 31,	
	2009	2010
Land and building	$4,927	$4,997
Machinery and equipment	13,382	15,547
Furniture and fixtures	2,730	2,944
Computer equipment	6,089	6,375
Leasehold improvements	6,102	6,314
	33,230	36,177
Accumulated depreciation	(20,389)	(22,500)
Total property, plant and equipment, net	$12,841	$13,677

Depreciation expense amounted to $4,500, $6,751 and $3,706 for the years ended December 31, 2008, 2009, and 2010,

respectively.

8. Identifiable Intangible Assets and Goodwill:

Identifiable Intangible Assets

Identifiable intangible assets as of December 31, 2009 and 2010 are as follows:

	Gross Carrying Amount	Accumulated Amortization	Net
December 31, 2009			
Developed technology	$53,390	$45,153	$8,237
Customer and distributor relationships	7,436	6,674	762
Trade names	4,342	2,520	1,822
Total identifiable intangible assets	$65,168	$54,347	$10,821
December 31, 2010			
Developed technology	$53,826	$46,484	$7,342
Customer and distributor relationships	7,446	6,789	657
Trade names	4,361	2,789	1,572
Total identifiable intangible assets	$65,633	$56,062	$9,571

Intangible asset amortization expense amounted to $5,890, $1,358 and $1,715 for the years ended December 31, 2008, 2009 and 2010, respectively. Assuming no change in the gross carrying value of identifiable intangible assets and estimated lives, estimated amortization expense amounts to $1,757 for 2011, $1,664 for 2012, $1,664 for 2013, $1,405 for 2014, and $1,033 for 2015.

Goodwill

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

Balance at December 31, 2008	$—
Adventa acquisition	3,282
Balance at December 31, 2009	3,282
YDI acquisition	1,210
Balance at December 31, 2010	$4,492

Goodwill and Identifiable Intangible Assets Impairment

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.

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.

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9. Non-current liabilities

	December 31,	
	2009	2010
Unrecognized tax benefits (including interest)	$4,472	$4,831
Other	2,990	2,404
Total non-current liabilities	$7,462	$7,235

10. Commitments and Contingencies:

Intellectual Property Indemnification Obligations

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

Warranty Reserves

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

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

	Year Ended December 31,		
	2008	2009	2010
Balance, beginning of the year	$2,365	$1,813	$700
Accruals	1,868	894	2,363
Warranty liability assumed in acquisition	215	—	—
Usage	(2,635)	(2,007)	(1,409)
Balance, end of the year	$1,813	$700	$1,654

Legal Matters

From time to time the Company is subject to legal proceedings and claims in the ordinary course of business. In December 2007, Rudolph completed its acquisition of specific assets and liabilities of the semiconductor division of Applied Precision LLC (“Applied”). As a result of the acquisition, Rudolph assumed certain liabilities of Applied including a lawsuit filed by Integrated Technology Corporation (“ITC”) against Applied alleging infringement on two of ITC's patents. While this litigation is currently ongoing, Rudolph believes that it has meritorious defenses and is vigorously defending the action. In the event that Rudolph is ultimately found liable, damage estimates related to this case, which have not been accrued for as of December 31, 2010, range from approximately $25 to $9,000, depending on multiple factors presented by the parties.

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 $2,821, $2,720 and $2,916 for the years ended December 31, 2008,

2009 and 2010, respectively.

The Company also leases certain equipment pursuant to operating leases, which expire through 2014. Rent expense related

to these leases amounted to $148, $122 and $118 for the years ended December 31, 2008, 2009 and 2010, respectively.

Total future minimum lease payments under noncancelable operating leases as of December 31, 2010 amounted to $2,929 for 2011, $2,162 for 2012, $1,668 for 2013, $1,701 for 2014, $1,730 for 2015 and $2,185 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 $838, $279 and $871 for the years ended December 31, 2008, 2009 and 2010, respectively.

Open and Committed Purchase Orders

The Company has open and committed purchase orders of $21,994 as of December 31, 2010.

11. 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 of Directors 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 is scheduled to expire in 2015.

12. 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, 2009 and 2010, there were 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 available 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, 2010, there were 3,561 shares of common stock reserved for future grants under the 2009 Plan.

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

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	Year Ended December 31,		
	2008	2009	2010
Share-based compensation expense:			
Stock options	$508	$453	$618
Restricted stock units	2,897	3,306	4,821
Total share-based compensation	3,405	3,759	5,439
Tax effect on share-based compensation	1,396	1,541	2,230
Net effect on net income	$2,009	$2,218	$3,209
Tax effect on:			
Cash flows from financing activities	$—	$—	$242
Effect on earnings per share—basic	$(0.07)	$(0.07)	$(0.10)
Effect on earnings per share—diluted	$(0.07)	$(0.07)	$(0.10)

Valuation Assumptions for Stock Options
For the year ended December 31, 2009, there were 397 stock options granted. For the year ended December 31, 2010, there were 10 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		2010	
Expected life (years)	4.9		5.0	
Expected volatility	82.0	%	85.5	%
Expected dividend yield	0.0	%	0.0	%
Risk-free interest rate	2.0	%	2.1	%
Weighted average fair value per option	$4.50		$5.07	

Stock Option Activity
A summary of the Company’s stock option activity with respect to the years ended December 31, 2008, 2009 and 2010 follows:

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	Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
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		
Granted	10	7.47		
Exercised	(22)	5.20		
Expired	(225)	25.86		
Forfeited	(1)	14.46		
Outstanding at December 31, 2010	1,950	$19.14	3.5	$532
Vested or expected to vest at December 31, 2010	1,935	$19.24	3.4	$511
Exercisable at December 31, 2010	1,652	$21.36	2.6	$114

The total intrinsic value of the stock options exercised during 2008, 2009 and 2010 was $87, $41 and $68, respectively.
The options outstanding and exercisable at December 31, 2010 were in the following exercise price ranges:

	Options Outstanding			Options Exercisable	
Range of Exercise Prices	Shares	Weighted Average Remaining Contractual Life (years)	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
$6.80 - $7.86	399	8.7	$6.90	102	$7.11
$10.00 - $15.38	396	3.3	$13.33	395	$13.33
$15.48 - $20.41	420	2.6	$16.83	420	$16.83
$20.60 - $26.20	454	2.0	$24.12	454	$24.12
$28.06 - $50.30	281	0.1	$40.11	281	$40.11
$ 6.80 - $50.30	1,950	3.5	$19.14	1,652	$21.36

As of December 31, 2010, there was $997 of total unrecognized compensation cost related to stock options granted under the plans. That cost is expected to be recognized over a weighted average remaining period of 2.6 years.
Restricted Stock Unit Activity
A summary of the Company’s restricted stock unit activity with respect to the years ended December 31, 2008, 2009 and 2010 follows:

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	Number of Shares	Weighted Average Grant Date Fair Value
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
Granted	487	$7.58
Vested	(377)	$9.23
Forfeited	(27)	$7.97
Nonvested at December 31, 2010	1,455	$7.28

As of December 31, 2010, there was $6,215 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 2.0 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, 2008, 2009 and 2010. As of December 31, 2009 and 2010, there were 300 and 280 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, 2010. Company matching contributions to the plan totaled $899, $340 and $817 for the years ended December 31, 2008, 2009 and 2010, 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, 2008, 2009 and 2010.

13. Other Income (Expense):

	Year Ended December 31,		
	2008	2009	2010

Foreign currency exchange gains (losses), net	$2,547	$(937)	$(255)
Realized gains (losses) on sales of marketable securities, net	(79)	(1)	—
Total other income (expense)	$2,468	$(938)	$(255)

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14. Income Taxes:
The components of income tax expense are as follows:

	Year Ended December 31,		
	2008	2009	2010
Current:			
Federal	$(3,985)	$(2,640)	$743
State	11	(46)	124
Foreign	2,308	230	2,807
	(1,666)	(2,456)	3,674
Deferred:			
Federal	(3,155)	157	—
State	572	37	(167)
Foreign	134	23	15
	(2,449)	217	(152)
Total income tax expense (benefit)	$(4,115)	$(2,239)	$3,522

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. Income before income tax of $16,284 and $14,253 was generated by domestic and foreign operations, respectively, in 2010.
Deferred tax assets and liabilities are comprised of the following:

	December 31,	
	2009	2010
Research and development credit carryforward	$7,445	$7,367
Reserves and accruals not currently deductible	1,493	1,729
Deferred revenue	1,015	2,395
Domestic net operating loss carryforwards	7,393	985
Depreciation	759	471
Capital losses	497	73
Foreign net operating loss and credit carryforwards	3,935	4,933
Intangibles	17,379	15,753
Tax deductible transaction costs	601	534
Share-based compensation	114	1,706
Inventory obsolescence reserve	5,098	4,049
Other	668	491
Gross deferred tax assets	46,397	40,486
Valuation allowance for deferred tax assets	(43,267)	(37,239)
Deferred tax assets after valuation allowance	3,130	3,247
Gross deferred tax liabilities	(32)	(30)
Net deferred tax assets	$3,098	$3,217

At December 31, 2009 and 2010, we had valuation allowances of $43,267 and $37,239 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. The decrease in valuation allowance of $6,028 is primarily due to utilization of domestic net operating loss carry forwards. Valuation allowances have been recorded

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on substantially all of the Company's deferred tax assets as of December 31, 2009 and 2010, except for $3,094 and $3,217 of research and development credits which are reserved for in the Company's provision for uncertain tax positions and $4 and $0 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.

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, 2008, 2009 and 2010 to income before provision for income taxes as follows:

	Year Ended December 31,		
	2008	2009	2010
Federal income tax provision at statutory rate	$(88,830)	$(11,154)	$10,687
State taxes, net of federal effect	(1,789)	(904)	468
Non-deductible goodwill impairment charges	50,440	—	—
Foreign taxes net of federal effect	1,342	525	—
Domestic manufacturing benefit	—	—	(573)
Change in valuation allowance for deferred tax assets	35,196	8,312	(6,553)
True up of prior year benefit	(45)	580	(414)
Other	(429)	402	(93)
Provision (benefit) for income taxes	$(4,115)	$(2,239)	$3,522
Effective tax rate	2%	7%	12%

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, 2010, the Company had federal, state and foreign net operating loss carryforwards of $0, $15,147 and $1,696, 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, 2010, the Company had federal and state research & development credits and foreign tax credit carryforwards of $5,553, $2,860 and $4,205, respectively. The federal research & development credits are set to expire at various dates through December 31, 2030. 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.

A provision has not been made at December 31, 2010 for U.S. or additional foreign withholding taxes on approximately $1,142 of undistributed earnings of our foreign subsidiary in Europe because it is the present intention of management to permanently reinvest these undistributed earnings. U.S. taxes on such permanently reinvested foreign earnings would be recorded net of applicable foreign tax credits and withholding taxes, if any.

The total amount of unrecognized tax benefits were as follows:

	December 31,		
	2008	2009	2010
Unrecognized tax benefits, opening balance	$5,875	$5,967	$5,531
Gross increases—tax positions in prior period	700	(71)	982
Gross increases—current-period tax positions	225	68	211
Lapse of statute of limitations	(833)	(433)	—

Unrecognized tax benefits, ending balance	$5,967	$5,531	$6,724

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Included in the balance of unrecognized tax benefits at December 31, 2009 and 2010 are unrecognized tax benefits of $5,531 and $6,724, of which $4,392 and $4,731, 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, 2008, 2009 and 2010, the Company recognized approximately $37, $16 and $27 in interest and penalties expense associated with uncertain tax positions, respectively. As of December 31, 2009 and 2010, the Company had accrued interest and penalties expense related to unrecognized tax benefits of $170 and $214, 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, 2007 through December 31, 2009. In 2010, the State of New Jersey and the State of Minnesota closed their audits 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, 2005.

15. Manufacturing Consolidation:

Budd Lake, New Jersey, Facility

As a result of the decline in the semiconductor capital equipment industry between 2008 and 2009 and its effect on the Company's Metrology operations, the Company recorded restructuring and asset write-down charges in the three months ended December 31, 2009. The cumulative restructuring and write-down charges through the period ended December 31, 2010 are as follows: 1) $4,500 for asset write-downs, which includes inventory and fixed assets related to discontinued older product lines which the Company believes will not be competitive as the industry recovers; 2) $1,845 for unused and excess rental space that has developed as the Company's Metrology operations have declined over time; and 3) $425 for employee termination costs related to moving the manufacturing of the Company's metrology products from its facility in Budd Lake, NJ to its facility in Bloomington, MN. These charges, which total $6,838, were recorded in Cost of revenues and Selling, general and administrative expenses for $3,048 and $3,722, respectively.

The following table sets forth changes in the Company's reserve as of December 31, 2010.

	Year Ended December 31, 2010			
	Balance at December 31, 2009	Charged to Costs and Expenses	Payments and Other	Balance at December 31, 2010
Employee termination	$159	$266	$(425)	$—
Excess rental space	1,949	—	(403)	1,546
Total	$2,108	$266	$(828)	$1,546

16. 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:

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	Year Ended December 31,								
	2008			2009			2010		
Systems:									
Inspection	$73,465	56	%	$38,027	48	%	$105,904	54	%
Metrology	21,118	16	%	8,921	11	%	39,428	20	%
Data Analysis and Review	4,410	3	%	6,691	9	%	19,417	10	%
Parts	20,801	16	%	15,428	20	%	19,266	10	%
Services	11,246	9	%	9,590	12	%	11,290	6	%
Total revenue	$131,040	100	%	$78,657	100	%	$195,305	100	%

The Company's significant operations outside the United States include sales, service and application offices in Europe and Asia. For geographical reporting, revenues are attributed to the geographic location in which the product is shipped. Revenue by geographic region is as follows:

	Year Ended December 31,		
	2008	2009	2010
Revenues from third parties:			
United States	$30,744	$21,673	$45,243
Taiwan	27,361	22,401	48,455
China	6,582	5,261	24,201
Singapore	12,106	11,765	30,305
South Korea	17,577	4,062	17,612
Japan	11,035	4,394	7,725
Europe	25,635	9,101	21,764
Total revenue	$131,040	$78,657	$195,305

In 2008 and 2009, sales to Intel Corporation accounted for 10.9% and 13.6 % of our revenues, respectively. In 2010, sales to Taiwan Semiconductor Manufacturing Co. and Samsung Semiconductor, Inc. accounted for 13.9% and 11.2% of our revenues, respectively. No other individual end user customer accounted for more than 10% of our revenues in 2008, 2009 and 2010.
As of December 31, 2009 there were two customers, STATS ChipPAC, LTD. and Hynix Semiconductor, Inc., that accounted for more than 10% of net accounts receivable. At December 31, 2010, two customers, Semiconductor Manufacturing International Corporation and Samsung Semiconductor, Inc., accounted for more than 10% of net accounts receivable.
Substantially all of the Company’s long-lived assets are within the United States of America.

17. 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, 2008, all outstanding stock options and restricted stock units were excluded from the computation of diluted loss per share totaling 2,307 and 729, respectively, 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. For the year ended December 31, 2010, the weighted average number of stock options and restricted stock units excluded from the computation of diluted earnings per share were 2,059 and 446, respectively.

The computations of basic and diluted loss per share for the years ended December 31, 2008, 2009, and 2010 are as follows:

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	Income (Numerator)	Shares (Denominator)	Per-Share Amount
For the year ended December 31, 2008			
Basic earnings per share:			
Net income	$(249,686)	30,614	$(8.16)
Effect of dilutive stock options and restricted stock units	—	—	—
Diluted earnings per share:			
Net income	$(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)
For the year ended December 31, 2010			
Basic income per share:			
Net income	$27,015	31,286	$0.86
Effect of dilutive stock options and restricted stock units	—	206	—
Diluted loss per share:			
Net income	$27,015	31,492	$0.86

18. 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.

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, 2010. In the opinion of the Company's management, this quarterly information has been prepared on the same basis as the consolidated financial statements and includes all adjustments (consisting only of normal recurring adjustments) necessary to present fairly the information for the periods presented. The results of operations for any quarter are not necessarily indicative of results for the full year or for any future period.
Year-over-year quarterly comparisons of the Company's results of operations may not be as meaningful as the sequential quarterly comparisons set forth below tend to reflect the cyclical activity of the semiconductor industry as a whole. 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.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
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	Quarters Ended				
	March 31, 2009	June 30, 2009	September 30, 2009	December 31, 2009	Total
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

	Quarters Ended				
	March 31, 2010	June 30, 2010	September 30, 2010	December 31, 2010	Total
Revenues	$40,622	$48,349	$52,323	$54,011	$195,305
Gross profit	20,287	25,190	29,272	29,151	103,900
Income before income taxes	2,768	7,372	9,506	10,891	30,537
Net income	2,045	6,513	8,903	9,554	27,015
Income per share:					
Basic	$0.07	$0.21	$0.28	$0.30	$0.86
Diluted	$0.07	$0.21	$0.28	$0.30	$0.86
Weighted average number of shares outstanding:					
Basic	31,117	31,216	31,365	31,409	31,286
Diluted	31,352	31,437	31,534	31,606	31,492

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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 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
Year 2010:					
Allowance for doubtful accounts	$602	$(142)	$—	$154	$306
Inventory valuation	9,474	(1,046)	—	892	7,536
Warranty	700	2,363	—	1,409	1,654
Deferred tax valuation allowance	43,267	(6,553)	745	220	37,239

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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/ Steven R. Roth
Steven R. Roth
Senior Vice President, Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)

Date: June 24, 2011

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EXHIBIT INDEX

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 (SEC File No. 005-58091) 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 (SEC File No. 000-27965) 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	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).
3.3	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 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 (SEC File No. 000-27965), 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), as amended May 19, 2010 (incorporated by reference to Exhibit 10.1 to Registrant's quarterly report on Form 10-Q, filed on August 4, 2010).
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 (SEC File No. 000-27965), 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).

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Exhibit No.	Description
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 (SEC File No. 005-58091) 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).
21.1	Subsidiaries.
23.1	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.

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

* Management contract, compensatory plan or arrangement.