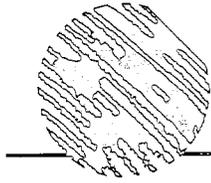
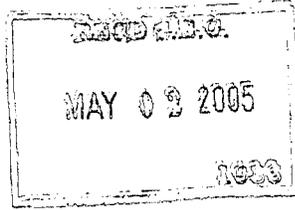


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RUDOLPH

Technologies, Inc.

2004 Annual Report

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www.rudolphtech.com



Letter to Shareholders

Dear Fellow Shareholders:

I'm happy to report that 2004 was an excellent year for Rudolph, one in which our stated vision and commitment to planned, profitable growth was clearly evident. For the full year, revenue grew 44 percent, gross profit rose 57 percent, operating profit improved 16-fold, net income increased 281 percent, and earnings per share increased 264 percent. So, all in all, I would characterize this past year as one of excellent execution on our vision of planned, profitable growth.

While there are areas of weakness, particularly in memory products, we believe the semiconductor industry will continue the upturn that began last year after a short pause. We believe that capital spending will be stronger in the second half of the year. Therefore, we believe the year will be back-end loaded, driven primarily by leading edge processing of 300-millimeter wafers. According to some industry analysts, process control tools are expected to take an increasing percentage of new fabs' capital budgets, growing from around 10 percent in the year 2000, to up to 15 percent in 2005. This would be very good for Rudolph. We believe the slope of the growth curve for semiconductor metrology and inspection manufacturers in the second half of 2005 could be steeper than many expect.

We continue to win competitive business in our three core areas of expertise: macrodefect inspection, transparent film metrology, and opaque film metrology. Our opaque film product, *MetaPULSE*[®], grew more than 100 percent in 2004. We see tremendous upside potential in this product family due to *MetaPULSE*'s demonstrated strength in copper film applications. At this point, only 10 percent of semiconductor production involves copper metallization, but projections are that the majority of devices manufactured will eventually move to copper to take advantage of its faster speed and lower power requirements at smaller device geometries. We see the accelerated plans of a number of memory manufacturers to incorporate copper as evidence that the overall transition will occur sooner rather than later.

Our new macrodefect inspection systems, introduced at Semicon West last summer, have been well received in the market. The product line features the unique *WaferView*[®] Team concept that includes *WaferView* stand-alone inspection and review stations, *i-MOD*[™] in-line process modules, and our fab-proven *YieldView*[®] server. The Team provides customers with a complete, integrated inspection solution that clearly differentiates Rudolph from its competitors. We have also been pleased by the growing acceptance of *WaferView* for back-end bump inspection. I should note here that, beginning this year, we will report sales of our integrated metrology products within the product family that they serve. For instance, *i-MOD* macrodefect modules are sold as a component of the overall *WaferView* Team and are not offered independently of other Team components.

Our heritage transparent film products also remain strong. We have major existing customers who are deeply committed to our technology, and we expect to acquire new customers with the S300 *ultra-II*[™] advanced gate system that is specifically designed for the 10-15 Angstrom films used in 90, 65, and 45 nanometer processes. The system includes a number of unique capabilities, MAC (Molecular Airborne Contaminant) control for improved performance on ultra thin gate oxides, deep UV reflectometry for

continues

nitrided gate measurements, and improved repeatability and temperature stability, that are valuable across a range of applications and give us a clear performance edge in diffusion—Rudolph's traditional strength.

2005 will be a year of leading edge enhancements across all our product lines. Most significant will be the migration to VANGUARD-II™, a versatile new platform designed to accommodate new metrologies and additional wafer handling capacity. VANGUARD-II is a direct response to the maturing semiconductor industry's demand for improvements in traditional manufacturing metrics: reduced cost of ownership through greater throughput, higher precision, more flexibility, and better reliability. Equally important is the new platform's ability to integrate new measurement technologies as they become available. The first example will be the planned introduction of the *Meta*PULSE-III™ in the first half of 2005, designed specifically to measure ultra thin metals such as barrier and seed layers in copper interconnects.

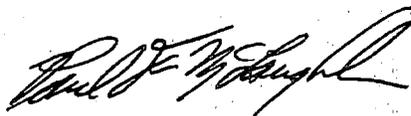
Last October we began a transition from sales through a distributor to direct sales and service in Japan. As expected, our investment in our Japan operations has initially put some pressure on our gross margin, however the start up has moved very quickly, including orders for their first new tools earlier this year. We believe the short-term cost will be more than compensated over the long run by enhanced customer relationships, particularly in our ability to understand and meet our Japanese customers' technical requirements. Japan accounted for 9% of our 2004 business and I believe we can look toward doubling that as our branch, Rudolph Technologies Japan, KK, gets fully established in the years to come. Continuing the move to develop direct overseas operations that we have pursued in recent years, we also increased our presence in China with the opening of an additional office near Beijing.

We are especially proud of our ability to manage the bottom line by remaining profitable regardless of where we are in the industry business cycle. The Company's cash, cash equivalents and marketable securities balances remain extremely strong, totaling over \$76 million at the end of the year. We are actively pursuing opportunities for investments in mergers or acquisitions that would enhance our position in the marketplace and our value to our investors. The principle here is to capitalize on our strong brand reputation in the areas of metrology and inspection while leveraging our business model to the benefit of all our constituencies.

2004 has been a good year for Rudolph and our investors. We reported our sixth straight quarter of increasing revenues. We continue to strengthen our customer base by providing leading edge tools and services in each of our chosen metrology and inspection niches. We have deep relationships with several of the larger IDMs and foundries, and we are working with them to develop new tools that meet their long-term technology roadmap. We believe that by distinguishing ourselves technically in each of our chosen niches, we can continue to drive cash flow and profit, such that we can look to deliver mid-20 percent operating profit margins to our shareholders when the industry continues its ramp.

On behalf of the Board of Directors, I would like to thank our stockholders, customers, suppliers, and employees. Each of your contributions has been vital to our achievements to date. I look forward to continuing that success in the coming year.

Sincerely yours,



Paul F. McLaughlin
Chairman and Chief Executive Officer

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

(MARK ONE)

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

For the Fiscal Year Ended December 31, 2004

OR

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

For the transition period from to

Commission File No. 000-27965

RUDOLPH TECHNOLOGIES, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
Incorporation or organization)

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

One Rudolph Road, Flanders, NJ 07836
(Address of principal executive offices) (Zip Code)

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

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

None

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

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

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

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

Indicate by check mark whether the registrant is an accelerated filer (as defined in Rule 12b-2 of the Securities Exchange Act of 1934). Yes No

The aggregate market value of the voting stock held by non-affiliates of the registrant based on the closing price of the registrant's stock price on June 30, 2004 of \$18.19 was approximately \$231,921,754.

The registrant had 16,855,318 shares of Common Stock outstanding as of March 1, 2005.

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 scheduled to be held on May 24, 2005.

TABLE OF CONTENTS

<u>Item No.</u>		<u>Page</u>
PART I		
1.	Business	1
2.	Properties	16
3.	Legal Proceedings	17
4.	Submission of Matters to a Vote of Security Holders	17
PART II		
5.	Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	18
6.	Selected Financial Data	19
7.	Management's Discussion and Analysis of Financial Condition and Results of Operation	20
7A.	Quantitative and Qualitative Disclosures about Market Risk	27
8.	Financial Statements and Supplementary Data	28
9.	Changes in and Disagreements with Accountants on Accounting and Financial Disclosure	28
9A.	Controls and Procedures	28
9B.	Other Information	29
PART III		
10.	Directors and Executive Officers of the Registrant	30
11.	Executive Compensation	30
12.	Security Ownership of Certain Beneficial Owners and Management	30
13.	Certain Relationships and Related Transactions	30
14.	Principal Accounting Fees and Services	30
PART IV		
15.	Exhibits and Financial Statement Schedules	31
	Signatures	
	Certifications	

FORWARD LOOKING STATEMENTS

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

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

PART I

Item 1. Business.

General

Rudolph is a worldwide leader in the design, development and manufacture of high-performance process control metrology and defect inspection systems used by semiconductor device manufacturers. We provide full-fab solutions through a family of standalone systems and integrated modules for both transparent and opaque thin film measurements, and macro-defect inspection. These systems, which have production-worthy automation, are designed specifically for semiconductor manufacturing applications and are backed by worldwide customer support.

We introduced the industry's first production-oriented microprocessor-controlled ellipsometer for thin transparent film measurements in 1977. Since that time, we have consistently provided innovative product developments designed to meet manufacturers' most advanced measurement requirements. Our patented transparent film technology uses up to four lasers operating simultaneously at multiple angles and multiple wavelengths, providing powerful analysis and measurement capabilities to handle the most challenging requirements of today's advanced processes and tomorrow's new materials. Unlike spectroscopic ellipsometers, lasers make our metrology tools inherently stable, increase measurement speed and accuracy, and reduce maintenance costs by minimizing the time required to requalify a light source when it is replaced. Our systems also employ a proprietary reflectometer technology that allows the characterization of films and film stacks that

cannot be performed using conventional reflectometry or ellipsometry alone. Our latest offering, the S300 *ultra-II*[™], delivers high precision accuracy when optimizing critical film deposition processes and superior repeatability when monitoring production of current and future generations of advanced materials, including nitrided and high- κ gate materials, low- κ dielectrics, low- κ dielectric integration materials, 193 nm ARCs, and SiGe.

For opaque film characterization, we brought patented optical acoustic metal film metrology technology to the semiconductor manufacturing floor with *MetaPULSE*[®]. *MetaPULSE* allows customers to simultaneously measure the thickness and other properties of up to six metal or other opaque film layers in a non-contact manner on product wafers. *PULSE Technology*[™] uses an ultra-fast laser to generate sound waves that pass down through a stack of metal or 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 over two-thirds of all systems sold have been for copper applications. The *MetaPULSE-II*[™] is our second generation metal metrology system which provides superior performance on today's ultra thin barriers, narrow lines, and more complex structures, while providing high throughput, a smaller measurement spot, and excellent repeatability.

Our acquisition of the Yield Metrology Group (YMG), in September 2002, marked the introduction of the *WaferView*[®] family of metrology systems for automated macro-defect inspection of lithography, etch, CMP, and bump processes. The advanced color vision system provides higher defect detection rates than can be achieved with gray-scale systems and our proprietary and patented knowledge-based algorithms accurately and consistently classify macro-defects which vary widely in color, shape, size, and appearance. Results from *WaferView*'s expert system software can be integrated directly into the manufacturer's process control system to provide rapid notification of process problems. In 2004, a new line of *WaferView* products, the 220 and 320 Series, was introduced. The new systems offer higher resolution inspection while maintaining production throughputs, add the ability to inspect the edge and back of the wafer to capture more defects and to improve root-cause analysis, and incorporate the high-resolution *ReviewScope*[™] microscope for sub-micron defect inspection and fast review.

The new *WaferView* products are part of the *WaferView Team*[™], which was also introduced in 2004. The Team provides the industry's first cost-effective inline real-time macro-defect inspection for every wafer at every critical process step. The Team consists of three members:

- The *i-MOD ADI*[™] inspection module is designed for integration directly into lithography track equipment. Lithography inspection is critical to high-yield semiconductor manufacturing as detected defects can be reworked and corrected. With the *i-MOD ADI*, manufacturers can inspect the surface of every wafer immediately after processing without impacting track performance or throughput.
- Standalone *WaferView* systems offer a modular configuration, allowing manufacturers to customize a tool to meet their specific inspection needs for lithography, etch, CMP, or bump processes. The standalone tools offer industry leading inspection capabilities and also support the *i-MOD ADI* with high-magnification review of suspect wafers and the ability to inspect the wafer's edge and back.
- The *YieldView*[®] server, a fab-wide information system, coordinates the Team. *YieldView* stores, manages, and analyzes macro and microdefect data and inspection recipes from inspection systems throughout the fab to rapidly pinpoint the source of process excursions and to make fast and accurate pass/rework/scrap decisions.

The Team offers virtually instantaneous notification of process problems and simplifies root-cause analysis, minimizing the number of misprocessed wafers by substantially reducing delays between defect formation and corrective action. The Team can also significantly lower personnel costs, contributing to a very short payback on investment.

Technology

We believe that our expertise in engineering, research, and development enables 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 photolithography, etch, CMP, and bump processes.

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

The use of optical acoustics to measure multi-layer metal and opaque films was pioneered by scientists at Brown University in collaboration with engineers at Rudolph. The proprietary optical acoustic technology in our PULSE Technology systems measures the thickness of single or multi-layer opaque films ranging from less than 40 Angstroms to greater than five microns. It provides these measurements at a rate of up to 70 wafers per hour with one to two percent accuracy and 0.5% 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. When a surface or interface is struck by polarized light, ellipsometers measure the change in the reflected light's polarization. By measuring at multiple wavelengths, an ellipsometer can determine process significant properties of transparent films. The combination of multiple angles of incidence and multiple wavelength ellipsometry also allows more accurate and reliable measurement across a wider range of thicknesses and a wider variety of films and film stacks than single angle systems.

We have been an industry leader in ellipsometry technology for the last three decades. We hold patents on several ellipsometry technologies developed by our engineers, 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.

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

Automated Defect Detection and Classification. Automating the defect detection and classification process is best done by a system that can mimic, or even extend, the response of the human eye, but at a much higher speed and more consistently. To do this, our WaferView vision system captures 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 "learn" 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.

Products

We market and sell products to all major logic, memory, and ASIC device manufacturers. We provide our customers with versatile full-fab metrology and inspection solutions by offering families of systems designed for high-volume semiconductor manufacturing facilities that offer automated wafer handling and 200 and 300 mm configurations to satisfy our customers' needs. Our systems operate at high throughput with ultraclean operation and high reliability. Our *MetaPULSE*, *MetaPULSE-II*, *S300 ultra-II*, and *S-Series* products are all built on the production-worthy *VANGUARD*® automation platform that provides a common software system, user interface, and hardware base. Our products can be broken down into three main categories: Transparent Thin Films, Opaque Thin Films, and Macro-Defect Inspection.

Transparent Thin Films

S-Series

Our S-Series family of products, including the *S300 ultra-II*, incorporates up to four lasers, providing ellipsometry at wavelengths across the spectrum from deep blue to near infrared. Visible and ultraviolet reflectometers are also available. These systems can be user configured by selecting the required lasers and reflectometers for various specific applications including CMP, CVD, diffusion, lithography, and etch. They are available in both 200 and 300 mm configurations and are designed for production applications with high reliability and high throughput, ranging from 80 to 120 wafers per hour. The average selling price ranges from \$350,000 to \$1.0 million.

Focus

The highly successful *Focus*™ series was introduced in 1991. Our most current model, the *FE VII*™, provides accurate and repeatable measurements of production wafers with its dual-laser multiple angle ellipsometry for 200 mm or smaller wafers. The average selling price ranges from \$300,000 to \$600,000.

AutoEL

The *AutoEL*® series, the first microprocessor-based automated ellipsometer, was introduced in 1977. It continues to be sold today and provides a fully automated desktop solution for measuring film thickness and optical constants. It is available in different wavelength configurations and has an average selling price of \$30,000 to \$100,000.

Opaque Thin Films

MetaPULSE and MetaPULSE-II

Introduced in 1997, the *MetaPULSE* was the first, and we believe remains the market dominant, non-contact production metrology system for thin opaque films. The *MetaPULSE-II* is our second generation *PULSE*™ system that provides a smaller measurement spot size, better repeatability on advanced materials, and higher throughput than previous versions. Nearly 200 *PULSE* systems have been sold to fabs around the world and over two-thirds have been deployed in copper interconnect production applications. The systems are available in 200 and 300 mm configurations and are designed for production applications with high reliability and throughput ranging from 60 to 70 wafers per hour. The average selling price ranges from \$900,000 to \$2.0 million.

Macro-defect Inspection

WaferView

WaferView systems provide automated macro-defect inspection for lithography, etch, CMP, and bump applications. The completely redesigned 220 and 320 Series offer a variety of enhancements including better resolution, the ability to inspect the edge and back of wafers, as well as the addition of a high-magnification microscope for rapid defect review. WaferView systems have been deployed in production fabs in the U.S., Europe, and Asia. WaferView is available in 200 and 300 mm configurations and is designed for production applications with high-reliability and throughputs ranging from 100 to 150 wafers per hour. The average selling price ranges from \$700,000 to \$1.4 million.

i-MOD ADI

The *i-MOD ADI* incorporates the same full-color vision system and advanced defect classification technology as the WaferView systems but is designed for integration directly into lithography track equipment. The average selling price ranges from \$300,000 to \$600,000.

YieldView

YieldView is an advanced yield management and process control system. It collects, stores, and analyzes data from multiple WaferView or *i-MOD ADI* inspection systems. In addition, it manages information transfers between inspection tools and communications with the manufacturing facility's statistical process control system. The average selling price ranges from \$250,000 to \$500,000.

Customers

We sell our products worldwide to over 70 semiconductor device manufacturers, including both independent semiconductor device manufacturers and foundries throughout the world. We have a diverse customer base in terms of both geographic location and type of semiconductor device manufactured. Our customers are located in 16 different countries.

We depend on a relatively small number of customers and end users for a large percentage of our revenues. In the years 2002, 2003 and 2004, sales to end user customers that individually represented at least five percent of our revenues accounted for 46.8%, 59.4% and 53.4% of our revenues, respectively. In 2004, sales to Intel accounted for 23.2% of our revenues and sales to Taiwan Semiconductor Manufacturing Company were 22.2% of our revenues. No other individual end user customer accounted for more than 10% of our revenues. We do not have purchase contracts with any of our customers that obligate them to continue to purchase our products.

Research and Development

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

The core competencies of our research and development team include metrology systems for high volume manufacturing, ellipsometry, ultra-fast optics, picosecond acoustic and optical design, advanced metrology application development and algorithm development. As of December 31, 2004, we have been granted, or hold exclusive licenses to, 48 U.S. and foreign patents covering technology in the transparent thin film measurement, altered material characterization, picosecond ultrasonic areas and knowledge-based algorithms used in macro-

defect detection and classification. We also have 26 pending regular and provisional applications in the U.S. and in other countries.

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 2002, 2003 and 2004 were \$11.8 million, \$13.4 million and \$15.8 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. In addition, the acquisition of YMG resulted in our recording of a one-time expense of \$3.5 million in 2002 for the write-off of in-process research and development. This expense related to automated defect inspection technology to be used in stand-alone and integrated metrology equipment.

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 New Jersey, Texas, Germany, Scotland, Holland, Ireland, Israel, Korea, Singapore, Taiwan, China and Japan.

We provide our customers with comprehensive support before, during and after the delivery of our products. For example, in order to facilitate the smooth integration of our tools into our customers' operations, we often assign dedicated, site-specific field service and applications engineers to provide long-term support at selected customer sites. We also provide comprehensive service and applications training for customers at our training facility in Mt. Arlington, 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 facility in Ledgewood, New Jersey. Our core manufacturing competencies include electrical, optical and mechanical assembly and testing as well as the management of new product transitions. While we use standard components and subassemblies wherever possible, most mechanical parts, metal fabrications and critical components used in our products are engineered and manufactured to our specifications. We expect to rely increasingly on subcontractors and turnkey suppliers to fabricate components, build assemblies and perform other non-core activities in a cost-effective manner.

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

Intellectual Property

We have a policy of seeking patents on inventions governing new products or technologies as part of our ongoing research, development, and manufacturing activities. As of December 31, 2004, we have been granted,

or hold exclusive licenses to, 48 U.S. and foreign patents. The patents we own or exclusively license have expiration dates ranging from 2005 to 2022. We also have 26 pending regular and provisional applications in the U.S. and other countries. Our patents and applications principally cover various aspects of transparent thin film measurement, altered material characterization and macro-defect detection and classification.

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

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

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

Competition

The market for semiconductor capital equipment is highly competitive. We face substantial competition from established companies in each of the markets that we serve. We principally compete with KLA-Tencor and Therma-Wave. We compete to a lesser extent with companies such as Dai Nippon Screen, Nanometrics, Sopra, August Technology and Leica. Each of our products also competes with products that use different metrology techniques. Some of our competitors have greater financial, engineering, manufacturing and marketing resources, broader product offerings and service capabilities and larger installed customer bases than we do.

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

Backlog

We schedule production of our systems based upon order backlog and informal customer forecasts. We include in backlog only those orders to which a purchase order number has been assigned by the customer and for which delivery has been specified within 12 months. Because shipment dates may be changed and customers may cancel or delay orders with little or no penalty, our backlog as of any particular date may not be a reliable indicator of actual sales for any succeeding period. At December 31, 2004, we had a backlog of approximately \$22.5 million compared with a backlog of approximately \$27.7 million at December 31, 2003.

Employees

As of December 31, 2004, we had 326 employees. Our employees are not represented by any collective bargaining agreements, and we have never experienced a work stoppage. We believe our employee relations are good.

Available Information

We were incorporated in New Jersey in 1958 and reincorporated in Delaware in 1999. The Internet website address of Rudolph Technologies, Inc. is <http://www.rudolphtech.com>. The 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>.

Factors that May Affect Future Results

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.

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 included in our systems could seriously harm our results of operations.

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

In 2002, 2003 and 2004, sales to end user customers that individually represented at least five percent of our revenues accounted for 46.8%, 59.4%, and 53.4% of our revenues. In 2002, 2003, 2004, sales to Intel, a key customer, accounted for 46.8%, 35.3% and 23.2% of our revenues. In 2004, sales to Taiwan Semiconductor Manufacturing Company accounted for 22.2% 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 we expect this trend 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 would significantly decline. We expect that we will continue to depend on a small number of large customers for a significant portion of our revenues for at least the next several years. In addition, as large semiconductor device manufacturers seek to establish closer relationships with their suppliers, we expect that our customer base will become even more concentrated.

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

Our quarterly operating results have varied significantly in the past and may continue to do so in the future, which could cause our stock price to decline. Some of the factors that may influence our operating results and subject our stock to extreme price and volume fluctuations include:

- changes in customer demand for our systems, which is influenced by economic conditions in the semiconductor device industry, demand for products that use semiconductors, market acceptance of our systems and those 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 and shipments;
- 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 revenue may vary significantly each quarter due to relatively small fluctuations in our unit sales

During any quarter, a significant portion of our revenue may be derived from the sale of a relatively small number of systems. Our transparent film measurement systems range in average selling price from approximately \$30,000 to \$1.0 million per system, our opaque film measurement systems range in average selling price from approximately \$900,000 to \$2.0 million per system and our macro-defect detection systems range in average selling price from approximately \$250,000 to \$1.4 million per system. Accordingly, a small change in the number of systems we sell may also cause significant changes in our operating results. This, in turn, could cause fluctuations in the market price of our common stock.

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

Variations in the length of our sales cycles could cause our revenues, and thus our business, financial condition and operating results, 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 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:

- 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 equipment.

Because of the number of factors influencing the sales process, the period between our initial contact with a customer and the time when we recognize revenue from that customer, if ever, 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, typically range from six to 15 months. Sometimes our sales cycles can be much longer, particularly with customers in Japan. During these cycles, we commit substantial resources to our sales efforts in advance of receiving any revenue, and we may never receive any revenue from a customer despite our sales efforts.

If we do make a sale, our customers often purchase only one of our systems, and then evaluate its performance for a lengthy period before purchasing any more of our systems. The number of additional products a customer purchases, if any, depends on many factors, including a customer's capacity requirements. The period between a customer's initial purchase and any subsequent purchases can vary from six months to a year or longer, and variations in the length of this period could cause further fluctuations in our operating results and possibly in our stock price.

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 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 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 developing them, as not all research and development activities result in viable commercial products. Any significant delay in releasing new systems could adversely affect our reputation, give a competitor a first-to-market advantage or cause a competitor to achieve greater market share.

Even if we are able to successfully develop new products, if these products do not gain general market acceptance we will not be able 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. Any new systems we introduce may not achieve a significant degree of market acceptance or, once accepted, may fail to sell well for a sustained period.

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 is 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 do materialize may be cancelled. As a result, if we do not achieve market acceptance of new products, we may not be able to realize sufficient sales to recoup research and development expenditures.

Even if we are able to develop new products that gain market acceptance, sales of 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 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.

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

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 long-term ability to produce commercially successful systems will be impaired.

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

Our industry is characterized by the need for continual investment in research and development as well as customer service and support. As a result of our need to maintain our spending levels in these areas, our operating results could be materially harmed if our revenues fall below expectations. In addition, because of our emphasis on research and development and technological innovation, our operating costs may increase further in the future.

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, trade secret and trademark law to protect that technology. If we fail to adequately protect our intellectual property, it will be easier for our competitors to sell competing products. We own or have licensed a number of patents relating to our 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 not in the future be able to develop additional proprietary technology that is patentable. In addition, the patents we do own or that have been issued or licensed to us may not provide us with competitive advantages and may be challenged by third parties. Third parties may also design around these patents.

In addition to patent protection, we rely upon trade secret protection for our confidential and proprietary information and technology. We routinely enter into confidentiality agreements with our employees and other

third parties. However, in the event that these agreements may be breached, we may not have adequate remedies. Our confidential and proprietary information and technology might also be independently developed by or become otherwise known to third parties.

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

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

Protection of our intellectual property rights, or the efforts of third parties to enforce their own intellectual property rights against us, has in the past resulted and may in the future result in costly and time-consuming litigation

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. In addition, we may be subject to lawsuits by third parties seeking to enforce their own intellectual property rights. Any such litigation, regardless of outcome, could be expensive and time consuming, and could subject us to significant liabilities or require us to re-engineer our products or obtain expensive licenses from third parties.

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

In 2002, 2003 and 2004, 40.6%, 65.4% and 69.1% of our revenue was derived from sales in foreign countries, including certain countries in Asia such as Taiwan, China, Korea, Singapore and Japan and certain Western European countries. The laws of some foreign countries do not protect our proprietary rights to as great an extent as do the laws of the United States, and many U.S. companies have encountered substantial problems in protecting their proprietary rights against infringement in such countries, some of which are countries in which we have sold and continue to sell systems. 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 prosecution process, 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. There is a risk that our means of protecting our proprietary rights may not be adequate in these countries. For example, our competitors in these countries may independently develop similar technology or duplicate our systems. If we fail to adequately protect our intellectual property in these countries, it would be easier for our competitors to sell competing products in those countries.

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

Therma-Wave. We compete to a lesser extent with companies such as Dai Nippon Screen, Nanometrics, Sopra, August Technology and Leica. 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. As a result, our competitors may be able to respond more quickly to new or emerging technologies or market developments by devoting greater resources to the development, promotion and sale of products, which could impair sales of our products. Moreover, there may be significant merger and acquisition activity among our competitors and potential competitors. These transactions by our competitors and potential competitors may provide them with a competitive advantage over us by enabling them to rapidly expand their product offerings and service capabilities to meet a broader range of customer needs. Many of our customers and potential customers in the semiconductor device manufacturing industry are large companies that require global support and service for their semiconductor capital equipment. While we believe that our global support and service infrastructure is sufficient to meet the needs of our customers and potential customers, 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 ours. 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. Such product introductions by our competitors would likely cause us to decrease the prices of our systems and increase the level of discounts we grant our customers.

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 metrology equipment to help support our future growth, and competition for such personnel in our industry is high

Our success depends to a significant degree upon the continued contributions of our key management, engineering, sales and marketing, customer support, finance and manufacturing personnel. The loss of any of these key personnel, who would be extremely difficult to replace, could harm our business and operating results. During downturns in our industry, we have often experienced significant employee attrition, and we may experience further attrition in the event of a future downturn. Although we have employment and noncompetition agreements with key members of our senior management team, including Messrs. McLaughlin, Loiterman and Roth, these individuals or other key employees may nevertheless leave our company. 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 manufacture all of our systems at a single facility, and any prolonged disruption in the operations of that facility could have a material adverse effect on our revenues

We produce all of our systems in our manufacturing facility located in Ledgewood, New Jersey. 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, 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 revenues could be adversely affected.

If we are unsuccessful in our transition from an independent distributor to a direct sales operation in Japan, our financial results and customer relationships could be adversely affected

Historically, a portion of our sales in Japan have been made to an independent distributor, Tokyo Electron Limited (TEL). In 2002, 2003 and 2004, sales to TEL accounted for 6.8%, 9.5% and 5.8% of our revenues. TEL previously served as our Japanese distributor for over twenty years. Effective October 2004, we opened a new direct sales and support operation in Japan to offer our customers in Japan a direct link to us. We have entered into a transition arrangement with TEL that extends up to December 31, 2005. If we are unsuccessful with the transition of providing sales and services directly in Japan, our financial results and our ability to support our customers in Japan could be adversely affected.

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

Our sales to customers in Asian markets represented approximately 30.1%, 39.9% and 59.6% of our revenues in 2002, 2003 and 2004. Countries in the Asia Pacific region, including Japan, Korea, China, Singapore and Taiwan, each of which accounted for a significant portion of our business in that region, have experienced currency, banking and equity market weaknesses in the past. We expect that political or economic instability in the Asian markets we service could adversely affect our sales in future periods.

Due to our significant level of international sales, we are subject to operational, financial and political risks such as unexpected changes in regulatory requirements, tariffs, political and economic instability, outbreaks of hostilities, adverse tax consequences and difficulties in managing foreign sales representatives and foreign branch operations

International sales accounted for approximately 40.6%, 65.4% and 69.1% of our revenues in 2002, 2003 and 2004. We anticipate that international sales will account for a significant portion of our revenue for at least the next five years. Due to the significant level of our international sales, we are subject to material risks which include:

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 such restrictions could lead to 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., such 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 Taiwan or South Korea, or an economic downturn in Japan, would likely harm the operations of our customers in these countries, causing our sales to suffer. The effect of such events on our revenues could be material because we derive substantial revenues from sales to semiconductor device foundries in Taiwan such as TSMC and UMC, from memory chip manufacturers in South Korea such as Hynix and Samsung, and from semiconductor device manufacturers in Japan such as NEC and Toshiba.

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

Since a substantial portion of our revenues are derived from sales in other countries yet are denominated in U.S. dollars, we could experience a significant decline in sales or experience collection problems in the event the dollar becomes more expensive relative to local currencies

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. Such 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.

Terrorist attacks and terrorist threats may disrupt our operations and negatively impact our revenues, costs and stock price

The terrorist attacks in September 2001 in the United States and the U.S. response to these attacks and the resulting decline in consumer confidence has had a substantial adverse impact on the economy. Any similar future events may disrupt our operations or those of our customers and suppliers. In addition, these events have had and may continue to have an adverse impact on the U.S. and world economy in general and consumer confidence and spending in particular, which could harm our sales. Any of these events could increase volatility in the U.S. and world financial markets, which could harm our stock price and may limit the capital resources available to us and our customers or suppliers. This could have a significant impact on our operating results, revenues and costs and may result in increased volatility in the market price of our common stock.

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 may choose to acquire new and complementary businesses, products, or technologies 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 do not know if we will be able to complete any acquisitions, or whether we will be able to successfully integrate any acquired business, operate it profitably or retain its key employees. Integrating any business, product or technology we acquire could be expensive and time-consuming, could disrupt our ongoing business and could distract our management. If we are unable to integrate any acquired entities, products or technologies effectively, our business, financial condition and operating results will suffer. In addition, 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 amortization of intangible assets or other assets, write-down of impaired assets or charges resulting from the costs of acquisitions could harm our business and operating results.

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 sometimes have contained errors, defects and bugs when introduced. If we deliver systems with errors, defects or bugs, our credibility and the market acceptance and sales of our systems could be harmed. Further, if our systems contain errors, defects or bugs, we may be required to expend significant capital and resources to alleviate such problems. Defects could also lead to product liability as a result of product liability lawsuits against us or against our customers. We have agreed to indemnify our customers in some circumstances against liability arising from defects in our systems. Our product liability policy currently provides \$1.0 million to \$2.0 million of coverage per claim, depending on location of claim, with an overall umbrella limit of \$4.0 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.

Provisions of our charter documents and Delaware law could discourage potential acquisition proposals and could delay, deter or prevent a change in control of our company

Provisions of our certificate of incorporation and bylaws 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; and
- the authority of our board to issue, without stockholder approval, preferred stock with such terms as the board may determine.

We will also be afforded the protections of Section 203 of the Delaware General Corporation Law, which could have similar effects.

Item 2. Properties.

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

<u>Location</u>	<u>Facility Purpose</u>	<u>Approximate Square Footage</u>	<u>Lease Expiration Year, Unless Owned</u>
Flanders, New Jersey	Executive Office	20,000	Owned
Ledgewood, New Jersey	Manufacturing	31,000	2008
Mt. Arlington, New Jersey	Engineering and Service	22,000	2005
Richardson, Texas	Yield Metrology Group	21,000	Owned
Shanghai, China	Sales and Service	3,000	2006
Beijing, China	Sales and Service	1,000	2006
Scotland, United Kingdom	Sales and Service	1,000	2006
Seoul, Korea	Sales and Service	2,000	2007
Hsin-Chu, Taiwan	Sales and Service	6,000	2006
Tainan, Taiwan	Sales and Service	2,000	2005
Singapore	Sales and Service	2,000	2005
Takatsu, Japan	Sales and Service	5,000	2006

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.

On September 30, 2003, our wholly-owned subsidiary, ISOA, Inc. ("ISOA"), filed a counterclaim in the Dallas, Texas District Courts in response to a claim filed on September 23, 2003 against us and ISOA by August Technology Corporation ("August") and STI, Inc. ("STI") related to a commercial dispute. The dispute arose from a December 24, 1997 Development Agreement between ISOA and STI. August acquired STI from ASTI Holdings, Ltd. in April 2003.

Under the Development Agreement, ISOA agreed to provide to STI certain engineering resources in the development of software for STI's semiconductor metrology systems. In return, STI agreed to pay to ISOA a minimum royalty of \$1.0 million of which approximately one-third was paid. August alleged that ISOA did not fulfill its obligations under the Development Agreement and sought a judgment against ISOA for repayment of the monies previously paid and attorney's fees incurred in bringing this action. We had maintained that ISOA fulfilled its obligations under the Development Agreement and that August remained obligated to pay all amounts as agreed to under the Development Agreement. We further believed that intellectual property delivered by ISOA under the terms of the Development Agreement may have been and continue to be used in current systems on the market from August. ISOA's counterclaim sought full payment of the minimum royalty, ongoing royalty payments for any August macro-defect inspection tools using ISOA's property, damages, costs, and attorneys' fees.

On August 6, 2004, the Company and ISOA entered into a settlement agreement with August and STI. Under the terms of the settlement, both companies have agreed to dismiss all claims against each other related to this matter. We received a one-time payment of \$502,500 from ASTI Holdings in connection with the settlement, which is reflected in our consolidated statement of income for the year ended December 31, 2004 in interest income and other, net.

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

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

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

PART II

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

Our common stock is traded on the Nasdaq National Market under the symbol "RTEC." The following table sets forth, for the periods indicated, the high and low sale prices per share of our common stock as reported on the Nasdaq National Market.

	Price Range of Common Stock	
	High	Low
Year Ended December 31, 2003		
First Quarter	\$21.71	\$11.83
Second Quarter	\$17.69	\$11.10
Third Quarter	\$24.12	\$14.87
Fourth Quarter	\$28.54	\$19.18
Year Ended December 31, 2004		
First Quarter	\$30.25	\$16.72
Second Quarter	\$21.24	\$15.86
Third Quarter	\$18.10	\$13.02
Fourth Quarter	\$18.50	\$13.62

As of March 1, 2005, there were 43 stockholders of record of our common stock and approximately 2,369 beneficial stockholders.

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

Certain Equity Compensation Plan Information included in Item 12 of Part III, hereof, is hereby incorporated into this Item 5 of Part II and will be included in our Proxy Statement for the 2005 Annual Meeting of Stockholders.

Item 6. Selected Financial Data.

The following selected financial data should be read in conjunction with our Consolidated Financial Statements and the related Notes thereto appearing elsewhere in this Form 10-K, and "Management's Discussion and Analysis of Financial Condition and Results of Operations." The balance sheet data as of December 31, 2003 and 2004 and the statement of income (loss) data for the years ended December 31, 2002, 2003 and 2004 set forth below were derived from our audited consolidated financial statements included elsewhere in this Form 10-K. The balance sheet data as of December 31, 2000, 2001 and 2002, and the statement of income data for the years ended December 31, 2000 and 2001 were derived from our audited consolidated financial statements not included herein.

	Year Ended December 31,				
	2000	2001	2002(1)	2003	2004
	(In thousands, except share and per share data)				
Statement of Income (Loss) Data:					
Revenues	\$ 88,107	\$ 79,398	\$ 57,445	\$ 58,500	\$ 84,248
Cost of revenues	41,854	39,798	33,576	33,214	44,595
Gross profit	46,253	39,600	23,869	25,286	39,653
Operating expenses:					
Research and development	9,022	11,625	11,828	13,390	15,847
In-process research and development	—	—	3,500	—	—
Selling, general and administrative	14,463	12,171	11,025	10,561	15,222
Amortization (2)	339	339	412	877	876
Total operating expenses	23,824	24,135	26,765	24,828	31,945
Operating income (loss)	22,429	15,465	(2,896)	458	7,708
Interest income and other, net	(2,174)	(2,774)	(2,050)	(1,610)	(1,899)
Income (loss) before provision (benefit) for income taxes and cumulative effect of a change in accounting principle	24,603	18,239	(846)	2,068	9,607
Provision (benefit) for income taxes	(431)	6,499	585	298	2,855
Income (loss) before cumulative effect of a change in accounting principle	25,034	11,740	(1,431)	1,770	6,752
Cumulative effect of a change in accounting principle (net of tax of \$924) (3)	1,458	—	—	—	—
Net income (loss)	\$ 23,576	\$ 11,740	\$ (1,431)	\$ 1,770	\$ 6,752
Net income (loss) per share from continuing operations:					
Basic:					
Income (loss) before extraordinary item and cumulative effect of a change in accounting principle	\$ 1.69	\$ 0.74	\$ (0.09)	\$ 0.11	\$ 0.40
Cumulative effect of a change in accounting principle	(0.09)	—	—	—	—
Net income (loss)	\$ 1.60	\$ 0.74	\$ (0.09)	\$ 0.11	\$ 0.40
Diluted:					
Income (loss) before extraordinary item and cumulative effect of a change in accounting principle	\$ 1.58	\$ 0.71	\$ (0.09)	\$ 0.11	\$ 0.40
Cumulative effect of a change in accounting principle	(0.09)	—	—	—	—
Net income (loss)	\$ 1.49	\$ 0.71	\$ (0.09)	\$ 0.11	\$ 0.40
Pro forma amounts assuming the accounting change in 2000 is applied retroactively (3):					
Net income (loss)	\$ 25,034	\$ 11,740	\$ (1,431)	\$ 1,770	\$ 6,752
Per share amounts:					
Basic	\$ 1.69	\$ 0.74	\$ (0.09)	\$ 0.11	\$ 0.40
Diluted	\$ 1.58	\$ 0.71	\$ (0.09)	\$ 0.11	\$ 0.40
Weighted average shares outstanding:					
Basic	14,773,295	15,899,933	16,215,237	16,408,677	16,746,212
Diluted	15,805,188	16,531,461	16,215,237	16,722,708	16,913,649

	December 31,				
	2000	2001	2002	2003	2004
Balance Sheet Data:					
Cash and cash equivalents (4)	\$29,736	\$ 94,642	\$ 42,047	\$ 28,220	\$ 12,627
Marketable securities (4)	—	—	31,223	52,342	64,120
Working capital	70,122	128,647	106,051	111,251	120,115
Total assets	98,554	147,798	161,963	160,371	171,280
Retained earnings (accumulated deficit)	(3,617)	8,123	6,692	8,462	15,214
Total stockholders' equity	83,508	142,150	144,081	148,537	156,775

- (1) Statement of income (loss) data for 2002 reflects results of operations of YMG since September 25, 2002.
- (2) Effective January 1, 2002, we adopted the provisions prescribed by the Financial Accounting Standards Board in Statement of Financial Accounting Standards No. 142, "Goodwill and Intangible Assets." Consequently, we ceased amortizing goodwill as of such date. Amortization expense relating to goodwill is immaterial in periods prior to 2002.
- (3) Effective January 1, 2000, we changed our method of accounting for revenue recognition based on guidance provided in Securities and Exchange Commission Staff Accounting Bulletin No. 101, "Revenue Recognition in Financial Statements." The pro forma amounts presented in the income statement were calculated assuming the accounting change was made retroactively to all prior periods.
- (4) During 2004, the Company reclassified certain auction rate securities, for which interest rates reset in less than 90 days, but for which the maturity date is longer than 90 days, from cash and cash equivalents to marketable securities. This resulted in a reclassification from cash and cash equivalents to marketable securities of approximately \$13.0 million on the December 31, 2003 consolidated balance sheet.

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 process control metrology systems used in semiconductor device manufacturing. Our thin film measurement proprietary systems measure the thickness and other properties of thin films applied during various steps in the manufacture of integrated circuits; enabling semiconductor device manufacturers to improve yields and reduce overall production costs. Our macro-defect inspection proprietary systems detect and classify defects in semiconductor wafers. We provide our customers with a flexible full-fab metrology solution by offering families of systems that meet their transparent and opaque thin film measurement and macro-defect inspection needs in various applications across the fabrication process. Our three primary families of metrology solutions offer leading-edge metrology technology, flexible systems cost-effectively designed for specific manufacturing applications and a common production-worthy automation platform, all backed by worldwide support.

Our 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 and cell phone sales. Current forecasts by industry analysts for the semiconductor device manufacturing industry project a year-over-year decrease in capital spending of 5—15% for 2005. We monitor capital equipment spending through announced capital spending plans by our customers and monthly-published industry data such as the book to bill ratio. The book to bill ratio is a 3-month running statistic that compares bookings or orders placed with capital equipment suppliers to billings or shipments. A book to bill above one shows that equipment manufacturers are ordering equipment at a pace that exceeds the equipment suppliers' shipments for the period. The North American semiconductor equipment book to bill ratio was 0.92 for the month of December 2004.

Historically, a significant portion of our revenues in each quarter and year has been derived from sales to relatively few end user customers, and we expect this trend to continue. For the years ended 2002, 2003 and 2004 sales to end user customers that individually represented at least five percent of our revenues accounted for 46.8%, 59.4% and 53.4% of our revenues, respectively. For the years ended 2002, 2003 and 2004 sales to Intel accounted for 46.8%, 35.3% and 23.2% of our revenues, respectively. For 2004, sales to Taiwan Semiconductor Manufacturing Company accounted for 22.2% of our revenues.

We do not have purchase contracts with any of our customers that obligates them to continue to purchase our products, and they could cease purchasing products from us at any time. A delay in purchase or cancellation by any of our large customers could cause quarterly revenues to vary significantly. In addition, during a given quarter, a significant portion of our revenues may be derived from the sale of a relatively small number of systems. Our transparent film measurement systems range in average selling price from approximately \$30,000 to \$1.0 million per system, our opaque film measurement systems range in average selling price from approximately \$900,000 to \$2.0 million per system and our macro-defect inspection systems range in average selling price from approximately \$250,000 to \$1.4 million per system. Accordingly, a small change in the number of systems we sell may also cause significant changes in our operating results. Because fluctuations in the timing of orders from our major customers or in the number of our individual systems we sell could cause our revenues to fluctuate significantly in any given quarter or year, we do not believe that period-to-period comparisons of our financial results are necessarily meaningful, and they should not be relied upon as an indication of our future performance.

A significant portion of our revenues has been derived from customers outside of the United States, and we expect this trend to continue. In 2004, approximately 69.1% of our revenues were derived from customers outside of the United States, of which 59.6% were derived from customers in Asia and 9.5% were derived from customers in Europe. In 2003, approximately 65.4% of our revenues were derived from customers outside of the United States, of which 39.9% were derived from customers in Asia and 25.5% were derived from customers in Europe. In 2002, approximately 40.6% of our revenues were derived from customers outside of the United States, of which 30.1% were derived from customers in Asia and 10.4% 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.

Effective October 2004, we opened a new direct sales and support operation in Japan. The new operation offers our customers in Japan a direct link to us. We have established a main office in Takatsu, Japan, with branch operations in Osaka and on Kyushu Island. We currently have an installed base of more than 500 metrology tools in Japan. Tokyo Electron Limited previously served as our Japanese distributor for over twenty years. The transition from our distributor arrangement with Tokyo Electron Limited is expected to take 12—15 months. As part of the transition, our operations will be staffed with some of the same support personnel that supported our products at Tokyo Electron Limited. Our new operations in Japan will have a negative impact on our gross profit and selling, general and administrative expenses for at least the next several quarters until sufficient sales are generated to cover these additional costs.

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

Results of Operations

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

	Year Ended December 31,		
	2002	2003	2004
Revenues	100.0%	100.0%	100.0%
Cost of revenues	58.4	56.8	52.9
Gross profit	41.6	43.2	47.1
Operating expenses:			
Research and development	20.6	22.9	18.8
In-process research and development	6.1	—	—
Selling, general and administrative	19.2	18.1	18.1
Amortization	0.7	1.5	1.0
Total operating expenses	46.6	42.5	37.9
Operating income (loss)	(5.0)	0.7	9.2
Interest income and other, net	3.6	2.8	2.3
Income (loss) before provision for income taxes	(1.5)	3.5	11.5
Provision for income taxes	1.0	0.5	3.4
Net income (loss)	(2.5%)	3.0%	8.1%

Results of Operations 2002, 2003 and 2004

Revenues. Our revenues are derived from the sale of our systems, services, spare parts and licensing. Our revenues were \$57.4 million, \$58.5 million and \$84.2 million in the years 2002, 2003 and 2004. These changes represent increases of 1.8% from 2002 to 2003 and 44.0% from 2003 to 2004.

The following table lists the different sources of our revenue:

Revenue Type	2002 % of Revenue	2003 % of Revenue	2004 % of Revenue
Systems:			
Metrology	85%	73%	79%
Inspection	—	5	2
Parts	6	9	9
Services	8	8	8
Licensing	1	5	2
Total revenue	100%	100%	100%

Systems revenue decreased as a percentage of revenue from 2002 to 2003 due to a decrease in customer demands for our products as a result of the downturn in the semiconductor industry. The increase in systems revenue from 2003 to 2004 from 78% of revenues to 82% of revenues was driven by improved customer demands for our products as a result of increased capital spending in the semiconductor device manufacturing sector this past year. Systems revenue generated by our latest product releases and major enhancements in each of our product families amounted to 39% of total revenue for 2004. Parts and services revenues were slightly higher as a percentage of revenue from 2002 to 2003 and flat as a percentage of revenue from 2003 to 2004. Parts and services revenues are generated from part sales, maintenance service contracts, as well as time and material

billable service calls. If the industry sustains a prolonged recovery, we expect systems revenues as a percentage of total revenue to increase and parts and service revenues as a percentage of total revenue to decrease as customers buy new equipment. Licensing revenue is derived from contracts obtained as a result of the acquisition of our Yield Metrology Group in September 2002. Licensing our technologies is not part of our core business strategy. Therefore, we expect licensing revenue to continue to be a small portion of our revenue.

Gross Profit. Our gross profit has been and will continue to be affected by a variety of factors, including manufacturing efficiencies, excess and obsolete inventory write-offs, pricing by competitors or suppliers, new product introductions, product sales mix, production volume, international and domestic sales mix, and parts and service margins. Our gross profit was \$23.9 million, \$25.3 million and \$39.7 million in 2002, 2003 and 2004. Our gross profit represented 41.6%, 43.2% and 47.1% of our revenues in 2002, 2003 and 2004. The increase in gross profit as a percentage of revenue from 2002 to 2004 is primarily due to an increase in metal tool shipments, which typically have higher margins, and leverage generated by fixed manufacturing and customer service costs representing a smaller percentage of the overall cost of goods sold. These increases were partially offset by a decrease in licensing revenues and our investment in our direct sales and support operations in Japan.

As a result of a transition arrangement with Tokyo Electron Limited, effective October 1, 2004, we began the fourth quarter of 2004 with a fully staffed sales and service team. Our new operations in Japan will have a negative impact on our gross profit for at least the next several quarters until sufficient sales are generated to cover these additional costs.

Research and Development. The thin film transparent, opaque process control and macro-defect inspection metrology market is characterized by continuous technological development and product innovations. We believe that the rapid and ongoing development of new products and enhancements to existing products, including the transition to copper and low-k dielectrics, the progression to 300 mm wafers, the continuous shrinkage in critical dimensions, and the evolution of ultra-thin gate process control, is critical to our success. Accordingly, we devote a significant portion of our technical, management and financial resources to research and development programs. Research and development expenditures consist primarily of salaries and related expenses of employees engaged in research, design and development activities. They also include consulting fees and the cost of related supplies. Our research and development expense was \$11.8 million, \$13.4 million and \$15.8 million in 2002, 2003 and 2004. Research and development expense represented 20.6%, 22.9% and 18.8% of our revenues in 2002, 2003 and 2004. The year-over-year dollar increase in research and development expenses from 2002 to 2003 resulted from the engineering team acquired from YMG being included for the full year of 2003. The year-over-year dollar increase from 2003 to 2004 primarily reflects higher compensation costs and an increase in product development costs. We continue to maintain our commitment to investing in new product development and enhancement to existing products as we position ourselves for future growth. We anticipate research and development expense will be a similar amount in absolute dollars for the first quarter of 2005 as we continue to roll out new products.

In-Process Research and Development. The acquisition of YMG resulted in our recording of a one-time expense of \$3.5 million in 2002 for the write-off of in-process research and development (IPRD). The IPRD we acquired related to automated defect inspection technology to be used in stand alone and integrated metrology equipment. At the time of the acquisition, we determined that the IPRD had not reached technological feasibility and that it did not have an alternative future use. Accordingly, this amount was immediately expensed in the consolidated statement of loss upon the acquisition date.

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 \$11.0 million, \$10.6 million and \$15.2 million in 2002, 2003 and 2004. Selling, general and administrative expense represented 19.2%, 18.1% and 18.1% of our revenues in 2002, 2003 and 2004. The year-over-year dollar increase from 2003 to 2004 in selling, general and administrative expense was primarily due to increased compensation costs, our investment in our direct sales and support operations in Japan, increased administrative costs at our other branch

offices and an increase in costs associated with Sarbanes-Oxley section 404 reporting requirements compliance. Our operations in Japan will also have a negative impact on our ongoing selling, general and administrative expenses for the next several quarters.

Interest Income and Other, Net. Interest income and other, net was \$2.1 million, \$1.6 million and \$1.9 million in 2002, 2003 and 2004. Interest income and other, net for 2004 consisted primarily of interest income, realized gains and losses on sales of marketable securities, rental income and income from the settlement of the August Technology lawsuit in the third quarter of 2004. The decrease in interest income and other, net of \$0.5 million from 2002 to 2003 is attributable to lower interest income of \$0.6 million, partially offset by higher realized gains on investments of \$0.2 million. The increase in interest income and other, net of \$0.3 million from 2003 to 2004 is due to the litigation settlement income of \$0.5 million, higher interest income of \$0.3 million, higher rental income of \$0.1 million, offset by higher realized losses on sales of marketable securities of \$0.6 million.

Provision (Benefit) for Income Taxes. We use the asset and liability method of accounting for income taxes prescribed by Statement of Financial Accounting Standards (SFAS) No. 109, "Accounting for Income Taxes." Income tax expense was \$0.6 million, \$0.3 million and \$2.9 million in 2002, 2003 and 2004. Our effective tax rate was (69%), 14% and 30% in 2002, 2003 and 2004. We computed our effective tax rate for 2002 through 2004 on prevailing federal and state rates adjusted for research and development tax credits and income derived from tax exempt interest. Our effective tax rate in 2002 also reflects the non-deductibility of the IPRD charge for tax purposes. In addition, our effective tax rate in 2004 reflects a valuation allowance of \$0.6 million for a portion of the deferred tax assets attributable to foreign net operating loss (NOL) carryforwards at December 31, 2004, due to the uncertainty of future earnings of our European subsidiary. Realization of the deferred tax assets is dependent on our generating sufficient taxable income in future years in Europe to obtain the tax benefit of NOL carryforwards. Due to uncertainties in the timing and amount of the realization of this deferred tax asset, we have provided a valuation allowance equal to 75% of such deferred asset at December 31, 2004.

Liquidity and Capital Resources

At December 31, 2004 our cash, cash equivalents and marketable securities totaled \$76.7 million, while working capital amounted to \$120.1 million. At December 31, 2003, we had \$80.6 million of cash, cash equivalents and marketable securities and \$111.3 million in working capital. At December 31, 2002 we had \$73.3 million of cash, cash equivalents and marketable securities and \$106.1 million in working capital.

Typically during periods of revenue growth, changes in accounts receivable and inventories represent a use of cash as we incur costs and expend cash in advance of receiving cash from our customers. Similarly, during periods of declining revenue, changes in accounts receivable and inventories represent a source of cash as inventory purchases decline and revenue from prior periods is collected. Because of the lack of visibility in projected sales for 2005, we are uncertain as to the level of expected cash from operating activities in 2005, if any.

Cash provided by operating activities in 2002 and 2003 was \$1.2 million and \$6.3 million, respectively. Net cash used in operating activities in 2004 totaled \$3.2 million. The net cash provided by operating activities during 2002 was primarily a result of increases in deferred revenue of \$4.0 million, accrued liabilities of \$2.1 million and profit before depreciation, amortization and the write-off of IPRD of \$3.7 million, partially offset by an increase in inventories of \$6.2 million and an increase in accounts receivable of \$0.9 million. Cash provided by operating activities during 2003 was primarily due to net income of \$1.7 million combined with a decrease in accounts receivable of approximately \$6.0 million, and a decrease in inventories of \$2.3 million. Cash provided from operating activities during 2003 was negatively affected by a decrease in accounts payable and other liabilities and a decrease in deferred revenue. Net cash used in operating activities in 2004 was primarily due to increases in accounts receivable and inventories of \$12.7 million and \$7.3 million, partially offset by profit before depreciation and amortization of \$9.0 million, a decrease of \$1.5 million in deferred taxes, an increase in accrued liabilities of \$2.8 million, an increase in other current liabilities of \$0.3 million, a decrease in prepaid expenses and other assets of \$2.0 million and a decrease in income taxes receivable of \$1.3 million.

Net cash used in investing activities was \$56.3 million, \$21.7 million and \$14.1 million in 2002, 2003 and 2004. Net cash used in investing activities for 2002 included the acquisition of YMG, net of cash acquired, of \$25.1 million, a net increase in marketable securities of \$30.6 million and capital expenditures of \$0.6 million. In 2003, net cash used in investing activities included a net increase in marketable securities of \$21.1 million and capital expenditures of \$0.7 million. In 2004, net cash used in investing activities included a net increase in marketable securities of \$12.4 million, costs incurred for capitalized software of \$0.8 million and capital expenditures of \$1.0 million. Capital expenditures over the next twelve months are expected to be approximately \$2.0 million.

Net cash provided by financing activities was \$2.5 million, \$1.6 million and \$1.6 million in 2002, 2003 and 2004. Net cash provided by financing activities in 2002 was a result of proceeds received from sales of shares, including sales of shares through employee stock plans and proceeds received from a director of the Company in connection with his sale of the Company's stock. In 2003 and 2004, net cash provided by financing activities was a result of proceeds received from sales of shares through employee stock plans.

From time to time we evaluate whether to acquire new or complementary businesses, products and technologies, and we therefore could apply cash for investing activities in 2005 to consummate any such potential acquisition. On January 21, 2005, August Technology Corporation announced it had entered into a merger agreement with Nanometrics Incorporated. On January 27, 2005, we advised the Board of August Technology that we would be prepared to enter into a merger agreement with August Technology whereby each shareholder would receive consideration consisting of \$2.16 per share in cash and 0.4955 a share in our common stock. The total cash consideration would aggregate approximately \$40 million and the implied total purchase price would aggregate approximately \$190 million based upon the market value of our common stock on January 21, 2005. On February 9, 2005, KLA-Tencor Corporation announced it had advised the Board of August Technology that it was proposing to acquire August Technology for \$11.50 per share in cash. We currently intend to continue to seek to acquire August Technology. There can be no assurance that we will enter into a merger agreement with August Technology, and if we do, the terms of any such agreement.

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, capital expenditures, and research and development activities for the foreseeable future. Thereafter, if cash generated from operations and financing activities is insufficient to satisfy our working capital requirements, we may seek additional funding through bank borrowings, sales of securities or other means. There can be no assurance that we will be able to raise any such capital on terms acceptable to us or at all.

Contractual Obligations

The following is a summary of our contractual obligations at December 31, 2004.

	Payments due by period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Operating lease obligations	\$2,353	\$1,114	\$983	\$256	\$—
Open and committed purchase orders	5,819	5,819	—	—	—
Total	<u>\$8,172</u>	<u>\$6,933</u>	<u>\$983</u>	<u>\$256</u>	<u>\$—</u>

Off-Balance Sheet Arrangements

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

Critical Accounting Policies

Management's discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America. We review the accounting policies we use in reporting our financial results on a regular basis. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities. On an ongoing basis, we evaluate our estimates, including those related to revenue recognition, accounts receivable, inventories, intangible assets, 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, installation and training services. We generally recognize product revenue upon shipment. When customer acceptance is subjective and not obtained prior to shipment, we defer product revenue until such time as positive affirmation of acceptance has been obtained from the customer. Customer acceptance is generally based on our products meeting published performance specifications. The amount of revenue allocated to the shipment of products is done on a residual method basis. Under this method, the total arrangement value is allocated first to undelivered contract elements, based on their fair values, with the remainder being allocated to product revenue. The fair value of installation and training services is based upon billable hourly rates and the estimated time to complete the service. Revenue related to undelivered installation services is deferred until such time as installation is completed at the customer's site. Revenue related to training services is recognized ratably over the training period.

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

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

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. Goodwill, in accordance with SFAS No. 142, is reviewed for possible impairment at least annually during the fourth quarter of each year. A review of goodwill may be initiated prior to conducting the annual analysis if events or changes in circumstances indicate that the carrying value of goodwill may be impaired. 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.

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, 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.

Impact of Recent Accounting Pronouncements

In November 2004, the Financial Accounting Standards Board (FASB) issued SFAS No. 151, "Inventory Costs, an amendment of ARB No. 43, Chapter 4," which is the result of its efforts to converge U.S. accounting standards for inventories with International Accounting Standards. SFAS No. 151 requires idle facility expenses, freight, handling costs, and wasted material (spoilage) costs to be recognized as current-period charges. It also requires that the allocation of fixed production overheads to the costs of conversion be based on the normal capacity of the production facilities. SFAS No. 151 will be effective for inventory costs incurred during fiscal years beginning after June 15, 2005. We are currently evaluating the impact of SFAS No. 151 on our consolidated financial statements.

In December 2004, the FASB issued SFAS No. 123 (revised 2004), "Share-Based Payment" ("SFAS No. 123R"). SFAS No. 123R addresses all forms of share-based payment awards, including shares issued under employee stock purchase plans, stock options, restricted stock and stock appreciation rights. SFAS No. 123R will require us to expense share-based payment awards with compensation cost for share-based payment transactions measured at fair value. SFAS No. 123R requires us to adopt the new accounting provisions beginning in our third quarter of 2005. We are currently evaluating our share-based employee compensation programs, the potential impact of this statement on our consolidated financial position and results of operations and the alternative adoption methods.

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

Interest Rate Risk

We are exposed to changes in interest rates primarily from our investments in certain available-for-sale securities. Our available-for-sale securities consist primarily of fixed income investments (U.S. Treasury and Agency securities and corporate bonds). We continually monitor our exposure to changes in interest rates and credit ratings of issuers from our available-for-sale securities. It is possible that we are at risk if interest rates or credit ratings of issuers change in an unfavorable direction. The magnitude of any gain or loss will be a function of the difference between the fixed rate of the financial instrument and the market rate and our financial condition and results of operations could be materially affected. Based on sensitivity analysis performed on our financial investments held as of December 31, 2004, an immediate adverse change of 10% in interest rates (e.g. 3.00% to 3.30%) would result in a \$0.3 million decrease in the fair value of our available for sale securities.

Foreign Currency Risk

We have branch operations in Taiwan, Singapore, China and Korea and wholly-owned subsidiaries in Europe and Japan, which are subject to currency fluctuations. We have determined that the functional currency of our foreign operations is the local currency in our international operations, which incur most of their expenses in the local currency. These foreign branches and subsidiaries are limited in their operations and level of investment so that the risk of currency fluctuations is not material. A substantial portion of our international sales are denominated in U.S. dollars and, as a result, we have relatively little exposure to foreign currency exchange risk with respect to sales. As of October 1, 2004, substantially all our sales in Japan are denominated in Japanese yen. From time to time, we may enter into forward exchange contracts to hedge a portion of, but not all, existing and anticipated foreign currency denominated transactions expected to occur within 12 months. Because the effect of movements in currency exchange rates on forward exchange contracts generally offsets the related effect on the underlying items being hedged, these financial instruments are not expected to subject us to risks that would otherwise result from changes in currency exchange rates. Gains and losses on these contracts are generally recognized in the Consolidated Statements of Income at the time that the related transactions being hedged are recognized. 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

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of our disclosure controls and procedures, as such term is defined under Rules 13a-15(e) and 15d-15(e) promulgated under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Based on this evaluation, our principal executive officer and our principal financial officer concluded that, as of December 31, 2004, our disclosure controls and procedures are effective in providing assurance that material information required to be disclosed in our reports filed with or submitted to the Securities and Exchange Commission under the Exchange Act is made known to management, including our principal executive officer and our principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation under the framework in *Internal Control—Integrated Framework*, our management concluded that our internal control over financial reporting was effective as of December 31, 2004.

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 management's assessment of the effectiveness of our internal control over financial reporting as of December 31, 2004 has been audited by KMPG LLP, the independent registered public accounting firm that audited our financial statements included in this annual report, as stated in their report which is included herein.

Date: March 15, 2005

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

Date: March 15, 2005

By: /s/ STEVEN R. ROTH
 Steven R. Roth
 Senior Vice President

Changes in Internal Control Over Financial Reporting

There were no changes to the Company's internal control over financial reporting that occurred during the fourth quarter ended December 31, 2004, that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Item 9B. Other Information.

None.

PART III

Certain information required by Part III is omitted from this Annual Report on Form 10-K because we will file a definitive proxy statement within one hundred twenty (120) days after the end of the fiscal year pursuant to Regulation 14A (the "Proxy Statement") for our Annual Meeting of Stockholders currently scheduled for May 24, 2005, and the information included in the Proxy Statement is incorporated herein by reference.

Item 10. Directors and Executive Officers of the Registrant.

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

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

Item 11. Executive Compensation.

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

Item 12. Security Ownership of Certain Beneficial Owners and Management.

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

Item 13. Certain Relationships and Related Transactions.

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

Item 14. Principal Accounting Fees and Services.

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

PART IV

Item 15. Exhibits and Financial Statement Schedules.

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

1. Financial Statements

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

2. Financial Statement Schedule

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

3. Exhibits

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

<u>Exhibit No.</u>	<u>Description</u>
3.1	Restated Certificate of Incorporation of Registrant (incorporated herein by reference to Exhibit (3.1(b)) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871 filed on September 9, 1999).
3.2	Amended and Restated Bylaws of Registrant (incorporated herein by reference to Exhibit (3.2(b)) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.1+	License Agreement, dated June 28, 1995, between the Registrant and Brown University Research Foundation (incorporated herein by reference to Exhibit (10.1) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.2	Form of Indemnification Agreement (incorporated herein by reference to Exhibit (10.3) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.3	Amended 1996 Non-Qualified Stock Option Plan (incorporated herein by reference to Exhibit 10.15 to Registrant's quarterly report on Form 10-Q, filed on November 14, 2001).
10.4	Form of 1999 Stock Plan (incorporated herein by reference to Exhibit (10.4) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.5	Form of 1999 Employee Stock Purchase Plan (incorporated herein by reference to Exhibit (10.5) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.6	Management Agreement, dated as of July 24, 2000, by and between Rudolph Technologies, Inc. and Paul F. McLaughlin (incorporated herein by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000).
10.7	Management Agreement, dated as of July 24, 2000, by and between Rudolph Technologies, Inc. and Robert Loiterman (incorporated herein by reference to Exhibit 10.13 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000).

<u>Exhibit No.</u>	<u>Description</u>
10.8	Management Agreement, dated as of July 24, 2000 by and between Rudolph Technologies, Inc. and Steven R. Roth (incorporated herein by reference to Exhibit 10.14 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000).
10.9	Registration Agreement, dated June 14, 1996 by and among the Registrant, 11, L.L.C., Riverside Rudolph, L.L.C., Dr. Richard F. Spanier, Paul F. McLaughlin (incorporated herein by reference to Exhibit (10.9) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.10	Stockholders Agreement, dated June 14, 1996 by and among the Registrant, Administration of Florida, Liberty Partners Holdings 11, L.L.C., Riverside Dr. Richard F. Spanier, Paul McLaughlin, Dale Moorman, Thomas Cooper and (incorporated herein by reference to Exhibit (10.10) to the Registrant's Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.11	Agreement and Plan of Merger among Rudolph Technologies, Inc., Oasis Acquisition, Inc., ISOA, Inc. and certain shareholders of ISOA, Inc. dated July 22, 2002 (incorporated by reference to an exhibit to the Company's Current Report on Form 8-K as filed with the Commission on October 9, 2002).
10.12	Form of option agreement under 1999 Stock Plan (incorporated herein by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 5, 2004).
21.1	Subsidiaries.
23.1	Consent of KPMG LLP, Independent Registered Public Accounting Firm.
31.1	Certification of Paul F. McLaughlin, Chief Executive Officer, pursuant to Securities Exchange Act Rule 13a-14(a).
31.2	Certification of Steven R. Roth, Chief Financial Officer, pursuant to Securities Exchange Act Rule 13a-14(a).
32.1	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Paul F. McLaughlin, Chief Executive Officer of Rudolph Technologies, Inc.
32.2	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Steven R. Roth, Chief Financial Officer of Rudolph Technologies, Inc.

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

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

	<u>Page</u>
Consolidated Financial Statements:	
Reports of Independent Registered Public Accounting Firm	F-2
Consolidated Balance Sheets as of December 31, 2003 and 2004	F-4
Consolidated Statements of Income (Loss) for the years ended December 31, 2002, 2003 and 2004	F-5
Consolidated Statements of Stockholders' Equity and Comprehensive Income (Loss) for the years ended December 31, 2002, 2003 and 2004	F-6
Consolidated Statements of Cash Flows for the years ended December 31, 2002, 2003 and 2004	F-7
Notes to the Consolidated Financial Statements	F-8
Consolidated Financial Statement Schedule:	
Schedule of Valuation and Qualifying Accounts	F-27

Report of Independent Registered Public Accounting Firm

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

We have audited the consolidated financial statements of Rudolph Technologies, Inc. and subsidiaries as listed in the accompanying index. In connection with our audits of the consolidated financial statements, we also have audited the consolidated financial statement schedule as listed in the accompanying index. These consolidated financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements and financial statement schedule based on our audits.

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

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Rudolph Technologies, Inc. and subsidiaries as of December 31, 2004 and 2003, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2004, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the related financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

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

/s/ KPMG LLP

Short Hills, New Jersey
March 7, 2005

Report of Independent Registered Public Accounting Firm

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

We have audited management's assessment, included in Management's Report on Internal Control Over Financial Reporting in Item 9A of the Company's Annual Report on Form 10-K, that Rudolph Technologies, Inc. maintained effective internal control over financial reporting as of December 31, 2004, based on criteria established in "Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO)." Rudolph Technologies, Inc.'s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting. Our responsibility is to express an opinion on management's assessment and an opinion on the effectiveness of the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, evaluating management's assessment, testing and evaluating the design and operating effectiveness of internal control, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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

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

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

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated financial statements of Rudolph Technologies, Inc. and subsidiaries listed in the accompanying index, and our report dated March 7, 2005 expressed an unqualified opinion on those consolidated financial statements.

/s/ KPMG LLP

Short Hills, New Jersey
March 7, 2005

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

(In thousands, except share and per share data)

	December 31,	
	2003	2004
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 28,220	\$ 12,627
Marketable securities	52,342	64,120
Accounts receivable, less allowance of \$249 in 2003 and \$323 in 2004	10,244	20,827
Inventories	28,321	33,996
Income taxes receivable	1,332	—
Deferred income taxes	1,370	1,853
Prepaid expenses and other current assets	1,256	1,197
Total current assets	123,085	134,620
Property, plant and equipment, net	6,817	8,330
Goodwill	13,245	13,245
Identifiable intangible assets, net	10,379	9,504
Deferred income taxes	6,319	4,347
Other assets	526	1,234
Total assets	\$160,371	\$171,280
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 3,070	\$ 2,914
Accrued liabilities:		
Payroll and related expenses	1,841	3,758
Royalties	601	1,432
Warranty	950	1,209
Income taxes payable	1,295	1,392
Deferred revenue	2,923	2,459
Other current liabilities	1,154	1,341
Total current liabilities	11,834	14,505
Commitments and contingencies (Note 8)		
Stockholders' equity:		
Preferred stock, \$0.001 par value, 5,000,000 shares authorized, no shares issued and outstanding at December 31, 2003 and 2004	—	—
Common stock, \$0.001 par value, 50,000,000 shares authorized, 16,661,240 and 16,817,011 issued and outstanding at December 31, 2003 and 2004, respectively	17	17
Additional paid-in capital	141,154	142,986
Accumulated other comprehensive loss	(1,096)	(1,442)
Retained earnings	8,462	15,214
Total stockholders' equity	148,537	156,775
Total liabilities and stockholders' equity	\$160,371	\$171,280

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

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

	Year Ended December 31,		
	2002	2003	2004
Revenues	\$ 57,445	\$ 58,500	\$ 84,248
Cost of revenues	33,576	33,214	44,595
Gross profit	23,869	25,286	39,653
Operating expenses:			
Research and development	11,828	13,390	15,847
In-process research and development	3,500	—	—
Selling, general and administrative	11,025	10,561	15,222
Amortization	412	877	876
Total operating expenses	26,765	24,828	31,945
Operating income (loss)	(2,896)	458	7,708
Interest income and other, net	2,050	1,610	1,899
Income (loss) before provision for income taxes	(846)	2,068	9,607
Provision for income taxes	585	298	2,855
Net income (loss)	\$ (1,431)	\$ 1,770	\$ 6,752
Earnings (loss) per share:			
Basic	\$ (0.09)	\$ 0.11	\$ 0.40
Diluted	\$ (0.09)	\$ 0.11	\$ 0.40
Weighted average number of shares outstanding:			
Basic	16,215,237	16,408,677	16,746,212
Diluted	16,215,237	16,722,708	16,913,649

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

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY AND
COMPREHENSIVE INCOME (LOSS)
For the years ended December 31, 2002, 2003 and 2004
(In thousands, except share data)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Retained Earnings	Total	Comprehensive Income (Loss)
	Shares	Amount					
Balance at December 31, 2001	16,136,003	\$ 16	\$134,315	\$ (304)	\$ 8,123	\$142,150	
Proceeds from sales of shares through employee stock plans and other	194,837	—	2,468	—	—	2,468	
Net loss	—	—	—	—	(1,431)	(1,431)	\$(1,431)
Tax benefit of exercise of employee stock options	—	—	885	—	—	885	
Currency translation	—	—	—	(417)	—	(417)	(417)
Unrealized gain on investments, net of income tax expense of \$132	—	—	—	426	—	426	426
Comprehensive loss							<u>\$(1,422)</u>
Balance at December 31, 2002	16,330,840	\$ 16	\$137,668	\$ (295)	\$ 6,692	\$144,081	
Proceeds from sales of shares through employee stock plans and other	330,400	1	1,553	—	—	1,554	
Net income	—	—	—	—	1,770	1,770	\$ 1,770
Tax benefit of exercise of employee stock options	—	—	1,933	—	—	1,933	
Currency translation	—	—	—	(466)	—	(466)	(466)
Unrealized loss on investments, net of income tax expense of \$190	—	—	—	(335)	—	(335)	(335)
Comprehensive income							<u>\$ 969</u>
Balance at December 31, 2003	16,661,240	\$ 17	\$141,154	\$(1,096)	\$ 8,462	\$148,537	
Proceeds from sales of shares through employee stock plans	155,771	—	1,629	—	—	1,629	
Net income	—	—	—	—	6,752	6,752	\$ 6,752
Tax benefit of exercise of employee stock options	—	—	203	—	—	203	
Currency translation	—	—	—	60	—	60	60
Unrealized loss on investments, net of income tax benefit of \$317	—	—	—	(406)	—	(406)	(406)
Comprehensive income							<u>\$ 6,406</u>
Balance at December 31, 2004	<u>16,817,011</u>	<u>\$ 17</u>	<u>\$142,986</u>	<u>\$(1,442)</u>	<u>\$15,214</u>	<u>\$156,775</u>	

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

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

	Year Ended December 31,		
	2002	2003	2004
Cash flows from operating activities:			
Net income (loss)	\$ (1,431)	\$ 1,770	\$ 6,752
Adjustments to reconcile net income (loss) to net cash and cash equivalents provided by (used in) operating activities:			
Amortization	412	877	876
In-process research and development	3,500	—	—
Depreciation	1,233	1,297	1,335
Net loss (gain) on sale of marketable securities	(169)	(363)	192
Tax benefit for sale of shares through employee stock plans	885	1,933	203
Provision for (recovery of) doubtful accounts	(78)	(5)	62
Deferred income taxes	252	(1,104)	1,489
Decrease (increase) in assets, net of acquired business:			
Accounts receivable	(860)	5,967	(12,669)
Income taxes receivable	(419)	4	1,332
Inventories	(6,215)	2,308	(7,253)
Prepaid expenses and other assets	(1,497)	(318)	1,991
Increase (decrease) in liabilities, net of acquired business:			
Accounts payable	135	470	(202)
Accrued liabilities	2,075	(1,308)	2,830
Income taxes payable	1,157	136	77
Deferred revenue	3,986	(2,552)	(464)
Other current liabilities	(1,792)	(2,826)	250
Net cash and cash equivalents provided by (used in) operating activities	<u>1,174</u>	<u>6,286</u>	<u>(3,199)</u>
Cash flows from investing activities:			
Purchase of business, net of cash acquired	(25,069)	—	—
Net increase in marketable securities	(30,628)	(21,091)	(12,376)
Purchases of property, plant and equipment	(618)	(656)	(963)
Capitalized software	—	—	(806)
Net cash and cash equivalents used in investing activities	<u>(56,315)</u>	<u>(21,747)</u>	<u>(14,145)</u>
Cash flows from financing activities:			
Proceeds from sales of shares through employee stock plans and other ...	2,468	1,554	1,629
Net cash and cash equivalents provided by financing activities	<u>2,468</u>	<u>1,554</u>	<u>1,629</u>
Effect of exchange rate changes on cash and cash equivalents	78	80	122
Net decrease in cash and cash equivalents	(52,595)	(13,827)	(15,593)
Cash and cash equivalents at beginning of period	<u>94,642</u>	<u>42,047</u>	<u>28,220</u>
Cash and cash equivalents at end of period	<u>\$ 42,047</u>	<u>\$ 28,220</u>	<u>\$ 12,627</u>
Supplemental disclosures of cash flow information:			
Net cash refunded during the period for:			
Income taxes	\$ (475)	\$ (916)	\$ (616)

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

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

1. Organization and Nature of Operations:

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

The Company sells its products to the semiconductor device industry and believes that changes in any of the following areas could have a material adverse effect on the Company's financial position, results of operations or cash flows: advances and trends in new technologies and industry standards; competitive pressures in the form of new products or price reductions on current products; changes in product mix; changes in the overall demand for products and services offered by the Company; changes in customer relationships; litigation or claims against the Company based on intellectual property, patent, product, regulatory or other factors; risks associated with changes in domestic and international economic and/or political conditions or regulations; dependency on suppliers and availability of necessary product components and the Company's ability to attract and retain employees necessary to support its growth.

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, installation and training services. The Company generally recognizes product revenue upon delivery. When customer acceptance is subjective and not obtained prior to shipment, the Company defers product revenue until such time as positive affirmation of acceptance has been obtained from the customer. Customer acceptance is generally based on the Company's products meeting published performance specifications. The amount of revenue allocated to the shipment of products is done on a residual method basis. Under this method, the total arrangement value is allocated first to undelivered contract elements, based on their fair values, with the remainder being allocated to product revenue. The fair value of installation and training services is based upon billable hourly rates and the estimated time to complete the service. Revenue related to 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.

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.

Licensing revenue is recognized based on the licensees' sales that incorporate the Company's technology. License support and maintenance revenue is recognized ratably over the contract period.

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

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, 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 and accruals for contingencies. 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 has evaluated its investment policies consistent with the Financial Accounting Standards Board's (FASB) Statement of Financial Accounting Standards (SFAS) No. 115, "Accounting for Certain Investments in Debt and Equity Securities," and determined that all of its investment securities are to be classified as available-for-sale. Available-for-sale securities are carried at fair value, with the unrealized gains and losses reported in stockholders' equity under the caption "Accumulated other comprehensive loss." Realized gains and losses, interest and dividends on available-for-sale securities are included in interest income and other, net. Available-for-sale securities are classified as current assets regardless of their maturity date as they are available for use in current operations.

F. Allowance For Doubtful Accounts:

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

G. Inventories:

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

H. Property, Plant and Equipment:

Property, plant and equipment are stated at cost. Depreciation of property, plant and equipment is computed using the straight-line method over the estimated useful lives of the assets which are thirty years for buildings, four to seven years for machinery and equipment, seven years for furnitures and fixtures, and three years for computer equipment. Leasehold improvements are amortized using the straight-line method over the lesser of the

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

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

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 Acquired Intangible Assets:

In July 2001, the FASB issued SFAS No. 142, "Goodwill and Other Intangible Assets." SFAS No. 142 requires that goodwill and intangible assets with indefinite useful lives no longer be amortized, but instead they will be tested for impairment at least annually in accordance with the provisions of SFAS No. 142. SFAS No. 142 also requires that intangible assets with definite useful lives be amortized over their respective estimated useful lives to their estimated residual values, and reviewed for impairment in accordance with SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets." The Company has adopted the provisions of SFAS No. 142 effective January 1, 2002. In connection therewith, the Company determined that it has one reporting unit. SFAS No. 142 requires that the Company perform an assessment of whether there is an indication that goodwill is impaired based on the provisions of SFAS No. 142. To the extent an indication exists that the goodwill may be impaired, the Company must measure the impairment loss, if any. Under SFAS No. 142, goodwill impairment is deemed to exist if the net book value of a reporting unit exceeds its estimated fair value. The Company performed an assessment to determine whether goodwill was impaired as of January 1, 2002, the date of adoption, and as of December 31, 2002, 2003 and 2004, and determined that there was no impairment to its goodwill balance at these dates. The Company reviewed its intangible assets with definite useful lives as of December 31, 2002, 2003 and 2004, and determined that there was no impairment of its intangible assets at these dates. The Company will test for impairment at December 31 each year.

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 reserves for potential credit losses. The Company maintains cash and cash equivalents and marketable securities with higher credit quality financial institutions and monitors the amount of credit exposure to any one financial institution.

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

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

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.

N. Translation of Foreign Currencies:

The Company has foreign branches in China, Korea, Taiwan and Singapore, and wholly-owned subsidiaries in Europe and Japan, which use their local currency as their functional currency. 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 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. Foreign exchange rate gains and losses included in operating results are not material for all periods presented. The Company had accumulated exchange losses resulting from the translation of foreign financial statements of \$1,187 and \$1,127 as of December 31, 2003 and 2004, respectively.

O. Stock-based Compensation:

The Company has stock-based employee compensation plans which are described more fully in Note 9. The Company accounts for its stock option plans in accordance with the provisions of Accounting Principles Board (APB) Opinion No. 25, "Accounting for Stock Issued to Employees," and related interpretations. As such, compensation expense is recorded on the date of grant only if the current market price of the underlying stock exceeds the exercise price. No stock-based employee compensation cost is reflected in net income (loss), as all options granted under those plans had an exercise price equal to the market value of the underlying common stock on the date of grant. The Company has adopted the disclosure standards of SFAS No. 123, "Accounting for Stock-Based Compensation," which requires the Company to provide pro forma net income and pro forma earnings per share disclosures for employee stock option grants as if the fair-value-based method of accounting for stock options as defined in SFAS No. 123 had been applied. The following table illustrates the effect on net income (loss) and per share amounts if the Company had applied the fair value recognition provisions of SFAS No. 123 to stock-based employee compensation:

	<u>Year Ended December 31,</u>		
	<u>2002</u>	<u>2003</u>	<u>2004</u>
Net income (loss), as reported	\$(1,431)	\$ 1,770	\$6,752
Deduct: Total stock-based employee compensation expense determined under fair value based method, net of related income tax benefits	<u>4,376</u>	<u>5,119</u>	<u>5,654</u>
Pro forma net income (loss)	<u>\$(5,807)</u>	<u>\$(3,349)</u>	<u>\$1,098</u>
Net income (loss) per share:			
Basic-as reported	\$ (0.09)	\$ 0.11	\$ 0.40
Basic-pro forma	\$ (0.36)	\$ (0.20)	\$ 0.07
Diluted-as reported	\$ (0.09)	\$ 0.11	\$ 0.40
Diluted-pro forma	\$ (0.36)	\$ (0.20)	\$ 0.07

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

The fair value of each stock option granted during the year is estimated on the date of grant using the Black-Scholes option pricing model with the following assumptions:

<u>Employee Stock Options</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>
Expected life (years)	5.0	5.0	5.0
Expected volatility	85.0%	62.5%	67.2%
Expected dividend yield	0.0%	0.0%	0.0%
Risk-free interest rate	3.8%	3.6%	3.1%
Weighted average fair value of options granted during the year	\$ 9.24	\$ 9.59	\$ 13.34
<u>Employee Stock Purchase Plan Shares</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>
Expected life (years)	0.5 to 2.0	0.5 to 2.0	0.5 to 2.0
Expected volatility	85.0%	59.5%	56.0%
Expected dividend yield	0.0%	0.0%	0.0%
Risk-free interest rate	1.7%	1.7%	1.5%
Weighted average fair value of options granted during the year	\$ 9.84	\$ 5.99	\$ 6.31

P. Research and Development and Software Development Costs:

Expenditures for research and development are expensed as incurred. The Company accounts for software development costs in accordance with SFAS No. 86, "Accounting for Costs of Computer Software to Be Sold, Leased or Marketed." SFAS No. 86 requires that certain software product development costs incurred after technological feasibility has been established, be capitalized and amortized, commencing upon the general release of the software product to the Company's customers, over the economic life of the software product. Annual amortization of capitalized costs is computed using the greater of: (i) the ratio of current gross revenues for the software product over the total of current and anticipated future gross revenues for the software product or (ii) the straight-line basis. 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, 2003 and 2004, capitalized software development costs were \$0 and \$806, respectively. There was no amortization of software development cost during the years ended December 31, 2002, 2003 and 2004.

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 approximates fair value due to their short maturities.

R. Derivative Instruments and Hedging Activities

FASB SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities," requires, among other things, that all derivatives be recognized in the balance sheet at fair value and special accounting for hedging activities that meet certain criteria. The Company did not hold any derivative instruments or engage in hedging activities during 2002, 2003, and 2004.

S. Reclassifications

The Company has reclassified certain auction rate securities, for which interest rates reset in less than 90 days, but for which the maturity date is longer than 90 days, from cash and cash equivalents to marketable

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

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

securities. This resulted in a reclassification from cash and cash equivalents to marketable securities of approximately \$13.0 million on the December 31, 2003 consolidated balance sheet and an increase in cash flows used in investing activities of approximately \$13.0 million on the consolidated statement of cash flows for the year ended December 31, 2003.

In addition, certain other prior year amounts have been reclassified to conform to the 2004 financial statement presentation.

T. Recent Accounting Pronouncements:

In November 2004, the FASB issued SFAS No. 151, "Inventory Costs, an amendment of ARB No. 43, Chapter 4," which is the result of its efforts to converge U.S. accounting standards for inventories with International Accounting Standards. SFAS No. 151 requires idle facility expenses, freight, handling costs, and wasted material (spoilage) costs to be recognized as current-period charges. It also requires that the allocation of fixed production overheads to the costs of conversion be based on the normal capacity of the production facilities. SFAS No. 151 will be effective for inventory costs incurred during fiscal years beginning after June 15, 2005. The Company is currently evaluating the impact of SFAS No. 151 on its consolidated financial statements.

In December 2004, the FASB issued SFAS No. 123 (revised 2004), "Share-Based Payment" ("SFAS No. 123R"). SFAS No. 123R addresses all forms of share-based payment awards, including shares issued under employee stock purchase plans, stock options, restricted stock and stock appreciation rights. SFAS No. 123R will require the Company to expense share-based payment awards with compensation cost for share-based payment transactions measured at fair value. SFAS No. 123R requires the Company to adopt the new accounting provisions beginning in our third quarter of 2005. The Company is currently evaluating its share-based employee compensation programs, the potential impact of this statement on its consolidated financial position and results of operations and the alternative adoption methods.

3. Business Combinations:

On September 25, 2002, the Company acquired all of the outstanding stock of ISOA, Inc., a Texas corporation (ISOA), through a merger of Oasis Acquisition, Inc., a wholly-owned subsidiary of the Company, with and into ISOA, with ISOA as the surviving corporation, doing business as Yield Metrology Group (YMG). YMG is a spin-off from Texas Tech University's International Center for Informatics Research. Historically, YMG has licensed its technology for use in the semiconductor industry and recently began transitioning to a semiconductor capital equipment supplier. YMG's core technologies are knowledge-based algorithms used in wafer macro-defect detection and classification. Customers in Asia, Europe and the U.S. are currently using its recently introduced WaferView family of tools. The Company believes YMG's technology has significantly expanded its product offering and provides additional value to our customers. YMG will continue to maintain its offices in Richardson, Texas. The transaction was accounted for using the purchase method of accounting for business combinations and, accordingly, the results of operations of YMG have been included in the Company's consolidated financial statements since the date of acquisition.

The purchase consideration for YMG, including direct acquisition costs, was \$25,235 in cash. The purchase price has been allocated to the net assets acquired and liabilities assumed based upon their respective fair market values.

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

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

The allocation of the purchase consideration to the assets acquired and liabilities assumed follows:

Cash	\$ 166
Accounts receivable	1,623
Inventories	1,413
Property, plant and equipment	2,838
Other assets	409
Accounts payable and accrued liabilities	(1,684)
Deferred taxes	(817)
Other liabilities	(4,945)
Identifiable intangible assets	13,400
Goodwill	12,832
	<u>\$25,235</u>

The excess of the purchase price over the fair value of the net assets acquired and liabilities assumed was allocated to goodwill. The total goodwill of \$12,832, none of which is deductible for tax purposes, is not being amortized in accordance with SFAS No. 141, "Business Combinations" and SFAS No. 142, "Goodwill and Intangible Assets." All remaining and future acquired goodwill will be subject to an impairment test each year using a fair-value-based approach pursuant to SFAS No. 142. Identifiable intangible assets include patented technology and in-process research and development (IPRD). The Company is amortizing the patented technology of approximately \$9,900 on a straight-line basis over its estimated remaining useful life of 16 years. The amount allocated to IPRD of \$3,500 is related to automated defect inspection technology to be used in stand alone and integrated metrology equipment. Such amount was charged to expense at the acquisition date as the IPRD had not reached technological feasibility and had no alternative future use.

The Company used the income approach to estimate the fair value of the developed technology and IPRD. The income approach measures the value of an asset by the present value of its future economic benefits. Value indications are developed in this technique by discounting expected cash flows to their present value at a rate of return that incorporates the risk-free rate for the use of funds, the expected rate of inflation and risks associated with the asset. The discount rate selected is generally based on rates of return available from alternative investments of similar type and risk as of September 25, 2002. The income approach was deemed to be an appropriate method of valuation for these assets, since the income approach focuses on the ability of the assets to generate future earnings.

The following unaudited pro forma consolidated financial information presents the combined results of operations of the Company and YMG as if the acquisition occurred at the beginning of the period presented, after giving effect to certain adjustments, including amortization expense. Due to the special nature of the \$3,500 IPRD charge, this amount has not been included in the unaudited pro forma consolidated financial information. The unaudited pro forma consolidated financial information does not necessarily reflect the results of operations that would have occurred had the acquisition been completed as of the dates indicated or of the results that may be obtained in the future (in thousands except per share information).

	(Unaudited) Year Ended December 31, 2002
Revenues	\$63,686
Net income	\$ 1,258
Earnings per share:	
Basic	\$ 0.08
Diluted	\$ 0.08

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

4. Marketable Securities:

At December 31, 2003, marketable securities are categorized as follows:

	<u>Amortized Cost</u>	<u>Gross Unrealized Holding Gains</u>	<u>Gross Unrealized Holding Losses</u>	<u>Fair Value</u>
Treasury notes and obligations of U.S.				
Government agencies	\$31,411	\$ 75	\$ (24)	\$31,462
Tax-free auction rate securities	13,000	—	—	13,000
Asset-backed securities	1,064	11	—	1,074
Corporate bonds	4,187	67	(17)	4,237
Mortgage-backed securities	<u>2,535</u>	<u>39</u>	<u>(6)</u>	<u>2,569</u>
Total marketable securities	<u>\$52,197</u>	<u>\$192</u>	<u>\$ (47)</u>	<u>\$52,342</u>

At December 31, 2004, marketable securities are categorized as follows:

	<u>Amortized Cost</u>	<u>Gross Unrealized Holding Gains</u>	<u>Gross Unrealized Holding Losses</u>	<u>Fair Value</u>
Treasury notes and obligations of U.S.				
Government agencies	\$28,378	\$ 19	\$(414)	\$27,983
Tax-free auction rate securities	20,900	—	—	20,900
Asset-backed securities	3,931	3	(16)	3,918
Corporate bonds	9,384	13	(111)	9,286
Mortgage-backed securities	<u>2,030</u>	<u>19</u>	<u>(16)</u>	<u>2,033</u>
Total marketable securities	<u>\$64,623</u>	<u>\$ 54</u>	<u>\$(557)</u>	<u>\$64,120</u>

The 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, 2003 and 2004:

	<u>December 31, 2003</u>		<u>December 31, 2004</u>	
	<u>Amortized Cost</u>	<u>Fair Value</u>	<u>Amortized Cost</u>	<u>Fair Value</u>
Due within one year	\$20,831	\$20,890	\$32,436	\$32,164
Due after one through five years	26,988	27,043	25,952	25,716
Due after five through ten years	2,225	2,242	3,695	3,701
Due after ten years	<u>2,153</u>	<u>2,167</u>	<u>2,540</u>	<u>2,539</u>
Total marketable securities	<u>\$52,197</u>	<u>\$52,342</u>	<u>\$64,623</u>	<u>\$64,120</u>

A net gain of \$363 and a net loss of \$192 were included in the consolidated statements of income for 2003 and 2004, respectively.

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

5. Identifiable Intangible Assets and Goodwill:

Identifiable intangible assets:

Identifiable intangible assets as of December 31, 2003 are as follows:

	<u>Weighted Average Useful Life</u>	<u>Gross Carrying Amount</u>	<u>Accumulated Amortization</u>	<u>Net</u>
Purchased technology	12 years	\$ 3,091	\$1,838	\$ 1,253
Patented technology (Note 3)	16 years	9,900	774	9,126
Total		<u>\$12,991</u>	<u>\$2,612</u>	<u>\$10,379</u>

Identifiable intangible assets as of December 31, 2004 are as follows:

	<u>Weighted Average Useful Life</u>	<u>Gross Carrying Amount</u>	<u>Accumulated Amortization</u>	<u>Net</u>
Purchased technology	12 years	\$ 3,091	\$2,095	\$ 996
Patented technology (Note 3)	16 years	9,900	1,392	8,508
Total		<u>\$12,991</u>	<u>\$3,487</u>	<u>\$9,504</u>

Intangible asset amortization expense amounted to \$412, \$877 and \$876 for the years ended December 31, 2002, 2003 and 2004, respectively. Assuming no change in the gross carrying value of identifiable intangible assets, estimated amortization expense amounts to \$876 for 2005, 2006 and 2007, \$842 for 2008 and \$618 for 2009.

Goodwill:

Goodwill was \$13,245 at December 31, 2002, 2003 and 2004.

6. Property, Plant and Equipment:

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

	<u>December 31,</u>	
	<u>2003</u>	<u>2004</u>
Land and building	\$ 5,152	\$ 5,169
Machinery and equipment	1,885	3,991
Furniture and fixtures	1,401	1,473
Computer equipment	2,812	3,410
Leasehold improvements	884	946
	<u>12,134</u>	<u>14,989</u>
Accumulated depreciation	(5,317)	(6,659)
Property, plant and equipment, net	<u>\$ 6,817</u>	<u>\$ 8,330</u>

Depreciation expense amounted to \$1,233, \$1,297 and \$1,335 for the years ended December 31, 2002, 2003, and 2004 respectively.

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

7. Inventories:

Inventories are comprised of the following:

	December 31,	
	2003	2004
Materials	\$13,476	\$20,485
Work-in-process	10,446	8,507
Finished goods	4,399	5,004
Total inventories	\$28,321	\$33,996

The Company has established reserves of \$1,967 and \$1,307 at December 31, 2003 and 2004, for slow moving and obsolete inventory. During 2004, the Company recorded a charge of \$265 for the write-down of inventory for excess parts, for older product lines and for parts which design and engineering advancements rendered obsolete and wrote off \$925 of inventory previously provided for.

8. Commitments and Contingencies:

Intellectual property indemnification obligations

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

Warranty Reserves

The Company generally provides a warranty on its products for a period of twelve to fifteen months against defects in material and workmanship. The Company estimates the costs that may be incurred during the warranty period and records a liability in the amount of such costs at the time revenue is recognized. The Company's estimate is based primarily on historical experience. The Company periodically assesses the adequacy of its recorded warranty liabilities and adjusts the amounts as necessary.

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

	Year Ended December 31,		
	2002	2003	2004
Balance, beginning of the period	\$ 972	\$ 1,120	\$ 950
Provision for warranties issued during the period	1,225	1,024	1,540
Consumption of reserves	(1,077)	(1,194)	(1,281)
Balance, end of the period	\$ 1,120	\$ 950	\$ 1,209

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(In thousands, except share and per share data)

Legal Matters

On September 30, 2003, the Company's wholly-owned subsidiary, ISOA, Inc. ("ISOA"), filed a counterclaim in the Dallas, Texas District Courts in response to a claim filed on September 23, 2003 against Rudolph and ISOA by August Technology Corporation ("August") and STI, Inc. ("STI") related to a commercial dispute. The dispute arose from a December 24, 1997 Development Agreement between ISOA and STI. August acquired STI from ASTI Holdings, Ltd. in April 2003.

Under the Development Agreement, ISOA agreed to provide to STI certain engineering resources in the development of software for STI's semiconductor metrology systems. In return, STI agreed to pay to ISOA a minimum royalty of one million dollars of which approximately one-third was paid. August alleged that ISOA did not fulfill its obligations under the Development Agreement and sought a judgment against ISOA for repayment of the monies previously paid and attorney's fees incurred in bringing this action. Rudolph had maintained that ISOA fulfilled its obligations under the Development Agreement and that August remained obligated to pay all amounts as agreed to under the Development Agreement. The Company further believed that intellectual property delivered by ISOA under the terms of the Development Agreement may have been and continue to be used in current systems on the market from August. ISOA's counterclaim sought full payment of the minimum royalty, ongoing royalty payments for any August macro-defect inspection tools using ISOA's property, damages, costs, and attorneys' fees.

On August 6, 2004, the Company and ISOA entered into a settlement agreement with August and STI. Under the terms of the settlement, both companies have agreed to dismiss all claims against each other related to this matter. Rudolph received a one-time payment of \$503 from ASTI Holdings in connection with the settlement, which is reflected in its consolidated statement of income for the year ended December 31, 2004 in interest income and other, net.

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

Lease Agreements

The Company rents space for its manufacturing and service operations and sales offices. Total rent expense for these facilities amounted to \$1,126, \$1,069 and \$1,149 for the years ended December 31, 2002, 2003 and 2004, respectively.

The Company also leases certain equipment pursuant to operating leases, which expire through 2008. Rent expense related to these leases amounted to \$80, \$63 and \$47 for the years ended December 31, 2002, 2003 and 2004, respectively.

Total future minimum lease payments under noncancelable operating leases as of December 31, 2004 amounted to \$1,114, \$662, \$321, \$256 and \$0 for the years 2005 to 2009, respectively.

Royalty Agreements

Under various licensing agreements, the Company is obligated to pay royalties based on net sales of products sold. There are no minimum annual royalty payments. Royalty expense amounted to \$1,763, \$1,326 and \$2,755 for the years ended December 31, 2002, 2003 and 2004, respectively.

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(In thousands, except share and per share data)

Open and Committed Purchase Orders

The Company has open and committed purchase orders of \$5.8 million for the year ended December 31, 2004.

9. Employee Benefit and Stock Option Plans:

In 1996, the Company adopted the 1996 Stock Option Plan (the "Option Plan"). Under the Option Plan, the Company was authorized to grant options to purchase up to 1,069,902 shares of common stock. All of the outstanding options became 100% vested upon the initial public offering of the Company on November 12, 1999. As of December 31, 2003 and 2004, there were no shares of common stock reserved for future grants under the Option Plan.

The Company established an Employee Stock Purchase Plan (the "ESPP") effective August 31, 1999. 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 Common Stock. The price the employee must pay for each share of stock will be 85% of the lower of the fair market value of the Common Stock at the beginning of the twenty-four month offering period or at the end of the applicable six month purchase period. The ESPP qualifies as a non-compensatory plan under section 423 of the Internal Revenue Code. As of December 31, 2003 and 2004, there were 1,001,711 and 1,209,689 shares available for issuance under the ESPP, respectively.

The Company established the 1999 Stock Plan (the "1999 Plan") effective August 31, 1999. The 1999 Plan provides for the grant of 2,000,000 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 vest over a five year period and expire ten years from the date of grant. As of December 31, 2003 and 2004, there were 316,180 and 376,032 shares of common stock reserved for future grants under the 1999 Plan, respectively.

The following tables summarize the stock option activity for the years ended December 31, 2002, 2003 and 2004:

	Options Outstanding		
	Number of Shares	Weighted Average Exercise Price Per Share	Number of Shares Exercisable
Balance at December 31, 2001	2,128,740	\$21.73	667,769
Granted	506,500	13.41	
Exercised	(153,594)	5.07	
Canceled	(60,427)	27.09	
Balance at December 31, 2002	2,421,219	20.92	952,952
Granted	507,000	17.24	
Exercised	(252,698)	2.29	
Canceled	(146,400)	19.86	
Balance at December 31, 2003	2,529,121	22.11	1,111,092
Granted	378,750	22.88	
Exercised	(63,749)	7.66	
Canceled	(106,403)	22.12	
Balance at December 31, 2004	<u>2,737,719</u>	<u>\$22.55</u>	<u>1,579,246</u>

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

Stock option information as of December 31, 2004 is as follows:

<u>Options Outstanding</u>			<u>Options Vested and Exercisable</u>	
<u>Range of Exercise Prices</u>	<u>Options Outstanding</u>	<u>Weighted Avg. Remaining Contract Life</u>	<u>Weighted Avg. Exercise Price per Share</u>	<u>Number Exercisable</u>
\$ 0.56 - \$ 15.78	436,599	7.80	\$ 12.61	182,777
15.79 - 21.00	1,020,643	6.46	16.52	684,006
21.01 - 39.00	886,126	7.41	26.22	404,634
39.01 - 50.75	394,351	6.08	40.92	307,829
\$ 0.56 - \$ 50.75	<u>2,737,719</u>	6.92	\$ 22.55	<u>1,579,246</u>

The Company has a 401(k) savings plan to provide retirement and incidental benefits for its employees. As allowed under Section 401(k) of the Internal Revenue Code, the Plan provides tax-deferred salary deductions for eligible employees. Employees may contribute up to 100% of their annual compensation to the Plan, limited to a maximum annual amount as set periodically by the Internal Revenue Service. The Plan provides a 50% match of all employee contributions up to 6 percent of the employee's salary. Company matching contributions to the Plan totaled \$276, \$349 and \$393 for the years ended December 31, 2002, 2003 and 2004, respectively.

In addition, 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, 2002, 2003 and 2004.

10. Interest Income and Other, Net:

	<u>Year Ended December 31,</u>		
	<u>2002</u>	<u>2003</u>	<u>2004</u>
Interest Income	\$1,881	\$1,247	\$1,525
Realized gains (losses) on sale of marketable securities	169	363	(192)
Rental income	—	—	63
Litigation settlement	—	—	503
Total interest income and other, net	<u>\$2,050</u>	<u>\$1,610</u>	<u>\$1,899</u>

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

11. Income Taxes:

The components of income tax expense are as follows:

	<u>Year Ended December 31,</u>		
	<u>2002</u>	<u>2003</u>	<u>2004</u>
Current:			
Federal	\$ 478	\$ 54	\$ 387
State	108	48	392
Foreign	—	—	270
	<u>586</u>	<u>102</u>	<u>1,049</u>
Deferred:			
Federal	8	(222)	2,436
State	130	43	(659)
Foreign	<u>(139)</u>	<u>375</u>	<u>29</u>
	<u>(1)</u>	<u>196</u>	<u>1,806</u>
Total income tax expense	<u>\$ 585</u>	<u>\$ 298</u>	<u>\$2,855</u>

Income (loss) before income tax of \$927 and (\$1,773) was generated by domestic and foreign operations, respectively in 2002. Income (loss) before income tax of (\$104) and \$2,172 was generated by domestic and foreign operations, respectively in 2003. Income before income tax of \$6,528 and \$3,079 was generated by domestic and foreign operations respectively in 2004.

Deferred tax assets are comprised of the following:

	<u>December 31,</u>	
	<u>2003</u>	<u>2004</u>
Research and development credit carryforward	\$ 1,914	\$ 2,303
Reserves and accruals not currently deductible	476	1,323
Domestic net operating loss carryforwards	3,051	1,106
Foreign net operating loss carryforwards	475	1,075
Amortization of intangibles	4,285	3,755
Inventory obsolescence reserve	715	429
Other	<u>176</u>	<u>274</u>
Gross deferred tax assets	11,092	10,265
Valuation allowance for deferred tax assets	—	(629)
Deferred tax assets after valuation allowance	11,092	9,636
Amortization of intangibles	(3,403)	(3,172)
Other	<u>—</u>	<u>(264)</u>
Total deferred tax liabilities	<u>(3,403)</u>	<u>(3,436)</u>
Net deferred tax assets	<u>\$ 7,689</u>	<u>\$ 6,200</u>

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(In thousands, except share and per share data)

The provision (benefit) for income taxes differs from the amount of income tax determined by applying the applicable U.S. income tax rate of 34% to income (loss) before provision for income taxes as follows:

	Year Ended December 31,		
	2002	2003	2004
Federal income tax provision (benefit) at statutory rate	\$ (288)	\$ 703	\$ 3,266
State taxes, net of federal effect	201	74	372
In-process research and development write-off	1,190	—	—
Research tax credit	(374)	(663)	(1,132)
Extraterritorial income exclusion	(87)	(31)	(221)
Valuation allowance for deferred tax assets	—	—	629
Other	(57)	215	(59)
Provision for income taxes	<u>\$ 585</u>	<u>\$ 298</u>	<u>\$ 2,855</u>
Effective tax rate (benefit)	<u>(69%)</u>	<u>14%</u>	<u>30%</u>

In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities, projected future taxable income, and tax planning strategies in making this assessment. Based upon the level of historical taxable income and projections for future taxable income over the periods in which the deferred tax assets are deductible, management believes it is more likely than not that the Company will realize the benefits of its domestic deferred tax assets at December 31, 2004. However, the Company has established a valuation allowance of \$629 for a portion of the deferred tax assets attributable to foreign net operating loss (NOL) carryforwards at December 31, 2004, due to the uncertainty of future earnings of its Netherlands subsidiary. The remaining deferred tax assets considered realizable at December 31, 2004, could be reduced in the near term if estimates of future taxable income during the carryforward period are reduced.

In connection with the Company's acquisition of YMG in 2002, the Company acquired patented technology, which gave rise to a deferred tax liability of \$3,500 as of December 31, 2002. The Company also acquired U.S. and state NOL carryforwards in connection with the YMG acquisition which, as of December 31, 2002, gave rise to deferred tax assets totaling \$2,900. These NOL carryforwards, having a balance of \$2,626 as of December 31, 2004, expire between 2013 and 2022 for U.S. purposes, and between 2005 and 2007 for state purposes. The annual utilization of these NOL carryforwards is limited under certain provisions of the Internal Revenue Code. The foreign NOL carryforwards relate to our European and Japanese subsidiaries. The Japan NOL carryforward of \$562 as of December 31, 2004 will expire in 2010, and the Netherlands NOL carryforward of \$2,397 as of December 31, 2004 may generally be carried forward indefinitely.

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

(In thousands, except share and per share data)

12. Segment Reporting and Geographic Information:

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

The following table lists the different sources of revenue:

<u>Revenue Type</u>	<u>2002</u> <u>% of Revenue</u>	<u>2003</u> <u>% of Revenue</u>	<u>2004</u> <u>% of Revenue</u>
Systems:			
Metrology	85%	73%	79%
Inspection	—	5	2
Parts	6	9	9
Services	8	8	8
Licensing	<u>1</u>	<u>5</u>	<u>2</u>
Total revenue	<u>100%</u>	<u>100%</u>	<u>100%</u>

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

	<u>Year Ended December 31,</u>		
	<u>2002</u>	<u>2003</u>	<u>2004</u>
Revenues from third parties:			
United States	\$34,152	\$20,255	\$26,000
Asia	17,271	23,336	50,218
Europe	5,945	14,894	8,011
Other	<u>77</u>	<u>15</u>	<u>19</u>
Total	<u>\$57,445</u>	<u>\$58,500</u>	<u>\$84,248</u>

Customers comprising 10% or more of the Company's total revenue for the period indicated:

A	46.8%	35.3%	23.2%
B	4.4%	5.9%	22.2%

Accounts receivable of customers comprising 10% or more of the Company's total revenue for the period indicated:

A	\$ 9,582	\$ 3,014	\$ 7,363
B	\$ 1,627	\$ 350	\$ 5,383

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

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

13. Earnings (Loss) Per Share:

The Company has adopted SFAS No. 128, "Earnings per Share", which requires the presentation of basic earnings (loss) per share and diluted earnings (loss) per share. Basic earnings (loss) per share is computed by dividing net income (loss) by the weighted average number of common shares outstanding during the period. Diluted earnings (loss) gives effect to all potential dilutive common shares outstanding during the period. The computation of diluted earnings (loss) per share does not assume conversion, exercise or contingent exercise of securities that would have an anti-dilutive effect.

The computations of basic and diluted earnings (loss) per share for the years ended December 31, 2002, 2003 and 2004 are as follows:

	<u>Income (Numerator)</u>	<u>Shares (Denominator)</u>	<u>Per-Share Amount</u>
For the year ended December 31, 2002			
Basic loss per share:			
Net loss	\$(1,431)	16,215,237	\$(0.09)
Effect of dilutive stock options	<u>—</u>	<u>—</u>	<u>—</u>
Diluted loss per share:			
Net loss	<u>\$(1,431)</u>	<u>16,215,237</u>	<u>\$(0.09)</u>
For the year ended December 31, 2003			
Basic income per share:			
Net income	\$ 1,770	16,408,677	\$ 0.11
Effect of dilutive stock options	<u>—</u>	<u>314,031</u>	<u>—</u>
Diluted income per share:			
Net income	<u>\$ 1,770</u>	<u>16,722,708</u>	<u>\$ 0.11</u>
For the year ended December 31, 2004			
Basic income per share:			
Net income	\$ 6,752	16,746,212	\$ 0.40
Effect of dilutive stock options	<u>—</u>	<u>167,437</u>	<u>—</u>
Diluted income per share:			
Net income	<u>\$ 6,752</u>	<u>16,913,649</u>	<u>\$ 0.40</u>

For the year ended December 31, 2002, all outstanding stock options, totaling 2,421,219, were excluded from the computation of diluted loss per share because the effect in the period would be anti-dilutive. For the years ended December 31, 2003 and 2004, the Company had outstanding options to purchase 1,077,825 and 1,375,489 shares of common stock, respectively, which were excluded from the calculations due to the anti-dilutive nature of these instruments.

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

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

14. Quarterly Consolidated Financial Data (unaudited):

The following tables present certain unaudited consolidated quarterly financial information for each of the eight quarters ended December 31, 2004. 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 period 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 which tend to reflect the cyclical activity of the semiconductor industry as a whole. 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.

	Quarters Ended				Total
	March 31, 2003	June 30, 2003	September 30, 2003	December 31, 2003	
Revenues	\$ 14,505	\$ 13,931	\$ 14,169	\$ 15,895	\$ 58,500
Gross profit	6,116	5,928	6,279	6,963	25,286
Income before income taxes	228	372	604	864	2,068
Net income	175	286	465	844	1,770
Net income per share:					
Basic	\$ 0.01	\$ 0.02	\$ 0.03	\$ 0.05	\$ 0.11
Diluted	\$ 0.01	\$ 0.02	\$ 0.03	\$ 0.05	\$ 0.11
Weighted average number of shares outstanding:					
Basic	16,331,068	16,356,886	16,376,434	16,568,055	16,408,677
Diluted	16,546,599	16,555,981	16,781,359	16,998,371	16,722,708

	Quarters Ended				Total
	March 31, 2004	June 30, 2004	September 30, 2004	December 31, 2004	
Revenues	\$ 18,892	\$ 20,433	\$ 21,845	\$ 23,078	\$ 84,248
Gross profit	8,604	9,900	10,398	10,751	39,653
Income before income taxes	1,270	2,109	3,332	2,896	9,607
Net income	978	1,492	2,194	2,088	6,752
Net income per share:					
Basic	\$ 0.06	\$ 0.09	\$ 0.13	\$ 0.12	\$ 0.40
Diluted	\$ 0.06	\$ 0.09	\$ 0.13	\$ 0.12	\$ 0.40
Weighted average number of shares outstanding:					
Basic	16,693,407	16,740,759	16,755,374	16,749,675	16,746,212
Diluted	17,030,736	16,892,059	16,819,564	16,863,086	16,913,649

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

15. Subsequent Event (unaudited):

On January 21, 2005, August Technology Corporation announced it had entered into a merger agreement with Nanometrics Incorporated. On January 27, 2005, we advised the Board of August Technology that we would be prepared to enter into a merger agreement with August Technology whereby each shareholder would receive consideration consisting of \$2.16 per share in cash and 0.4955 a share in Rudolph common stock. The total cash consideration would aggregate approximately \$40 million and the implied total purchase price would aggregate approximately \$190 million based upon the market value of our common stock on January 21, 2005. On February 9, 2005, KLA-Tencor Corporation announced it had advised the Board of August Technology that it was proposing to acquire August Technology for \$11.50 per share in cash. Rudolph currently intends to continue to seek to acquire August Technology. There can be no assurance that Rudolph will enter into a merger agreement with August Technology, and if it does, the terms of any such agreement.

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES
SCHEDULE II—VALUATION AND QUALIFYING ACCOUNTS
(In thousands)

<u>Column A</u>	<u>Column B</u>	<u>Column C</u>		<u>Column D</u>	<u>Column E</u>
<u>Description</u>	<u>Balance at Beginning of Period</u>	<u>Charged to (Recovery of) Costs and Expenses</u>	<u>Charged to Other Accounts (net)</u>	<u>Deductions</u>	<u>Balance at End of Period</u>
Year 2002:					
Allowance for doubtful accounts	\$ 328	\$ (78)	\$—	\$ —	\$ 250
Inventory valuation	1,426	271	—	—	1,697
Warranty	972	1,225	—	1,077	1,120
Year 2003:					
Allowance for doubtful accounts	\$ 250	\$ 54	\$—	\$ 55	\$ 249
Inventory valuation	1,697	435	—	165	1,967
Warranty	1,120	1,024	—	1,194	950
Year 2004:					
Allowance for doubtful accounts	\$ 249	\$ 74	\$—	\$ —	\$ 323
Inventory valuation	1,967	265	—	925	1,307
Warranty	950	1,540	—	1,281	1,209
Deferred tax valuation allowance	—	629	—	—	629

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

I, Paul F. McLaughlin, certify that:

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

Date: March 15, 2005

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

Corporate Information

BOARD OF DIRECTORS

Paul F. McLaughlin
Chairman of the Board and
Chief Executive Officer

David Belluck
General Partner
Riverside Partners, LLC

Daniel H. Berry
Operating Partner
Riverside Partners, LLC

Paul Craig
President
Riverside Partners, Inc.

Thomas G. Greig
Managing Director
Liberty Capital Partners, Inc.

Carl E. Ring, Jr.
Former Managing Director
Liberty Capital Partners, Inc.

Richard F. Spanier
Retired, Chairman Emeritus

Aubrey C. Tobey
President
ACT International

EXECUTIVE OFFICERS

Paul F. McLaughlin
Chairman of the Board and
Chief Executive Officer

Nathan H. Little
Executive Vice President

Robert M. Loiterman
Senior Vice President of
Manufacturing and Engineering

Steven R. Roth
Senior Vice President, Finance and
Administration and Chief Financial Officer

CORPORATE HEADQUARTERS

Rudolph Technologies, Inc.
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Flanders, New Jersey 07836
Phone: 973-691-1300
www.rudolphtech.com

WORLDWIDE OFFICES

**Rudolph Technologies Yield
Metrology Group**
Richardson, Texas

Rudolph Technologies Europe B.V.
Woerden, The Netherlands

Rudolph Technologies China
Shanghai, China

Rudolph Technologies Japan KK
Takatsu, Japan

Rudolph Technologies Korea
Seoul, Korea

Rudolph Technologies Singapore
Singapore

Rudolph Technologies Taiwan
Hsin-Chu City, Taiwan

KEY EMPLOYEES

George J. Collins
Vice President and General Manager,
Key Accounts Business Unit

Robert DiCrosta
Vice President of Global Customer Support

Ajay Khanna
Vice President of International Sales

Robert A. Koch
Vice President and General Counsel

John R. Kurdock
Vice President of Manufacturing

Yasuomi Uchida
Vice President of Japan Operations

SHAREHOLDER INFORMATION

General Shareholder and Investor Questions May Be Directed to:

Steven R. Roth
Chief Financial Officer
Rudolph Technologies, Inc.
One Rudolph Road
P.O. Box 1000
Flanders, New Jersey 07836
Phone: 973-691-1300

**Independent Registered Public
Accounting Firm**
KPMG LLP
Short Hills, New Jersey

Registrar and Transfer Agent
American Stock Transfer &
Trust Company
6201 15th Avenue
Brooklyn, New York 11219
Phone: 212-936-5100
www.amstock.com

Stock Symbol
Common Stock is traded on the Nasdaq
National Market® under the symbol, RTEC.

Annual Meeting
Stockholders are invited to attend the Annual
Meeting at 10:00AM On Tuesday, May 24th,
2005, at our corporate headquarters in
Flanders, New Jersey.

Form 10-K
The Annual Report on Form 10-K filed with
the Securities and Exchange Commission is
available without charge upon written request
to:

Investor Relations
Rudolph Technologies, Inc.
One Rudolph Road
P.O. Box 1000
Flanders, New Jersey 07836
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