

CYBEROPTICS CORP  
Form 10-K  
March 13, 2013  
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**SECURITIES AND EXCHANGE COMMISSION**  
WASHINGTON, D.C. 20549

**FORM 10-K**

☒ ANNUAL REPORT PURSUANT TO SECTION 13 or 15(d) of the Securities Exchange  
Act of 1934 for the Year Ended December 31, 2012.

☐ TRANSITION PURSUANT TO SECTION 13 or 15(d) of the Securities Exchange  
Act of 1934 for the transition period from \_\_\_\_\_ to \_\_\_\_\_.

*COMMISSION FILE NO. (0-16577)*

**CYBEROPTICS CORPORATION**

(Exact name of registrant as specified in its charter)

**Minnesota**

(State or other jurisdiction of  
incorporation or organization)

**41-1472057**

(I.R.S. Employer  
Identification No.)

**5900 Golden Hills Drive**  
**MINNEAPOLIS, MINNESOTA**  
(Address of principal executive offices)

**55416**  
(Zip Code)

**(763) 542-5000**

(Registrant's telephone number, including area code)

**Securities registered pursuant to Section 12(b) of the Exchange Act: Title of each class: Common Stock, no par  
value**

**Name of Exchange: NASDAQ Stock Market LLC**

**Securities registered pursuant to Section 12(g) of the Exchange Act: None**

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

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

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or 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.

## Edgar Filing: CYBEROPTICS CORP - Form 10-K

Yes ☐ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).

Yes ☐ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definition of "accelerated filer" or "large accelerated filer" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☐ Accelerated filer ☐ Non-accelerated filer ☐ Smaller Reporting Company ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act).

Yes ☐ No ☐

State the aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of the last business day of the registrant's most recently completed second fiscal quarter: \$57,952,170.

As of February 28, 2013, there were 6,957,444 shares of the registrant's Common Stock, no par value, issued and outstanding.

### **DOCUMENTS INCORPORATED BY REFERENCE:**

The responses to Part III items 10, 11, 12, 13 and 14 herein are incorporated by reference to certain information in the Company's definitive Proxy Statement for its Annual Meeting of Shareholders to be held May 17, 2013.

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**CYBEROPTICS CORPORATION**  
**FORM 10-K**  
**For the Fiscal Year Ended December 31, 2012**

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**PART I.**

**ITEM 1. DESCRIPTION OF BUSINESS**

**Background**

CyberOptics® Corporation was founded in 1984 to commercialize technology for non-contact three-dimensional sensing. Our headquarters are located at 5900 Golden Hills Drive in Golden Valley, Minnesota. Our website address is [www.cyberoptics.com](http://www.cyberoptics.com). You can access, free of charge, our filings with the Securities and Exchange Commission, including our annual report on Form 10-K, our quarterly reports on Form 10-Q, current reports on Form 8-K and any other amendments to those reports, at our website, or at the Commission's website at [www.sec.gov](http://www.sec.gov). Proxy materials for our upcoming 2013 annual shareholders meeting to be held on May 17, 2013 will be available electronically via the internet at the following address: <http://ideliverycommunications.com/proxy/cybe>.

We are a leading global supplier of optical process control sensors and inspection systems that are used to control the manufacturing process and to ensure the quality of electronic circuit boards manufactured by our customers using surface mount technology (SMT). We also manufacture and sell sensors that assist with yield improvement during semiconductor fabrication. Our products assist the global SMT industry in meeting the rigorous quality demands for printed circuit board assembly and the global semiconductor fabrication industry with its rigorous quality requirements. Using a variety of proprietary technologies such as lasers, optics and machine vision, combined with software, electronics and mechanical design, our products enable manufacturers to increase production volume, product yields and quality by measuring the characteristics and placement of components and other properties both during and after the manufacturing process.

Most of our products (84% of revenue in 2012) are developed and sold for use in SMT electronic circuit board assembly or with equipment used in SMT electronic circuit board assembly. We sell products in these markets both as sensor components that are incorporated into products manufactured by other companies for sale to circuit board assembly companies, and as complete stand-alone "systems" that are sold directly to circuit board assembly companies.

Our alignment sensor products are sold to manufacturers of pick-and-place machines to align electronic surface mount components during placement on the circuit board and to solder paste screen printer companies to align stencils with circuit boards. We also sell alignment sensors to a manufacturer of photovoltaic equipment to perform accurate high-speed wafer alignment measurements within the wafer print nest and for fuel cell manufacturing.

Our stand-alone inspection system products are sold to original design manufacturers (ODMs) and other companies with surface mount assembly lines, to control quality as in-line systems. These stand-alone system products are used by manufacturers of circuit boards to measure screen printed solder paste, to inspect circuit boards and components after component placement, to confirm proper placement after full assembly of circuit boards and to inspect solder joints on printed circuit boards. Our embedded inspection sensors are sold to manufacturers of pick-and-place machines for integration into their equipment and offer some, but not all, of the inspection functionality of our stand-alone inspection systems. Manufacturers of DRAM and Flash memory also use our stand-alone system products to inspect assembly of their memory modules.

Our semiconductor products assist with yield improvement in semiconductor fabrication, and are used with the robotic equipment that handles semiconductor wafers during the semiconductor fabrication process. In addition, we sell frame grabber products for general industrial applications. Semiconductor products represented 15% of total revenues in 2012.

**Market Conditions Recent Developments of the Business**

Historically our markets have been cyclical, and have included periods of rapid growth as worldwide capacity is added to support increased consumer demand for electronic products, followed by periods of excess capacity and reduced capital spending. The global electronics market strengthened significantly in 2010 and 2011, following the severe global recession of 2009. Our results were favorably impacted as an improving economy and worldwide demand for cell phones, smart phones, laptops and other consumer electronics drove the need for increased production of printed circuit boards and memory modules, and thereby increasing demand for our electronic assembly and semiconductor products. These factors coupled with new product introductions led to significantly increased sales of alignment sensors and our stand-alone solder paste inspection (SPI) and automated optical inspection (AOI) systems. We doubled our share of the AOI market in 2011 as our new QX500 AOI system was favorably received by large original design manufacturers in China, where we have an established installed base of SPI systems and where the fast inspection times of the QX500 are required.

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During the second half of 2012, our results were impacted by an increasingly sluggish global economy and weak SMT, semiconductor and solar market conditions. These conditions caused manufacturers to delay plans for new capacity expansion - the main driver of our business. In addition, because a significant portion of the customers that use our SPI and AOI inspection systems produce laptop computers, our sales were negatively impacted in 2012 by ongoing changes in the electronics market, as consumers moved away from laptops and instead to smart phones, tablets and other mobile computing devices such as those of Apple and Samsung that are manufactured by companies that have not purchased our systems. We experienced reduced year over year demand for our SMT sensor and system products in 2012. Backlog at December 31, 2012 totaled \$2.6 million, compared to \$2.2 million at the end of this year's third quarter, and \$4.9 million at the end of 2011. We presently believe the fourth quarter of 2012 and first quarter of 2013 should mark the low point of this market cycle.

In the third quarter of 2012, we consolidated research and development for our semiconductor products into our Minneapolis headquarters facility. We believe this move, which resulted in a restructuring charge of \$217,000, will streamline our business and provide our sensor engineers in Minneapolis with more efficient access to our WaferSense® technology and products. Due to the consolidation initiative, we no longer manage our semiconductor operations as a separate segment, and no longer report semiconductor segment information. This action had no impact on our global sales and service capabilities and sales of WaferSense products will remain an important component of our product mix.

In addition to the semiconductor consolidation, and in response to the sluggish economy and weak SMT, semiconductor and solar market conditions, we reduced our global workforce by approximately 10% or 20 employees during the fourth quarter of 2012, recording severance costs of \$523,000. We anticipate annual savings of approximately \$800,000 resulting from consolidation of research and development for our semiconductor products and \$1.4 million from the fourth quarter reduction in our global workforce. In addition, we anticipate using some of the savings to fund new investments and hire new employees to strengthen our software engineering and marketing capabilities.

Although we believe our strategies of developing products with common platforms and tiering those products for different levels of manufacturers in our markets helped fuel our profitability in 2010 and 2011, we also believe that our products need to better compete for customers that focus on mobile computing devices. We devoted development dollars in 2012 to two new products that will be introduced in the first half of 2013 and that are designed with the significantly improved resolution and performance required to accurately inspect the smallest circuit board components used in smart phones, tablets and other applications requiring higher resolution due to smaller component sizes. We believe these products will help us strengthen our market position in the SPI market and grow our market position in the AOI market given current trends in the mobile computing market.

We also need to grow market share in the SMT markets and further expand into less cyclical adjacent markets in order to meet our growth objectives. To that end, we have (1) restructured management in our research and development organization, (2) earmarked expenditures to expand management and personnel in our marketing organization, and (3) committed resources to development of products with ease of use and inspection performance that exceeds the performance of current and foreseeable competitive products. With cash and marketable securities of \$29.2 million at December 31, 2012, we believe we have the resources required to enhance our position in SMT inspection and to establish a growing position in the many adjacent markets for high precision optical inspection.

Our ability to achieve our forecast and to implement our strategy effectively is subject to numerous uncertainties and risks, including the risks identified in Item 1A of this Annual Report on Form 10-K. We cannot assure you that our efforts will be successful.

**Objective**

In the SMT markets, our objective is to be the leading supplier of full-line defect monitoring and process control solutions that improve the quality and efficiency of our customers. Through our initiatives to develop common platforms and tiered products for various levels of entry, we are both diversifying our existing customer base and the potential target markets for our products. For example, our stand-alone inspection system products accounted for 53% of our sales in 2012, while five years ago these products only accounted for 36% of our total revenue. We intend to further diversify and improve the performance and ease of use of our SPI and AOI products to expand in markets and geographies, including Europe and the Americas, where rigorous performance demands are essential. We eventually intend to tie these products and other new products designed for SMT production together as a full-line process control solution.

During the last several years we have also continued to invest in the WaferSense product line, a family of wireless, wafer-like precision measurement tools for in-situ setup, calibration and process optimization in semiconductor processing equipment. Our first WaferSense product, the Automatic Leveling Sensor (ALS) was introduced late in 2004. Since that time, we have introduced several new additions to the WaferSense family of products, including gapping, teaching and vibration sensors that improve up-time and yield for semiconductor manufacturers. We further enhanced the product line in 2012 by introducing our new WaferSense particle sensor.

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We explored several potential acquisitions during 2012, and although none were completed, we believe we generated valuable information about the character of adjacent markets. Although the solar (photovoltaic cell) and fuel cell markets have grown more slowly than anticipated, it is one of our objectives to expand into other high-growth markets both organically and through acquisition.

**OPERATIONS AND PRODUCTS**

We develop, manufacture and sell intelligent, non-contact sensors and systems for process control and inspection. Our products are used primarily in the SMT electronic assembly, semiconductor and photovoltaic and fuel cell fabrication industries and enable manufacturers to increase operating efficiencies, product yields and quality. In addition to proprietary hardware designs that combine precision optics, various light sources and multiple detectors, our products incorporate software that controls the hardware and filters and converts raw data into application specific information. Our product offerings are sold both to original equipment manufacturers (OEMs) that supply the SMT and photovoltaic and fuel cell fabrication industries and to end-user customers who use our SMT systems and WaferSense products directly for process and quality control in the circuit board manufacturing and semiconductor fabrication processes.

**SMT Electronic Assembly Alignment Sensors**

Our SMT electronic assembly alignment sensors product line, which has historically generated the largest component of our sales during the past ten years until 2011, is a family of alignment sensors that are customized and incorporated into the equipment manufactured by our customers for use in SMT circuit board assembly. We work closely with our original equipment manufacturer customers to integrate sensors into their equipment.

Sales of these products, including service repairs, to Juki Corporation accounted for approximately 13% of our revenue in 2012 and 16% of our revenue in 2011. Sales of these products, including service repairs, to Assembleon B.V. accounted for approximately 12% of our revenue in 2012 and 9% of our revenue in 2011. Accordingly, revenues and operations are currently heavily influenced by the level of purchases from these two customers and by the cyclical nature of the SMT production industry.

**LaserAlign®.** Our LaserAlign sensor family has accounted for the vast majority of our sales in the SMT electronic assembly alignment sensors product line. These sensors are sold for incorporation into component placement machines used in the SMT production lines that are manufactured by a number of different OEM customers.

The LaserAlign family of products aligns extremely small surface mount components, known as chip capacitors and resistors, during transport on a pick-and-place machine prior to placement on a circuit board. LaserAlign sensors are incorporated into the placement heads of component placement machines to ensure accurate component placement at high production speeds. Various high-speed component placement machines use between one and twenty LaserAlign sensors per machine. LaserAlign integrates an intelligent sensor, composed of a laser, optics and detectors with a microprocessor and software for making specific measurements. LaserAlign enables quick and accurate alignment of each component as it is being transported by the pick-and-place arm for surface mount assembly. Using non-contact technology, LaserAlign facilitates orientation and placement of components at higher speeds than can be achieved using conventional mechanical or machine vision component centering systems.

The LaserAlign sensor is offered in several different configurations to satisfy the requirements of the different machines on which it is used. The latest version of the LaserAlign sensor technology will be introduced in 2013 as a 6<sup>th</sup> generation sensor for Juki Corporation. Revenue from new product shipments of LaserAlign sensors has been a principal contributor to revenue during the past five years and accounted for 18% of our revenue in 2012 and 20% of our revenue in 2011.

**BoardAlign Camera (BA Camera).** The BA Camera, which is incorporated directly into the placement head of component placement machines, identifies fiducial markings on a circuit board and aligns the board in the component placement machine prior to component placement. The BA Camera was first introduced in a sensor for Assembleon B.V. during 2003 and a second generation BA Camera, which was introduced in 2012, has been incorporated into the latest version of Assembleon's component placement machine. Revenue from shipments of BA Camera sensors to Assembleon B.V. accounted for 6% of our revenue in 2012 and 4% in 2011.

**InPrinter Inspection Camera.** The InPrinter Inspection Camera, which is mounted directly in screen printers manufactured by DEK International GmbH, identifies fiducial markings on a circuit board to ensure accurate board registration prior to placement of solder paste, as well as to provide an upgraded capability for 2D solder paste and stencil inspection. The InPrinter Inspection Camera was introduced for DEK International GmbH during the third quarter of 2005. Revenue from shipments of the InPrinter Inspection Camera accounted for 3% of our revenue in both 2012 and 2011.



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**Photovoltaic and Fuel Cell Alignment Sensors**

**Solar Wafer Alignment Camera.** The Solar Wafer Alignment Camera performs accurate high-speed alignment measurements within the wafer print nest. This camera also has the ability to perform traditional wafer edge alignment of both monocrystalline and polycrystalline wafer materials. The Solar Wafer Alignment Camera was introduced for DEK International GmbH during the first quarter of 2010. DEK is also using the sensor for fuel cell applications. Revenue from shipments of the Solar Wafer Alignment Camera accounted for less than 1% of our revenue in 2012 and 3% of our revenue in 2011.

**Embedded and OEM Inspection Solutions**

**Embedded Process Verification.** Juki Corporation, our largest LaserAlign customer, has incorporated our embedded process verification, or EPV®, inspection technology into its KE-2070, KE-2080 and FX robotic assembly platforms. Equipped with our EPV inspection technology, these platforms are the industry's first robotic assembly machines capable of inspecting for the presence or absence of electronic components on SMT circuit boards as they are placed. With EPV inspection technology, Juki's platforms are the only systems in the world that can visualize feeder action during the electronic component placement process with images of both component pick-and-placement and movie mode. EPV technology also provides line engineers with a tool for root cause failure analysis during the assembly process to improve circuit board yields and minimize costly rework or scrap. Our EPV technology is comprised of six ultra small cameras mounted on a placement head for on-the-fly imaging with no cycle time penalty for the inspection process. The resulting inspection for missing components on the SMT circuit board operates at the full placement speed of the robotic assembly machine. The Juki platforms also will continue to deploy CyberOptics' LaserAlign component placement sensors to ensure that electronic components placed on the circuit board are properly aligned and positioned.

**3D Solder Paste Inspection - Viscom OEM.** Early in 2011, we entered into an agreement with Viscom GmbH to integrate SE500 3D solder paste inspection technology into Viscom's solder paste inspection platform. Sales of our SE500 3D solder paste inspection sensor to Viscom began in the second half of 2011, and accounted for 2% of our revenue in 2012 and 1% of revenue in 2011.

**SMT Stand-Alone Inspection System Products**

Our SMT inspection systems product line consists of stand-alone measurement and inspection systems used in the SMT electronic assembly industry for process control and inspection. These systems are sold directly to end-user manufacturing customers that use them in a production line or along-side a production line to maintain process and quality control. Our products incorporate proprietary sensors, off the shelf, translation or robotics hardware and conveyors and complete computer systems or processors with internally developed software.

**Solder Paste Inspection (SPI) Products**

We began selling in-line solder paste measurement machines in the mid-1990's and have continued to develop and evolve our SPI family of products since then. More recently, we have introduced a number of next generation SPI machines, and will introduce additional models in 2013.

**SE500.** In 2009, we introduced our latest-generation SE500 SPI system. The SE500 is an in-line system that measures in three dimensions (3D) the amount of solder paste applied to the circuit board after the first step of the SMT assembly process. Because of the small size of the components that must be placed on each pad of solder paste and the density of components placed on the circuit board, a significant amount of SMT assembly problems are related to the quality of solder paste deposition. Misplaced solder paste, excess or inadequate amounts of paste can lead to improper connections or bridges between leads causing an entire circuit board to malfunction. The SE500 inspects the height, area and volume of 100% of a circuit board at production line speeds and with resolution that allows it to measure the smallest chip scale packages and micro ball array component sites. The SE500 can be integrated into most SMT production lines, providing real time quality control immediately after a printed circuit board leaves the screen printer and before component placement commences. We further broadened our SE500 product line by developing systems capable of accommodating large board sizes and dual lane production lines.

**SE350.** In 2010, we introduced a new lower-cost SPI system, based on our proprietary 3D inspection technology, at a lower price point for a different segment of the inspection market; those customers requiring solder paste inspection capability, but not the full functionality and superior measurement performance of our SE500 product. As our first mid-range offering, the SE350 has served as a vehicle to expand our served market.



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**SE600 and SE500ultra.** In 2013, we will introduce two new SPI machines. The SE600 will feature a dual illumination sensor for improved resolution and performance required for accurately inspecting the smallest circuit board components used in smart phones, tablets and other applications requiring higher resolution due to smaller component sizes. The SE600 SPI system will also feature an enhanced user interface, which will improve the usability of the system. Our new SE500ultra SPI system, which will be introduced in the second quarter, will offer a 30% increase in inspection speed for high-volume production environments.

Revenues from shipments of our SPI products accounted for 17% of our revenue in 2012 and 26% of our revenue in 2011.

***Automated Optical Inspection (AOI) Products***

We introduced our first in-line AOI products, the Flex series, in the fourth quarter of 2000, and have continued to develop and evolve our AOI offerings since then. These products inspect circuit boards after component placement to determine whether all components are present and have been placed correctly and can also be used to measure the quality of solder joints after the reflow oven. We introduced our latest generation QX500 AOI system in the second quarter of 2010, and have subsequently developed new products for our QX AOI product family.

**QX500.** The QX500 features a cost reduced design that uses our strobe inspection module (SIM) sensor technology and next-generation common hardware platform. The QX500 features the fastest AOI inspection times currently available in the market and also utilizes our unique software technology which offers an industry leading level of low false call performance. We have further broadened our in-line AOI product offerings by introducing additional versions of the QX500 accommodating dual production lanes and capable of inspecting larger circuit board sizes.

**QX100 and QX100i.** In 2012, we developed a new off-line AOI tabletop system (the QX100) and a lower cost in-line AOI system (the QX100i) based on the common SIM sensor technology used in our other QX AOI products. The QX100 is used for off-line inspection typically found in low volume high mix production environments not requiring 100% in-line inspection. These types of inspection environments are more prevalent in the Americas and European markets.

**QX600.** In 2013, we will introduce our next generation QX600 AOI system, designed with significantly improved resolution and performance required for accurately inspecting the smallest circuit board components used in smart phones, tablets and other applications requiring higher resolution due to smaller component sizes. We will continue to market our QX500 AOI systems for production lines requiring faster inspection speeds. In 2012, we introduced significant software enhancements for all of our AOI products that improve set-up and programming time and ease of use for the customer.

Revenues from shipments of our AOI products accounted for 31% of our revenue in 2012 and 26% of our revenue in 2011.

**Semiconductor Products**

Our principal semiconductor products, the WaferSense family of products, are a series of wireless sensors that provide measurements of critical factors in the semiconductor fabrication process. Other semiconductor products include sensors that inspect the presence and orientation of semiconductor wafers in cassettes and FOUPS during the fabrication process, and frame grabber and machine vision subsystems. We sell our semiconductor products to both original equipment manufacturers and to end-user customers through a network of distributors. Sales of our semiconductor products constituted 15% of our revenue in 2012 and 11% of our revenue in 2011.

**WaferSense Sensors.** Our WaferSense family of sensors are intended to go where wafers go in semiconductor fabrication and provide measurements of critical factors that are currently impossible or extremely difficult to obtain without powering down the fabrication process equipment. Because the user is not required to break down semiconductor fabrication equipment when using our WaferSense products, our customers tell us that significant time is saved and accuracy is increased compared to the manual techniques currently used by many customers when checking the process parameters measured by our WaferSense products. As a result of WaferSense technology, up-time, through-put and process yield for semiconductor fabrication equipment is improved.

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We introduced our first WaferSense product in late 2004 and have since continued to add new products to the WaferSense family. The automatic leveling sensor (ALS) is a wireless, vacuum-compatible sensor that can be placed in cassettes, FOUPS, on end effectors, aligners, in load locks and process chambers used in semiconductor fabrication to ensure that all stations are level and coplanar. The automatic gapping sensor (AGS) is a gapping tool that measures the gap in three places between the shower head and pedestal in semiconductor process equipment. The automatic teaching sensor (ATS), measures X-Y-Z offset from robotic transfers of wafers to the pedestal in semiconductor process equipment. The amount of gap and offset after robotic transfer of wafers to the shower pedestal can affect film thickness and uniformity when material is deposited on semiconductor wafers, impacting quality and product yields. The automatic vibration sensor (AVS) measures X-Y-Z acceleration for shock and vibration, which can generate wafer particles, scratches or wafer breakage, thereby reducing yield. The automatic particle sensor (APS), introduced in 2012, allows engineers to efficiently detect and classify particles and their exact sources in a process as wafers are transferred, slit valves actuate and chambers are cycled, pumped down and purged. APS is designed to be compatible with front-ends, coater/developer tracks, and deposition and etch equipment. We are currently working on new versions of our WaferSense products to prepare for the market transition to 450 millimeter wafer production.

***Wafer Mapping and Alignment Sensors.*** We manufacture and sell laser based reflective sensors that improve the performance of robotic wafer handling equipment. During the fabrication process, semiconductor wafers are stored in slotted cassettes during transport to various fabrication tools. Robotic equipment removes the wafers from the cassettes and inserts them into a fabrication tool. Our wafer mapping sensors inspect for the presence of wafers in the cassettes and determine if the wafer is properly present and located in the cassette.

***Frame Grabber Products and Machine Vision Subsystems.*** Frame grabber products are a machine vision component that captures, digitizes, and stores video images. These products are currently sold into a broad array of applications in a number of different industries, with an emphasis on semiconductor customers. We offer both digital and analog versions of frame grabbers under the Imagenation brand.

## **Markets and Customers**

We sell the vast majority of our products into the electronics manufacturing markets (84% of total revenue in 2012). The value of automation is high in these markets because the products produced have high unit costs and are manufactured at speeds too high for effective human intervention. Moreover, the trend toward smaller electronic devices with higher circuit densities, smaller circuit paths and extremely small components requires manufacturing and testing equipment capable of extremely accurate alignment and multidimensional measurement such as achieved using non-contact optical sensors. Trends in the SMT market include further efforts to reduce the cost of the manufacturing process, with continued movement to low cost regions with less skilled engineers operating equipment. Our alignment and inspection sensors and embedded inspection solutions are sold to OEM's serving the SMT circuit board assembly market and our stand-alone SPI and AOI systems are sold to end-user electronic assembly manufacturers in this market. Our solar wafer alignment camera is sold to DEK on an OEM basis for use in their photovoltaic and fuel cell manufacturing equipment.

We sell our semiconductor products into the semiconductor capital equipment market for use in the fabrication of semiconductor devices. This market has many of the same characteristics as the SMT electronics assembly market and requires non-contact optical measurement tools that enable the production of more complex, higher density and smaller semiconductor devices. Our WaferSense family of precision measurement tools for process optimization in semiconductor processing equipment is sold directly or through other semiconductor equipment manufacturers to semiconductor fabrication facilities for use by process and equipment engineers during the production of semiconductor wafers. We sell our wafer mapping and alignment sensors to manufacturers of equipment that transport wafers during the semiconductor manufacturing (front-end fabrication) process.

A large proportion of our stand-alone inspection system sales occur in the low cost geographies of Asia where a significant portion of the worldwide production capacity for circuit board assembly occurs. In order to be closer to our customers, we perform system level integration, software development, and final assembly for our stand-alone inspection system products in Singapore. We also have sales and service offices in China and Singapore to serve the growing market for manufacturing production equipment in Asia. Our sales and service office in the United Kingdom serves the European market and we have sales and service team members based out of our home office in Minneapolis to serve the Americas market. We have partnered with Viscom, a German distributor with significant sales to the automotive industry, to better penetrate the European markets and with newer high performance products intend to expand our marketing efforts in the Americas and Europe.

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We sell our products worldwide to many of the leading manufacturers of electronic circuit board assembly equipment, manufacturers of semiconductor DRAM memory, semiconductor capital equipment manufacturers and end-user electronic assembly manufacturers, including Asian original design manufacturers (ODM s) and electronic manufacturing service providers (EMS s), who manufacture cell phones, smart phones, notebook computers and server boards, among other electronic devices. We manufacture our OEM alignment and inspection sensors, embedded inspection solutions, the sensors used in our stand-alone inspection systems and all of our semiconductor products in our Minneapolis, Minnesota headquarters facility. All final assembly and integration for our stand-alone system products takes place in our Singapore facility.

Export sales represent a large percentage of our total sales because the majority of new worldwide electronics and semiconductor capacity is being added outside the United States. In addition, a significant portion of our export sales to Europe are electronic assembly alignment sensors that ultimately are sold by our OEM customer into Asia.

The following table sets forth the percentage of total sales revenue represented by total export sales (sales for delivery to countries other than the United States, including sales delivered through distributors) by location during the past two years:

	December 31,	
	2012	2011
Asia	51%	56%
Europe	30%	25%
Other export sales (1)	5%	4%

(1) Includes export sales in the Americas, primarily export sales to Canada, Mexico and Latin America.

See Note 13 to our Consolidated Financial Statements contained in Item 8 of this Form 10-K. Most of our international export sales are negotiated, invoiced and paid in U.S. dollars. We manufacture our SMT system products in Singapore and a portion of our raw material purchases are denominated in Singapore dollars. We also have R&D and sales personnel located in Singapore and sales offices located in other parts of the world. Although currency fluctuations do not significantly affect our revenue, they can impact our costs and influence the price competitiveness of our products and the willingness of existing and potential customers to purchase units.

## Sales and Marketing

Our electronic assembly and photovoltaic and fuel cell alignment and inspection sensors are sold to large OEM customers by direct sales staff located in Minnesota. Our stand-alone system products are primarily sold through independent representatives and distributors managed by direct sales personnel located in Singapore, as well as in the UK, U.S. and China. We have agreements with 49 independent representatives and distributors who focus on sales and service of our stand-alone system products to end-user customers. These agreements cover North and South America (15), Europe (15) and China and the rest of Asia (19).

We have established a separate worldwide sales representative organization for our WaferSense semiconductor products. We currently have agreements in place or in process with sales representatives in the U.S. (3), Europe (3) and the Pacific Rim (6). Our wafer mapping semiconductor products are sold to large OEM customers by a direct sales staff located in Oregon. We sell our semiconductor frame grabber products through direct sales staff located in Portland, Oregon, and through 13 sales representatives located throughout the world. These representatives are not under contract, but are authorized to sell frame grabber products and in many cases act as system integrators for our products.

We market our products through appearances at industry trade shows, advertising in industry journals, articles published in industry and technical journals and on the Internet. In addition, we have strategic relationships with certain key customers that serve as highly visible references.

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**Backlog**

Our products are typically shipped two weeks to two months after the receipt of an order. Product backlog was \$2.6 million on December 31, 2012, compared to \$4.9 million on December 31, 2011. Backlog totaling \$2.1 million is deliverable in the first quarter of 2013. Sales of some stand-alone SMT inspection system products may require customer acceptance due to performance or other acceptance criteria included in the terms of sale. For these SMT product sales, revenue is recognized at the time of customer acceptance. Although our business is generally not of a highly seasonal nature, sales may vary based on the capital procurement practices in the electronics manufacturing and semiconductor industries. For example, production capacity expansion for anticipated holiday or back to school demands can result in higher levels of sales in our second and third quarters. Moreover, the second and third quarters tend to mark the peak buying periods for our Asian ODM customers. However, we are not able to quantify with any level of precision, the impact of these events on our sales in any given quarterly period. Our scheduled backlog at any time may vary significantly based on the timing of orders from OEM customers. Accordingly, backlog may not be an accurate indicator of performance in the future.

**Research and Development**

We differentiate our products primarily on the basis of customer benefits afforded by the use of clever and proprietary technology and on our ability to combine several different technical disciplines to address industry and customer needs. In addition, we actively seek ongoing strategic customer relationships with leading product innovators in our served markets and actively investigate the needs of, and seek input from, these customers to identify opportunities to improve manufacturing processes. Our engineers have frequent interactions with our customers to ensure adoption of current technologies. In some instances, we receive funding from these customers through development contracts that provide the customer with an exclusive selling period but allow us to retain technology and distribution rights.

We commit substantial resources to the development of important next-generation products that, we believe, will position us to capture additional market share as the SMT market rebounds. We maintain our commitment to research and development and product development even during periods when our markets are weak. During the past year, research and development efforts have been focused on a number of activities that are critical to our future growth and success, including the following:

Continued development of our automated optical inspection (AOI) and solder paste inspection (SPI) product families. In the first half of 2013, we will introduce our next generation SE600 SPI system and our next generation QX600 AOI system, both designed with significantly improved resolution and performance required for accurately inspecting the smallest circuit board components used in smart phones, tablets and other applications requiring higher resolution due to smaller component sizes. Our SE600 SPI system will also feature an enhanced user interface. We will continue to market our QX500 AOI system for production lines requiring faster inspection speeds.

Our new SE500ultra SPI system, which will be introduced in the second quarter, will offer a 30% increase in inspection speed for high-volume production environments.

In 2012, we developed a new off-line AOI tabletop system (the QX100) and a lower cost in-line AOI system (the QX100i) based on the common sensor technology used in our other QX AOI products. We also introduced significant software enhancements for all of our AOI products that improve set-up and programming time and ease of use for the customer.

We continued to enhance our WaferSense line of products in 2012 by introducing our new particle sensor.

Research and development expenses were \$7.7 million in 2012 and \$7.8 million in 2011. These amounts represented 19% of revenues in 2012 and 13% in 2011. Research and development expenses consist primarily of salaries, project materials, contract labor and other costs associated with ongoing product development and enhancement efforts. Research and development resource utilization is centrally managed based on market opportunities and the status of individual projects.

In the third quarter of 2012, we consolidated research and development for our semiconductor products into our Minneapolis headquarters facility. We believe this move will streamline our business and provide our sensor engineers in Minneapolis with more efficient access to our WaferSense technology and products. We anticipate annual savings of up to \$800,000 resulting from consolidation of research and development for our semiconductor products. However, we anticipate using some of the savings to fund new investments and hire new employees to strengthen our software engineering capabilities.

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**Manufacturing**

Much of our product manufacturing, which is primarily circuit board manufacturing, lens manufacturing and metal parts production, is contracted with outside suppliers. Our production personnel inspect incoming parts, perform final assembly, calibrate and perform final quality control testing of finished products. Our products are not well suited for the large production runs that would justify the capital investment necessary for complete internal manufacturing.

Our electronic assembly, photovoltaic and fuel cell alignment, inspection sensor products and our semiconductor products are assembled at our Minneapolis, Minnesota headquarters facility. Our stand-alone SMT inspection system products are assembled in Singapore.

A variety of components used in our products are available only from single sources and involve relatively long order cycles, in some cases over one year. We believe we have identified alternative assembly contractors for most of our subassemblies. Use of those alternative contractors could require substantial rework of the product designs, resulting in periods during which we could not satisfy customer orders. An actual change in such contractors would likely require a period of training and testing. Accordingly, an interruption in a supply relationship or the production capacity of one or more of such contractors could result in the inability to deliver one or more products for a period of several months. To help prevent delays in the shipment of our products, we maintain in inventory, or on scheduled delivery from suppliers, what we believe to be a sufficient amount of certain components based on forecasted demand (forecast extends a minimum of 6 months).

**Competition**

We face competition from a number of companies in the machine vision, image processing and inspection systems market, some of which are larger and have greater financial resources.

Our electronic assembly sensor products face competition in the market for alignment and inspection on component placement machines primarily from manufacturers of vision (camera and software based) systems. Potential competitors in these markets include Cognex Corporation and the vision systems developed by OEMs using their own design staff for incorporation into their products. We compete in this market based on our ability to custom design products with stringent physical form requirements, speed, flexibility, low cost and ease of control. Our electronic assembly alignment sensor products have historically competed favorably on the basis of these factors, and particularly on the basis of speed and product cost. We believe our sensor products are also better suited to align the smaller electronic component sizes currently available in the market. Nevertheless, advances in terms of speed by vision systems have reduced some of the advantages of our products in some configurations. We have introduced newer configurations that we believe allow our alignment sensors, and the component placement machines in which they are incorporated, to compete favorably based on the speed and accuracy of their performance, as well as their price.

The primary competition for sales of our SPI systems has been from Asian based companies such as KohYoung Technology (Korea), Parmi (Korea) and Test Research, Inc. (Taiwan). Our sales of SPI systems were negatively impacted in 2012 by ongoing changes in the electronics market, as consumers continue to favor smart phones, tablets and other mobile computer devices, in lieu of purchasing new laptop computers. We believe our new SE600 SPI offering, with significantly improved resolution and performance required for accurately inspecting the smallest circuit board components used in smart phones, tablets and other applications requiring higher resolution due to smaller component sizes, will appeal to manufacturers of those devices, thereby helping us to gain market share.

Our AOI systems face competition from a large number of AOI companies, the most significant being MirTec, Ltd. (Korea), KohYoung Technology (Korea), Viscom (Germany), Test Research, Inc. (Taiwan) and Saki Corporation (Japan). We believe that our strobe inspection module (SIM) sensor and unique software technology used in our QX family of products is differentiated from the competition and that these products compete effectively in this market based on cost, ease of use at rapid production line speeds and the low rate of false calls. We believe that our QX family of products offers the fastest AOI inspection times currently available in the market.

The electronics manufacturing market has become increasingly competitive and concentrated in large Asian based original design manufacturers and global electronic manufacturing service contract manufacturers, resulting in the ability on their part to drive more competition into the market and command more favorable terms when purchasing from suppliers, including capital equipment suppliers like CyberOptics. Due to the increased level of competition, we have been required to decrease the price of our SPI and AOI systems in some markets. These same pricing pressures also impact our OEM customers for our alignment sensors, who in turn ask us to design newer products at a lower price point to allow them to remain competitive in the marketplace. We respond to these pricing pressures through continuous investment in research and development of cost reduced products with new features and enhancements across all product lines that command better pricing in the market.

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We believe our WaferSense products are unique to the marketplace and primarily face competition from the manual techniques currently used by most customers to monitor their semiconductor fabrication equipment. Because the user is not required to break down semiconductor fabrication equipment, or pressurize a vacuum chamber, we believe that our WaferSense products will save significant time and increase measurement accuracy over the manual techniques currently used by customers and will improve equipment up-time, through-put and process yield.

Although we believe our current products offer several advantages in terms of price and suitability for specific applications and although we have attempted to protect the proprietary nature of such products, it is possible that any of our products could be duplicated by other companies in the same general market.

**Employees**

As of December 31, 2012, we had 168 full-time employees worldwide, including 39 in sales, marketing and customer support, 52 in manufacturing, purchasing and production operations, 59 in engineering, research and development, and 18 in finance, administration and information services. Of these employees, 92 are located at our corporate headquarters in Minneapolis and 76 are located in other offices (6 in the UK, 2 in Oregon, 1 in California, 57 in Singapore, 9 in China, and 1 in Japan). To date, we have been successful in attracting and retaining qualified technical personnel, although there can be no assurance that this success will continue. None of our employees are covered by collective bargaining agreements or are members of a union.

**Proprietary Protection**

We rely on the technical expertise and know-how of our personnel and trade secret protection, as well as on patents, to maintain our competitive position. We attempt to protect intellectual property by restricting access to proprietary methods by a combination of technical and internal security measures. In addition, we make use of non-disclosure agreements with customers, consultants, suppliers and employees. Nevertheless, there can be no assurance that any of the above measures will be adequate to protect our proprietary technology.

We hold 77 patents (49 U.S. and 28 foreign) on a number of technologies, including those used in LaserAlign, our embedded inspection technology including our strobe inspection module (SIM), our stand-alone inspection systems and other products. Some of the patents relate to equipment such as pick-and-place machines, into which our products are integrated. In addition, we have 48 pending patents (10 U.S. and 38 foreign). We protect the proprietary nature of our software primarily through copyright and license agreements, but also through close integration with our hardware offerings. We utilize 14 registered trademarks (6 U.S. and 8 foreign) and have no trademark registrations pending. We also have 8 domain names and several common law trademarks. It is our policy to protect the proprietary nature of our new product developments whenever they are likely to become significant sources of revenue. No guarantee can be given that we will be able to obtain patent or other protection for other products.

As the number of our products increases and the functionality of those products expands, we may become increasingly subject to attempts to duplicate our proprietary technology and to infringement claims. In addition, although we do not believe that any of our products infringe the rights of others, there can be no assurance that third parties will not assert infringement claims in the future or that any such assertion will not require us to enter into a royalty arrangement or result in litigation.

**Government Regulation**

Many of our products contain lasers. Products containing lasers are classified as either Class I, Class II or Class IIIb Laser Products under applicable rules and regulations of the Center for Devices and Radiological Health (CDRH) of the Food and Drug Administration. Such regulations generally require a self-certification procedure pursuant to which a manufacturer must file with the CDRH with respect to each product incorporating a laser device, periodic reporting of sales and purchases and compliance with product labeling standards. Our lasers are generally not harmful to human tissue, but could result in injury if directed into the eyes of an individual or otherwise misused. We are not aware of any incident involving injury or a claim of injury from our laser devices and believe that our sensors and sensor systems comply with all applicable laws for the manufacture of laser devices.

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Under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, as amended, or the Dodd-Frank Act, the SEC adopted new disclosure requirements for public companies using certain minerals and metals, known as conflict minerals, in their products. Under these rules, we are required to perform due diligence and disclose our efforts to prevent the sourcing of such conflict minerals from the Democratic Republic of Congo or adjoining countries. These conflict minerals are commonly used in the manufacture of semiconductor devices. As a result of these new regulations, we expect to incur additional costs to comply with the disclosure requirements, including costs related to determining the source of any of the conflict minerals used in our products. These new requirements could also adversely affect the sourcing, availability and pricing of such minerals as used in the manufacture of our products, and the pool of suppliers who provide conflict free metals may be limited. As a result, we may not be able to obtain materials for our products in sufficient quantities or at competitive prices. In addition, since our supply chain is complex, we may not be able to sufficiently verify the origins of all metals used in our products and confirm that they are conflict free, which may adversely affect our reputations with our customers and shareholders.

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## ITEM 1A. RISK FACTORS

Our operations are subject to a number of risks and uncertainties that may affect our financial results, and the accuracy of the forward looking statements we make in this Form 10-K. We make statements regarding anticipated product introductions and performance, changes in markets, customers and customer order rates, expenditures in research and development, growth in revenue and improvement in profits, taxation levels, the effects of pricing, and competition, all of which represent our expectations and beliefs about future events. Our actual results may vary from these expectations because of a number of factors that affect our business, the most important of which include the following:

**Our business has been and will continue to be significantly impacted by the global economy, and the current uncertainty in the outlook for the global economy makes it more likely that our actual results will differ materially from expectations.** In 2009, the world economy experienced the worst economic recession since the great depression of the 1930 s. The severe economic conditions were brought about by extreme disruptions in global credit and financial markets including severely diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, increases in unemployment rates, and uncertainty about economic stability. Although the world economy underwent a slow recovery in 2010 and 2011, the debt crisis in Europe during 2012 and political uncertainty again caused an oversupply in the electronics market and a cyclical downturn starting in the second half of 2012. These economic uncertainties affect businesses such as ours in a number of ways, making it difficult to accurately forecast and plan our future business activities. Further political instability or uncertainty could cause additional tightening of credit in financial markets, may lead consumers and businesses to postpone spending, and may cause our customers to cancel, decrease or delay their existing and future orders with us. In addition, financial difficulties experienced by our suppliers or distributors could result in product delays, increased accounts receivable defaults and inventory challenges. The original equipment manufacturers to which we sell our sensors supply SMT manufacturers, and those manufacturers, as well as the circuit board manufacturers that purchase our SMT system products directly, are largely dependent on continued demand for consumer and commercial electronics, including cell phones, smart phones and computers. Demand for electronics is a function of the health of the economies in the United States and around the world. Our results would be adversely affected in the future, when or if these economies move into periods of recession, thereby negatively impacting the demand for overall electronics and adversely affecting demand for our products.

**Sales to our four largest customers constituted a significant portion of our revenue in 2012 and loss of any of these customers, or a decline in the customer s business, would have a materially adverse impact on our results of operations.** Sales to our four largest customers, including our two principal OEM sensor customers, and two original design manufacturers, constituted 39% of our total revenue in 2012. We believe our relationships with these customers are good and we continue to pursue new projects with them. However, like most manufacturers in and suppliers to the global electronics markets, their businesses were adversely impacted by recession, and would most likely again be impacted in the future when or if the global economy moves into another recessionary period. If the order rates of these customers are negatively impacted by global economic events beyond their control, or if they choose sensors or inspection systems manufactured by other suppliers, or otherwise terminate their relationships with us, our long-term results of operations would be significantly adversely affected.

**The market for capital equipment for the electronics industry in which we operate is cyclical and we cannot predict with precision when market downturns will occur.** We operate in a cyclical market the electronics capital equipment market that periodically adjusts independent of global economic conditions. We have been unable to predict with accuracy the timing or magnitude of periodic downturns in this market. These downturns, including 2012, and particularly the severe downturns in electronics production markets from 2001 through 2003, and from 2008 through 2009, have severely affected our operations and generated several years of unprofitable operations. Ultimately, we have difficulty determining the duration or severity of any market downturns, the strength of any subsequent recoveries, and the long-term impact that the market may have on our business.

**With our Solar Wafer Alignment camera, we have entered a new market where capital equipment purchases are dependent upon market factors that differ from our typical markets and may be more difficult to project.** Sales of our Solar Wafer Alignment Camera are dependent upon the ability of DEK (a division of Dover Corporation) to design and sell photovoltaic and fuel cell capital equipment which is competitive in the marketplace. DEK s success in turn is also dependent upon the commercial success of the solar energy market. Solar energy is currently not as economical as other more conventional energy sources, including those based on fossil fuels and its use is dependent upon significant government subsidies in many markets. Our future revenue from this product and ability to sell existing inventory may be impacted if DEK s equipment is not competitive or if government subsidies for solar energy are reduced or eliminated, or if the technology related to solar energy does not continue to advance and become competitive with other more conventional sources of energy.



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**Two of our key OEM customers, DEK and Juki, are pursuing strategic transactions that could impact the amount of business we transact with them.** Dover Corporation has announced that it is entertaining bids for the purchase of DEK, and Juki Corporation has signed a non-binding letter of intent to integrate its surface-mount technology equipment and related businesses with Sony EMCS Corporation, a wholly owned subsidiary of Sony. Although we don't believe these transactions will impact the level of business we conduct with either DEK or Juki, as part of their integration strategies, new owners or management could decide to discontinue or de-emphasize products that use our sensors, which could have a negative impact on our level of revenue and profitability.

**World events beyond our control may affect our operations.** Our operations and markets could be negatively affected by world events that effect economies and commerce in countries, such as China, Singapore and Japan, in which we do business. Natural disasters, such as the SARS outbreak, have affected travel patterns and accessibility in these countries in the past and other natural occurrences, such as a bird flu outbreak, could affect the business we do in these countries in the future. Other natural disasters, such as the tsunami and earthquake that hit Japan and the floods that hit Thailand in 2011, could also affect the business we do in the affected regions. Further, these countries may be affected by economic forces that are different from the forces that affect the United States and change the amount of business we conduct.

**We generate more than three quarters of our revenue (approximately 85% in 2012) from export sales that are subject to risks of international operations.** Our export sales are subject to many of the risks of international operations including:

- currency controls and fluctuations in currency exchange rates;
- changes in local market business requirements and increased cost and development time required to modify and translate our products for local markets;
- inability to recruit qualified personnel in a specific country or region;
- difficulty in establishing and maintaining relationships with local vendors;
- differing foreign technical standards;
- differing regulatory requirements;
- export restrictions and controls, tariffs and other trade barriers;
- reduced protection for intellectual property rights;
- changes in political and economic conditions;
- seasonal reductions in business activity;
- potentially adverse tax assessments; and
- terrorism, disease, or other events that may affect local economies and access.

**We conduct platform and software development and final assembly and integration for our stand-alone system products in Singapore which are subject to unique risks due to the remote nature of the operations.** Our Singapore development and manufacturing operations present a number of risks related to the retention of personnel, management of product development and operations, control over administrative and business processes, regulatory and legal issues we may encounter and other matters relating to foreign operations. We cannot be certain that we will be able to retain software development and management personnel in Singapore at attractive rates. Although most components for our system products are more readily available in Singapore, some of the hardware components used in our system products necessary for manufacture in Singapore may be difficult to import at efficient rates. Our financial performance, ability to serve our customers and ability to manufacture products could be negatively impacted if we are unable to retain our Singapore based employees, or if it costs more than expected to retain these employees or hire experienced employees in a timely manner, or if we are unable to locate suitable sources of supply for our products manufactured in Asia.

**We price our products in U.S. dollars, and as a result, our products may have difficulty competing in periods of increasing strength of the dollar.** Most of our international export sales are negotiated, invoiced and paid in U.S. dollars, and accordingly, currency fluctuations do not affect our revenue per unit. However, significant fluctuations in the value of the U.S. dollar relative to other currencies could have an impact on the price competitiveness of our products relative to foreign competitors, which could impact the willingness of customers to purchase our products and have an impact on our results of operations.

**Because of our significant operations in Singapore, our costs are negatively impacted when the U.S. dollar weakens relative to the Singapore dollar.** A significant portion of our cost of goods, research and development and sales and marketing costs are denominated in the Singapore dollar. In addition, other sales and marketing costs are denominated in British Pounds Sterling and the Chinese Yuan, resulting from our sales offices located in the UK and China. Our costs will increase, and our results will be negatively impacted in future periods, if the U.S. dollar weakens relative to the currencies of these countries.

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**We enter into foreign exchange forward contracts to hedge against the effect of exchange rate fluctuations on cash flows denominated in foreign currencies associated with our subsidiaries in the United Kingdom and Singapore, which may result in losses.** At December 31, 2012, our open foreign exchange forward contracts were in an unrealized gain position equal to \$153,000 on a pre-tax basis due to a significant weakening of the U.S. dollar in relation to the Singapore dollar in 2012. If the exchange rate between the U.S. dollar and the Singapore dollar were to remain unchanged over the next twelve months, we would realize this gain through our statement of operations. However, because we do not fully hedge all of our future anticipated cash flows in Singapore dollars, the portion of our costs that we do not hedge would be higher in relation to recent quarters. If the U.S. dollar were to strengthen in future periods in relation to the Singapore dollar, the unrealized gain on our open foreign exchange forward contracts would be reduced, but costs that are not hedged would decrease. The ultimate impact of any fluctuation in the relationship between the U.S. dollar and Singapore dollar is dependent on the level of Singapore denominated cash flows in future periods.

**Our products could become obsolete.** Our current products, as well as the products we have under development, are designed to operate with the technology we believe currently exists or may exist for electronic components, printed circuit boards, memory modules, photovoltaic wafers and semiconductor manufacturing. The technology for these components changes rapidly and, because it takes considerable time to develop new products, we must anticipate technological developments in order to effectively compete. Further, because we do not have unlimited development resources, we might choose to forgo the pursuit of what becomes a leading technology and devote our resources to technology that is less successful. If we incorrectly anticipate technology developments, or have inadequate resources to develop our products to deal with changes in technology, our products could become obsolete.

**We compete in the electronics assembly alignment sensor market with larger companies.** Our electronic assembly alignment sensor products compete with products made by larger machine vision companies, other optical sensor companies, and by solutions internally developed by our customers. Advances in machine vision technology in recent years have eliminated some, but not all, of the features that have differentiated our products from some of these competitors, and advances in other technologies could eliminate other advantages.

**The market for surface mount capital equipment has become very price competitive.** The electronics capital equipment market for surface mount technologies is becoming more mature, resulting in increased price pressure on suppliers of equipment. Consequently, our electronic assembly stand-alone system and alignment sensor products have become subject to increased levels of price competition and competition from other suppliers and technologies, including suppliers in Asia who have specifically designed their products to compete favorably against our products.

**We are dependent upon our systems business for approximately one-half of our revenue.** During 2012, approximately 53% of our total revenue was generated by sales of stand-alone SPI and AOI systems. Sales of these products have been subject to increasing competition in world markets, particularly in Asia, negatively impacting sales prices for our products. Our sales of SPI systems were negatively impacted in 2012 by ongoing changes in the electronics market, as consumers continue to favor smart phones, tablets and other mobile computer devices, in lieu of purchasing new laptop computers. While we've historically had success selling our SPI offerings to manufacturers of notebook computers in China, manufacturers of mobile computing devices like smart phones and tablets have tended to prefer the offerings of our competitors. If we are not successful in continuing to sell and differentiate this product line relative to our competition, our results of operations would be negatively affected.

**Competitors in Asia may be able to compete favorably with us based on lower production, employee costs and in some cases, governmental support.** We compete with large multinational system companies in sales of stand-alone end-user system products, many of which are able to take advantage of greater financial resources and larger sales distribution networks. We also compete with new Asian based suppliers of stand-alone end-user system products, many of which may have lower overall production and employee costs and are willing to offer their products at lower selling prices to customers. Further, we believe some competitors receive government sponsored research and manufacturing assistance that can cause their relative cost of development of new products to be lower, and are under less market pressure to forgo the short-term income impact of concentrated investment in research and development.

**We are exposed to credit risk through sales to our OEM customers and distributors of our stand-alone system products.** We sell our products through three key OEM customers, and usually have significant credit exposure with respect to these customers. In addition, we sell our stand-alone inspection system products through a network of international distributors. These distributors tend to be smaller in size with limited financial resources and access to capital. Although these distributors do not hold our products in inventory for re-sale, we are exposed to credit risk and would incur losses if they are unable to pay for the products they have purchased from us.

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**We are dependent upon outside suppliers for components of our products, and delays in or unavailability of those components would adversely affect our results.** We use outside contractors to manufacture the components used in many of our products and some of the components we order require significant lead times that could affect our ability to sell our products if not available. In addition, if these components do not meet stringent quality requirements or become subject to obsolescence, there could be delays in product availability, and we could be required to make significant investments in designing replacement components.

**Our ability to gain share in our current markets and to identify, focus on and achieve success in new markets is dependent on our ability to identify the customer requirements in segments of our current market or new markets where we lack familiarity.** Our ability to grow share in our current markets and achieve success in new markets is subject to a number of risks, including hiring and retaining key sales and marketing personnel, identifying new markets where our technology may have applicability, and our ability to identify the requirements to successfully compete in those markets, including sales channels, product development and other market specific requirements.

**The absence of significant market liquidity in our common stock could impact the ability of our shareholders to purchase and sell larger blocks, the attractiveness of our stock to institutional shareholders, and the market value of our common stock.** There were 6,969,772 shares of our common stock outstanding as of December 31, 2012. Although our common stock is traded in the NASDAQ Global Market, in part because of the number of shares we have outstanding and available for trading, the daily trading volume in our stock is low, averaging less than 15,000 shares per day. Shareholders wishing to purchase or sell larger blocks of stock may not be able to do so quickly, and disposal by any shareholder of a significant block of stock could adversely affect the sale price in the marketplace. Further, institutional investors often have policies against investment in stock that is illiquid, and many institutional investors may elect not to purchase or hold our stock because of the inability to dispose of it. The reduced institutional interest, as well as the lack of current evaluations by securities analysts, has had and can be expected to continue to have a further adverse impact on the market price and liquidity of our common stock.

## **ITEM 1B. UNRESOLVED STAFF COMMENTS**

Not applicable.

## **ITEM 2. PROPERTIES**

We lease a 50,724 square foot mixed office and warehouse facility built to our specifications in Golden Valley, Minnesota, which functions as our corporate headquarters and primary manufacturing facility for our sensor products, including the sensors used in our stand-alone system products and our semiconductor products. In March 2011, we finalized a lease amendment for the facility that became effective July 1, 2011. The amendment provides that we will lease the current facility through December 31, 2018. The amendment contains escalation clauses and two renewal options of three years each.

We lease a 20,000 square foot mixed office and warehouse facility in Singapore that serves as a sales, development and final assembly and integration facility for our stand-alone system products. The lease for our facility in Singapore expires in July 2013. As of December 31, 2012, we also have operating leases in the United Kingdom and China, which expire in June 2013 and September 2013, respectively. We believe that our leased facilities are adequate for our anticipated needs for the foreseeable future.

## **ITEM 3. LEGAL PROCEEDINGS**

We are not currently subject to any material pending or threatened legal proceedings.

## **ITEM 4. MINE SAFETY DISCLOSURES**

None.

Table of Contents**PART II.****ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES**

Our common stock is traded on the Nasdaq Global Market. The following table sets forth, for the fiscal periods indicated, the high and low sales prices for our common stock as reported by the Nasdaq Global Market. These prices do not reflect adjustments for retail markups, markdowns or commissions.

Quarter	2012		2011	
	High	Low	High	Low
First	\$ 9.75	\$ 7.29	\$ 9.90	\$ 8.10
Second	\$ 10.21	\$ 7.81	\$ 10.29	\$ 8.20
Third	\$ 8.64	\$ 6.06	\$ 10.22	\$ 6.55
Fourth	\$ 8.12	\$ 6.17	\$ 8.45	\$ 6.83

As of February 28, 2013, there were approximately 200 holders of record of our common stock and approximately 3,000 beneficial holders. We have never paid a dividend on our common stock. Dividends are payable at the discretion of the board of directors out of funds legally available. Our board has no current intention of paying dividends.

Company repurchase of equity securities:

Period	(a) Total Number of Shares Purchased	(b) Average Price Paid per Share	(c) Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (1)	(d) Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs (1)
November 1, 2012 to November 30, 2012	100	\$ 7.00	100	\$ 2,999,300
December 1, 2012 to December 31, 2012	2,840	\$ 6.99	2,940	\$ 2,979,449
Total	2,940	\$ 6.99	2,940	\$ 2,979,449

- (1) On October 30, 2012, we publicly announced that our board of directors has authorized a \$3.0 million share repurchase program. The common stock will be acquired from time to time in open market transactions, block purchases and other transactions complying with the Securities and Exchange Commission's Rule 10b-18. Also on October 30, 2012, we announced our intention to adopt a 10b5-1 trading plan to implement the repurchase program. Shares were purchased in open market transactions pursuant to this 10b5-1 plan. Amount reflected in column (d) represents the dollar value of shares that remain to be repurchased under the plan.

**ITEM 6. SELECTED FINANCIAL DATA**

Not applicable

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## **ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS**

### **Results of Operations for the Two Years Ended December 31, 2012:**

#### **General Overview**

Our products are sold primarily into the electronics assembly, DRAM and Flash memory, and semiconductor fabrication capital equipment markets. We sell products in these markets both to original equipment manufacturers of production equipment and to end-user customers that assemble circuit boards and semiconductor wafers and devices. Historically these markets have been cyclical, and have experienced periods of rapid growth as worldwide capacity is added to support increased consumer demand for electronic products, and new capital equipment is purchased as a result of technology changes in electronics components, such as miniaturization, and changing production requirements. These periods of growth have historically been followed by periods of excess capacity and reduced capital spending.

The global electronics market strengthened significantly in 2010 and 2011, following the severe global recession of 2009. Our results were favorably impacted as an improving economy and worldwide demand for cell phones, smart phones, laptops and other consumer electronics drove the need for increased production of printed circuit boards and memory modules, and thereby increasing demand for our electronic assembly and semiconductor products. These factors coupled with new product introductions led to significantly increased sales of alignment sensors and our stand-alone solder paste inspection (SPI) and automated optical inspection (AOI) systems. We successfully doubled our share of the AOI market in 2011 as our new QX500 AOI system was favorably received by large original design manufacturers in China, where we have an established installed base of SPI systems and where the fast inspection times of the QX500 are required.

During the second half of 2012, our results were impacted by an increasingly sluggish global economy and weak SMT, semiconductor and solar market conditions. These conditions caused manufacturers to delay plans for new capacity expansion-- the main driver of our business. In addition, because a significant portion of the customers that use our SPI and AOI systems produce laptop computers, our sales were negatively impacted in 2012 by ongoing changes in the electronics market, as consumers moved away from laptops and instead to smart phones, tablets and other mobile computing devices such as those of Apple and Samsung that are manufactured by companies that have not purchased our systems. We experienced reduced year over year demand for our SMT sensor and system products in 2012. Backlog at December 31, 2012 totaled \$2.6 million, compared to \$2.2 million at the end of this year's third quarter, and \$4.9 million at the end of 2011. We presently believe the fourth quarter of 2012 and first quarter of 2013 should mark the low point of this market cycle.

In the third quarter of 2012, we consolidated research and development for our semiconductor products into our Minneapolis headquarters facility. We believe this move, which resulted in a restructuring charge of \$217,000, will streamline our business and provide our sensor engineers in Minneapolis with more efficient access to our WaferSense® technology and products. Due to the consolidation initiative, we no longer manage our semiconductor operations as a separate segment, and no longer report semiconductor segment information. This action had no impact on our global sales and service capabilities and sales of WaferSense products will remain an important component of our product mix.

In addition to the semiconductor consolidation, and in response to the sluggish economy and weak SMT, semiconductor and solar market conditions, we reduced our global workforce by approximately 10% or 20 employees during the fourth quarter of 2012, recording severance costs of \$523,000. We anticipate annual savings of approximately \$800,000 resulting from consolidation of research and development for our semiconductor products and \$1.4 million from the fourth quarter reduction in our global workforce. In addition, we anticipate using some of the savings to fund new investments and hire new employees to strengthen our software engineering and marketing capabilities.

Despite the challenging economic and competitive environment, CyberOptics' financial condition remains strong. Cash and marketable securities were \$29.2 million as of December 31, 2012, down modestly from \$30.5 million at December 31, 2011. Our sizable cash position is allowing us to maintain our commitment to the development of important next-generation products that, we believe, will position us to capture additional market share as the SMT market rebounds. We have (1) restructured management in our research and development organization, (2) earmarked expenditures to expand management and personnel in our marketing organization, and (3) committed resources to development of products with ease of use and inspection performance that exceeds the performance of current and foreseeable competitive products. Under development is an enhanced SPI system with a new user interface, as well as a new AOI system, both designed with significantly enhanced resolution required for accurately inspecting today's smallest circuit board components used in smart phones, tablets and other applications requiring higher resolution due to smaller component sizes.

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We anticipate that sales will improve as 2013 progresses reflecting an improving global economy, particularly in China, an important market for our products, and that there will be a gradual rebound of solar sensor sales. We believe the introduction of new SPI and AOI offerings in 2013 will strengthen our competitive position in the market for inspection systems used to manufacture mobile computing products, new smaller personal computer products like ultra books and other similar devices. We expect increased investment in our marketing organization and in next generation products during 2013 that will provide a path to longer term growth and stability.

Our board of directors has authorized a \$3.0 million share repurchase program. The common stock will be acquired from time to time in open market transactions, block purchases and other transactions complying with the Securities and Exchange Commission's Rule 10b-18. We adopted a 10b5-1 trading plan to implement the repurchase program.

Our ability to achieve our forecast and to implement our strategy effectively is subject to numerous uncertainties and risks, including the risks identified in Item 1A of this Annual Report on Form 10-K. We cannot assure you that our efforts will be successful.

**Revenues**

Our revenues decreased by 32% to \$41.6 million in 2012 from \$61.1 million in 2011 and increased by 7% in 2011 from \$57.0 million in 2010. The following table sets forth, for the years indicated, revenues by product line (in thousands):

(In thousands)	2012	2011	2010
OEM Alignment Sensors	\$ 13,187	\$ 20,844	\$ 25,537
Semiconductor Sensors	6,363	6,940	5,984
SMT Inspection Systems	22,094	33,303	25,430
Total	\$ 41,644	\$ 61,087	\$ 56,951

Revenue from sales of OEM alignment sensors decreased by \$7.7 million, or 37%, to \$13.2 million in 2012, from \$20.8 million in 2011, and decreased by \$4.7 million or 18% in 2011, from \$25.5 million in 2010. The decrease in sales of OEM alignment sensors in 2012 resulted largely from a sluggish global economy and weak SMT market conditions, causing manufacturers to delay plans for new capacity expansion. In addition, sales of solar wafer alignment cameras for the photovoltaic cell market were down \$2.0 million or 95% in 2012 to \$100,000, reflecting the continued impact of aggressive production capacity expansion in the solar market during 2010 and early 2011. We anticipate a gradual rebound in sales of solar and fuel cell sensors in 2013. The decrease in sales of OEM alignment sensors in 2011 resulted from a challenging comparison to 2010, when sales of capital equipment for printed circuit board production benefited from pent-up demand as the global economy was emerging from the deep recession of 2009.

Revenue from sales of our semiconductor products decreased by \$576,000, or 8%, to \$6.4 million in 2012, from \$6.9 million in 2011, and increased by 16% or \$1.0 million in 2011, from \$6.0 million in 2010. The decrease in sales of semiconductor sensors in 2012 was driven by weak market conditions and continuing declines in sales of older wafer mapper and frame grabber products. We anticipate that sales of these products will continue to slowly decline in the future, given that the products are mature, and any new investment is expected to be minimal. Sales of WaferSense products in 2012 were roughly flat on a year over year basis at \$4.8 million, mainly due to weak market conditions late in the year. Revenue from sales of WaferSense products increased by \$1.3 million, or 37%, to \$4.7 million in 2011, from \$3.4 million in 2010, due to improving conditions in the market for semiconductor fabrication equipment, and increased market acceptance of our WaferSense products.

Revenue from sales of our SMT inspection system products decreased by \$11.2 million, or 34%, to \$22.1 million in 2012, from \$33.3 million in 2011, and increased by 31% or \$7.9 million in 2011, from \$25.4 million in 2010. Revenue from sales of SPI systems decreased by \$8.6 million, or 54%, to \$7.2 million in 2012, from \$15.8 million in 2011, and decreased by \$600,000 or 4% in 2011, from \$16.4 million in 2010. Revenue from sales of AOI systems decreased by \$2.9 million, or 18%, to \$12.8 million in 2012, from \$15.7 million in 2011 and increased over 100% in 2011, from \$7.2 million in 2010. Sales of AOI systems in 2012 benefited from our new QX100 tabletop system and QX100i in-line system which were introduced early in the year. Sales of these products totaled \$1.7 million in 2012.

The decrease in sales of our SMT inspection system products in 2012 was driven by a persistently sluggish global economy and weak market conditions. In addition, because a significant portion of the customers that use our SPI and AOI systems produce laptop computers, our sales were negatively impacted in 2012 by ongoing changes in the electronics market, as consumers moved away from laptops and instead to smart phones, tablets and other mobile computing devices such as those of Apple and Samsung that are manufactured by companies that have not purchased our systems. The large increase in sales of SMT inspection system products in 2011 was driven by favorable market acceptance of our new QX500 AOI system by large original design manufacturers in China, where we have an established installed base of SPI systems, and where the fast inspection times of the QX500 are required, resulting in a 100% market share increase for our AOI products in 2011.



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Export revenue totaled \$35.5 million or 85% of revenue in 2012, compared to \$52.1 million or 85% of revenue in 2011. Sales to international customers continue to be significant, as manufacturing of electronic components has migrated offshore, particularly to China and other areas of Asia.

We believe that ongoing introduction of new system products will strengthen our future competitive position in the SMT inspection systems market, resulting in market share increases, and that technology trends toward smaller components and increased production speeds will continue to drive demand in the future.

**Cost of Revenue and Gross Margin**

Cost of revenue decreased by \$9.6 million or 29% to \$23.5 million in 2012, after increasing by 3% to \$33.0 million in 2011. The decrease in the cost of revenue in 2012 was due to a 32% decline in sales. The increase in cost of revenue in 2011 was due to a 7% increase in sales. Items included in cost of revenue that fluctuate with the level of sales include raw materials, direct labor and factory overhead costs.

Gross margin as a percentage of OEM alignment and semiconductor sensor sales was 47% in 2012, compared to 52% in 2011, and 50% in 2010. The decrease in gross margin percentage in 2012 was due largely to sluggish sales of certain higher margin SMT alignment sensors, including the absence of revenues from solar wafer alignment cameras. Factory de-leverage also had an impact on gross margins in 2012. The increase in gross margin as a percentage of OEM alignment and semiconductor sales in 2011 was largely due to revenue increases from new higher margin products, including a 37% increase in WaferSense sales, and initial sales of our 3D SPI sensor to German based Viscom AG.

Gross margin as a percentage of stand-alone SMT inspection systems sales was 41% in 2012, compared to 41% in 2011 and 36% in 2010. The increase in gross margin percentage in 2011 was due largely to the ongoing shift in our sales mix of stand-alone SMT inspection systems to higher margin QX AOI systems and away from SPI systems.

Our markets are highly price competitive, particularly the electronic assembly market, resulting in continual pressure on our gross margins. We compensate for pricing pressure by introducing new products with more features and improved performance and through manufacturing cost reduction programs. For example, our latest stand-alone SMT inspection system products combine a reduction in cost with enhanced performance. Other recently introduced products, including our off-line and integrated in-line QX100 and QX100i AOI tabletop systems, solar wafer alignment camera, WaferSense sensors and the 3D SPI sensor we sell to Viscom AG, have more favorable margins than our existing products.

**Operating Expenses**

Research and development expenses were \$7.7 million or 19% of revenue in 2012, \$7.8 million or 13% of revenue in 2011, and \$7.4 million or 13% of revenue in 2010. The slight decrease in research and development expenses in 2012 resulted from savings of \$200,000 related to the third quarter consolidation of research and development for our semiconductor products and lower project costs for proto-types and consulting, offset in part by higher expenses for additional wages and benefits due to annual pay increases and headcount additions to strengthen our inspection systems product development team. The \$427,000 or 6% increase in research and development expense in 2011 resulted from higher research and development costs in Singapore due to a weaker U.S. dollar, higher recruitment costs, along with additional wages and benefits due to annual pay increases and headcount additions, offset in part by lower project costs for proto-types and consulting.

Our research and development efforts in 2012 were focused on new products, including an enhanced SPI system with a new user interface, as well as enhanced QX AOI systems, designed with significantly improved resolution and performance required for accurately inspecting the smallest circuit board components used in smart phones, tablets and other applications requiring higher resolution due to smaller component sizes. Other product development efforts include an SPI system which will offer a 30% increase in inspection speed for high-volume production environments, along with enhancements to our off-line QX100 tabletop AOI system and our QX100i in-line system. As we complete these products and invest in next-generation products, we anticipate a slight increase in research and development expenses in 2013.

Selling, general and administrative expenses were \$12.8 million or 31% of revenue in 2012, \$14.5 million or 24% of revenue in 2011 and \$13.8 million or 24% of revenue in 2010. The \$1.7 million or 12% decrease in selling, general and administrative expense in 2012 was due to a reduction in commissions for third party sales representatives of \$712,000, and a reduction in internal sales commissions and incentive bonuses of \$715,000, resulting from the 32% decline in 2012 sales, and a \$165,000 reduction in our allowance for doubtful accounts. The \$700,000 or 5% increase in selling, general and administrative expenses in 2011 compared to 2010 was due to additional business development activities and the impact of the weakening United States dollar on costs attributable to our foreign sales offices, offset in part by a reduction in commissions for third party sales representatives, as more sales were sold through distribution channels, and a \$65,000 reduction in our allowance for doubtful accounts.





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Our 2012 restructuring actions will provide annual operating expense savings of up to \$1.6 million, exclusive of savings that will impact cost of revenue and gross margin. A portion of the annual savings was realized in the fourth quarter of 2012. In addition, we anticipate using some of the savings to fund additional investments and hire new employees to strengthen our software engineering and marketing capabilities.

**Re-organization and Restructure Charge**

In the third quarter of 2012, we consolidated research and development for our semiconductor products into our Minneapolis headquarters facility, resulting in a \$217,000 restructuring charge for severance and relocation expenses. We believe this move will streamline our business and provide our sensor engineers in Minneapolis with more efficient access to our WaferSense technology and products. We anticipate annual savings of up to \$800,000 resulting from consolidation of research and development for our semiconductor products. Additional severance costs of \$523,000 were incurred in the fourth quarter of 2012 when we reduced our global workforce by approximately 10% or 20 employees in response to the sluggish economy and weak SMT, semiconductor and solar market conditions. We anticipate annual savings of up to \$1.4 million from the fourth quarter workforce reduction. No restructuring or severance costs were incurred in 2011.

A summary of our restructuring accrual follows:

(In thousands)	Semiconductor R&D Consolidation	Fourth Quarter 2012 Workforce Reduction	Total
Balance, January 1, 2012	\$	\$	\$
Cost incurred	217	523	740
Payments made	217	331	548
Balance, December 31, 2012	\$	\$ 192	\$ 192

The remaining accrued severance in the amount of \$192,000 at December 31, 2012 will be paid prior to July 1, 2013.

**Interest Income and Other**

Interest income and other includes interest earned on investments and gains and losses associated with foreign currency transactions and foreign exchange forward contracts used to hedge against the effects of exchange rate fluctuations on intercompany financing transactions associated with our subsidiaries in the United Kingdom and Singapore. Interest income and other decreased in 2012 and 2011, due to smaller gains resulting from foreign currency transactions and lower interest income resulting from lower rates of interest earned on invested funds. In 2012, we also recognized a \$42,000 permanent impairment loss on our investment in an equity security.

Fluctuations in the level of gains and losses associated with foreign currency transactions and foreign exchange forward contracts impact the level of interest income and other reported in any given period. We incurred foreign currency transaction losses, net of underlying currency hedges of \$11,000 in 2012, compared to foreign currency transaction gains, net of underlying currency hedges of \$34,000 in 2011.

**Income Taxes**

We recorded income tax expense of \$3.6 million in 2012 reflecting an effective tax rate of a negative 114%. Even though we incurred a loss in 2012, we still recorded income tax expense and our effective tax rate was negatively impacted, because we concluded that a \$5.7 million non-cash charge was needed to record a valuation allowance against substantially all of our United States and Singapore based deferred tax assets due to the decline in our level of profitability and near term financial outlook. The valuation allowance may be reversed once our operations and outlook materially strengthen.

We recorded income tax expense of \$1.4 million in 2011 reflecting an effective tax rate of 24%. Our effective tax rate for 2011 reflects the benefit of having a significant portion of our operations in Singapore where corporate income tax rates are substantially lower than the United States. Lower tax rates in foreign jurisdictions favorably impacted our 2011 income tax rate by 11.1%. Other items favorably impacting our income tax rate in 2011 include benefits from the federal research and experimentation (R&D) tax credit and the domestic manufacturer's production incentive deduction. An increase in our valuation allowance for state R&D tax credits and net operating loss carry forwards negatively impacted our effective tax rate by 1.4% in 2011.

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We file income tax returns in the U.S. federal jurisdiction, and various state and foreign jurisdictions. During 2012, the Internal Revenue Service completed an audit of our 2010 federal income tax return. The audit resulted in no change to our reported level of taxable income or income tax liability, and had no impact on our financial condition. Due to the carryback of our 2009 federal taxable loss to the years 2004-2007, the Internal Revenue Service could potentially examine our federal income tax returns for those years. The statute of limitations for examination of these returns had previously expired. We are no longer subject to state and local income tax examinations by tax authorities for years before 2008.

**Liquidity and Capital Resources**

Our cash and cash equivalents decreased by \$6.5 million in 2012 due to use of cash for investing activities, including purchases of marketable securities, net of maturities and sales, of \$5.2 million, and equipment purchases of \$1.4 million, offset in part by proceeds from exercise of stock options and issuance of common stock under our employee stock purchase plan of \$166,000. Our cash and cash equivalents fluctuate in part because of maturities of marketable securities, and investment of cash balances in marketable securities, or from other sources of cash, in addition to marketable securities. Accordingly, we believe the combined balances of cash and marketable securities provide a more reliable indication of our available liquidity. Combined balances of cash and marketable securities decreased to \$29.2 million as of December 31, 2012, from \$30.5 million as of December 31, 2011.

Operations provided virtually no cash in 2012, reflecting our net loss of \$6.7 million, offset in part by non-cash expenses totaling \$7.0 million for depreciation and amortization, provision for doubtful accounts, deferred income taxes, non-cash gains from foreign currency transactions, unrealized loss on available-for-sale equity security and stock compensation costs. Deferred income tax expense of \$4.8 million resulting from the valuation allowance we recorded in 2012 was the largest component of total non-cash expenses. Changes in operating assets and liabilities providing cash included decreases in accounts receivable of \$5.9 million. Changes in operating assets and liabilities using cash included increases in inventory of \$1.8 million, increases in refundable income taxes of \$1.1 million, decreases in accounts payable of \$1.7 million, decreases in advance customer payments of \$299,000 and decreases in accrued expenses of \$1.4 million. The decrease in accounts receivable and advance customer payments resulted from substantially lower sales levels and activity in the fourth quarter of 2012, compared to the fourth quarter of 2011. Inventories have increased as 2012 sales levels have been lower than anticipated. Higher income tax refunds receivable are due to income tax payments made in 2012 and an increase in refundable income taxes resulting from our loss in 2012. Accrued expenses and other liabilities decreased due to lower commission and incentive compensation accruals, resulting from lower levels of revenue and profitability, and payment of 2011 incentive compensation accruals in 2012. The decrease in accounts payable resulted from a significant reduction in new raw material purchases as we work to reduce inventory levels resulting from lower than anticipated sales in 2012.

Operating activities provided \$9.2 million of cash in 2011. Cash provided by operations included net income of \$4.4 million, which included non-cash expenses totaling \$2.9 million for depreciation and amortization, provision for doubtful accounts, deferred taxes, non-cash gains and losses from foreign currency transactions and stock compensation expenses. Changes in operating assets and liabilities providing cash included decreases in inventory of \$2.9 million and increases in accrued expenses and other liabilities of \$638,000. Changes in operating assets and liabilities using cash included increases in accounts receivable of \$549,000 and decreases in accounts payable of \$1.1 million. Better sales forecasting and inventory management resulted in lower inventory purchases in the latter half of 2011 and a corresponding reduction in inventory and accounts payable levels. Accrued expenses and other liabilities increased due to higher warranty, commission and incentive compensation accruals, resulting from higher sales levels and improved operating results. Accounts receivable were higher due to a slight slowdown in our collection efficiency.

Investing activities used \$6.7 million of cash in 2012, compared to using \$4.0 million of cash in 2011. Changes in the level of investment in marketable securities, resulting from the purchases, sales and maturities of those securities, used \$5.2 million of cash in 2012 and used \$3.1 million of cash in 2011. We used \$1.5 million of cash in 2012 and \$900,000 of cash in 2011 for the purchase of fixed assets and capitalized patent costs. The increase in fixed asset purchases in 2012 was due to new network storage equipment, office improvements and research and development test equipment.

Financing activities provided \$145,000 of cash in 2012, compared to providing \$205,000 of cash in 2011. Cash from the exercise of employee stock options and issuance of common stock under our Employee Stock Purchase Plan totaled \$166,000 in 2012 and \$205,000 in 2011. Common stock repurchases totaled \$21,000 in 2012.

At December 31, 2012, we did not have any relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities, which would have been established for the purpose of establishing off-balance sheet arrangements or other contractually narrow or limited purposes. We do not believe we are exposed to any financing, liquidity, market or credit risk that could arise if we had engaged in such relationships.

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Except for our obligations under facilities leases and purchase contracts, we had no material commitments for expenditures as of December 31, 2012. Purchase commitments for inventory can vary based on the volume of revenue and resulting inventory requirements. While there were no material commitments, we evaluate investment opportunities that come to our attention and could make a significant commitment in the future.

Our board of directors has authorized a \$3.0 million share repurchase program. The common stock will be acquired from time to time in open market transactions, block purchases and other transactions complying with the Securities and Exchange Commission's Rule 10b-18. We adopted a 10b5-1 trading plan to implement the repurchase program.

Our cash, cash equivalents and marketable securities totaled \$29.2 million at December 31, 2012. We believe that on-hand cash, cash equivalents and marketable securities, coupled with anticipated future cash flow from operations, will be adequate to fund our cash flow needs for the foreseeable future, including contractual obligations discussed above.

**Related Party Transactions**

We did not engage in any related party transactions during the two year period ended December 31, 2012.

**Inflation and Foreign Currency Transactions**

Changes in our revenues have resulted primarily because of changes in the level of unit shipments and the relative strength or weakness of the worldwide electronics and semiconductor fabrication capital equipment markets. We believe that inflation has not had a significant effect on our operations.

Most of our international export sales are negotiated, invoiced and paid in U.S. dollars. We manufacture our SMT system products in Singapore and a portion of our raw material purchases are denominated in Singapore dollars. We also have R&D and sales personnel located in Singapore and sales offices located in other parts of the world. Although currency fluctuations do not significantly affect our revenue, they can impact our costs and influence the price competitiveness of our products and the willingness of existing and potential customers to purchase units.

We enter into foreign exchange forward contracts to hedge against the effect of exchange rate fluctuations on cash flows denominated in foreign currencies and certain intercompany financing transactions associated with our subsidiaries in the United Kingdom and Singapore. These transactions are designated as cash flow hedges. The effective portion of the gain or loss on the derivative is reported as a component of other comprehensive income and reclassified into earnings in the same period during which the hedged transaction affects earnings. The maximum length of time over which we hedge our exposure to the variability in future cash flows is 12 months and, accordingly, at December 31, 2012, all of our open foreign exchange forward contracts had maturities of one year or less. The dollar equivalent gross notional amount of our foreign exchange forward contracts designated as cash flow hedges at December 31, 2012 was approximately \$8.3 million.

At December 31, 2012, our open foreign exchange forward contracts were in an unrealized gain position equal to \$153,000 on a pre-tax basis due to a significant weakening of the U.S. dollar in relation to the Singapore dollar in 2012. If the exchange rate between the U.S. dollar and the Singapore dollar were to remain unchanged over the next twelve months, we would realize this gain through our statement of operations. However, because we do not fully hedge all of our future anticipated cash flows in Singapore dollars, the portion of our costs that we do not hedge would be higher in relation to recent quarters. If the U.S. dollar were to strengthen in future periods in relation to the Singapore dollar, the unrealized gain on our open foreign exchange forward contracts would be reduced, but costs that are not hedged would decrease. The ultimate impact of any fluctuation in the relationship between the U.S. dollar and Singapore dollar is dependent on the level of Singapore denominated cash flows in future periods and our hedging activity.

**Recent Accounting Developments**

In June 2011, the FASB issued amended disclosure requirements for the presentation of comprehensive income (ASU No. 2011-05, *Comprehensive Income (Topic 220): Presentation of Comprehensive Income*). The amended guidance eliminates the option to present components of other comprehensive income (OCI) as part of the statement of changes in stockholders' equity. Under the amended guidance, all changes in OCI are to be presented either in a single continuous statement of comprehensive income or in two separate but consecutive financial statements. The FASB subsequently met on October 21, 2011 and decided that the specific requirement to present items that are reclassified from other comprehensive income to net income alongside their respective components of net income and other comprehensive income will be deferred. We adopted the remaining amended disclosure requirements effective January 1, 2012. Our adoption of the amended disclosure requirements had no impact on our consolidated financial results as the amendments relate only to changes in financial statement presentation.



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In February 2013, the FASB issued amended disclosure requirements for amounts classified out of other comprehensive income to improve the transparency of reporting these reclassifications (ASU No. 2013-02, *Comprehensive Income (Topic 220): Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income*). The amended guidance requires an entity to provide information about the amounts reclassified out of accumulated other comprehensive income by component. In addition, an entity is required to present, either on the face of the statement where net income is presented or in the notes, significant amounts reclassified out of accumulated other comprehensive income by the respective line items of net income but only if the amount reclassified is required under U.S. GAAP to be reclassified to net income in its entirety in the same reporting period. For other amounts that are not required under U.S. GAAP to be reclassified in their entirety to net income, an entity is required to cross-reference to other disclosures required under U.S. GAAP that provide additional detail about those amounts. The amended guidance is effective for reporting periods beginning after December 15, 2012. There will be no impact to the consolidated financial results as the amendments relate only to changes in financial statement presentation.

**Critical Accounting Policies and Estimates**

Our discussion and analysis of financial condition and results of operations is based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. 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 on-going basis, we evaluate these estimates, including those related to revenue recognition, bad debts, warranty obligations, inventory valuation, intangible assets, and income taxes. We base these estimates on historical experience and on various other assumptions that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Our actual results may differ from these estimates under different assumptions or conditions. The estimates and judgments that we believe have the most effect on our reported financial position and results of operations are as follows:

***Revenue Recognition.***

Revenue from all customers, including distributors, is recognized when all significant contractual obligations have been satisfied and collection of the resulting receivable is reasonably assured. Generally, revenues are recognized upon shipment under FOB shipping point terms, and include shipping and handling costs. Estimated returns and warranty costs are recorded at the time of sale. Sales of some surface mount technology (SMT) system products may require customer acceptance due to performance or other acceptance criteria included in the terms of sale. For these SMT product sales, revenue is recognized at the time of customer acceptance. Our multiple deliverable arrangements typically include the sale of an SMT inspection system, installation and training, and in some cases, an extended warranty. Revenue from installation and training are recognized as the services are provided. Revenue from extended warranties are recognized ratably over the warranty period.

When a sale involves multiple elements, revenue is allocated to each respective element at inception of an arrangement using the relative selling price method. Selling price is determined based on a selling price hierarchy, consisting of vendor specific objective evidence (VSOE), third party evidence or estimated selling price. Management's best estimate of the selling price of an SMT machine is based on the cost build-up of the product and a reasonable margin based on geographic location and market conditions. We use VSOE to establish fair value for extended warranty, installation and training services. If VSOE is not available to establish fair value for extended warranty, installation and training services, we estimate a selling price based on the cost-build-up for the particular service and a reasonable gross margin. Costs related to products delivered are recognized in the period revenue is recognized. Cost of goods sold consists primarily of direct labor, manufacturing overhead, raw materials and components and excludes amortization of intangible assets.

***Allowance for Doubtful Accounts.***

We maintain allowances for doubtful accounts for estimated losses resulting from the inability of our customers to make required payments. In making the determination of the appropriate allowance for doubtful accounts, we consider specific accounts, historical write-offs, changes in customer relationships and credit worthiness and concentrations of credit risk. Specific accounts receivable are written-off once a determination is made that the account is uncollectible. If the financial condition of our customers were to deteriorate, resulting in an impairment of their ability to make payments, additional allowances may be required. The allowance for doubtful accounts is \$775,000 at December 31, 2012 and \$940,000 at December 31, 2011.

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***Allowance for Warranty Expenses.***

We provide for the estimated cost of product warranties at the time revenue is recognized. While we engage in extensive product quality programs and processes, including actively monitoring and evaluating the quality of component suppliers, warranty obligations are 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. The allowance for warranties was \$694,000 at December 31, 2012 and \$985,000 at December 31, 2011.

***Reserve for Inventory Obsolescence.***

We write down inventory for estimated obsolescence or unmarketable inventory equal to the difference between the cost of inventory and the estimated market value based upon assumptions about future demand and market conditions. We formulate our assumptions regarding future demand and market conditions based on order trends and input from customers regarding their future requirements. If actual market conditions are less favorable than those projected, or if in the future we decide to discontinue sales and marketing of any of our products, additional inventory write-downs may be required. We had a reserve for obsolete and excess inventory of \$489,000 at December 31, 2012 and \$592,000 at December 31, 2011.

***Valuation of Intangible and Long-Lived Assets.***

We assess the impairment of identifiable intangible assets, long lived assets and related goodwill whenever events or changes in circumstances indicate the carrying value may not be recoverable. In addition, goodwill is tested for impairment annually. Factors we consider important, which could trigger an impairment review include the following:

- Significant under-performance relative to expected historical or projected future operating results.
- Significant changes in the manner of our use of the acquired assets or the strategy for our overall business.
- Significant negative industry or economic trends.
- Significant decline in our stock price for a sustained period; and our market capitalization relative to net book value.
- For intangible assets and long-lived assets, if the carrying value of the asset exceeds the undiscounted cash flows from such asset.
- For goodwill, if the carrying value of our net assets (net book value) exceeds fair value.

When we determine that the carrying value of intangibles, long-lived assets and related goodwill may not be recoverable based upon the existence of one or more of the above indicators of impairment, we measure any potential impairment based on a projected discounted cash flow method using a discount rate that we believe is commensurate with the risk inherent in our current business model. Annually, we also test for impairment of goodwill by estimating our fair value utilizing the income approach. The income approach is a valuation technique under which we estimate future cash flows using financial forecasts. Future estimated cash flows are discounted to their present value to calculate fair value. When considering fair value, we also gave consideration to the control premium in excess of our current market capitalization that might be obtained from a third party acquirer. These assumptions require significant judgment and actual results may differ from assumed or estimated amounts.

At December 31, 2012 and 2011 we have remaining goodwill equal to \$569,000. Our recent analyses performed in 2012 and 2011 indicate that this goodwill is not impaired. However, our conclusion could change in the future, if our assumptions about future economic conditions, revenue growth or profitability change. Any resulting impairment charge could have a material effect on our financial position and results of operations in the future.

***Income Taxes.***

Significant judgment is required in determining worldwide income tax expense based upon tax laws in the various jurisdictions in which we operate. We have established reserves for uncertain tax positions by applying the more likely than not threshold (i.e., a likelihood of occurrence greater than fifty percent). The recognition threshold is met when an entity concludes that a tax position, based solely on its technical merits, is more likely than not to be sustained upon examination by the relevant taxing authority. Those tax positions failing to qualify for initial recognition are recognized in the first interim period in which they meet the more likely than not standard, or are resolved through negotiation or litigation with the taxing authority, or upon expiration of the statute of limitations. De-recognition of a tax position that was previously recognized occurs when an entity subsequently determines that a tax position no longer meets the more likely than not threshold of being sustained. All tax positions are analyzed periodically and adjustments are made as events warrant modification, such as the completion of audits or the expiration of statutes of limitations, which may result in future charges or credits to income tax expense.





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As part of the process of preparing consolidated financial statements, management is required to estimate income taxes in each of the jurisdictions in which we operate. This process involves estimating the current tax liability, as well as assessing temporary differences arising from the different treatment of items for financial statement and tax purposes. These differences result in deferred tax assets and liabilities, which are recorded on our balance sheet.

We currently have significant deferred tax assets as a result of temporary differences between taxable income on our tax returns and U.S. GAAP income, research and development tax credit carry forwards and federal, state and foreign net operating loss carry forwards. A deferred tax asset generally represents future tax benefits to be received when temporary differences previously reported in our financial statements become deductible for income tax purposes, or when net operating loss carry forwards or credits are applied against future taxable income, or when tax credit carry forwards are utilized on our tax returns. We assess the realizability of our deferred tax assets and the need for a valuation allowance based on the guidance provided in current financial accounting standards.

Significant judgment is required in determining the realizability of our deferred tax assets. The assessment of whether valuation allowances are required considers, among other matters, the nature, frequency and severity of any current and cumulative losses, forecasts of future profitability, the duration of statutory carry forward periods, our experience with loss carry forwards not expiring unused and tax planning alternatives.

At December 31, 2012, we concluded that a valuation allowance is needed for substantially all of our United States and Singapore based deferred tax assets due to the decline in our level of profitability and near term financial outlook. In analyzing the need for a valuation allowance, we first considered our history of cumulative operating results for income tax purposes over the past three years in each of the tax jurisdictions where we operate, our financial performance in recent quarters, statutory carry forward periods and tax planning alternatives. Finally, we considered both our near and long term financial outlook and timing regarding when we might return to profitability. After considering all available evidence both positive and negative, we concluded that a valuation allowance of \$6.3 million is required for substantially all of our U.S. and Singapore based deferred tax assets. The valuation allowance at December 31, 2011 of \$833,000 was needed for various long-term state tax credit carry forwards, state operating loss carry forwards and capital losses for which recovery was not deemed to be more likely than not.

Deferred tax assets at December 31, 2012, include \$226,000 for net operating loss carry forwards incurred in the UK by CyberOptics Ltd., which was acquired in 1999. A valuation allowance has not been recorded against these deferred tax assets. The utilization of these net operating loss carry forwards is dependent on CyberOptics Ltd.'s ability to generate sufficient UK taxable income during the carry forward period.

***Derivatives and Hedging.***

We enter into foreign exchange forward contracts to hedge against the effect of exchange rate fluctuations on cash flows denominated in foreign currencies and certain intercompany financing transactions associated with our subsidiaries in the United Kingdom and Singapore. These transactions are designated as cash flow hedges and are recorded in the accompanying balance sheet at fair value. The effective portion of the gain or loss on the derivative is reported as a component of other comprehensive income and reclassified into earnings in the same period during which the hedged transaction affects earnings. Gains and losses on the derivative representing either hedge ineffectiveness or hedge components excluded from the assessment of effectiveness are recognized in current earnings. The maximum length of time over which we hedge our exposure to the variability in future cash flows is 12 months. Accordingly, at December 31, 2012 and December 31, 2011, all of our open foreign exchange forward contracts had maturities of one year or less. The dollar equivalent gross notional amount of our foreign exchange forward contracts designated as cash flow hedges was approximately \$8.3 million at December 31, 2012 and \$11.0 million at December 31, 2011.

We estimate hedge ineffectiveness on a quarterly basis by considering the difference between the prices of a hypothetical forward contract maturing on the last day of a given month, to the prices of a series of hypothetically perfect daily forward contracts. Hedge ineffectiveness and the amounts excluded from effectiveness testing recognized in earnings on cash flow hedges were not material for the years ended December 31, 2012 and 2011. At December 31, 2012, the fair value of our foreign exchange forward contracts representing a gain in the amount of \$153,000 was recorded in other current assets in the accompanying consolidated balance sheet. At December 31, 2011, the fair value of foreign exchange forward contracts representing a loss in the amount of \$493,000 was recorded in accrued expenses in the accompanying consolidated balance sheet.

The fair value for our foreign exchange forward contracts is based on foreign currency spot and forward rates obtained from reputable financial institutions with resulting valuations periodically validated by obtaining foreign currency spot rates and forward quotes from other industry standard sources or third party or counterparty quotes.



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**ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

Not applicable.

Table of Contents**ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA****CONSOLIDATED BALANCE SHEETS  
CYBEROPTICS CORPORATION**

(In thousands, except share information)	As of December 31,	
	2012	2011
<b>ASSETS</b>		
Cash and cash equivalents	\$ 7,340	\$ 13,791
Marketable securities	11,438	10,640
Accounts receivable, less allowance for doubtful accounts of \$775 at December 31, 2012 and \$940 at December 31, 2011	6,129	11,909
Inventories	12,533	11,052
Income tax refunds receivable	1,325	196
Other current assets	1,338	1,238
Deferred tax assets	100	2,518
Total current assets	40,203	51,344
Marketable securities, long-term	10,435	6,106
Equipment and leasehold improvements, net	1,719	1,400
Intangible and other assets, net	189	230
Goodwill	569	569
Other assets	142	137
Deferred tax assets	363	3,130
Total assets	\$ 53,620	\$ 62,916
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Accounts payable	\$ 2,476	\$ 4,081
Advance customer payments	563	655
Accrued expenses	1,840	3,657
Deferred tax liability	29	
Total current liabilities	4,908	8,393
Deferred rent	408	327
Deferred warranty revenue	146	353
Deferred tax liability		34
Reserve for income taxes	686	840
Total liabilities	6,148	9,947
Commitments and contingencies		
<b>Stockholders' equity:</b>		
Preferred stock, no par value, 5,000,000 shares authorized, none outstanding		
Common stock, no par value, 25,000,000 shares authorized, 6,969,772 shares issued and outstanding at December 31, 2012 and 6,933,029 shares issued and outstanding at December 31, 2011	31,410	30,965
Accumulated other comprehensive loss	(157)	(926)
Retained earnings	16,219	22,930
Total stockholders' equity	47,472	52,969
Total liabilities and stockholders' equity	\$ 53,620	\$ 62,916

**THE ACCOMPANYING NOTES ARE AN INTEGRAL PART OF THE CONSOLIDATED FINANCIAL STATEMENTS.**

Table of Contents**CONSOLIDATED STATEMENTS OF OPERATIONS  
CYBEROPTICS CORPORATION**

(In thousands, except per share amounts)		Year Ended December 31,	
		2012	2011
Revenues	\$	41,644	\$ 61,087
Cost of revenues		23,465	33,034
Gross margin		18,179	28,053
Research and development expenses		7,748	7,781
Selling, general and administrative expenses		12,802	14,476
Restructuring and severance costs		740	
Amortization of intangibles			108
Income (loss) from operations		(3,111)	5,688
Interest income and other		(24)	39
Income (loss) before income taxes		(3,135)	5,727
Income tax provision		3,576	1,370
Net income (loss)	\$	(6,711)	\$ 4,357
Net income (loss) per share Basic	\$	(0.97)	\$ 0.63
Net income (loss) per share Diluted	\$	(0.97)	\$ 0.63
Weighted average shares outstanding Basic		6,946	6,906
Weighted average shares outstanding Diluted		6,946	6,952

**THE ACCOMPANYING NOTES ARE AN INTEGRAL PART OF THE CONSOLIDATED FINANCIAL STATEMENTS.**

Table of Contents**CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)  
CYBEROPTICS CORPORATION**

(In thousands)	Year Ended December 31,	
	2012	2011
Net income (loss)	\$ (6,711)	\$ 4,357
<b>Other comprehensive income (loss), before tax:</b>		
Foreign currency translation adjustments	376	(37)
<b>Unrealized gains (losses) on available-for-sale securities:</b>		
Unrealized gains (losses) for the period	(79)	30
Reclassification adjustment for other-than-temporary impairment loss included in net income (loss)	42	
Reclassification adjustment for gains included in net income (loss)	(8)	
Total unrealized gains (losses) on available-for-sale securities	(45)	30
<b>Unrealized gains (losses) on foreign exchange forward contracts:</b>		
Unrealized gains (losses) for the period	591	(468)
Reclassification adjustment for (gains) losses included in net income (loss)	74	(29)
Total unrealized gains (losses) on foreign exchange forward contracts	665	(497)
Other comprehensive income (loss), before tax	996	(504)
Income tax provision (benefit) related to items of other comprehensive income (loss)	227	(164)
Other comprehensive income (loss), net of tax	769	(340)
Total comprehensive income (loss)	\$ (5,942)	\$ 4,017

**THE ACCOMPANYING NOTES ARE AN INTEGRAL PART OF THE CONSOLIDATED FINANCIAL STATEMENTS.**

Table of Contents**CONSOLIDATED STATEMENTS OF CASH FLOWS  
CYBEROPTICS CORPORATION**

(In thousands)	For The Year Ended December 31,	
	2012	2011
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>		
Net income (loss)	\$ (6,711)	\$ 4,357
<b>Adjustments to reconcile net income (loss) to net cash provided by operating activities:</b>		
Depreciation and amortization	1,843	1,955
Provision for doubtful accounts	(165)	(62)
Deferred taxes	4,808	629
Foreign currency transaction gains	(12)	(68)
Excess tax benefits from equity compensation plans		(3)
Realized gains on available-for-sale securities	(8)	
Unrealized loss on available-for-sale equity security	42	
Stock compensation costs	449	430
<b>Changes in operating assets and liabilities:</b>		
Accounts receivable	5,945	(549)
Inventories	(1,801)	2,859
Income tax refunds receivable	(1,129)	184
Other assets	154	65
Accounts payable	(1,696)	(1,095)
Advance customer payments	(299)	(144)
Accrued expenses	(1,412)	638
Net cash provided by operating activities	8	9,196
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>		
Proceeds from maturities of available-for-sale marketable securities	13,241	10,053
Proceeds from sales of available-for-sale marketable securities	3,154	3,175
Purchases of available-for-sale marketable securities	(21,630)	(16,304)
Additions to equipment and leasehold improvements	(1,350)	(772)
Additions to patents	(113)	(104)
Net cash used in investing activities	(6,698)	(3,952)
<b>CASH FLOWS FROM FINANCING ACTIVITIES:</b>		
Proceeds from exercise of stock options	27	1
Excess tax benefits from equity compensation plans		3
Proceeds from issuance of common stock under employee stock purchase plan	139	201
Common stock repurchases	(21)	
Net cash provided by financing activities	145	205
Effects of exchange rate changes on cash and cash equivalents	94	(85)
Net increase (decrease) in cash and cash equivalents	(6,451)	5,364
Cash and cash equivalents beginning of period	13,791	8,427
Cash and cash equivalents end of period	\$ 7,340	\$ 13,791

**THE ACCOMPANYING NOTES ARE AN INTEGRAL PART OF THE CONSOLIDATED FINANCIAL STATEMENTS.**

Table of Contents**CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY  
CYBEROPTICS CORPORATION**

<b>(In thousands)</b>	<b>Common Stock Shares</b>	<b>Common Stock Amount</b>	<b>Accumulated Other Comprehensive Income (Loss)</b>	<b>Retained Earnings</b>	<b>Total Stockholders Equity</b>
<b>BALANCE, DECEMBER 31, 2010</b>	6,891	\$ 30,330	\$ (586)	\$ 18,573	\$ 48,317
Excess tax benefit from exercise of stock options, net of deferred tax shortfall related to stock options and restricted stock units		3			3
Exercise of stock options, vesting of restricted stock units, net of shares exchanged as payment	13	1			1
Share issuances for compensation purposes	4	41			41
Stock compensation		389			389
Issuance of common stock under Employee Stock Purchase Plan	25	201			201
Market value adjustments of marketable securities, net of reclassification adjustment			20		20
Unrealized loss on foreign exchange forward contracts, net of reclassification adjustment			(323)		(323)
Cumulative translation adjustment			(37)		(37)
Net income				4,357	4,357
<b>BALANCE, DECEMBER 31, 2011</b>	6,933	\$ 30,965	\$ (926)	\$ 22,930	\$ 52,969
Excess tax benefit from exercise of stock options, net of deferred tax shortfall related to stock options and restricted stock units		(149)			(149)
Exercise of stock options, vesting of restricted stock units, net of shares exchanged as payment	15	27			27
Share issuances for compensation purposes	5	41			41
Stock compensation		408			408
Issuance of common stock under Employee Stock Purchase Plan	20	139			139
Repurchase of common stock	(3)	(21)			(21)
Market value adjustments of marketable securities, net of reclassification adjustment			(41)		(41)
Unrealized loss on foreign exchange forward contracts, net of reclassification adjustment			434		434
Cumulative translation adjustment			376		376
Net loss				(6,711)	(6,711)
<b>BALANCE, DECEMBER 31, 2012</b>	6,970	\$ 31,410	\$ (157)	\$ 16,219	\$ 47,472

**THE ACCOMPANYING NOTES ARE AN INTEGRAL PART OF THE CONSOLIDATED FINANCIAL STATEMENTS.**



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**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS  
CYBEROPTICS CORPORATION**

**NOTE 1 BUSINESS DESCRIPTION AND SIGNIFICANT ACCOUNTING POLICIES**

**Description of Business**

We are a leading global supplier of optical process control sensors and inspection systems that are used to control the manufacturing process and to ensure the quality of electronic circuit boards manufactured by our customers using surface mount technology (SMT). We also manufacture and sell sensors that assist with yield improvement in the semiconductor wafer fabrication process.

**Principles of Consolidation**

The consolidated financial statements include the accounts of CyberOptics® Corporation and its wholly-owned subsidiaries. In these Notes to the Consolidated Financial Statements, these companies are collectively referred to as CyberOptics, we, us, or our. All significant inter-company accounts and transactions have been eliminated in consolidation.

**Use of Estimates**

The preparation of financial statements in conformity with generally accepted accounting principles 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. Actual results could differ significantly from those estimates.

**Cash Equivalents**

We consider all highly liquid investments purchased with an original maturity of 90 days or less to be cash equivalents. Cash and cash equivalents consist of funds maintained in demand deposit accounts, money market accounts, corporate debt instruments and U.S. government backed obligations. Some cash and cash equivalent balances may exceed federally insured limits.

**Marketable Securities**

All marketable securities are classified as available-for-sale and consist of U.S. government backed obligations, certificates of deposit, corporate debt instruments, asset backed securities or equity securities. Marketable securities are classified as short-term or long-term in the balance sheet based on their maturity date and expectations regarding sales.

Available-for-sale securities are carried at fair value, with unrealized gains and losses reported as a separate component of stockholders' equity until realized. These fair values are primarily determined using quoted market prices. The carrying amounts of securities, for purposes of computing unrealized gains and losses, are determined by specific identification. The cost of securities sold is also determined by specific identification.

We monitor the carrying value of our investments compared to their fair value to determine whether an other-than-temporary impairment has occurred. If a decline in fair value is determined to be other-than-temporary, an impairment charge related to that specific investment is recorded in current operations.

Cash and marketable securities held by foreign subsidiaries totaled \$3,585,000 at December 31, 2012 and \$2,296,000 at December 31, 2011.

**Inventories**

Inventories are stated at the lower of cost or market, with cost determined using the first-in, first-out (FIFO) method. Appropriate consideration is given to deterioration, obsolescence, and other factors in evaluating net realizable value. Demonstration inventories are stated at cost less accumulated amortization, generally based on a 36 month useful life.

**Allowance for Doubtful Accounts**

Allowances for doubtful accounts are maintained for estimated losses resulting from the inability of our customers to make required payments. In making the determination of the appropriate allowance for doubtful accounts, we consider specific accounts, historical write-offs, changes in customer relationships and credit worthiness and concentrations of credit risk. Specific accounts receivable are written-off once a determination is made that the account is uncollectible.

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**Equipment and Leasehold Improvements**

Equipment and leasehold improvements are stated at cost. Significant additions or improvements extending asset lives are capitalized, while repairs and maintenance are charged to expense as incurred. In progress costs are capitalized with depreciation beginning when assets are placed in service. Depreciation is recorded using the straight-line method over the estimated useful lives of the equipment, ranging from three to ten years. Leasehold improvements are depreciated using the straight-line method over the shorter of the asset useful life or the underlying lease term. Gains or losses on dispositions are included in current operations.

**Intangible Assets**

Identified intangible assets (excluding goodwill and patents), consisting primarily of developed technology, were amortized on a straight-line basis over periods ranging from six to ten years, based upon their estimated life. These assets were fully amortized prior to December 31, 2011.

Intangible assets subject to amortization and other long lived assets are reviewed for impairment when events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. An impairment loss would be recognized when future undiscounted cash flows expected to result from use of the asset and eventual disposition are less than the carrying amount.

**Goodwill**

Goodwill represents the excess of purchase price over the fair value of net assets acquired in a business combination. We evaluate the carrying value of goodwill during the fourth quarter of each year and between annual evaluations if events occur or circumstances change that indicate goodwill might be impaired. Goodwill is tested by comparing our fair value, as determined based on our future estimated discounted cash flows, to our net book value.

**Patents**

Patents consist of legal and patent registration costs for protection of our proprietary technology. We amortize patent costs on a straight-line basis over a three year period, based upon their estimated life.

**Revenue Recognition**

Revenue from all customers, including distributors, is recognized when all significant contractual obligations have been satisfied and collection of the resulting receivable is reasonably assured. Generally, revenues are recognized upon shipment under FOB shipping point terms, and include shipping and handling costs. Taxes collected from customers and remitted to governmental authorities are excluded from revenues. Estimated returns and warranty costs are recorded at the time of sale. Sales of some SMT system products may require customer acceptance due to performance or other acceptance criteria included in the terms of sale. For these SMT product sales, revenue is recognized at the time of customer acceptance. Our multiple deliverable arrangements typically include the sale of an SMT inspection system, installation and training, and in some cases, an extended warranty. Revenue from installation and training and extended warranty are recognized as the services are provided, typically within one month of shipment in the case of installation and training. Extended warranties are typically for a second or third year of coverage beyond the basic one year warranty included with all SMT sales.

When a sale involves multiple elements, revenue is allocated to each respective element at inception of an arrangement using the relative selling price method. Selling price is determined based on a selling price hierarchy, consisting of vendor specific objective evidence (VSOE), third party evidence or estimated selling price. Management's best estimate of the selling price of an SMT machine is based on the cost build-up of the product and a reasonable margin based on geographic location and market conditions. We use VSOE to establish selling price for extended warranty, installation and training services. If VSOE is not available to establish selling price for extended warranty, installation and training services, we estimate a selling price based on the cost build-up for the particular service and a reasonable gross margin. Costs related to products delivered are recognized in the period revenue is recognized. Cost of goods sold consists primarily of direct labor, manufacturing overhead, raw materials and components and excludes amortization of intangible assets.

**Foreign Currency Translation**

Financial position and results of operations of our international subsidiaries are measured using local currency as their functional currency. Assets and liabilities of these operations are translated at the exchange rates in effect at each fiscal year-end. Statements of operations accounts are translated at the average rates of exchange prevailing during the year. Translation adjustments arising from the use of differing exchange rates from period to period are included as a cumulative translation adjustment in stockholders' equity.

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**Foreign Currency Transactions**

Foreign currency transaction gains and losses are included in interest income and other in the statement of operations. We recognized foreign currency transaction losses, net of underlying currency hedges of \$11,000 in 2012 and foreign currency transaction gains, net of underlying currency hedges of \$34,000 in 2011.

**Research and Development**

Research and development (R&D) costs, including software development, are expensed when incurred. Software development costs are required to be expensed until the point that technological feasibility and proven marketability of the product are established; costs otherwise capitalizable after such point also are expensed because they are insignificant. All other R&D costs are expensed as incurred. R&D expenses consist primarily of salaries, project materials, contract labor and other costs associated with ongoing product development and enhancement efforts.

**Derivatives and Hedging**

We enter into foreign exchange forward contracts to hedge against the effect of exchange rate fluctuations on cash flows denominated in foreign currencies and certain intercompany financing transactions associated with our subsidiaries in the United Kingdom and Singapore. These transactions are designated as cash flow hedges and are recorded in the accompanying balance sheet at fair value. The effective portion of the gain or loss on the derivative is reported as a component of other comprehensive income and reclassified into earnings in the same period during which the hedged transaction affects earnings. Gains and losses on the derivative representing either hedge ineffectiveness or hedge components excluded from the assessment of effectiveness are recognized in current earnings. Cash flows from derivative instruments are classified in the statement of cash flows in the same category as the cash flows from the items subject to designated hedge relationships.

**Advertising Costs**

We expense all advertising costs as incurred. The amounts were not material for all periods presented.

**Warranty Costs**

We provide for the estimated cost of product warranties at the time revenue is recognized, generally for one year.

**Income Taxes**

We evaluate uncertain tax positions using the more likely than not threshold (i.e., a likelihood of occurrence greater than fifty percent). The recognition threshold is met when an entity concludes that a tax position, based solely on its technical merits, is more likely than not to be sustained upon examination by the relevant taxing authority. Those tax positions failing to qualify for initial recognition are recognized in the first interim period in which they meet the more likely than not standard, or are resolved through negotiation or litigation with the taxing authority, or upon expiration of the statute of limitations. De-recognition of a tax position that was previously recognized occurs when an entity subsequently determines that a tax position no longer meets the more likely than not threshold of being sustained.

Only the portion of the liability that is expected to be paid within one year is classified as a current liability. As a result, liabilities expected to be resolved without the payment of cash (e.g. resolution due to the expiration of the statute of limitations) or are not expected to be paid within one year are not classified as current. It is our policy to record estimated interest and penalties as income tax expense and tax credits as a reduction in income tax expense.

Deferred income taxes are recorded to reflect the tax consequences in future years of differences between the financial reporting and tax bases of assets and liabilities. Income tax expense is the sum of the tax currently payable and the change in the deferred tax assets and liabilities during the period, excluding changes in deferred tax assets recorded to equity and goodwill. Valuation allowances are established when, in the opinion of management, there is uncertainty that some portion or all of the deferred tax assets will not be realized. We assess the realizability of our deferred tax assets and the need for a valuation allowance based on all positive and negative evidence.

**Net Income (Loss) Per Share**

Basic net income (loss) per share is computed by dividing net income (loss) by the weighted average number of common shares outstanding during the period. Net income per diluted share is computed by dividing net income by the weighted average number of common and common equivalent shares outstanding during the period. Common equivalent shares consist of common shares to be issued upon exercise of stock options, restricted stock units and from participation in our employee stock purchase plan, as calculated using the treasury stock method. All potentially dilutive common equivalent shares are excluded from the calculation of net loss per diluted share due to their anti-dilutive effect.

Table of Contents**Fair Value of Financial Instruments**

The carrying amounts of financial instruments such as cash equivalents, accounts receivable, income tax refunds receivable, other assets, accounts payable, accrued expenses and other current liabilities approximate their related fair values due to the short-term maturities of these instruments.

**Stock-Based Compensation**

All equity-based payments to employees, including grants of employee stock options, are required to be recognized as an expense in our consolidated statement of operations based on the grant date fair value of the award. We utilize the straight-line method of expense recognition over the award's service period for our graded vesting options. The fair value of stock options has been determined using the Black-Scholes model. The compensation expense recognized for all equity based awards is net of estimated forfeitures, which is based on historical data. We have classified equity based compensation within our statement of operations in the same manner as our cash based employee compensation costs. We elected to use the alternative transition guidance known as the short-cut method to determine our pool of windfall tax benefits at January 1, 2006.

See Note 6 to the Consolidated Financial Statements for additional information on stock-based compensation.

**Recent Accounting Developments**

In June 2011, the FASB issued amended disclosure requirements for the presentation of comprehensive income (ASU No. 2011-05, *Comprehensive Income (Topic 220): Presentation of Comprehensive Income*). The amended guidance eliminates the option to present components of other comprehensive income (OCI) as part of the statement of changes in stockholders' equity. Under the amended guidance, all changes in OCI are to be presented either in a single continuous statement of comprehensive income or in two separate but consecutive financial statements. The FASB subsequently met on October 21, 2011 and decided that the specific requirement to present items that are reclassified from other comprehensive income to net income alongside their respective components of net income and other comprehensive income will be deferred. We adopted the remaining amended disclosure requirements effective January 1, 2012. Our adoption of the amended disclosure requirements had no impact on our consolidated financial results as the amendments relate only to changes in financial statement presentation.

In February 2013, the FASB issued amended disclosure requirements for amounts classified out of other comprehensive income to improve the transparency of reporting these reclassifications (ASU No. 2013-02, *Comprehensive Income (Topic 220): Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income*). The amended guidance requires an entity to provide information about the amounts reclassified out of accumulated other comprehensive income by component. In addition, an entity is required to present, either on the face of the statement where net income is presented or in the notes, significant amounts reclassified out of accumulated other comprehensive income by the respective line items of net income but only if the amount reclassified is required under U.S. GAAP to be reclassified to net income in its entirety in the same reporting period. For other amounts that are not required under U.S. GAAP to be reclassified in their entirety to net income, an entity is required to cross-reference to other disclosures required under U.S. GAAP that provide additional detail about those amounts. The amended guidance is effective for reporting periods beginning after December 15, 2012. There will be no impact to the consolidated financial results as the amendments relate only to changes in financial statement presentation.

**NOTE 2 MARKETABLE SECURITIES**

Our investments in marketable securities are classified as available-for-sale and consist of the following:

(In thousands)	Cost	December 31, 2012		Recorded Basis	
		Unrealized Gains	Unrealized Losses		
<b>Short-Term</b>					
U.S. government and agency obligations	\$ 7,358	\$ 10	\$ (35)	\$ 7,333	
Corporate debt securities and certificates of deposit	4,100	5		4,105	
Marketable securities short-term	\$ 11,458	\$ 15	\$ (35)	\$ 11,438	
<b>Long-Term</b>					
U.S. government and agency obligations	\$ 9,033	\$ 23	\$ (23)	\$ 9,033	
Corporate debt securities and certificates of deposit	1,192	4	(1)	1,195	
Asset backed securities	165			165	
Equity security	42			42	
Marketable securities long-term	\$ 10,432	\$ 27	\$ (24)	\$ 10,435	

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(In thousands)	Cost	December 31, 2011		Recorded Basis
		Unrealized Gains	Unrealized Losses	
<b>Short-Term</b>				
U.S. government and agency obligations	\$ 6,495	\$ 8	\$	\$ 6,503
Corporate debt securities and certificates of deposit	4,133	4		4,137
Marketable securities short-term	\$ 10,628	\$ 12	\$	\$ 10,640
<b>Long-Term</b>				
U.S. government and agency obligations	\$ 3,653	\$ 28	\$ (1)	\$ 3,680
Corporate debt securities and certificates of deposit	2,353	9	(2)	2,360
Equity security	84		(18)	66
Marketable securities long-term	\$ 6,090	\$ 37	\$ (21)	\$ 6,106

Our investments in marketable debt securities all have maturities of less than three years. At December 31, 2012, marketable debt securities valued at \$19,012,000 were in an unrealized gain position totaling \$42,000 and marketable debt securities valued at \$2,819,000 were in an unrealized loss position totaling \$59,000 (all had been in an unrealized loss position for less than twelve months). At December 31, 2011, marketable debt securities valued at \$14,207,000 were in an unrealized gain position totaling \$49,000 and marketable debt securities valued at \$2,473,000 were in an insignificant unrealized loss position totaling \$3,000 (all had been in an unrealized loss position for less than twelve months).

In 2012, we recognized a \$42,000 impairment charge for our equity security resulting from a decline in market value which we determined to be other than temporary. Our equity security was in an unrealized loss position of \$18,000 at December 31, 2011, due to weak economic and market conditions.

Net pre-tax unrealized losses for marketable securities of \$17,000 at December 31, 2012 and net pre-tax unrealized gains for marketable securities of \$28,000 at December 31, 2011 were recorded as a component of accumulated other comprehensive income (loss) in stockholders equity. In 2012 we received proceeds of \$3,154,000 from the sale of marketable securities. In 2011 we received proceeds of \$3,175,000 from the sale of marketable securities. We recognized an \$8,000 gain from the sale of marketable securities in 2012. No gain or loss was recognized on any of the sales in 2011.

Investments in marketable securities classified as cash equivalents of \$2,824,000 at December 31, 2012 and \$685,000 at December 31, 2011 consist of the following:

(In thousands)	Cost	December 31, 2012		Recorded Basis
		Unrealized Gains	Unrealized Losses	
Corporate debt securities and certificates of deposit	\$ 2,824	\$	\$	\$ 2,824
	\$ 2,824	\$	\$	\$ 2,824

(In thousands)	Cost	December 31, 2011		Recorded Basis
		Unrealized Gains	Unrealized Losses	
U.S. government and agency obligations	\$ 30	\$	\$	\$ 30
Corporate debt securities and certificates of deposit	655			655
	\$ 685	\$	\$	\$ 685

**NOTE 3 DERIVATIVES**

We enter into foreign exchange forward contracts to hedge against the effect of exchange rate fluctuations on cash flows denominated in foreign currencies and certain intercompany financing transactions associated with our subsidiaries in the United Kingdom and Singapore. These transactions are designated as cash flow hedges. The effective portion of the gain or loss on the derivative is reported as a component of other comprehensive income (loss) and reclassified into earnings in the same period during which the hedged transaction affects earnings. Gains and losses on the derivative representing either hedge ineffectiveness or hedge components excluded from the assessment of effectiveness are recognized in current earnings. Hedge ineffectiveness and the amounts excluded from effectiveness testing recognized in earnings on cash flow hedges were not material for the years ended December 31, 2012 and December 31, 2011.



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The maximum length of time over which we hedge our exposure to the variability in future cash flows is 12 months. Accordingly, at December 31, 2012 and December 31, 2011, all of our open foreign exchange forward contracts had maturities of one year or less. The dollar equivalent gross notional amount of our foreign exchange forward contracts designated as cash flow hedges was approximately \$8.3 million at December 31, 2012 and \$11.0 million at December 31, 2011.

Reclassifications of amounts from accumulated other comprehensive income (loss) into earnings include accumulated gains (losses) at the time earnings are impacted by the forecasted transaction. The location in the consolidated statements of operations and consolidated statements of comprehensive income (loss) and amounts of gains and losses related to derivative instruments designated as cash flow hedges are as follows:

(In thousands)	Year Ended December 31, 2012		
	Pretax Gain (Loss) Recognized in Other Comprehensive Income (Loss) on Effective Portion of Derivative	Pretax Gain (Loss) Recognized in Income on Effective Portion of Derivative as a Result of Reclassification from Accumulated Other Comprehensive Income (Loss)	Ineffective Portion of Gain (Loss) on Derivative and Amount Excluded from Effectiveness Testing Recognized in Income (Loss)
Cost of sales	\$ 410	\$ (57)	\$
Research and development	103	(12)	
Sales and marketing	78	(5)	
Total	\$ 591	\$ (74)	\$

(In thousands)	Year Ended December 31, 2011		
	Pretax Gain (Loss) Recognized in Other Comprehensive Income (Loss) on Effective Portion of Derivative	Pretax Gain (Loss) Recognized in Income on Effective Portion of Derivative as a Result of Reclassification from Accumulated Other Comprehensive Income (Loss)	Ineffective Portion of Gain (Loss) on Derivative and Amount Excluded from Effectiveness Testing Recognized in Income (Loss)
Cost of sales	\$ (291)	\$ 59	\$
Research and development	(76)	7	
Sales and marketing	(58)	6	
Other income	(43)	(43)	
Total	\$ (468)	\$ 29	\$

Amounts recorded in accumulated other comprehensive income (loss) for the after tax net unrealized gain or loss associated with cash flow hedging instruments was a gain of \$111,000 as of December 31, 2012 and a loss of \$323,000 as of December 31, 2011. We expect to reclassify the December 30, 2012 after tax net unrealized gain recorded in accumulated other comprehensive income (loss) to earnings over the next 12 months with the impact offset by cash flows from underlying hedged items. The fair value of our foreign exchange forward contracts representing a gain in the amount of \$153,000 as of December 31, 2012 has been recorded in other current assets. The fair value of our foreign exchange forward contracts representing a loss in the amount of \$493,000 as of December 31, 2011 has been recorded in accrued expenses.

Additional information with respect to the impact of derivative instruments on other comprehensive income (loss) is included in Note 4. Additional information with respect to the fair value of derivative instruments is included in Note 5.

Our foreign exchange forward contracts contain credit risk to the extent that our bank counter-parties may be unable to meet the terms of the agreements. We minimize such risk by limiting our counter-parties to major financial institutions. We do not expect material losses as a result of defaults by other parties.

Table of Contents**NOTE 4 COMPREHENSIVE INCOME (LOSS)**

Taxes related to items of other comprehensive income (loss) are as follows:

(In thousands)	Year Ended December 31, 2012			Year Ended December 31, 2011		
	Before Tax	Tax Provision /(Benefit)	Net of Tax Amount	Before Tax	Tax Provision /(Benefit)	Net of Tax Amount
Foreign currency translation adjustments	\$ 376	\$	\$ 376	\$ (37)	\$	\$ (37)
Net changes related to available-for-sale securities:						
Unrealized gains (losses)	(79)	(18)	(61)	30	10	20
Reclassification adjustment for other-than-temporary impairment loss included in net income (loss)	42	15	27			
Reclassification adjustment for gains included in net income (loss)	(8)	(1)	(7)			
Total net changes related to available-for-sale securities	(45)	(4)	(41)	30	10	20
Unrealized gains (losses) on foreign exchange forward contracts:						
Unrealized gains (losses)	591	206	385	(468)	(164)	(304)
Reclassification adjustment for (gains) losses included in net income (loss)	74	25	49	(29)	(10)	(19)
Total unrealized gains (losses) on foreign exchange forward contracts	665	231	434	(497)	(174)	(323)
Other comprehensive income (loss)	\$ 996	\$ 227	\$ 769	\$ (504)	\$ (164)	\$ (340)

Reclassification adjustments are made to avoid double counting in comprehensive income (loss) items that are also recorded as part of net income (loss). Reclassifications to earnings related to cash flow hedging instruments are provided in Note 3. Income taxes are not provided for foreign currency translation adjustments relating to permanent investments in international subsidiaries.

At December 31, 2012 and December 31, 2011 components of accumulated other comprehensive income (loss) are as follows:

(In thousands)	December 31, 2012	December 31, 2011
Unrealized gains (losses) on available-for-sale securities	\$ (23)	\$ 18
Unrealized gains (losses) on effective portion of foreign exchange forward contracts, net	111	(323)
Foreign currency translation adjustments	(245)	(621)
Balance at end of period	\$ (157)	\$ (926)



Table of Contents**NOTE 5 FAIR VALUE MEASUREMENTS**

We determine the fair value of our assets and liabilities based on the exchange price that would be received for an asset or paid to transfer a liability (exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value maximize the use of observable inputs and minimize the use of unobservable inputs. We use a fair value hierarchy with three levels of inputs, of which the first two are considered observable and the last unobservable, to measure fair value. The fair value hierarchy gives the highest priority to quoted prices in active markets for identical assets or liabilities (Level 1). The next highest priority is based on quoted prices for similar assets or liabilities in active markets or quoted prices for identical or similar assets or liabilities in non-active markets or other observable inputs (Level 2). The lowest priority is given to unobservable inputs (Level 3). The following provides information regarding fair value measurements for our marketable securities and foreign exchange forward contracts as of December 31, 2012 and December 31, 2011 according to the three-level fair value hierarchy.

		Fair Value Measurements at December 31, 2012 Using			
		Balance December 31, 2012	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
(In thousands)					
<b>Marketable securities:</b>					
U.S. government and agency obligations	\$	16,366	\$	16,366	\$
Corporate debt securities and certificates of deposit		5,300		5,300	
Asset backed securities		165		165	
Equity security		42	42		
Total marketable securities	\$	21,873	\$	21,831	\$
<b>Derivative instruments-assets:</b>					
Foreign exchange forward contracts	\$	153	\$	153	\$

		Fair Value Measurements at December 31, 2011 Using			
		Balance December 31, 2011	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
(In thousands)					
<b>Marketable securities:</b>					
U.S. government and agency obligations	\$	10,183	\$	10,183	\$
Corporate debt securities and certificates of deposit		6,497		6,497	
Equity security		66	66		
Total marketable securities	\$	16,746	\$	16,680	\$
<b>Derivative instruments-liabilities:</b>					
Foreign exchange forward contracts	\$	(493)	\$	(493)	\$

During the years ended December 31, 2012 and 2011 there were no transfers within the three level hierarchy. A significant transfer is recognized when the inputs used to value a security have been changed which merit a transfer between the disclosed levels of the valuation hierarchy.

The fair value for our U.S. government and agency obligations, corporate debt securities and certificates of deposit and asset backed securities are determined based on valuations provided by external investment managers who obtain them from a variety of industry standard data providers. The fair value for our equity security is based on a quoted market price obtained from an active market.

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The fair value for our foreign exchange forward contracts is based on foreign currency spot and forward rates obtained from reputable financial institutions with resulting valuations periodically validated by obtaining foreign currency spot rate and forward quotes from other industry standard sources or third party or counterparty quotes. The fair value of our foreign exchange forward contracts representing a gain in the amount of \$153,000 as of December 31, 2012 has been recorded in other current assets. The fair value of our foreign exchange forward contracts representing a loss in the amount of \$493,000 as of December 31, 2011 has been recorded in accrued expenses.

The carrying amounts of financial instruments such as cash equivalents, accounts receivable, income tax refunds receivable, other assets, accounts payable, and all current liabilities approximate their related fair values due to the short-term maturities of these instruments. Non-financial assets such as equipment and leasehold improvements, goodwill and intangible assets are subject to non-recurring fair value measurements if they are deemed impaired. We had no re-measurements of non-financial assets to fair value in 2012 or 2011.

**NOTE 6 ACCOUNTING FOR STOCK-BASED COMPENSATION****Share Based Compensation Information**

The following is a summary of pre-tax equity based compensation expense for the two year period ended December 31, 2012:

(In thousands)	2012	2011
Pre-tax equity compensation expense	\$ 449	\$ 430
Income tax benefits related to equity based compensation	\$	\$ 120
Pre-tax equity based compensation expense for 2012 includes \$354,000 for stock options and restricted stock units, \$54,000 for our employee stock purchase plan, and \$41,000 for 5,000 shares issued to board members for compensation purposes (weighted average grant date fair value of \$8.17). Pre-tax equity based compensation expense for 2011 includes \$302,000 for stock options and restricted stock units, \$87,000 for our employee stock purchase plan, and \$41,000 for 4,000 shares issued to board members for compensation purposes (weighted average grant date fair value of \$10.12).		

We use historical data to estimate pre-vesting forfeitures. At December 31, 2012, the total unrecognized compensation cost related to non-vested equity based compensation arrangements was \$946,000 and the related weighted average period over which it is expected to be recognized is 2.41 years. The total fair value of shares vested was \$178,000 in 2012 and \$215,000 in 2011.

The fair value of stock options granted to our employees was estimated on the date of grant using the Black-Scholes model. The Black-Scholes valuation model incorporates ranges of assumptions that are disclosed in the table below. The risk-free interest is based on the United States Treasury yield curve at the time of grant with a remaining term equal to the expected life of the awards. For options granted in 2012, we estimated the expected term for our graded vesting options, representing the length of time in years that the options are expected to be outstanding, using historical experience. Previously, we used the simplified method for expected term because our historical exercise experience was not expected to be representative of future exercise patterns. Expected volatility was computed based on historical fluctuations in the daily price of our common stock.

There were no stock options granted in 2011. For stock options granted in 2012, we utilized the fair value of our common stock on the date of grant and employed the following key assumptions in computing fair value using the Black-Scholes option-pricing model:

	2012
Risk-free interest rates	0.70% - 0.86%
Expected life in years	4.95 - 5.20
Expected volatility	45.81% - 46.47%
Dividend yield	0.00%
Weighted average fair value on grant date	\$3.01

Table of Contents**Stock Options**

We have two stock incentive plans that are administered under the supervision of the Compensation Committee of the board of directors. In May 2012, our shareholders approved an amendment to our active stock incentive plan to increase the number of shares that may be issued under the plan by 350,000 shares. Including the newly approved shares, there are 1,041,745 shares of common stock reserved in the aggregate for issuance of options and other stock based benefits under these plans, including restricted stock units and share grants to employees, officers and others. Reserved shares underlying canceled options are available for future grant under our active plan. Options are granted at an option price per share equal to or greater than the market value of our common stock on the date of grant. Generally, options granted to employees vest over a four-year period and expire seven or ten years after the date of grant. The plans allow for option holders to tender shares of our common stock as consideration for the option price, provided that the tendered shares have been held by the option holder at least six months. As of December 31, 2012, there were 453,037 shares of common stock available under this plan for future issuance to employees, officers and others.

The following is a summary of stock option activity for the year ended December 31, 2012:

	<b>Options Outstanding</b>	<b>Weighted Average Exercise Price Per Share</b>
Outstanding, December 31, 2011	515,987	\$ 10.07
Granted	182,916	7.38
Exercised	(5,625)	4.99
Expired	(143,188)	12.21
Forfeited	(5,937)	7.54
Outstanding, December 31, 2012	544,153	\$ 8.68
Exercisable, December 31, 2012	300,029	\$ 9.44

The intrinsic value of an option is the amount by which the fair value of the underlying stock exceeds its exercise price. For options outstanding at December 31, 2012, the weighted average remaining contractual term of all outstanding options was 4.26 years and their aggregate intrinsic value was \$330,000. At December 31, 2012, the weighted average remaining contractual term of options that were exercisable was 2.91 years and their aggregate intrinsic value was \$290,000. The aggregate intrinsic value of stock options exercised was \$10,000 in 2012 and \$13,000 in 2011. We received proceeds of \$27,000 from the exercise of stock options in 2012. No tax benefit was realized from the exercise of these stock options. New shares are issued for all option exercises, upon vesting of restricted stock units, for share issuances to board members and others or for issuances under our Employee Stock Purchase Plan.

**Restricted Stock Units**

Our 1998 Stock Incentive Plan also permits our Compensation Committee to grant other stock-based benefits, including restricted stock units. Restricted stock units are valued at a price equal to the market value of our common stock on the date of grant, vest over a four year period provided the employee is still working for the company and entitle the holders to one share of our common stock for each restricted stock unit. There were 36,528 restricted stock units granted in 2012. The weighted average grant date fair value per restricted stock unit was \$7.37 in 2012. No restricted stock units were granted in 2011. The aggregate fair value of outstanding restricted stock units based on the closing share price of our common stock as of December 31, 2012 was \$331,000. The aggregate fair value of restricted stock units that vested, based on the closing share price of our common stock on the vesting date, was \$69,000 for the year ended December 31, 2012 and \$85,000 for the year ended December 31, 2011.

A summary of activity in non-vested restricted stock units for the year ended December 31, 2012 is as follows:

<b>Non-vested restricted stock units</b>	<b>Shares</b>	<b>Weighted Average Grant Date Fair Value</b>
Non-vested at December 31, 2011	19,404	\$ 7.58
Granted	36,528	7.37
Vested	(9,406)	6.65
Forfeited	(1,971)	7.54
Non-vested at December 31, 2012	44,555	\$ 7.61

Table of Contents**Employee Stock Purchase Plan**

We have an Employee Stock Purchase Plan available to eligible U.S. employees. Under terms of the plan, eligible employees may designate from 1% to 10% of their compensation to be withheld through payroll deductions, up to a maximum of \$6,500 in each plan year, for the purchase of common stock at 85% of the lower of the market value of our common stock on the first or last day of the offering period. There were 19,759 shares issued under this plan in the year ended December 31, 2012 and 25,003 shares issued in the year ended December 31, 2011. As of December 31, 2012, 166,582 shares remain available for future issuance under this plan.

**Stock Grant Plan for Non-Employee Directors**

Our stock grant plan for non-employee directors provides for automatic grants of 1,000 shares of our common stock to each of our non-employee directors upon their re-election to the Board of Directors. The plan provides for a total of 30,000 shares of our common stock for issuance to directors and will expire on May 19, 2018. Share issuances under the stock grant plan for non-employee directors were 5,000 shares of common stock in the year ended December 31, 2012 and 4,000 shares in the year ended December 31, 2011. The shares issued in 2012 and 2011 had a fair market value on the date of grant each year equal to \$41,000. As of December 31, 2012, 11,000 shares of common stock are reserved in the aggregate for future issuance under this plan.

**NOTE 7 NET INCOME (LOSS) PER SHARE**

Basic net income (loss) per share is computed by dividing net income (loss) by the weighted average number of common shares outstanding during the period. Net income per diluted share is computed by dividing net income by the weighted average number of common and common equivalent shares outstanding during the period. Common equivalent shares consist of common shares to be issued upon exercise of stock options, restricted stock units and from participation in our employee stock purchase plan, as calculated using the treasury stock method. All potentially dilutive common equivalent shares are excluded from the calculation of net loss per diluted share due to their anti-dilutive effect. As a result, no common equivalent shares were included in the calculation of net loss per diluted share for the year ended December 31, 2012. The components of net income (loss) per basic and diluted share are as follows:

(In thousands except per share amounts)	Net Loss	Weighted Average Shares Outstanding	Per Share Amount
<b>Year Ended December 31, 2012:</b>			
Basic	\$ (6,711)	6,946	\$ (0.97)
Dilutive effect of common equivalent shares			
Dilutive	\$ (6,711)	6,946	\$ (0.97)

(In thousands except per share amounts)	Net Income	Weighted Average Shares Outstanding	Per Share Amount
<b>Year Ended December 31, 2011:</b>			
Basic	\$ 4,357	6,906	\$ 0.63
Dilutive effect of common equivalent shares		46	
Dilutive	\$ 4,357	6,952	\$ 0.63

The calculation of diluted net income (loss) per common share excludes 592,000 potentially dilutive shares for the year ended December 31, 2012 and 381,000 potentially dilutive shares for the year ended December 31, 2011, because their effect would be anti-dilutive.

**NOTE 8 OTHER FINANCIAL STATEMENT DATA**

Inventories consist of the following:

(In thousands)	December 31,	
	2012	2011
Raw materials and purchased parts	\$ 8,152	\$ 6,893
Work in process	1,322	1,007
Finished goods	3,059	3,152
Total inventories	\$ 12,533	\$ 11,052



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Equipment and leasehold improvements consist of the following:

(In thousands)	December 31,	
	2012	2011
Equipment	\$ 10,800	\$ 10,257
Leasehold improvements	1,538	1,471
	12,338	11,728
Accumulated depreciation and amortization	(10,619)	(10,328)
	\$ 1,719	\$ 1,400

Total depreciation expense related to equipment and leasehold improvements was \$958,000 for the year ended December 31, 2012 and \$1,064,000 for the year ended December 31, 2011.

Intangible assets consist of the following:

(In thousands)	December 31, 2012			December 31, 2011		
	Gross Carrying Amount	Accumulated Amortization	Net	Gross Carrying Amount	Accumulated Amortization	Net
Developed technology	\$ 7,775	\$ (7,775)	\$	\$ 7,775	\$ (7,775)	\$
Patents	2,847	(2,658)	189	2,734	(2,504)	230
	\$ 10,622	\$ (10,433)	\$ 189	\$ 10,509	\$ (10,279)	\$ 230

Amortization expense for the two years ended December 31, 2012 and 2011 is as follows:

(In thousands)	Years Ended December 31,	
	2012	2011
Developed technology	\$	\$ 108
Patents	154	200
	\$ 154	\$ 308

As of December 31, 2012, the weighted average remaining life of our intangible assets, consisting entirely of patents, was approximately 2.3 years. Amortization of patents has been classified as research and development expense in the accompanying statement of operations. Estimated aggregate amortization expense based on current intangibles for the next three years is expected to be as follows: \$112,000 in 2013, \$58,000 in 2014, and \$19,000 in 2015.

Accrued expenses consist of the following:

(In thousands)	December 31,	
	2012	2011
Wages and benefits	\$ 770	\$ 1,741
Warranty liability	694	985
Re-organization and restructure charge	192	
Income taxes payable		122
Unrealized loss on foreign exchange forward contracts		493
Other	184	316
	\$ 1,840	\$ 3,657

### **Warranty costs:**

We provide for the estimated cost of product warranties at the time revenue is recognized, generally for one year. While we engage in extensive product quality programs and processes, including actively monitoring and evaluating the quality of component suppliers, warranty obligations are 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 and could be material. Our warranty liability is included as a component of accrued expenses. At the end of each reporting period we revise our estimated warranty liability based on these factors.



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A reconciliation of the changes in our estimated warranty liability is as follows:

(In thousands)	Year Ended December 31,	
	2012	2011
Balance at beginning of period	\$ 985	\$ 702
Accrual for warranties	745	1,273
Warranty revision	(2)	(15)
Settlements made during the period	(1,034)	(975)
Balance at end of period	\$ 694	\$ 985

### Deferred warranty revenue:

The current portion of our deferred warranty revenue is included as a component of advance customer payments. A reconciliation of the changes in our deferred warranty revenue is as follows:

(In thousands)	Year Ended December 31,	
	2012	2011
Balance at beginning of period	\$ 806	\$ 787
Revenue deferrals	230	489
Amortization of deferred revenue	(454)	(470)
Total deferred warranty revenue	582	806
Current portion of deferred warranty revenue	(436)	(453)
Long-term deferred warranty revenue	\$ 146	\$ 353

### NOTE 9 GOODWILL

We assess our goodwill for impairment in the fourth quarter of each year, and whenever events or changes in circumstances indicate that the carrying value may not be recoverable.

In evaluating whether goodwill was impaired, we compared our fair value to our net book value or carrying value (Step 1 of the impairment test). In calculating fair value, we used the income approach. The income approach is a valuation technique under which we estimate future cash flows using financial forecasts. Future estimated cash flows are discounted to their present value to calculate fair value. When considering fair value, we also gave consideration to the control premium in excess of our current market capitalization that might be obtained from a third party acquirer. In the situation where net book value or carrying value exceeds fair value, the amount of impairment loss must be measured. The measurement of impairment (Step 2 of the impairment test) is calculated by determining the implied fair value of goodwill, which equals the excess of any remaining fair value over the fair values assigned to other assets and liabilities. Goodwill impairment is measured as the excess of the carrying amount of goodwill over its implied fair value.

In determining fair value under the income approach, our expected cash flows are affected by various assumptions. Fair value on a discounted cash flow basis uses our business plan and projections as the basis for expected future cash flow forecasts, with an estimation of residual growth rates thereafter. For our 2012 goodwill impairment test we utilized a 15% discount rate and our terminal value was based on a multiple equal to 6 times our projected future earnings before interest, taxes, depreciation and amortization. For our 2011 goodwill impairment test we utilized a 20% discount rate and a 5% terminal growth rate. We believe the significant assumptions used in our 2012 goodwill impairment test, including a 15% discount rate, are reflective of the assumptions currently used in the marketplace to evaluate fair value. Our recent analyses indicate that our goodwill at December 31, 2012 and 2011 in the amount of \$569,000 is not impaired.

### NOTE 10 INCOME TAXES

Income (loss) before income taxes consists of the following:

(In thousands)	Year Ended December 31,	
	2012	2011
Sources of income (loss) before income taxes:		
United States	\$ (4,717)	\$ 3,196
Foreign	1,582	2,531
Total income (loss) before income taxes	\$ (3,135)	\$ 5,727





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The provision (benefit) for income taxes consists of the following:

(In thousands)	Year Ended December 31,	
	2012	2011
Current:		
Federal	\$ (1,010)	\$ 622
State	(3)	61
Foreign	(219)	58
Total current	\$ (1,232)	\$ 741
Deferred:		
Federal	\$ 4,377	\$ 259
State	409	166
Foreign	22	204
Total deferred	\$ 4,808	\$ 629
Total provision for income taxes	\$ 3,576	\$ 1,370

A reconciliation of the statutory rate to the effective income tax rate is as follows:

	Year Ended December 31,	
	2012	2011
Federal statutory rate	34.0%	34.0%
State income taxes, net of federal benefit	1.0	1.2
Domestic manufacturing tax deduction	(4.7)	(1.5)
U.S. Subpart F income	(1.8)	1.3
Stock based compensation	(0.5)	0.5
Research and experimentation credit		(1.9)
Foreign rate difference	37.9	(11.1)
Reserve for income taxes	1.8	0.4
Valuation allowance	(181.1)	1.4
Other, net	(0.6)	(0.4)
Effective tax rate	(114.0)%	23.9%

Our effective tax rate for 2012 and 2011 reflects the impact of having a significant portion of our operations in Singapore where corporate income tax rates are substantially lower than the United States. Lower tax rates in foreign jurisdictions negatively impacted our 2012 income tax rate by 37.9% and favorably impacted our 2011 tax rate by 11.1%.

A reconciliation of the beginning and ending amount of gross unrecognized tax benefits ( UTB ) is as follows:

(In thousands)	Year Ended December 31,	
	2012	2011
Gross UTB balance at beginning of year	\$ 1,599	\$ 1,543
Additions based on tax positions related to the current year	92	101
Additions for tax positions of prior years	39	52
Reductions for tax positions of prior years	(75)	(69)
Reductions due to lapse of applicable statute of limitations	(155)	(28)
Gross UTB balance at end of year	\$ 1,500	\$ 1,599
Net UTB balance at end of year	\$ 686	\$ 840

The ending net UTB results from adjusting the gross balance for items such as federal, state, and non-U.S. deferred items, interest and penalties, and deductible taxes. The net UTB is a long-term income tax reserve within our Consolidated Balance Sheets. We recognize interest and penalties related to unrecognized tax benefits in tax expense. Accrued interest and penalties on a gross basis were \$169,000 as of December 31, 2012 and \$177,000 as of December 31, 2011.

During the year ended December 31, 2012 we recorded a \$56,000 decrease in liabilities for uncertain tax positions that was recorded as income tax benefit. Estimated gross interest and penalties included in this amount total \$23,000. During the year ended December 31, 2011 we recorded a \$22,000 increase in liabilities, net of deferred tax benefit, for uncertain tax positions that was recorded as income tax expense. Estimated gross interest and penalties included in this amount total \$18,000.



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We file income tax returns in the U.S. federal jurisdiction, and various state and foreign jurisdictions. During 2012, the Internal Revenue Service completed an audit of our 2010 federal income tax return. The audit resulted in no change to our reported level of taxable income or income tax liability, and had no impact on our financial condition. Due to the carryback of our 2009 federal taxable loss to the years 2004-2007, the Internal Revenue Service could potentially examine our federal income tax returns for these years. The statute of limitations for examination of these returns had previously expired. We are no longer subject to state and local income tax examinations by tax authorities for years before 2008.

Deferred tax assets and liabilities consist of the following:

(In thousands)	December 31, 2012		December 31, 2011	
	Assets	Liabilities	Assets	Liabilities
Fixed asset and intangible amortization, net	\$ 683	\$ 109	\$ 940	\$ 34
Inventory allowances	466	15	497	
Accrued liabilities	328		309	
Warranty accrual	241		344	
Deferred revenue	332		500	
Accounts receivable allowance	269		328	
Federal and state tax credits	2,569		2,220	
Federal and state net operating loss carry forwards	634		262	
Foreign net operating loss carry forwards	882		311	
Stock based compensation	411		468	
Unrealized gains and losses - other comprehensive income (loss)	7	72	164	
Other, net	141		138	
Subtotal	6,963	196	6,481	34
Valuation allowance	(6,333)		(833)	
Total deferred tax assets and liabilities	\$ 630	\$ 196	\$ 5,648	\$ 34

We currently have significant deferred tax assets as a result of temporary differences between taxable income on our tax returns and U.S. GAAP income, research and development tax credit carry forwards and federal, state and foreign net operating loss carry forwards. A deferred tax asset generally represents future tax benefits to be received when temporary differences previously reported in our financial statements become deductible for income tax purposes, or when net operating loss carry forwards are applied against future taxable income, or when tax credit carry forwards are utilized on our tax returns. We assess the realizability of our deferred tax assets and the need for a valuation allowance based on the guidance provided in current financial accounting standards.

Significant judgment is required in determining the realizability of our deferred tax assets. The assessment of whether valuation allowances are required considers, among other matters, the nature, frequency and severity of any current and cumulative losses, forecasts of future profitability, the duration of statutory carry forward periods, our experience with loss carry forwards not expiring unused and tax planning alternatives.

At December 31, 2012, we concluded that a valuation allowance is needed for substantially all of our United States and Singapore based deferred tax assets due to the decline in our level of profitability and near term financial outlook. In analyzing the need for a valuation allowance, we first considered our history of operating results for income tax purposes over the past three years in each of the tax jurisdictions where we operate, our financial performance in recent quarters, statutory carry forward periods and tax planning alternatives. Finally, we considered both our near and long-term financial outlook and timing regarding when we might return to profitability. After considering all available evidence both positive and negative, we concluded that a valuation allowance with respect to substantially all of our U.S. and Singapore based deferred tax assets was required, resulting in the significant increase in our valuation allowance at December 31, 2012. The valuation allowance at December 31, 2011 was needed for various long-term state tax credit carry forwards, state operating loss carry forwards and capital losses for which recovery was not deemed to be more likely than not. We reduced our valuation allowance by \$178,000 in 2012 for the effect of various state tax credit carry forwards that expired unused. At December 31, 2012 we had federal R&D tax credits of \$2,658,000 that will begin to expire in 2019 and a federal net operating loss carry forward of \$925,000 that will expire in 2022, if unused.

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Deferred tax assets at December 31, 2012, include \$226,000 for net operating loss carry forwards incurred in the UK by CyberOptics Ltd., which was acquired in 1999. A valuation allowance has not been recorded against these deferred tax assets. The utilization of these net operating loss carry forwards is dependent on CyberOptics Ltd.'s ability to generate sufficient UK taxable income during the carry forward period. We reduced our deferred tax asset for UK net operating loss carry forwards by \$14,000 in 2012 and \$44,000 in 2011 due to reductions in the future UK income tax rate.

Cash payments for income taxes, net of refunds received, were \$170,000 for the year ended December 31, 2012 and \$822,000 for the year ended December 31, 2011.

We have been granted a tax holiday with respect to a wholly owned foreign subsidiary allowing us to pay a reduced rate of tax for a period of five years through 2013. The tax holiday had no impact on income tax expense in 2012 and decreased income tax expense in 2011 by \$115,000, if income tax expense had been computed using the statutory rate in the foreign jurisdiction where the subsidiary operates.

It is the intention of management to permanently reinvest all undistributed earnings of international subsidiaries, and accordingly, we have not provided United States taxes on such earnings. It is not practicable to determine the income tax liability that would be payable if such earnings were not indefinitely reinvested.

**NOTE 11 OPERATING LEASES**

We lease a 50,724 square foot mixed office and warehouse facility in Golden Valley, Minnesota. The lease has a term of 90 months and expires on December 31, 2018. The lease contains escalation clauses and two renewal options of three years each. Rental expense, including the effects of lease incentives, is recognized on a straight-line basis over the term of the lease. We are also required to pay insurance, property taxes and other operating expenses related to the leased facility.

We lease a 20,000 square foot mixed office and warehouse facility in Singapore. The lease for our facility in Singapore expires in July 2013. In addition, we lease facilities for the operations of our other subsidiaries under operating leases that expire at various times through September 2013.

Total rent expense was \$1,160,000 for the year ended December 31, 2012 and \$1,287,000 for the year ended December 31, 2011. At December 31, 2013, the future minimum lease payments required under non-cancelable operating lease agreements are as follows:

Year ending December 31,	(In thousands)
2013	\$ 702
2014	444
2015	456
2016	469
2017	482
2018	495
Total	\$ 3,048

**NOTE 12 401(K) AND OTHER DEFINED CONTRIBUTION PLANS**

We have a retirement savings plan pursuant to Section 401(k) of the Internal Revenue Code (the Code), whereby eligible employees may contribute a portion of their earnings, not to exceed annual amounts allowed under the Code. In addition, we may also make contributions at the discretion of the board of directors. We provided matching contributions to employees totaling \$246,000 in 2012 and \$237,000 in 2011.

We also contribute to defined contribution retirement savings plans on behalf of our employees in the United Kingdom. We made contributions to these plans totaling \$35,000 in 2012 and \$40,000 in 2011.

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The following summarizes our revenue by product line:

(In thousands)	2012	2011
OEM Alignment Sensors	\$ 13,187	\$ 20,844
Semiconductor Sensors	6,363	6,940
SMT Inspection Systems	22,094	33,303
Total	\$ 41,644	\$ 61,087

In the third quarter of 2012, we consolidated research and development for our semiconductor products into our Minneapolis headquarters facility. Due to the consolidation initiative, we no longer manage our semiconductor operations as a separate segment and no longer report semiconductor segment information.

The following summarizes certain significant customer information:

(In thousands)	Significant Customer	Revenues	Percentage of Revenues
Year ended December 31, 2012	A	\$ 5,428	13%
	B	\$ 4,886	12%
Year ended December 31, 2011	A	\$ 10,025	16%
	C	\$ 8,279	14%

As of December 31, 2012, accounts receivable from significant customer A were \$312,000 and accounts receivable from significant customer B were \$414,000. As of December 31, 2011, accounts receivable from significant customer A were \$1,393,000 and accounts receivable from significant customer C were \$1,120,000.

Our LaserAlign® sensor family has historically accounted for a significant portion of our sales and profitability. Revenue from product shipments of LaserAlign sensors accounted for 18% of our total revenue in 2012 and 20% of our total revenue in 2011. Our revenue, results of operations and cash flows would be negatively impacted if our LaserAlign customers are unsuccessful selling the products into which our sensors are incorporated, design their products to function without our sensors, purchase sensors from other suppliers, or otherwise terminate their relationships with us.

Export sales as a percentage of total sales were 85% for the years ended December 31, 2012 and December 31, 2011. Export sales are attributed to the country where the product is shipped. Substantially all of our export sales are negotiated, invoiced and paid in U.S. dollars.

Revenue by geographic area is summarized as follows:

(In thousands)	2012	2011
United States	\$ 6,165	\$ 9,009
Americas	1,511	1,739
Netherlands	4,920	5,402
Other Europe	7,435	9,562
China	8,356	14,898
Japan	6,403	11,616
Other Asia	6,273	7,850
Other	581	1,011
	\$ 41,644	\$ 61,087

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Long-lived assets include equipment and leasehold improvements attributable to each geographic area's operations. Long-lived assets at December 31, 2012 and 2011 are as follows:

(In thousands)	2012	2011
Long-lived assets:		
United States	\$ 929	\$ 1,081
Europe	5	4
Asia and other	785	315
Total long-lived assets	\$ 1,719	\$ 1,400

**NOTE 14 RE-ORGANIZATION AND RESTRUCTURE CHARGE**

In the third quarter of 2012, we consolidated research and development for our semiconductor products into our Minneapolis headquarters facility, resulting in a \$217,000 restructuring charge for severance and relocation expenses. We believe this move will streamline our business and provide our sensor engineers in Minneapolis with more efficient access to our WaferSense® technology and products. We anticipate annual savings of up to \$800,000 resulting from consolidation of research and development for our semiconductor products. Additional severance costs of \$523,000 were incurred in the fourth quarter of 2012 when we reduced our global workforce by approximately 10% or 20 employees in response to the sluggish economy and weak SMT, semiconductor and solar market conditions. We anticipate annual savings of up to \$1.4 million from the fourth quarter workforce reduction. No restructuring or severance costs were incurred in 2011.

A summary of our restructuring accrual is as follows:

(In thousands)	Semiconductor R&D Consolidation	Fourth Quarter 2012 Workforce Reduction	Total
Balance, January 1, 2012	\$	\$	\$
Cost incurred	217	523	740
Payments made	217	331	548
Balance, December 31, 2012	\$	\$ 192	\$ 192

The remaining accrued severance in the amount of \$192,000 at December 31, 2012 will be paid prior to July 1, 2013.

**NOTE 15 CONTINGENCIES**

We are periodically a defendant in miscellaneous claims and disputes in the ordinary course of business. While the outcome of these matters cannot be predicted with certainty, management presently believes the disposition of these matters will not have a material effect on our financial position, results of operations or cash flows.

In the normal course of business to facilitate sales of our products and services, we at times indemnify other parties, including customers, with respect to certain matters. In these instances, we have agreed to hold the other parties harmless against losses arising out of intellectual property infringement or other types of claims. These agreements may limit the time within which an indemnification claim can be made, and almost always limit the amount of the claim. It is not possible to determine the maximum potential amount under these indemnification agreements due to the limited history of prior indemnification claims and the unique facts and circumstances involved in each particular agreement. Historically, payments made, if any, under these agreements have not had a material impact on our operating results, financial position or cash flows.

**NOTE 16 SHARE REPURCHASE**

In the fourth quarter of 2012, our board of directors authorized a \$3.0 million share repurchase program. The common stock will be acquired from time to time in open market transactions, block purchases and other transactions complying with the Securities and Exchange Commission's Rule 10b-18. We adopted a 10b5-1 trading plan to implement the repurchase program. We spent \$21,000 to repurchase a total of 2,940 shares of our common stock in 2012 in accordance with our 10b5-1 trading plan.

Table of Contents**NOTE 17 QUARTERLY FINANCIAL INFORMATION (UNAUDITED)****(In thousands, except per share amounts)**

<b>2012</b>	<b>March 31</b>	<b>June 30</b>	<b>September 30</b>	<b>December 31</b>
Revenues	\$ 11,280	\$ 13,003	\$ 11,558	\$ 5,803
Gross margin	5,235	5,529	5,081	2,334
Income (loss) from operations (2)	92	98	(589)	(2,712)
Net income (loss) (3)	92	143	(447)	(6,499)
Net income (loss) per share - Basic (1)	0.01	0.02	(0.06)	(0.93)
Net income (loss) per share - Diluted (1)	0.01	0.02	(0.06)	(0.93)

<b>2011</b>	<b>March 31</b>	<b>June 30</b>	<b>September 30</b>	<b>December 31</b>
Revenues	\$ 13,350	\$ 16,859	\$ 17,088	\$ 13,790
Gross margin	6,607	7,507	7,467	6,472
Income from operations	1,087	1,844	2,069	688
Net income	846	1,398	1,566	547
Net income per share - Basic (1)	0.12	0.20	0.23	0.08
Net income per share - Diluted (1)	0.12	0.20	0.22	0.08

- (1) The summation of quarterly per share amounts may not equal the calculation for the full year, as each quarterly calculation is performed discretely.
- (2) Includes restructuring charges of \$217,000 in the third quarter and \$523,000 in fourth quarter of 2012.
- (3) Includes a \$5.7 million non-cash charge in the fourth quarter of 2012 to record a valuation allowance against our deferred tax assets.



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**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

Board of Directors and Stockholders  
CyberOptics Corporation

We have audited the accompanying consolidated balance sheets of CyberOptics Corporation (a Minnesota corporation) and subsidiaries (the Company ) as of December 31, 2012 and 2011, and the related consolidated statements of operations, comprehensive income (loss), stockholders equity and cash flows for each of the two years in the period ended December 31, 2012. These financial statements are the responsibility of the Company s management. Our responsibility is to express an opinion on these financial statements 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. The Company is not required to have, nor were we engaged to perform an audit of its internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company s internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, 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 CyberOptics Corporation and subsidiaries as of December 31, 2012 and 2011, and the results of their operations and their cash flows for each of the two years in the period ended December 31, 2012 in conformity with accounting principles generally accepted in the United States of America.

GRANT THORNTON LLP

Minneapolis, Minnesota  
March 12, 2013

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**ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE**

NONE.

**ITEM 9A. CONTROLS AND PROCEDURES**

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we evaluated the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934 (the "Exchange Act")). Based upon that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that, as of the end of the period covered by this report, our disclosure controls and procedures were effective in ensuring that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in applicable rules and forms and that such information is accumulated and communicated to management, including our Chief Executive Officer and Chief Financial Officer, in a manner that allows timely decisions regarding required disclosure.

**(i). MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING**

Management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in the Securities Exchange Act of 1934 Rule 13a-15(f), and for performing an assessment of the effectiveness of our internal control over financial reporting as of December 31, 2012. Internal control over financial reporting is a process designed by, or under the supervision of, the registrant's principal executive and principal financial officers, or persons performing similar functions, and effected by the registrant's board of directors, management, and other personnel 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 (GAAP) and includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the registrant; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures of the registrant are being made only in accordance with authorizations of management and directors of the registrant; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the registrant's assets that could have a material effect on the financial statements.

Management performed an assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2012 based upon criteria in *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on our assessment, management determined that the Company's internal control over financial reporting was effective as of December 31, 2012 based on the criteria in *Internal Control-Integrated Framework* issued by the COSO.

Because the Company is a smaller reporting company, this annual report on Form 10-K does not include an attestation report of the Company's registered public accounting firm regarding internal control over financial reporting.

(ii). During the quarter ended December 31, 2012, there has been no change in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

**ITEM 9B. OTHER INFORMATION**

NONE.

Table of Contents**PART III.****ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE**

The information contained under the headings Proposal I Election of Directors, Information About our Board of Directors and its Committees and Other Corporate Governance Matters and Section 16(a) Beneficial Ownership Reporting Compliance of the Company's definitive proxy statement for its annual meeting of shareholders to be held May 17, 2013 (hereafter, the Proxy Statement), is hereby incorporated by reference.

**ITEM 11. EXECUTIVE COMPENSATION**

The information under the headings Information About our Board of Directors and its Committees and Other Corporate Governance Matters Compensation of Independent Directors, and Executive Compensation of the Proxy Statement is hereby incorporated by reference.

**ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS**

The information contained under the heading Shares Outstanding of the Proxy Statement is hereby incorporated by reference.

The following table describes shares of our common stock that are available on December 31, 2012 for purchase under outstanding stock-based awards, or reserved for issuance under stock-based awards or other rights that may be granted in the future, under our equity compensation plans:

Plan Category	(a) Number of securities to be issued upon exercise of outstanding options, warrants and rights	(b) Weighted-average exercise price of outstanding options, warrants and rights	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding those reflected in column (a))
<b>Equity compensation plans approved by security holders</b>			
1998 Stock Incentive Plan (1)	507,708	\$ 7.09	453,037
Stock Option Plan for Non-Employee Directors	81,000	13.84	
Stock Grant Plan for Non-Employee Directors	N/A	N/A	11,000
Employee Stock Purchase Plan (2)	N/A	N/A	166,582
<b>Total</b>	<b>588,708</b>	<b>\$ 8.02</b>	<b>630,619</b>

(1) In addition to options, shares may be issued in the form of restricted stock awards, performance awards and other stock-based awards.

(2) Shares are issued based on employees' elections to participate in the plan.

**ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE**

The information under the headings Information About our Board of Directors and its Committees and Other Corporate Governance Matters Committees of Our Board Audit Committee of the Proxy Statement is hereby incorporated by reference.

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**ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES**

The information under the heading "Independent Accountants and Payment of Fees" and "Information About our Board of Directors and its Committees and Other Corporate Governance Matters" Committees of Our Board Audit Committee of the Proxy Statement is hereby incorporated by reference.

**PART IV.**

**ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES**

(a)(1) Financial Statements: The Consolidated Financial Statements included in Item 8 to this Form 10-K consist of the following:

Consolidated Balance Sheets as of December 31, 2012 and 2011.

Consolidated Statements of Operations for the years ended December 31, 2012 and 2011.

Consolidated Statements of Comprehensive Income (Loss) for the years ended December 31, 2012 and 2011.

Consolidated Statements of Cash Flows for the years ended December 31, 2012 and 2011.

Consolidated Statements of Stockholders' Equity for the years ended December 31, 2012 and 2011.

Notes to the Consolidated Financial Statements.

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(b) LIST OF EXHIBITS

<u>Exhibit Number</u>	<u>Description</u>
3.1	Articles of Incorporation of Company, as amended (incorporated by reference to Exhibit 3.1 to the Company's Annual Report on Form 10-K for the year ended December 31, 1997).
3.2	Bylaws of the Company (incorporated by reference to Exhibit 3.1 to the current report on Form 8-K dated September 8, 2008).
4.1	CyberOptics Corporation Stock Option Plan for Non-Employee Directors, as amended (incorporated by reference to Exhibit 4.2 of the Company's Registration Statement on Form S-8 filed August 10, 2006 (file no 333-136500)).
4.2	CyberOptics Corporation 1998 Stock Incentive Plan, as amended (incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-8 filed August 14, 2012 (file no. 333-183296)).
4.3	CyberOptics Corporation Employee Stock Purchase Plan (incorporated by reference to Exhibit 4.1 of the Company's Registration Statement on Form S-8 filed August 10, 2011 (file no 333-176196)).
4.4	CyberOptics Corporation Stock Grant Plan for Non-Employee Directors (incorporated by reference to Exhibit 4.1 of the Company's Registration Statement on Form S-8 filed August 14, 2008 (file no 333-153015)).
10.1	Lease Agreement between FirstCal Industrial 2 Acquisitions LLC and the Company dated March 27, 2006 (incorporated by reference to Exhibit 10.1 to the Company's quarterly report on Form 10-Q for the quarter ended March 31, 2006).
10.2	First Amendment to Lease effective as of March 14, 2011, by and between Hines REIT Minneapolis Industrial, LLC and CyberOptics Corporation (incorporated by reference to Exhibit 10.1 to the Company's quarterly report on Form 10-Q for the quarter ended March 31, 2011).
*10.3	Severance Pay Agreement with Kathleen P. Iverson (incorporated by reference to Exhibit 10.2 to the current report on Form 8-K dated May 19, 2008).
*10.4	Severance Pay Agreement with Jeffrey A. Bertelsen (incorporated by reference to Exhibit 10.3 to the current report on Form 8-K dated May 19, 2008).
*10.5	Amendment to Severance Pay Agreement with Jeffrey A. Bertelsen (incorporated by reference to Exhibit 10.1 to the current report on Form 8-K dated May 18, 2009).
10.6	Tenancy Agreement between NIDEC Component Technology Co. LTD and CyberOptics PTE LTD (Singapore) Term 15 May 2011 to 24 July 2013 (incorporated by reference to Exhibit 10.1 to the Company's quarterly report on Form 10-Q for the quarter ended September 30, 2010).
*10.7	Severance Pay Agreement with Daniel Good (incorporated by reference to Exhibit 10.6 to the Company's Annual Report on Form 10-K for the year ended December 31, 2010).
*10.8	Amendment to Severance Pay Agreement with Kathleen P. Iverson (incorporated by reference to Exhibit 10.8 to the Company's annual report on Form 10-K for the year ended December 31, 2011).
*10.9	Clarification to Severance Pay Agreement with Jeffrey A. Bertelsen (incorporated by reference to Exhibit 10.9 to the Company's annual report on Form 10-K for the year ended December 31, 2011).

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*10.10	Clarification to Severance Pay Agreement with Daniel Good (incorporated by reference to Exhibit 10.10 to the Company's annual report on Form 10-K for the year ended December 31, 2011).
21.0	Subsidiaries of the Company.
23.1	Consent of Independent Registered Public Accounting Firm.
31.1	Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.0	Certification of Chief Executive Officer and Chief Financial Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101	Financial statements formatted in Extensible Business Reporting Language: (i) the Consolidated Balance Sheets, (ii) the Consolidated Statement of Operations, (iii) the Consolidated Statements of Comprehensive Income (Loss), (iv) the Consolidated Statements of Cash Flows, (v) the Consolidated Statements of Stockholder's Equity, and (vi) the Notes to the Consolidated Financial Statements.
* Management Contract or Compensatory Plan or Arrangement	

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**SIGNATURES**

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

CYBEROPTICS CORPORATION

*/s/ KATHLEEN P. IVERSON*

By Kathleen P. Iverson, CEO and Chair

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<u><b>Name</b></u>	<u><b>Title</b></u>	<u><b>Date</b></u>
<i>/s/ KATHLEEN P. IVERSON</i> <i>Kathleen P. Iverson</i>	<i>Director, CEO and Chair</i> <i>(Principal Executive Officer)</i>	<i>March 11, 2013</i>
<i>/s/ ALEX B. CIMOCHOWSKI</i> <i>Alex B. Cimochoowski</i>	<i>Director</i>	<i>March 11, 2013</i>
<i>/s/ MICHAEL M. SELZER, JR.</i> <i>Michael M. Selzer, Jr.</i>	<i>Director</i>	<i>March 11, 2013</i>
<i>/s/ IRENE M. QUALTERS</i> <i>Irene M. Qualters</i>	<i>Director</i>	<i>March 11, 2013</i>
<i>/s/ SUBODH K. KULKARNI</i> <i>Subodh K. Kulkarni</i>	<i>Director</i>	<i>March 11, 2013</i>
<i>/s/ CRAIG D. GATES</i> <i>Craig D. Gates</i>	<i>Director</i>	<i>March 11, 2013</i>
<i>/s/ JEFFREY A. BERTELSEN</i> <i>Jeffrey A. Bertelsen</i>	<i>Vice President and CFO</i> <i>(Principal Financial Officer</i> <i>and Principal Accounting Officer)</i>	<i>March 11, 2013</i>