

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

Form 10-K

(Mark one)

**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2002
or

**TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from to

Commission file number 0-24085

AXT, Inc.

(Exact name of registrant as specified in its charter)

Delaware

*(State or other jurisdiction of
incorporation or organization)*

94-3031310

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

**4281 Technology Drive
Fremont, California**

(Address of principal executive offices)

94538

(Zip Code)

Registrant's telephone number, including area code:

(510) 683-5900

Securities registered pursuant to Section 12(b) of the Act:

None

Securities registered pursuant to Section 12(g) of the Act:

Common Stock, \$.001 par value

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

Indicate by checkmark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. Yes No

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

The aggregate market value of the voting stock held by non-affiliates of the registrant, based upon the closing sale price of the common stock on June 30, 2002 as reported on the Nasdaq National Market, was approximately \$128,411,024. Shares of common stock held by each officer, director and by each person who owns 5% or more of the outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not a conclusive determination for other purposes.

As of January 31, 2003, 22,495,094 shares, \$.001 par value, of the registrant's common stock were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive proxy statement for the registrant's 2003 annual meeting of stockholders to be filed with the Commission pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this form are incorporated by reference into Part III of this Form 10-K report.

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PART I

This report includes forward-looking statements that reflect our current views with respect to future events and our potential financial performance. These forward-looking statements are subject to certain risks and uncertainties, including those discussed in “Business”, “Management’s Discussion and Analysis of Financial Condition and Results of Operations”, and elsewhere in this report, that could cause actual results to differ materially from historical results or those anticipated. In this report, the words “anticipates,” “believes,” “expects,” “intends,” “future” and similar expressions identify forward-looking statements. Forward-looking statements also include the assumptions that underlie such statements. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this report.

Item 1. **Business — Overview**

We design, develop, manufacture and distribute high-performance compound semiconductor substrates, as well as opto-electronic semiconductor devices, such as high-brightness light emitting diodes, or HBLEDs, and laser diodes including vertical cavity surface emitting lasers, or VCSELs, and Fabry-Perot laser diodes. Our substrate products are used primarily in wireless communications, lighting display applications, and fiber optic communications. We believe our proprietary vertical gradient freeze, or VGF, technique for manufacturing compound semiconductor substrates provides significant benefits over other methods and has enabled us to become a leading manufacturer of compound semiconductor substrates. We pioneered the commercial use of VGF technology to manufacture gallium arsenide, or GaAs, substrates and used VGF technology to manufacture substrates from other materials, including indium phosphide, or InP, and germanium, or Ge. Some of our competitors followed our lead by developing their own versions of VGF technology. Customers for our substrates include Skyworks Solutions, Agilent Technologies, EMCORE, Kopin, IQE, Nortel Networks, and Sumitomo Chemical. Our acquisition of Lyte Optronics in 1999 provided us with expertise in epitaxial processes for manufacturing opto-electronic semiconductor devices. We use these capabilities to make blue, green and cyan HBLEDs and laser diodes. Our opto-electronic semiconductor devices are used in a wide range of applications, such as solid-state lighting and fiber optic communications. Over the past four years, we have implemented an initiative, which is now largely complete, to reduce the cost of manufacturing our substrates by moving most of our operations to China and by investing in sources of low cost raw materials. We also expanded our HBLED manufacturing capacity in response to an increase in customer demand.

We were incorporated in California in December 1986 and reincorporated in Delaware in May 1988. We changed our name from American Xtal Technology, Inc. to AXT, Inc. in July 2000. Our principal offices are located at 4281 Technology Drive, Fremont, California 94538, and our telephone number at this address is (510) 683-5900. Our web site is www.axt.com; however, the information on our web site does not constitute a part of this annual report on Form 10-K and is not incorporated herein. We make available, free of charge, on or through our web site, our annual, quarterly and current reports, and any amendments to those.

Industry Background

Historically, most semiconductor devices were created on a single crystal base material, or substrate, of silicon. Today, however, many electronic and opto-electronics devices are being developed with requirements that exceed the capabilities of silicon. These devices address the continually increasing demand to send, receive and display information on high-speed wireless and wireline networks. This demand created a growing need for power-efficient high-performance systems that can operate at high frequencies and can be produced cost-effectively in large volumes. These systems enable the growth and development of a wide range of end-user applications. For example, Dataquest, Inc., expects worldwide cellular/PCS handset production to grow from approximately 405 million units in 2002 to approximately 580 million units by 2004.

Other examples of applications for these systems include:

- voice and high-speed wireless data systems;
- infrared emitters and optical detectors in computer systems;
- fiber optic networks and optical systems within these networks;

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- solid-state lighting, including exterior and interior automobile lighting; and
- satellite communications systems.

As a result of the limitations of silicon-based technologies, semiconductor device manufacturers use compound semiconductor substrates to improve the performance of semiconductor devices and to enable these new applications. This use occurs even though these compound semiconductor substrates are more expensive than silicon. Compound semiconductor substrates are composed of multiple elements that include a metal, such as gallium, aluminum or indium, and a non-metal, such as arsenic, phosphorus or nitrogen. The resulting compounds include gallium arsenide, indium phosphide and gallium nitride. Advantages of devices manufactured on compound substrates over devices manufactured using silicon substrates include:

- operation at higher speeds;
- lower power consumption;
- less noise and distortion; and
- opto-electronic properties that enable devices to emit and detect light.

A key step in producing a compound semiconductor substrate is to grow a crystal of the materials. Historically, two processes were used to grow crystals: the Liquid Encapsulated Czochralski, or LEC, technique and the Horizontal-Bridgeman, or HB, technique. We believe two trends reduced the appeal of these techniques: more semiconductor devices are being formed using an epitaxial process and semiconductor device manufacturers are switching their production lines to six-inch diameter substrates. The LEC and HB techniques each have difficulties producing high quality, low-cost compound semiconductor substrates for epitaxial processing and substrates produced using this technique have a high volume of defects as size increases beyond four-inches in diameter. We introduced our VGF technique in 1986 to respond to the limitations inherent in the LEC and HB techniques, and, in recent years, some of our competitors who previously relied on the LEC or HB methods have also developed their own versions of VGF.

Compound semiconductor substrates enable the development of a wide range of electronic products including power amplifiers and radio frequency integrated circuits used in wireless handsets. Compound substrates can also be used to create opto-electronic products including HBLEDs and VCSELs used in solid-state lighting and fiber optic communications.

HBLEDs are solid-state compound semiconductor devices that emit light. The global demand for HBLEDs is experiencing rapid growth because HBLEDs have a long useful life, consume approximately 10% of the power consumed by incandescent or halogen lighting and improve display visibility. Applications where HBLEDs are increasingly used include wireless handset displays, automotive displays, full color video and sign displays, traffic lights and various consumer applications. According to Strategies Unlimited, an independent industry analyst, the market for HBLEDs is expected to grow from \$1.8 billion in 2002 to approximately \$3.9 billion by 2006.

The AXT Advantage

We are a leading developer and supplier of high-performance compound semiconductor substrates and opto-electronic semiconductor devices, including HBLEDs. There are four key causes of our success:

Our VGF technology is a competitive advantage. We pioneered the commercial use of VGF technology to manufacture GaAs substrates and we believe that through the use of VGF we have become a leading worldwide supplier of GaAs substrates, particularly for six-inch diameter substrates. Our VGF process produces substrates with high mechanical strength and physical and chemical uniformity, as well as a low defect rate. The following changes in our customers' technologies are increasing the share of substrates sold with these features:

- *Greater use of epitaxy rather than ion implantation.* Many of the newest generation of high-performance semiconductor devices for fiber optic and wireless communications applications, including heterojunction bipolar transistors, or HBTs, and pseudomorphic high electron mobility transistors, or

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PHEMTs, are popular because they offer lower power consumption and better device linearity than their predecessors. These devices are created using epitaxial processed substrates. Our VGF substrates are more suitable for these applications than are our competitors' products manufactured using LEC and HB technologies, and competing materials such as silicon germanium, or SiGe.

- *Switch to six-inch diameter wafers.* Many of our semiconductor device manufacturing customers switched their GaAs production lines to six-inch diameter substrates in order to reduce unit costs and increase capacity. We were among the first competitors able to deliver large volumes of six-inch diameter VGF substrates and retain a significant amount of manufacturing capacity for this product.
- *Introduction of InP substrates.* Even GaAs cannot meet the requirements for system performance and network bandwidth of some potential applications, including SONET OC-768 applications that will operate at speeds up to 40 gigabits per second. While the date of introduction of these applications is uncertain, they are likely to use Indium Phosphide (InP) substrates. We successfully used our VGF technique to develop InP and we were among the first to offer four- and six-inch diameter InP substrates.

In addition, VGF technology gives us further benefits.

- *Customer technology independence.* Our semiconductor device manufacturing customers often compete among themselves. For example, several of our customers compete for technological leadership in the wireless handset market. These customers or end-users all manufacture their devices on GaAs substrates. We are, therefore, largely immune from the effects of such competition and benefit from an overall need for faster, more power efficient electronic and opto-electronic devices.

Some customers specify VGF substrates. Our wafers are qualified with many of the key suppliers of GaAs and InP semiconductor devices. The qualification process, which is lengthy and must be repeated for each customer, can be a barrier to entry for a new material or supplier. Furthermore, certain of our customers now effectively specify that they will only accept VGF-grown or equivalent substrates for their manufacturing processes. As the businesses of these customers grow, we, and those competitors that developed a technology similar to VGF, are well positioned to capture their business.

Our low-cost manufacturing is an advantage. In 1998, we began moving portions of our substrate manufacturing operations to China, to benefit from a combination of lower costs for facilities, labor and materials than we encounter in the United States. That move continued and at the end of 2002 most of our substrate manufacturing activities occur in China. We also made some strategic investments in raw materials producers, including one that produces gallium, that assure us of a secured and low cost source of these materials and enables us to market surplus production to others. By the end of 2003, we anticipate that almost all of our substrate production will be located in China. We believe this provides us with a cost advantage vis-à-vis our competitors.

We entered the opto-electronic semiconductor device market quickly through our acquisition of Lyte Optronics. Our acquisition of Lyte Optronics provided us with expertise in epitaxial processes for manufacturing high-volumes of opto-electronic semiconductor devices. High-quality epitaxy is a key requirement for most of today's advanced opto-electronic semiconductor devices, such as HBLEDs and VCSELs. Since acquiring Lyte Optronics, we developed opto-electronic products that are among the more difficult to create using epitaxy, including blue and green HBLEDs and VCSELs. We have received three United States patents and filed eight additional patent applications for our approach to fabricating HBLEDs.

The AXT Strategy

Our goals are to strengthen our position as a leading developer and supplier of selected high-performance compound semiconductor substrates and to develop a leading position in the market for opto-electronic semiconductor devices. Key elements of our strategy include:

Decrease our substrate manufacturing cost structure. We will continue to shift our substrate manufacturing operations to China and invest in joint ventures to obtain key raw material supplies in order to lower unit production costs.

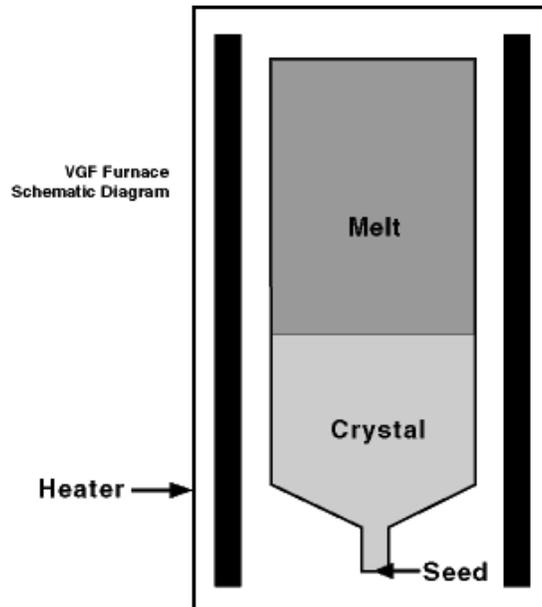
Advance VGF technology leadership. As some of our competitors have introduced production technologies similar to VGF, customers seeking VGF material have had more choice and some have allocated their orders among multiple suppliers. Given the current industry oversupply, customers are rejecting previously approved products if they can obtain higher yields from another supplier. We commit much of our research and development effort to improve the surface characteristics of our substrates and our recently produced substrates do increase customers' yields compared with our previous products.

Strengthen our leadership position in the InP market. We believe that there will be growth in demand for the next generation of high-speed fiber optic devices, such as devices used in SONET OC-768 applications. These products are manufactured on InP substrates and we are positioning ourselves to be the leading supplier of InP substrates.

Enhance our opto-electronic semiconductor devices. We intend to further penetrate the HBLED market through continued investment in research and development and selected expansion of production capacity. We expanded our manufacturing capacity by adding metal-organic chemical vapor deposition, or MOCVD, reactors and are modifying our epitaxial process to improve device performance and yield. We invested in the research and infrastructure required to grow our own sapphire substrates, which are used in producing blue, green and cyan HBLEDs.

Technology

Our core technologies include our proprietary VGF technique used to produce high quality crystals that are processed into compound substrates, and our epitaxy technologies that enable us to manufacture blue, green and cyan HBLEDs, VCSELs and edge-emitting laser diodes.



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Our VGF technique is designed to control the crystal-growth process with minimal temperature variation and is the technique we use to produce our GaAs, InP and Ge substrates. Unlike traditional techniques, our VGF technique places the hot compound melt above the cool crystal, thereby reducing the turbulence at the interface of the melt and the solid crystal, compared with the LEC technique in which the melt and crystal are inverted. The temperature gradient between the melt and the crystal in the VGF technique is significantly lower than in traditional techniques. These aspects of the VGF technique enable us to grow crystals that have a relatively low defect density and high uniformity. The crystal and the resulting substrate are mechanically strong, resulting in lower breakage rates during a customer's manufacturing process. Since the temperature gradient is controlled electronically rather than by physical movement, the sensitive crystal is not disturbed as it may be during some competitors' VGF-like growth processes. In addition, the melt and growing crystal are contained in a closed chamber, which isolates the crystal from the outside environment to reduce potential contamination. This substrate isolation allows for more precise control of the gallium-to-arsenic ratio, resulting in better consistency and uniformity of the crystals.

Our VGF technique offers several benefits when compared to traditional crystal growing technologies. The Liquid Encapsulated Czochralski, or LEC, technique is the traditional method for producing semi-insulating GaAs substrates for electronic applications. During the LEC process, the crystal is grown by dipping a seed crystal through molten boric oxide into a melt and slowly pulling the seed up into the cool zone above the boric oxide where the crystal hardens. Unlike the VGF technique, the LEC technique is designed so that the hotter GaAs melt is located beneath the cooler crystal, resulting in greater turbulence in the melt, and at a temperature gradient that is significantly higher than the VGF technique. The turbulence and high temperature cause LEC-grown crystals to have a higher dislocation density than VGF-grown crystals, resulting in a higher rate of breakage during the device manufacturing process. As an open process, the LEC technique also results in greater propensity for contamination and difficulty controlling the ratio of gallium to arsenic. It requires large, complex electro-mechanical systems that are expensive and require highly skilled personnel to operate.

Our VGF technique also offers advantages over the Horizontal-Bridgeman, or HB, technique, for producing semi-conducting GaAs substrates for opto-electronic applications. The HB technique holds the GaAs melt in a semi-cylindrical container, causing crystals grown using the HB method to have a semi-circular, or D-shaped, cross-section. Accordingly, more crystal material is discarded when the D-shaped substrate is subsequently trimmed to a round shape. In addition, crystals grown using the HB technique have a higher defect density than VGF-grown crystals. The HB technique cannot be used cost-effectively to produce substrates greater than three inches in diameter. The HB technique houses the GaAs melt in a quartz container during the growth process, which can contaminate the GaAs melt with silicon impurities, making it unsuitable for producing semi-insulating GaAs substrates.

The following table provides a comparison of these three techniques:

	VGF	HB	LEC
Substrate applications	Electronic and opto-electronic	Opto-electronic	Electronic
Largest wafer size available	6"	3"	6"
Stress/defect levels	Very Low	Low	High
Crystal purity	Good	Poor	Good
Applicability to multiple materials	GaAs, InP, Ge	GaAs	GaAs, InP, GaP
Equipment and labor cost	Very Low	Low	High
Amount of waste material	Very Low	High	Low
Equipment flexibility	Versatile	Limited	Limited
Equipment downtime	Minimal	Moderate	High
Number of competitors	Several	Declining	Declining

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Many major substrate purchasers have adjusted their product specifications to effectively allow only VGF or equivalent material. Some have simultaneously tightened their specifications for surface characteristics that causes them to reject material they had previously approved. We are improving our surface characteristics so that we fully comply with customer requirements.

We create our opto-electronic semiconductor devices using MOCVD, which is an epitaxial technique to synthesize compound semiconductor thin films onto substrates. MOCVD reactors are available from multiple sources and wafers fabricated using MOCVD generally possess a better combination of uniformity and optical and electronic properties and are easier to produce cost-effectively in high volumes than wafers manufactured by other methods, such as molecular beam epitaxy, vapor phase epitaxy or liquid phase epitaxy. As a result, MOCVD reactors have become the choice of the opto-electronics industry for fabricating devices such as LEDs, VCSELs and laser diodes. We modify our MOCVD reactors to improve their performance and use a proprietary growth recipe that controls temperature, material impurity, defect density, material thickness and layer composition while allowing for multiple wafer batch replication.

Products

We design, develop, manufacture and distribute high-performance semiconductor substrates, as well as opto-electronic devices, such as HBLEDs, VCSELs and laser diodes. The table below sets forth our products and selected applications:

Product	Applications	
Substrates	Electronic	Opto-electronic
GaAs	<ul style="list-style-type: none"> • Cellular phones • Direct broadcast television • High-performance transistors • Satellite communications 	<ul style="list-style-type: none"> • LEDs • Lasers • Optical couplers
InP	<ul style="list-style-type: none"> • Fiber optic communications • Satellite communications • High-performance transistors • Automotive collision avoidance radars 	<ul style="list-style-type: none"> • Lasers
Ge	<ul style="list-style-type: none"> • Satellite solar cells 	
Opto-electronics		
Blue, green and cyan HBLEDs		<ul style="list-style-type: none"> • Full color displays • Automobile interior and exterior lighting • Traffic signals • Back lighting for cellular phones, instrument panels, etc.
VCSELs		<ul style="list-style-type: none"> • White light for general illumination • Fiber optic and wireless communications • Storage area networks
Laser Diodes		<ul style="list-style-type: none"> • Fiber optic and wireless communications

Substrates. We currently sell compound substrates manufactured from GaAs and InP, as well as single-element substrates manufactured from Ge. We supply GaAs substrates in two-, three-, four-, five- and six-

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inch diameters. We manufacture InP substrates in two-, three- and four-inch diameters and Ge substrates in four-inch diameters. We developed and may initiate production of sapphire substrates.

Opto-electronics. We sell blue, green and cyan HBLED products in wafer and chip form. We began selling blue HBLED products in the first quarter of 2000 and in 2001 began shipping green and cyan HBLEDs. We introduced our first VSCEL product in August 2000 and introduced a range of Fabry-Parot laser products beginning in 2001 and early 2002.

Customers

We sell our compound semiconductor substrates worldwide to leading semiconductor device manufacturers. Our substrate customers include:

Agilent Technologies	Motorola	Sumitomo Chemical
Coherent Tutcore	Nortel Networks	Triquet Semiconductor
EMCORE	Osram	TRW Space & Defense
Exim and Mfr. Enterprise	Picogiga	Uni Light Technology
Gore Photonics	Procomp Informatics	United Epitaxy Company
IQE, Inc.	Skyworks Solutions	Visual Photonics Epitaxy
Kopin	Spectro-Physics	

We sell our HBLED products primarily to customers that incorporate them into lighting products. Our HBLED customers include Agilent, Metairie, Harvatek, Liteon, Kindwin, and Seoul Semiconductor.

Historically, we have sold a significant portion of our products in any particular period to a limited number of customers. Our five largest customers accounted for 35.6% of our total revenue from continuing operations in 2002, 28.3 % in 2001, and 26.1% in 2000. One customer accounted for 10.7% of our revenue in 2002 and no customer accounted for more than 10% percent of our total revenue in 2001 or 2000. We expect that sales to certain customers will continue to comprise a significant portion of our revenue in the future.

Manufacturing, Raw Materials and Supplies

We believe that our success is partially due to our manufacturing efficiency and high product yields and we continually emphasize quality and process control throughout our manufacturing operations. We perform our substrate manufacturing operations at our facilities in Beijing, China and Fremont, California. As part of our plan to reduce substrate manufacturing costs, we shifted most of our processes to our facilities in China, where costs are generally lower. We intend to transfer the vast majority, if not all, of our substrate manufacturing operations to China by the end of 2003. We believe that our capital investment and subsequent operating costs are lower for our manufacturing facilities in China relative to the U.S. Many of our manufacturing operations are fully automated and computer monitored or controlled, enhancing reliability and yield. We use proprietary equipment in our substrate manufacturing operations to protect our intellectual property and control the timing and pace of capacity additions. Our epitaxial wafer production is located in El Monte, California and our wafer fabrication and die fabrication activities for our opto-electronics products are located in Monterey Park, California, Beijing, China, and Xiamen, China. All of our manufacturing facilities are ISO 9001 or 9002 certified.

Although we purchase supply parts, components and raw materials from several domestic and international suppliers, we depend on a single or limited number of suppliers for certain critical materials used in the production of our substrates and opto-electronics products. We generally purchase these materials through standard purchase orders and not pursuant to long-term supply contracts. Although we seek to maintain sufficient inventory levels of certain materials to guard against interruptions in supply and to meet our near term needs, and have to date been able to obtain sufficient supplies of materials in a timely manner, there may be shortages of certain key materials, such as gallium. Accordingly, to help ensure continued supply of materials, we formed strategic alliances with and made investments in some suppliers of key raw materials required to manufacture our products. We believe that these alliances and investments will be advantageous in procuring materials to support our growth. In addition, excess capacity is marketed to others, enabling us to expand our markets and discouraging our alliance partners from becoming too dependent upon us.

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We use MOCVD equipment to manufacture our opto-electronics devices. We qualified two new MOCVD reactors during the past twelve months and have one reactor awaiting qualification. The substrate materials and raw wafers used in our opto-electronics products are purchased from our substrate division and other sources.

Sales and Marketing

Each of our divisions is responsible for its own sales and marketing activities, and each maintains its own sales and marketing personnel. In addition, each of our divisions advertises in trade publications, distributes promotional materials, publishes technical articles, conducts marketing programs and participates in industry trade shows and conferences in order to raise market awareness of our products.

Substrates. We sell our substrate products through our direct sales force in the U.S. and Japan and through independent sales representatives in France, Japan, South Korea, Taiwan and the United Kingdom. Our direct sales force consists of sales engineers who are knowledgeable in the manufacture and use of compound and single-element substrates. Our sales engineers work with customers during all stages of the substrate manufacturing process, from developing the precise composition of the substrate through manufacturing and processing the substrate to the customer's exact specifications. We believe that maintaining a close relationship with customers and providing them with ongoing technical support improves customer satisfaction and will provide us with a competitive advantage in selling other substrates to our customers. The substrate division launched a program in late 2000 with selected customers in which we guaranteed that certain volumes of six-inch GaAs and other substrates would be delivered on specific dates and the customer made a prepayment for part of the value of its order. Several major customers participate in this program which we expect will conclude during 2003. At December 31, 2002, the unearned pre-payments equaled \$2.2 million.

Opto-electronics. We sell our HBLED products through our direct sales force in the U.S. and Taiwan and through independent sales representatives to lamp package manufacturers in Asia. We intend to expand sales of these products in the U.S. and Europe primarily using our direct sales force. We sell our VCSEL and edge emitting laser diodes through our direct sales force and through independent sales representatives.

International Sales. International sales are an important part of our business. In the year ended December 31, 2002, sales to customers outside of the United States accounted for 58.2% of our revenue, as compared with 50.4% in 2001 and with 48.2% in 2000. The primary markets for sales of our products outside of the United States include countries in Asia and Western Europe. Our ability to sustain and increase our international sales involves significant risks, including volatile political, social and economic instabilities abroad, possible fluctuations in currency exchange rates, and changes in tariffs, import restrictions or other trade barriers.

Research and Development

To maintain and improve our competitive position, we focus our research and development efforts on designing new proprietary processes and products, improving the performance of existing products and reducing manufacturing costs. We have assembled a multi-disciplinary team of highly skilled scientists, engineers and technicians to meet our research and development objectives.

Our current substrate research and development activities focus on continued development and enhancement of six-inch GaAs crystals, including improved yield, enhanced surface characteristics and uniformity, greater substrate strength and increased crystal length. We developed and intend to initiate production of sapphire substrates.

We are focusing on all three major stages of HBLED development: epitaxy, wafer fabrication and die fabrication. Our goal is to improve brightness and yield, create products with a narrowly banded range of features including, for example, wavelength, brightness, and forward voltage, and enhance uniformity of product, both within and across production runs. Specific colors are created by controlling the indium content of the epitaxial layers, which we achieve, in part, from modifications that we make to our MOCVD reactors.

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The wafer and die fabrication experience we gained in our Lyte Optronics laser diode operation has helped us develop similar techniques for HBLEDs.

Research and development expenses were \$4.9 million in 2002, compared with \$8.2 million in 2001, and \$8.8 million in 2000.

Competition

The semiconductor industry is characterized by rapid technological change and price erosion, as well as intense foreign and domestic competition. We believe we currently have a leading position in the existing markets for compound semiconductor substrates primarily as a result of our expertise in VGF technology. However, we believe we face actual and potential competition from a number of established domestic and international companies.

We believe that the primary competitive factors in the markets in which our products compete are:

- quality;
- price;
- performance;
- meeting customer specifications;
- customer support and satisfaction; and
- customer investment in competing technologies.

Our ability to compete in target markets also depends on factors such as:

- the timing and success of the development and introduction of new products by us and our competitors;
- the availability of adequate sources of raw materials; and
- protection of our products by effective use of intellectual property laws and general economic conditions.

Our primary competition in the market for compound semiconductor substrates includes Freiberger, Japan Energy and Sumitomo Electric. In addition, we also face competition from compound semiconductor device manufacturers that produce substrates for their own internal use, and from companies such as IBM and Motorola that are actively developing alternative compound semiconductor materials.

Our primary competitors in the market for HBLED products include Arima, Cree, LumiLED, Nichia Chemicals, Toyoda Gosei and United Epitaxy. In general, HBLED manufacturers in Taiwan and China have a competitive pricing advantage due to low overhead and small research and development investments. Cree, Nichia Chemicals, Sony and Toyoda Gosei have significant patent portfolios that other competitors, including us, must either design around or license.

We primarily compete with EMCORE, Honeywell, Trulight, Picolight, Zarlink, Infineon, Cielo and E2O in the market for VCSEL devices.

Protection of our Intellectual Property

Our success and the competitive position of our VGF technique depend on our ability to maintain trade secrets and other intellectual property protections. We rely on a combination of patents, copyrights, trademark and trade secret laws, non-disclosure agreements and other intellectual property protection methods to protect our proprietary technology. We believe that, due to the rapid pace of technological innovation in the markets for our products, our ability to establish and maintain a position of technology leadership depends as much on the skills of our development personnel as upon the legal protections afforded our existing technologies. To protect our trade secrets, we take certain measures to ensure their secrecy, such as executing non-disclosure agreements with our employees, customers and suppliers. However, reliance on trade secrets is only an

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effective business practice insofar as trade secrets remain undisclosed and a proprietary product or process is not reverse engineered or independently developed.

To date, we have been issued one U.S. patents and have three U.S. patent applications pending, which relate to our VGF products and processes. We have three U.S. patents and eight U.S. patent applications pending which relate to our HBLED or laser diode technology, and have patent applications pending in Europe, Canada, China, Japan and Korea which are based on one of our U.S. patents that relates to our VGF and opto-electronic processes. We have no issued foreign patents.

Environmental Regulations

We are subject to federal, state and local environmental laws and regulations. These laws, rules and regulations govern the use, storage, discharge and disposal of hazardous chemicals during manufacturing, research and development and sales demonstrations. If we fail to comply with applicable regulations, we could be subject to substantial liability for clean-up efforts, personal injury and fines or suspension or cessation of our operations. We cooperated with the California Occupational Safety and Health Administration, or Cal-OSHA, in an investigation primarily regarding impermissible levels of potentially hazardous materials in certain areas of our manufacturing facility in Fremont, California. In May 2000, Cal-OSHA levied a fine against us in the amount of \$313,655 for alleged health and safety violations. In March 2001, we settled this claim in the amount of \$200,415, and have put in place engineering, administrative and personnel protective equipment programs to address these issues. On May 1, 2001, the Santa Clara Center for Occupational Safety and Health (SCCOSH) filed a complaint for injunctive relief and civil penalties against us alleging violations of California Business Professions Code 17200 et seq., and Health and Safety Code section 25249 et seq. as a result of our use of arsenic and inorganic arsenic compounds in our workplace. We reached a settlement with SCCOSH during 2002. See "Legal Proceedings" below.

Employees

As of December 31, 2002, we had 1,306 employees, of whom 1,075 were principally engaged in manufacturing, 197 in sales and administration, and 34 in research and development. Of these employees, 317 are located in the U.S., 988 in China and 1 in Japan. As a result of shifting more of our substrate manufacturing to China, we implemented headcount reductions in our Fremont, California facilities, and expect further reductions as our shift of our manufacturing activities to China is completed by the end of 2003. Our success is in part dependent on our ability to attract and retain highly skilled workers. Our employees are not represented by a union and we have never experienced a work stoppage. Although morale has been affected by our workforce reductions, we consider our relations with our employees to be good.

Item 2. Properties

Our principal properties as of March 15, 2003 are as follows:

Location	Square Feet	Principal Use	Ownership
Fremont, CA	80,000	Production	Owned
Fremont, CA	14,441	Administration	Operating lease, expires May 2005
Fremont, CA	9,280	Warehouse	Operating lease, expires June 2005
Fremont, CA	24,100	Warehouse	Operating lease, expires July 2006
Fremont, CA	55,000	Production and Administration	Owned; in contract to sell and lease through March 2013
Monterey Park, CA	22,000	Production and Administration	Owned
El Monte, CA	26,652	Production	Owned
Beijing, China	31,000	Production and Administration	Owned
Beijing, China	31,000	Production	Owned
Beijing, China	32,000	Production	Owned
Beijing, China	16,000	Housing	Owned
Beijing, China	34,000	Production	Owned
Beijing, China	48,000	Production	Owned
Beijing, China	22,000	Production and Administration	Owned
Beijing, China	53,000	Production	Owned; under construction
Xianshee, China	56,500	Production	Owned by Beijing Ji Ya Semiconductor Materials, Co., Ltd.
Xianshee, China	7,500	Administration	Owned by Beijing Ji Ya Semiconductor Materials, Co., Ltd.
Xianshee, China	1,000	Administration	Owned by Beijing Ji Ya Semiconductor Materials, Co., Ltd.
Nanjing, China	22,000	Production	Owned by Nanjing Jin Mei Gallium Co., Ltd.
Nanjing, China	5,700	R&D and Administration	Owned by Nanjing Jin Mei Gallium Co., Ltd.
Nanjing, China	3,900	Production	Owned by Nanjing Jin Mei Gallium Co., Ltd.
Beijing, China	7,600	Production and Administration	Owned by Beijing Bo Yu Semiconductor Vessel Craftwork Technology

We consider each facility to be in good operating condition and adequate for its present use, and believe that each facility has sufficient plant capacity to meet its current and anticipated operating requirements.

Item 3. Legal Proceedings

From time to time we are involved in judicial or administrative proceedings concerning matters arising in the ordinary course of our business. We do not expect that any of these matters, individually or in the aggregate, will have a material adverse effect on our business, financial condition, cash flows or results of operation.

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On May 1, 2001, the Santa Clara Center for Occupational Safety and Health filed a complaint for injunctive relief and civil penalties against us in the Superior Court of California, County of Alameda, Hayward Division, Case No. H218237-5. The complaint alleged violations of California Business and Professions Code section 17200 et seq., and violations under Proposition 65 and California Health and Safety Code section 25249 et seq. as a result of AXT's use of arsenic and inorganic arsenic compounds in its workplace. On June 24, 2002, we participated in a private mediation, and as a result, reached a settlement of all claims, pursuant to which we agreed to pay the Santa Clara Center for Occupational Safety and Health an amount equal to \$175,000. The parties have executed a settlement agreement, and the court approved the settlement on December 31, 2002, and dismissal of the case is pending.

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

None

PART II

Item 5. Market for Registrant's Common Equity and Related Stockholder Matters

Our common stock has been trading publicly on the Nasdaq National Market under the symbol "AXTI" since May 20, 1998, the date we consummated our initial public offering. The following table sets forth, for the periods indicated, the range of quarterly high and low closing sales prices for our common stock on the Nasdaq National Market.

	High	Low
Fiscal 2002		
First Quarter ended March 31, 2002	\$16.890	\$ 8.850
Second Quarter ended June 30, 2002	\$ 11.600	\$ 7.000
Third Quarter ended September 30, 2002	\$ 8.390	\$ 2.080
Fourth Quarter ended December 31, 2002	\$ 2.820	\$ 0.970
Fiscal 2001		
First Quarter ended March 31, 2001	\$44.560	\$ 14.500
Second Quarter ended June 30, 2001	\$40.670	\$13.720
Third Quarter ended September 30, 2001	\$26.700	\$ 10.200
Fourth Quarter ended December 31, 2001	\$ 16.850	\$ 10.300

As of December 31, 2002, there were 89 registered holders of record of our common stock. Because many shares of AXT's common stock are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by these registered holders.

We have never paid or declared any cash dividends on our common stock and do not anticipate paying cash dividends in the foreseeable future. We are restricted in our ability to pay dividends under the terms of our credit facility with our bank. Dividends accrue on our preferred stock at the rate of \$0.20 per annum per share of preferred stock.

Item 6. Selected Consolidated Financial Data

The following selected consolidated financial data are derived from and should be read in conjunction with, and are referenced to, our consolidated financial statements and related notes and Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations."

	Years Ended December 31,				
	2002	2001	2000	1999	1998
(In thousands, except per share data)					
Income Statement Data:					
Revenue	\$ 63,175	\$ 119,530	\$ 121,503	\$ 75,372	\$ 49,074
Cost of revenue	74,031	82,191	73,684	50,026	29,003
Gross profit (loss)	(10,856)	37,339	47,819	25,346	20,071
Operating expenses:					
Selling, general, and administrative	18,648	21,487	18,041	10,474	6,019
Research and development	4,868	8,204	8,769	2,566	2,504
Restructuring costs	39,086	—	6,409	—	—
Acquisition costs	—	—	—	2,810	—
Total operating expenses	62,602	29,691	33,219	15,850	8,523
Income (loss) from operations	(73,458)	7,648	14,600	9,496	11,548
Interest expense	1,326	2,081	3,616	2,201	875
Other (income) and expense, net	12,705	13,373	(28,432)	(1,423)	(715)
Income (loss) from continuing operations before provision for income taxes	(87,489)	(7,806)	39,416	8,718	11,388
Provision (benefit) for income taxes	(6,308)	(2,810)	14,978	4,380	4,668
Income (loss) from continuing operations	(81,181)	(4,996)	24,438	4,338	6,720
Discontinued operations:					
Loss from discontinued operations, net of tax benefits	—	—	(1,487)	(3,658)	(2,436)
Loss on disposal, net of tax benefits	—	—	(1,341)	—	—
Extraordinary item, net of tax benefits	—	—	—	(508)	—
Net income (loss)	\$ (81,181)	\$ (4,996)	\$ 21,610	\$ 172	\$ 4,284
Basic income (loss) per share:					
Income (loss) from continuing operations	\$ (3.63)	\$ (0.23)	\$ 1.24	\$ 0.23	\$ 0.42
Loss from discontinued operations	—	—	(0.14)	(0.19)	(0.15)
Extraordinary item	—	—	—	(0.03)	—
Net income (loss)	(3.63)	(0.23)	1.10	0.01	0.27
Diluted income (loss) per share:					
Income (loss) from continuing operations	\$ (3.63)	\$ (0.23)	\$ 1.16	\$ 0.22	\$ 0.41
Loss from discontinued operations	—	—	(0.13)	(0.18)	(0.15)
Extraordinary item	—	—	—	(0.03)	—
Net income (loss)	(3.63)	(0.23)	1.03	0.01	0.26
Shares used in per share calculations:					
Basic	22,433	22,278	19,677	18,655	16,076
Diluted	22,433	22,278	21,059	19,771	16,325

	December 31,				
	2002	2001	2000	1999	1998
	(In thousands)				
Balance Sheet Data:					
Cash and cash equivalents	\$ 13,797	\$ 37,538	\$ 68,585	\$ 6,062	\$ 16,438
Short-term investments	8,205	25,673	30,852	—	—
Working capital	65,375	125,295	140,387	40,462	41,644
Restricted deposits	11,150	—	—	—	—
Long-term investments	3,657	6,552	—	—	—
Total assets	145,667	243,359	250,220	115,762	102,983
Long-term capital lease, net of current portion	4,847	10,002	7,278	6,853	3,854
Long-term debt, net of current portion	13,289	14,342	15,123	15,254	18,416
Stockholders' equity	105,657	186,322	185,347	62,459	61,164

Income statement data from our substrate division and discontinued consumer products division is included in all periods presented. Income statement data from our opto-electronics division is included from the time of the acquisition of Alpha Photonics by Lyte Optronics on September 29, 1998. All periods have been restated to reflect the accounting for discontinued operations. As a result, the discontinued consumer products division has been eliminated from continuing operations in the income statements.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with "Selected Consolidated Financial Data" and our consolidated financial statements and related notes included elsewhere in this Form 10-K. In addition to historical information, the discussion in this Form 10-K contains forward-looking statements that involve risks and uncertainties that could cause our actual results to differ materially from those projected. The statements contained in the Report on Form 10-K that are not purely historical are forward looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act, including, without limitation, statements regarding our expectations, beliefs, intentions or strategies regarding the future. All forward-looking statements included in this Report on Form 10-K are based on information available to us on the date hereof, and we assume no obligation to update any such forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors, which may cause our actual results to differ materially from those implied by the forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as "may," "will," "should," "expects," "plans," "anticipates," "believes," "estimates," "predicts," "potential," or "continue" or the negative of these terms or other comparable terminology. Factors that might cause or contribute to such differences include, but are not limited to, those set forth under "Risks Related to Our Business" and elsewhere in this Form 10-K.

Overview

We were founded in 1986 to commercialize and enhance our proprietary VGF technique for producing high-performance compound semiconductor substrates. We currently operate two divisions: our substrate division and our opto-electronics division. We made our first substrate sales in 1990 and our substrate division currently sells GaAs and InP substrates to manufacturers of semiconductor devices for use in applications such as fiber optic and wireless telecommunications, LEDs and lasers. We also sell germanium substrates for use in satellite solar cells. We acquired Lyte Optronics, Inc., on May 28, 1999, and currently operate part of Lyte's historical business as our opto-electronics division. The opto-electronics division manufactures HBLEDs, VCSELs and laser diodes for the illumination markets, including full-color displays, automobile lighting and traffic signals, as well as fiber optic communications. We previously operated the consumer products division, discontinued in December 2000, which had focused on the design and manufacture of laser-pointing and alignment products for the consumer, commercial and industrial markets.

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Our total revenue from continuing operations was \$63.2 million for 2002, \$119.5 million for 2001 and \$121.5 million for 2000. In 2002 we incurred a loss from continuing operations of \$81.2 million compared to a loss of \$5.0 million for 2001 and income of \$24.4 million for 2000.

Several non-recurring events occurred that had a substantial impact on our performance and financial results for the years-ended December 31, 2002, 2001 and 2000. In 2002, we recorded excess inventory impairment charges of \$9.7 million that are included in cost of revenue, equipment impairment charges of \$38.0 million and goodwill impairment charges of \$1.1 million that are included in operating expenses, a write-down in our investment in Finisar Corporation of \$10.8 million and a loss on a building held for sale of \$3.1 million that are included in other expense. In 2001, we realized a net \$15.6 million non-cash loss as a result of writing down our investment in Finisar Corporation common stock. This loss is included in other expense. In 2000, we realized a \$27.3 million non-cash gain as a result of acquiring Finisar Corporation common stock in connection with Finisar Corporation's acquisition of Demeter Technologies, a company in which we held warrants to purchase preferred stock. This gain is included in other income. On December 14, 2000, the Board of Directors approved our plan to discontinue our unprofitable consumer products division. As a result of discontinuing the consumer products division, we incurred a pre-tax loss on disposal of \$2.2 million. The results of operations of the consumer products division have been segregated from continuing operations and are reported separately as discontinued operations in the income statements. In 2000 we exited our unprofitable 650nm laser diode product line at the opto-electronics division. As a result of exiting this product line, we incurred a restructuring charge of \$8.2 million, of which \$1.8 million has been classified as cost of goods sold and \$6.4 million has been classified as operating expense.

Our business, particularly sales of our substrate products, are dependant on the semiconductor industry, which is highly cyclical and has historically experienced downturns both as a result of economic changes and of overcapacity. Following a strong period during the first half of 2001, we are now in the midst of a significant and prolonged downturn, and, together with other industry participants, have experienced lower revenues, slower bookings, push outs and cancellation of orders. We cannot predict the severity or duration of the downturn, but it has impacted our ability to sell our products and operate profitably. If demand for our products remains depressed for an extended period, our business will be harmed as a result.

In the second half of 2001, we experienced a \$43.2 million, or 53.1% decrease in revenue compared to the first half as a result of the rapid decline in the mobile and fiber optic telecommunications markets. As such, we recorded losses in the third and fourth quarters. In 2002, the downward revenue trend that began in the second half of 2001 continued and full year 2002 revenue declined \$56.4 million, or 47.1% compared to 2001. We recorded losses in each quarter of 2002. In reaction to the economic downturn, we have initiated an aggressive effort to reduce substrate manufacturing costs. This includes moving much of our substrate manufacturing operations to China, reducing capacity in our Fremont, CA facility and developing and investing in key low cost raw material sources. We are hopeful that the cost reduction efforts should allow us to operate profitably again by the end of 2003 and will position us well for future growth. During the second half of 2002, we experienced certain manufacturing and quality problems that had a negative impact in obtaining orders from several large customers for HBLEDs at the opto-electronics division, as well as on our substrates, which resulted in decreased orders at our substrate division. As a result, the divisions continued to experience losses in each quarter of 2002. We have initiated measures to improve our manufacturing and quality issues and have taken measures to reduce operating costs. As a result, we are hopeful that the opto-electronics division will also be profitable by the end of 2003.

During 2002 and 2001, we raised approximately \$850,000 and \$4.8 million, respectively, from the exercise of options by employees to purchase our common stock under our employee stock option plan. During 2000, we raised approximately \$96.0 million from the sale of common stock in a private offering, a registered public offering and the exercise of options by employees to purchase our common stock under our employee stock option plan.

Our five largest customers accounted for 35.6% of our total revenue from continuing operations in 2002, 28.3% in 2001 and 26.1% in 2000. One customer accounted for 10.7% of our revenue in 2002 and no customer accounted for more than 10% of our total revenue in 2001 or 2000.

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Each of our divisions is responsible for its own sales and marketing activities, and each maintains its own sales and marketing personnel. We sell our substrate products through our direct sales force in the U.S. and through independent sales representatives in France, Japan, South Korea, Taiwan and the United Kingdom. We sell our HBLED and laser diode products through our direct sales force and through independent sales representatives.

Critical Accounting Policies and Estimates

We have prepared our consolidated financial statements in accordance with accounting principals generally accepted in the United States of America. As such, we have had to make estimates, assumptions and judgments that affect the amounts reported on our financial statements. These estimates, assumptions and judgments about future events and their effects on our results cannot be determined with certainty, and are made based upon our historical experience and on other assumptions that are believed to be reasonable under the circumstances. These estimates may change as new events occur or additional information is obtained, and we may periodically be faced with uncertainties, the outcomes of which are not within our control and may not be known for a prolonged period of time. The discussion and analysis of our results of operations and financial condition are based upon these statements. We have identified the policies below as critical to our business operations and understanding of our financial condition and results of operations. A critical accounting policy is one that is both material to the presentation of our financial statements and requires us to make difficult, subjective or complex judgments that could have a material effect on our financial condition and results of operations. They may require us to make assumptions about matters that are highly uncertain at the time of the estimate, and different estimates that we could have used, or changes in the estimate that are reasonably likely to occur, may have a material impact on our financial condition or results of operations.

We believe that the following are our critical accounting policies:

Revenue Recognition

We recognize revenue upon shipment of products to our customers provided that we have received a signed purchase order, the price is fixed or determinable, title has transferred, collection of resulting receivables is probable, product returns are reasonably estimable, there are no customer acceptance requirements and there are no remaining obligations. We assess the probability of collection based on a number of factors including past history with the customer and credit worthiness. We provide for future returns based on historical experience, current economic trends and changes in customer demand at the time revenue is recognized. Except for sales in Japan and some sales in Taiwan, which in both cases are denominated in Japanese yen, we denominate and collect our international sales in U.S. dollars. We do not provide for warranty related exposure as such exposure has historically been immaterial.

Allowance for Doubtful Accounts

We periodically review the likelihood of collecting our accounts receivable balances and provide an allowance for doubtful accounts receivable primarily based upon the age of these accounts. We provide a 100% allowance for U.S. receivables in excess of 90 days and for foreign receivables in excess of 120 days. At December 31, 2002 our accounts receivable balance was \$7.2 million net of an allowance for doubtful accounts of \$6.7 million.

Inventory

Inventories are stated at the lower of cost or net realizable value. Cost is determined using the weighted average cost method. Finished goods and work-in-process inventories include material, labor and manufacturing overhead costs. We routinely evaluate the levels of our inventory in light of current market conditions in order to identify excess and obsolete inventory and we provide a valuation allowance for certain inventories based upon the age and quality of the product. The lives of our substrate products are relatively long and accordingly, obsolescence has historically not been a significant factor. We also review our inventory to ensure costs can be realized upon ultimate sale to our customers. If we determine that the value of any items in

ending inventory exceeds the sales value less any related selling costs, a reserve is established for the difference. As a result of fourth quarter 2002 and expected 2003 market conditions, during the fourth quarter of 2002, we recorded a charge of \$9.7 million to reserve for excess inventory.

Impairment of Long-Lived Assets

We review the carrying value of our long-lived assets and investments in order to identify any impairment. Long-lived assets are written down to their current fair market value when the carrying value of an asset exceeds their related undiscounted future cash flows. To determine the fair market value of our long-lived assets, we obtain appraisals from outside consultants. During 2002, we recorded long-lived asset and goodwill impairment charges of \$42.2 million.

Investments

The Company classifies its investments in marketable securities as available-for-sale securities as prescribed in Financial Accounting Standard No. 115, "Accounting for Certain Investments in Debt and Equity Securities." All investments are carried at fair market value, which is determined based on quoted market prices, with net unrealized gains and losses included in comprehensive income, net of tax. If a decline in fair value is judged to be other than temporary, the cost basis of the individual security is written down to fair value as a new cost basis with the amount of the write down included in other (income) expense. We recorded an impairment charge of \$10.8 million in 2002 and \$15.6 million in 2001 to write-down our investment in Finisar Corporation common stock.

Income Taxes

The Company accounts for deferred income taxes using the liability method, under which the expected future tax consequences of timing differences between the book and tax basis of assets and liabilities are recognized as deferred tax assets and liabilities. Valuation allowances are established when necessary to reduce net deferred tax assets when management estimates, based on available objective evidence, that it is more likely than not that the future income tax benefit represented by the net deferred tax asset will not be realized.

Results of Operations

The following table sets forth certain operating data as a percentage of total revenues for the periods indicated.

	Years Ended December 31,		
	2002	2001	2000
Revenue	100.0%	100.0%	100.0%
Cost of revenue	117.2%	68.8%	60.6%
Gross profit (loss)	(17.2)%	31.2%	39.4%
Operating expenses:			
Selling, general, and administrative	29.5%	18.0%	14.8%
Research and development	7.7%	6.9%	7.2%
Restructuring costs	61.9%	0.0%	5.3%
Total operating expenses	99.1%	24.9%	27.3%
Income (loss) from operations	(116.3)%	6.3%	12.1%
Interest expense	2.1%	1.7%	3.0%
Other (income) and expense, net	20.1%	11.2%	(23.4)%
Income (loss) from continuing operations before provision for income taxes	(138.5)%	(6.6)%	32.5%
Provision (benefit) for income taxes	(10.0)%	(2.4)%	12.3%
Income (loss) from continuing operations	(128.5)%	(4.2)%	20.2%
Discontinued operations:			
Loss from discontinued operations, net of tax benefits	0.0%	0.0%	(1.2)%
Loss on disposal, net of tax benefits	0.0%	0.0%	(1.1)%
Net income (loss)	(128.5)%	(4.2)%	17.9%

Year Ended December 31, 2002 Compared to Year Ended December 31, 2001

Revenue from continuing operations. Revenue decreased \$56.4 million, or 47.1%, to \$63.2 million in 2002 compared to \$119.5 million in 2001. Revenue from our substrate division, which represents 71.0% of total revenue for the year ended 2002, decreased \$63.9 million, or 58.8%, to \$44.9 million compared to \$108.8 million in 2001. Total GaAs substrate revenue decreased \$42.5 million, or 56.4%, to \$32.9 million in 2002 compared to \$75.4 million in 2001. Sales of 5" and 6" diameter GaAs substrates decreased \$12.8 million, or 59.2%, to \$8.8 million in 2002 compared to \$21.6 million in 2001. InP substrate revenue decreased \$21.7 million, or 77.0%, to \$6.5 million in 2002 compared to \$28.2 million in 2001. The decrease in GaAs and InP substrate revenue is due to decreased volume and sales prices as a result of the slowdown in our markets including telecommunications, high speed electronic devices, and short wavelength lasers.

Revenue from our opto-electronics division, which represents 29.0% of total revenue for 2002, increased \$7.6 million, or 70.6%, to \$18.3 million in 2002, compared to \$10.7 million in 2001. The increase was a result of higher sales volume of HBLLED products. HBLLED revenue increased \$8.4 million, or 114.0%, to \$15.8 million in 2002 compared to \$7.4 million in 2001. While revenue earned from HBLLED products increased, the per unit price declined during 2002 and we may face further reductions in market prices in the future.

VCSEL revenue decreased \$392,000, or 38.8% to \$619,000 in 2002 compared to \$1.0 million in 2001. The decrease in VCSEL revenue was primarily due to a weakening in consumer demand. Laser diode sales decreased \$437,000, or 18.7%, to \$1.9 million in 2002 compared to \$2.3 million in 2001. The decrease in laser diode sales was primarily due to the exit of our unprofitable 650 nm laser diode product line in 2001.

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International revenue increased to 58.2% of total revenue in 2002 compared to 50.4% of total revenue in 2001. The increase was primarily due to increased sales of HBLED products to customers in Asia.

Gross margin. Gross margin decreased to negative 17.2% of revenue in 2002 compared to 31.2% in 2001. Gross margin at the substrate division decreased to negative 19.8% of revenue in 2002 compared to 38.0% in 2001. The decrease was primarily due to lower unit sales and average sales prices of GaAs and InP substrates spread over a relatively fixed manufacturing overhead base and a \$9.7 million charge to write-down excess inventory. As a result, we have initiated manufacturing cost reductions in order to align our costs with lower expected sales volumes and prices. We are currently shifting most of our substrate manufacturing to China and reducing capacity in our Fremont, California facility. Gross margin at the opto-electronics division increased to negative 10.7% of revenue for 2002 compared to negative 37.0% for 2001. The increase was primarily due to increased unit sales of blue HBLED products.

Selling, general and administrative expenses. Selling, general and administrative expenses decreased \$2.8 million, or 13.2%, to \$18.6 million in 2002 compared to \$21.5 million in 2001. As a percentage of total revenue, selling, general and administrative expenses were 29.5% in 2002 compared to 18.0% in 2001. In order to align our cost structure with the rapid decline in revenues, we have initiated and are aggressively pursuing cost reductions in this area, which led to the decrease in 2002.

Research and development expenses. Research and development expenses decreased \$3.3 million or 40.7%, to \$4.9 million in 2002 compared to \$8.2 million in 2001. As a percentage of total revenue, research and development expenses were 7.7% in 2002 compared to 6.9% in 2001. Although we reduced research and development expenses in 2002 as part of our effort to reduce costs, we believe that continued investment in product development is critical to attaining our strategic objectives of maintaining and increasing our technology leadership, and as a result, we expect research and development expenses to remain at current levels in future periods. Research and development efforts during 2002 were focused primarily on improving the yield and surface quality of our GaAs substrates, and improving the brightness, reliability, and yield of our HBLED products.

Interest expense. Interest expense decreased \$755,000, or 36.3%, to \$1.3 million in 2002 compared to \$2.1 million in 2001. The decrease was primarily due to the repayment of certain long-term real estate notes and capital equipment leases.

Other income and expense. Other expense was \$12.7 million in 2002 compared to \$13.4 million in 2001. The amount in 2002 includes non-cash charges of \$10.8 million related to the write-down to market value of our investment in Finisar Corporation common stock and \$3.1 million to write-down a building held for sale to net realizable value. The 2001 balance includes a non-cash charge of \$15.6 million to write-down to market value our investment in Finisar common stock.

Provision for income taxes. Due to our continuing operating losses during 2002 and uncertainty regarding future profitability, we recorded a full valuation allowance against our net deferred tax assets of \$31.2 million in 2002. As a result, our effective tax rate decreased to 7.2% in 2002 and will be 0% in the foreseeable future. Our effective tax rate in 2001 was 36%.

Year Ended December 31, 2001 Compared to Year Ended December 31, 2000

Revenue from continuing operations. Revenue decreased \$2.0 million, or 1.6%, to \$119.5 million in 2001 compared to \$121.5 million in 2000. Revenue from our substrate division, which represents 91.0% of total revenue for the year ended 2001, decreased \$4.6 million, or 4.0%, to \$108.8 million compared to \$113.4 million in 2000. Total GaAs substrate revenue decreased \$22.6 million, or 23.1%, to \$75.4 million in 2001 compared to \$97.9 million in 2000. Sales of 5" and 6" diameter GaAs substrates was unchanged at \$21.6 million for 2001 and 2000. InP substrate revenue increased \$14.3 million, or 102.0%, to \$28.2 million in 2001 compared to \$14.0 million in 2000. While our substrate division experienced sequential quarter over quarter revenue growth during the first half of 2001, substrate revenue declined substantially in the second half due to a decline in the wireless and fiber optic telecommunication markets. Substrate revenue in the first half of 2001 was \$76.9 million compared to \$31.9 million in the second half of 2001, as the global economic

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environment weakened through the middle of the year and customers reduced their requirements dramatically.

Revenue from our opto-electronics division, which represents 9.0% of total revenue for 2001, increased \$2.6 million, or 32.0%, to \$10.7 million in 2001, compared to \$8.1 million in 2000. The increase was a result of higher sales volume of HBLEED products. HBLEED revenue increased \$5.4 million, or 263.9%, to \$7.4 million in 2001 compared to \$2.0 million in 2000. VCSEL revenue increased \$816,000, or 418.5% to \$1.0 million in 2001 compared to \$195,000 in 2000. Laser diode sales decreased \$3.8 million, or 61.9%, to \$2.3 million in 2001 compared to \$6.2 million in 2000. The decrease in laser diode sales was primarily due to the exit of our unprofitable 650 nm laser diode product line.

International revenue increased to 50.4% of total revenue in 2001 compared to 48.2% of total revenue in 2000. The increase was primarily due to increased sales of HBLEED products to customers in Asia.

Gross margin. Gross margin decreased to 31.2% of revenue in 2001 compared to 39.4% in 2000. Gross margin at the substrate division decreased to 38.0% of revenue in 2001 compared to 45.9% in 2000. The decrease was primarily due to lower unit sales and average sales prices of GaAs substrates in the second half of 2001. As a result, we initiated manufacturing cost reductions in order to align our costs with lower expected sales volumes and prices. We began shifting much of our substrate manufacturing to China and reducing capacity in our Fremont, California facility. Gross margin at the opto-electronics division increased to negative 37.0% of revenue for 2001 compared to negative 51.6% for 2000. The increase was primarily due to increased unit sales of blue HBLEED products.

Selling, general and administrative expenses. Selling, general and administrative expenses increased \$3.5 million, or 19.1%, to \$21.5 million in 2001 compared to \$18.0 million in 2000. As a percentage of total revenue, selling, general and administrative expenses were 18.0% in 2001 compared to 14.8% in 2000. The increase was due to the addition of personnel and facilities in anticipation of increased revenues after the expansion of orders experienced in 2000. Due to the decline in substrate revenue in the second half of 2001, we initiated cost reductions in this area.

Research and development expenses. Research and development expenses decreased \$565,000, or 6.4%, to \$8.2 million in 2001 compared to \$8.8 million in 2000. As a percentage of total revenue, research and development expenses were 6.9% in 2001 compared to 7.2% in 2000.

Interest expense. Interest expense decreased \$1.5 million, or 42.5%, to \$2.1 million in 2001 compared to \$3.6 million in 2000. The decrease was primarily due to the repayment of outstanding short-term debt with equity financing proceeds in September 2000.

Other income and expense. Other expense was \$13.4 million in 2001 compared to income of \$28.4 million in 2000. The balance in 2001 includes the realization of a net \$15.6 million non-cash loss from the write-down to market value of our investment in Finisar Corporation common stock in accordance with SFAS 115. The balance in 2000 includes the realization of a \$27.3 million non-cash gain on Demeter Technology warrants that were exchanged for Finisar Corporation common stock as a result of Finisar Corporation's acquisition of Demeter Technology in 2000.

Provision for income taxes. Our effective tax rate decreased to 36.0% in 2001 compared to 38.0% in 2000. The decrease was primarily the result of shifting certain substrate manufacturing operations to China.

Liquidity and Capital Resources

We consider cash and cash equivalents, short-term investments and long-term investments as liquid and available for use. Short and long-term investments are comprised of government bonds and high-grade commercial debt instruments. Also included in short-term investments is our common stock investment in Finisar Corporation.

Cash and cash equivalents, short-term investments and long-term investments, excluding \$1.1 million and \$11.7 million for our investment in Finisar common stock at December 31, 2002 and 2001 respectively, decreased \$33.5 million to \$24.5 million at December 31, 2002 compared to \$58.1 million at December 31,

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2001. The decrease in available cash included restricting \$10.2 million as additional collateral with our bank as a result of a modification to our credit facility, restricting \$1.0 million as collateral for a \$1 million letter of credit supporting our workers' compensation insurance policy, purchases of capital equipment of \$14.2 million and debt repayments of \$12.9 million offset by borrowings of \$3.9 million.

Cash and cash equivalents decreased \$23.7 million to \$13.8 million at December 31, 2002 compared to \$37.5 million at December 31, 2001.

Net cash provided by operating activities of \$725,000 for the year ended December 31, 2002 was comprised primarily of our net loss adjusted for non-cash items of \$65.5 million, consisting primarily of the equipment and goodwill impairment charges of \$39.1 million, the write-down to market value of our investment in Finisar Corporation common stock of \$10.6 million, and depreciation of \$9.5 million and by a \$16.4 million net change in assets and liabilities. The net change in assets and liabilities resulted primarily from a decrease in inventory and accounts receivable, an increase in accounts payable, offset by increases in income tax receivables and a decrease in accrued liabilities.

Accounts receivable decreased \$8.5 million, or 54.1%, to \$7.2 million at December 31, 2002 compared to \$15.7 million at December 31, 2001. The change reflects lower sales volume, collections of \$71.7 million and no change in our allowance for doubtful accounts of \$6.7 million. Inventories decreased \$18.0 million, or 32.4% to \$37.6 million at December 31, 2002 compared to \$55.6 million at December 31, 2001. The decrease in inventory included an increase in the valuation reserve of \$11.8 million and a real decrease in on-hand components of \$6.2 million. As a result of the continued decline in unit sales during 2002 and uncertainty regarding the future, we have initiated plans to aggressively reduce inventory levels during 2003.

Net cash used in investing activities of \$16.0 million for the year ended December 31, 2002 includes purchases of property and equipment of \$14.2 million primarily used to transfer production capacity to China for the substrate division and to increase HBLED epitaxy growth and wafer processing capacity at the opto-electronics division. It also includes \$799,000 in purchases of high grade investment securities with maturities of less than two years and a transfer of \$1.0 million to restricted deposits to collateralize a letter of credit with a bank that supports our workers' compensation insurance policy.

We do not have any plans to initiate any major new capital spending projects through 2003. We are currently completing certain projects at our China facilities and are continuously constructing minor improvements to our existing production facilities in China and California. We expect to invest approximately \$6.0 million in capital projects in 2003. We believe that our existing and planned facilities and equipment are sufficient to fulfill current and expected future orders.

Net cash used in financing activities of \$8.1 million consisted of proceeds of \$850,000 from the exercise of options by our employees, additional long-term borrowings of \$3.9 million, offset by payments of \$6.9 million to reduce long-term borrowings and \$6.0 million for capital lease payments.

We generally finance equipment purchases through secured equipment loans and capital leases over four or five-year terms at interest rates ranging from 3.6% to 8.8% per annum. Our main Fremont, California manufacturing facility is financed by long-term borrowings, which were refinanced by taxable variable rate revenue bonds in 1998. These bonds mature in 2023 and bear interest at a variable rate that was 1.6% at December 31, 2002. The bonds are traded in the public market. Repayment of principal and interest under the bonds is supported by a letter of credit from our bank and is paid on a quarterly basis. We have the option to redeem the bonds in whole or in part during their term. At December 31, 2002, \$9.1 million was outstanding under these bonds.

At June 30, 2002, the credit facility maintained by the Company with a bank included a \$5 million line of credit with no balance outstanding, term loans in the amount of \$4.8 million and a letter of credit supporting repayment of the Company's industrial revenue bonds with an outstanding amount of \$9.4 million. The credit facility is collateralized by all corporate personal and real property owned by the Company. As of June 30, 2002, the Company was in default of the credit facility by failure to maintain certain financial covenants required under the terms of the facility. As a result, on September 30, 2002 we modified the credit agreement with our bank, which waived the covenant default, terminated the credit line, amended the financial covenants

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and added additional collateral to secure repayment of the bonds. At December 31, 2002 the credit facility included a letter of credit supporting our bonds with an outstanding amount of \$9.1 million and foreign exchange and overdraft obligations in the amount of \$1.1 million. The Company has pledged and placed certain investment securities with the trust department of the bank as additional collateral for this facility. As a result, \$10.2 million of our long-term investments are restricted. As of December 31, 2002, we are out of compliance with our tangible net worth covenant as amended on September 30, 2002. We have obtained a waiver from our bank for this covenant default through April 30, 2003. Effective April 7, 2003, our bonds will be supported by a new letter of credit supported by another bank.

As a result of the significant revenue declines that we have experienced over the past six quarters, we have taken cost reduction measures and continue to pursue additional measures to reduce our costs and increase our cash flows. At December 31, 2002, we had available cash and cash equivalents of \$13.8 million. We believe that our existing cash and cash equivalents, and cash generated from operations, coupled with additional efforts to reduce our expenditures in support of our substrate and opto-electronic businesses, will be sufficient to meet our working capital expenditure requirements for the next 12 months. However, our existing cash and cash equivalents could continue to decline during 2003 due to a continued or further weakening of the economy or changes in our planned cash outlay.

If our sales continue to decrease, our ability to generate cash from operations will be adversely affected which could adversely affect our future liquidity, require us to use more cash at a more rapid rate than expected, and require us to seek additional capital. There can be no assurance that such additional capital will be available or, if available it will be at terms acceptable to the Company. Cash from operations could be affected by various risks and uncertainties, including, but not limited to those set forth below under "Risks Related to Our Business."

Outstanding contractual obligations as of December 31, 2002 are summarized below (in thousands):

	Capital Leases	Debt	Operating Leases	Total
2003	\$ 4,090	\$ 965	\$ 1,200	\$ 6,255
2004	2,757	5,047	1,231	9,035
2005	1,908	965	1,115	3,988
2006	549	905	836	2,290
2007	—	722	771	1,493
Thereafter	—	5,650	—	5,650
	<u>\$ 9,304</u>	<u>\$14,254</u>	<u>\$5,153</u>	<u>\$28,711</u>
Less amounts representing interest at 3.6% to 8.8%	(895)			
	<u>8,409</u>			
Less short-term portion	(3,562)			
Long-term portion	<u>\$ 4,847</u>			

Recent Accounting Pronouncements

In June 2002, the Financial Accounting Standards Board (FASB) issued Statement of Accounting Standards No. 146, "Accounting for Costs Associated with Exit or Disposal Activities." SFAS No. 146 addresses the timing and amount of costs recognized as a result of restructuring and similar activities. The company will apply SFAS No. 146 to activities initiated after December 31, 2002. The adoption of SFAS No. 146 is not expected to have a material impact on the Company's consolidated statements of income or financial position.

In December 2002, the FASB issued Statement of Financial Accounting Standards No. 148 ("SFAS No. 148"), "Accounting for Stock-Based Compensation — Transition and Disclosure — an amendment to FASB Statement No. 123, Accounting for Stock-Based Compensation." SFAS No. 148 provides alternative

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methods of transition for a voluntary change to the fair value based method of accounting for stock-based employee compensation. In addition, SFAS No. 148 amends the disclosure requirements of Statement 123 to require more prominent and more frequent disclosures in financial statements about the effects of stock-based compensation. The transition guidance and annual disclosure provisions of SFAS No. 148 are effective for fiscal years ending after December 15, 2002. The interim disclosure provisions are effective for financial reports containing financial statements for interim periods beginning after December 15, 2002.

In November 2002, the FASB issued FASB Interpretation No. 45 (FIN 45), "*Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others.*" FIN No. 45 requires that a liability be recorded in the guarantor's balance sheet upon issuance of a guarantee. In addition, FIN No. 45 requires disclosures about the guarantees that an entity has issued, including a reconciliation of changes in the entity's product warranty liabilities. The initial recognition and initial measurement provisions of FIN No. 45 are applicable on a prospective basis to guarantees issued or modified after December 31, 2002, irrespective of the guarantor's fiscal year-end. The disclosure requirements of FIN No. 45 are effective for financial statements of interim or annual periods ending after December 15, 2002. Our adoption of FIN No. 45 did not have a material effect on our consolidated financial statements.

In January 2003, the FASB issued FASB Interpretation No. 46 (FIN 46), "*Consolidation of Variable Interest Entities, an Interpretation of ARB No. 51.*" FIN 46 requires certain variable interest entities to be consolidated by the primary beneficiary of the entity if the equity investors in the entity do not have the characteristics of a controlling financial interest or do not have sufficient equity at risk for the entity to finance its activities without additional subordinated financial support from other parties. FIN 46 is effective immediately for all new variable interest entities created or acquired after January 31, 2003. For variable interest entities created or acquired prior to February 1, 2003, the provisions of FIN 46 must be applied for the first interim or annual period beginning after June 15, 2003. We are currently evaluating the impact that the adoption of this standard will have on our financial statements.

Risks Related to Our Business

The semiconductor industry is cyclical and is currently experiencing a severe and prolonged downturn which has adversely impacted our operating results.

Our business depends in significant part upon manufacturers of electronic and opto-electronic semiconductor devices, as well as the current and anticipated market demand for such devices and products using such devices. The semiconductor industry is highly cyclical. The industry has in the past, and will likely in the future, experience periods of oversupply that result in significantly reduced demand for semiconductor devices and components, including our products, both as a result of general economic changes and overcapacity. When these periods occur, our operating results and financial condition are adversely affected, and create pressure on our revenue, gross margins and net income. Inventory buildups in telecommunications products and slower than expected sales of computer equipment resulted in overcapacity and led to reduced sales by our customers, and therefore reduced purchases of our products. During periods of declining demand such as those experienced over the past year, customers typically reduce purchases, delay delivery of products and/or cancel orders of component parts such as our products. Increased price competition may result, causing pressure on our net sales, gross margin and net income. We have over the past year experienced cancellations, delays and push outs of orders, which have resulted in reduced revenues. If the economic downturn continues, further order cancellations, reductions in order size or delays in orders will materially adversely affect our business and results of operations. Although we have taken actions to reduce our costs, if our actions are insufficient to align our structure with prevailing business conditions, we may be required to undertake additional cost-cutting measures, and may be unable to invest in marketing, research and development and engineering at the levels we believe are necessary to maintain our competitive position. Our failure to make these investments could seriously harm our business. In addition, we may continue to experience a decline in our cash and cash equivalents and therefore we may be required to seek additional sources of cash, which may not be available on acceptable terms or at all.

The impact of changes in global economic conditions on our customers may cause us to fail to meet expectations, which would negatively impact the price of our stock.

Our operating results can vary significantly based upon the impact of changes in global economic conditions on our customers. More specifically, the macro-economic environment that we faced in the second half of 2001 and continued to face in 2002 is more uncertain than in prior periods, has lasted longer than expected and has materially and adversely affected us and our operating results and may continue to do so. The revenue growth and profitability of our business depends on the overall demand for our substrates, LED's and laser diodes, and we are particularly dependant on the market conditions for the wireless, fiber optics and telecommunications industries. Because our sales are primarily to major corporate customers whose businesses fluctuate with general economic and business conditions, a softening of demand for products that use our substrates, LEDs and laser diodes caused by a weakening economy may result in further or prolonged decreased revenues. Customers may find themselves facing excess inventory from earlier purchases, and may defer or reconsider purchasing products due to the downturn in their business and in the general economy.

Unpredictable fluctuations in our operating results could disappoint analysts or our investors, which could cause our stock price to decline.

We have not over the past year been able to sustain growth, and may not be able to return to historic growth levels in the current economic environment. Our net loss in 2002 is the largest in our history. We have and may continue to experience significant fluctuations in our revenue and earnings. Our quarterly and annual revenue and operating results have varied significantly in the past and may vary significantly in the future due to a number of factors, including:

- decline in general economic conditions or downturns in the industry in which we compete;
- fluctuations in demand for our products;
- expansion of our manufacturing capacity;
- expansion of our operations in China; limited availability and increased cost of raw materials;
- the volume and timing of orders from our customers, and cancellations, push outs and delays of customer orders;
- fluctuation of our manufacturing yields;
- decreases in the prices of our competitors' products;
- costs incurred in connection with any future acquisitions of businesses or technologies;
- increases in our expenses, including expenses for research and development; and
- our ability to develop, manufacture and deliver high quality products in a timely and cost-effective manner.

Due to these factors, we believe that period-to-period comparisons of our operating results may not be a meaningful indicator of our future performance. Our operating results have over the past year at times been below the expectations of securities analysts or investors. If this occurs again in future periods, the price of our common stock would likely decline or fluctuate.

A substantial percentage of our operating expenses are fixed in the short term and we may be unable to adjust spending to compensate for an unexpected shortfall in revenues. As a result, any delay in generating revenue could cause our operating results to be below the expectations of market analysts or investors, which could also cause our stock price to fall.

The lead-time for customer orders is generally shorter than it was eighteen year ago. As a result, our visibility regarding future financial performance is uncertain and we have and may continue to provide investors with financial guidance that we cannot meet. As a result, our operating results could be below the expectations of market analysts or investors, which could also cause our stock price to fall.

If the economy recovers and we are again in a period of high demand for our products, we may be unable to expand our manufacturing capacity quickly enough to meet increased demand, and we may be unable to lower our costs or increase revenue.

Although we are currently in a period of overcapacity, reduced sales, and decreased margins, if the economy recovers, demand may increase rapidly as it has in prior years after other cyclical downturns in the economy and the industries in which we operate. If this happens, in order to meet increased demand and maintain our market share, we may need to increase production, which could require us to build new facilities, expand and modify our existing facilities, purchase additional manufacturing equipment, and add qualified staff. If we are not at that time able to expand our manufacturing capacity, we will be unable to increase production, which may adversely impact our ability to meet increased production demand while reducing unit costs, margins and improving our operating results.

We are currently constructing and modifying facilities in California and China. Our construction activities subject us to a number of risks, including:

- unforeseen environmental or engineering problems;
- unavailability or late delivery of production equipment;
- delays in completing new facilities;
- delays in bringing production equipment on-line;
- work stoppages or delays; inability to recruit and train qualified staff;
- unanticipated cost increases and restrictions imposed by requirements of local, state or federal regulatory agencies in the United States and China.

If any of these risks occurs, construction may be costlier than anticipated and completion could be delayed, which could hurt our ability to expand capacity and increase our sales. In addition, if we experience delays in expanding our manufacturing capacity, we might not be able to timely meet customer requirements, and we could lose future sales. We are also completing selective investments in equipment and facilities as part of our previously planned capacity expansion. To offset the additional fixed operating expenses, we must increase our revenue by increasing production and improving yields. If demand for our products does not grow or if our yields do not improve as anticipated, we may be unable to offset these costs against increased revenue, which would adversely impact our operating results.

Our results of operations may suffer if we do not effectively manage our inventory.

We must manage our inventory of component parts and finished goods effectively to meet changing customer requirements, while keeping inventory costs down and improving gross margins. Some of our products and supplies have in the past and may in the future become obsolete while in inventory due to changing customer specifications, or become excess inventory due to decreased demand for our products and an inability to sell the inventory within a foreseeable period. Furthermore, if current costs of production increase or sales prices drop below the standard prices at which we value inventory, we may need to take a charge for a reduction in inventory values. We have in the past had to take inventory valuation and impairment charges. If we are not successfully able to manage our inventory, we may need to write off unsaleable, obsolete or excess inventory, which could adversely affect our results of operations.

We may need additional capital to fund our future operations, expansion of capacity, or changes in manufacturing processes, which may not be available.

We may need additional capital to fund expansion of our manufacturing and production capacity and our future operations or acquisitions. If we raise additional capital through the sale of equity or debt securities, the issuance of such securities could result in dilution to existing stockholders. These securities could have rights, preferences and privileges that are senior to those of holders of our common stock. For example, in December 1998 we issued debt securities for the purchase and improvement of our facilities in Fremont, California.

If we require additional capital in the future, it might not be available on acceptable terms, or at all. If we are unable to obtain additional capital when needed, we may be required to reduce the scope of our product line, the planned expansion of our manufacturing capacity or of our product development and marketing efforts, which could adversely affect our business and operating results.

Our HBLED and VCSEL products are in their early stages, and we may not be able to achieve anticipated sales of these products.

We have experienced declining revenue for both our HBLED and laser diode products as a result of a loss of revenue from our leading LED customer and a decline in the market for our laser diode products, as well as due to quality control problems experienced on these products. We may be unable to successfully market and increase sales of these products. To market and increase sales of our HBLED and VCSEL products, we will have to continue to develop additional distribution channels and achieve certain product and reliability specifications. We may be unable to obtain significant increases in revenue and may seek potential investors for our opto-electronics business. We must also continue our research and development efforts to apply our proprietary VGF technique to new substrate products and successfully introduce and market new opto-electronic semiconductor devices, including enhancements to our HBLED and VCSEL products.

If we do not successfully develop new products to respond to rapidly changing customer requirements, our ability to generate sales and obtain new customers may suffer.

Our success depends on our ability to offer new products that incorporate leading technology and respond to technological advances. In addition, our new products must meet customer needs and compete effectively on quality, price and performance. The life cycles of our products are difficult to predict because the markets for our products are characterized by rapid technological change, changing customer needs and evolving industry standards. If our competitors introduce products employing new technologies, our existing products could become obsolete and unmarketable. If we fail to offer new products, we may not generate sufficient revenue to offset our development costs and other expenses or meet our customers' requirements. Other companies, including IBM and Motorola, are actively developing substrate materials that could be used to manufacture devices that could provide the same high-performance, low-power capabilities as GaAs-based devices at competitive prices. In addition, some of our competitors have developed VGF technology similar to ours. If these substrate materials or VGF derived products are successfully developed and semiconductor device manufacturers adopt them, demand for our GaAs substrates could decline and our revenue could suffer. Similarly, other companies, including Kopin, are developing alternative production technologies for HBLEDs. If they are successful, demand for our HBLEDs could drop and our revenue could decline.

The development of new products can be a highly complex process, and we may experience delays in developing and introducing new products. Any significant delays could cause us to fail to timely introduce and gain market acceptance of new products. Further, the costs involved in researching, developing and engineering new products could be greater than anticipated.

Our operating results depend in large part on further customer acceptance of our existing substrate products and on our ability to develop new products based on our core VGF technology.

Some of our competitors have developed a crystal growth technique similar to our VGF technology. As a result, some customers are now allocating their requirements for VGF grown substrates across more competitors and we believe that we may have lost revenue and market share as a result of these customer decisions, which we may be unable to recover. If we are unable to retain our market share, our revenue and performance will decline.

To shift more of our substrate manufacturing operations to China successfully, we will need our customers to qualify products manufactured in China. If we are unable to achieve qualifications for these products, our China facility will be underutilized, our investments in China will not be recouped and we will be unable to lower our costs by moving to China. We may lose sales of our products to competitors who are not

manufacturing in China, or whose operations in China have already been qualified by customers. All of these events could reduce our revenue but increase our cost structure.

Intense competition in the markets for our products could prevent us from increasing revenue and sustaining profitability.

The markets for our products are intensely competitive. We face competition for our substrate products from other manufacturers of substrates, such as Freiberger, Hitachi Cable, Japan Energy and Sumitomo Electric and from semiconductor device manufacturers that produce substrates for their own use, and from companies, such as IBM and Motorola, that are actively developing alternative materials to GaAs and some semiconductor devices are being marketed using these materials. We believe that at least two of our competitors are shipping GaAs substrates manufactured using a technique similar to our VGF technique. Other competitors may develop and begin using similar technology. If we are unable to compete effectively, our revenue may not increase and we may be unable to be profitable. We face many competitors that have a number of significant advantages over us, particularly in our compound semiconductor device products, including:

- greater experience in the business;
- more manufacturing experience;
- extensive intellectual property;
- broader name recognition; and
- significantly greater financial, technical and marketing resources.

Our competitors could develop new or enhanced products that are more effective than the products that we have developed or may develop. For example, some competitors in the HBLEd market offer devices that are brighter than our HBLEds and have other desirable features. Some of our competitors may also develop technologies that enable the production of commercial products with characteristics similar to or better than ours, but at a lower cost.

The level and intensity of competition has increased over the past year and we expect competition to continue to increase in the future. Competitive pressures caused by the current economic conditions have resulted in reductions in the prices of some of our products, and continued or increased competition could reduce our market share, require us to further reduce the prices of our products, affect our ability to recover costs or result in reduced gross margins.

If we have low product yields, the shipment of our products may be delayed and our operating results may be adversely impacted.

Our products are manufactured using complex technologies, and the number of usable substrates and devices we can produce can fluctuate as a result of many factors, including:

- impurities in the materials used;
- contamination of the manufacturing environment;
- substrate breakage;
- equipment failure, power outages or variations in the manufacturing process; and
- performance of personnel involved in the manufacturing process.

Because many of our manufacturing costs are fixed, our revenue could decline if our yields decrease but our costs would change little, if at all. We have experienced product shipment delays and difficulties in achieving acceptable yields on both new and older products, and delays and poor yields have adversely affected our operating results, as have quality control problems experienced on both our substrate and LED products. We may experience similar problems in the future and we cannot predict when they may occur or their

severity. In addition, many of our manufacturing processes are new and are still being refined, which can result in lower yields, particularly as we focus on producing higher diameter substrates and new opto-electronic semiconductor devices. For example, we recently made substantial investments in equipment and facilities to manufacture blue, green and cyan HBLEDS and VCSELS. If we are unable to produce adequate quantities of our high-brightness LEDs and VCSELS, we may not be able to meet customer demand and our revenue may decrease while our costs remain largely unchanged.

Demand for our products may decrease if our customers experience difficulty manufacturing, marketing or selling their products.

Our products are used as components in our customers' products. Accordingly, demand for our products is subject to factors affecting the ability of our customers to successfully introduce and market their products, including:

- the competition our customers face in their particular industries;
- the technical, manufacturing, sales and marketing and management capabilities of our customers;
- the financial and other resources of our customers; and
- the inability of our customers to sell their products if they infringe third party intellectual property rights.

If demand for the products offered by our customers decreases, our customers may reduce purchases of our products.

As inventory of telecommunication products and computer equipment remained high during the past year, resulting in overcapacity in the market, our customers have reduced sales of their products, causing them to reduce purchases of our products for both production and research and development purposes. As a result, our revenues have declined and may fail to recover until the overcapacity has been depleted and demand for our customers' products once again increases and their expenditures for research and development increase.

We purchase critical raw materials and parts for our equipment from single or limited sources, and could lose sales if these sources fail to fill our needs.

We depend on a limited number of suppliers for certain raw materials, components and equipment used in manufacturing our products, including key materials such as gallium, arsenic, quartz, and parts for our MOCVD reactors. We generally purchase these materials through standard purchase orders and not pursuant to long-term supply contracts and none of our suppliers guarantees supply of raw materials or equipment to us. If we lose any of our key suppliers, our manufacturing efforts could be significantly hampered and we could be prevented from timely producing and delivering products to our customers. We have experienced delays obtaining critical raw materials and spare parts, including gallium, due to shortages of these materials. We may experience delays due to shortages of materials and may be unable to obtain an adequate supply of materials. These shortages and delays could result in higher materials costs and cause us to delay or reduce production of our products. If we have to delay or reduce production, we could fail to meet customer delivery schedules, and our revenue and operating results could suffer.

We have periodically encountered a decline in quality of parts that are critical to the performance of our MOCVD reactors, which has led to lower yields of our HBLEDS products. If these quality problems continue, our ability to manufacture our HBLEDS products would be reduced, we could fail to meet customer delivery schedules, and our revenue and operating results could suffer.

If we fail to comply with environmental and safety regulations, we may be subject to significant fines or cessation of our operations.

We are subject to federal, state and local environmental and safety laws and regulations in all of our operating locations. These laws, rules and regulations govern the use, storage, discharge and disposal of

hazardous chemicals during manufacturing, research and development and sales demonstrations. If we fail to comply with applicable regulations, we could be subject to substantial liability for clean-up efforts, personal injury and fines or suspension or cessation of our operations. In March 2001, we settled a claim made by the California Occupational Safety and Health Administration, or Cal-OSHA, in an investigation primarily regarding impermissible levels of potentially hazardous materials in certain areas of our manufacturing facility in Fremont, California for \$204,415. Although we have put in place engineering, administrative and personnel protective equipment programs to address these issues, our ability to expand or continue to operate our present locations could be restricted or we could be required to acquire costly remediation equipment or incur other significant expenses. In addition, existing or future changes in laws or regulations may require us to incur significant expenditures or liabilities, or may restrict our operations.

The loss of one or more of our key substrate customers would significantly hurt our operating results.

A small number of substrate and HBLED customers have historically accounted for a substantial portion of our total revenue. Five customers accounted for 35.6% of our total revenue for the year ended December 31, 2002 and 28.3% for the year ended December 31, 2001. One customer accounted for 10.7% of our revenue for the year ended December 31, 2002. Our substrate revenue accounted for 71% of our total revenue for the year ended December 31, 2002 and 91% for the year ended December 31, 2001. We expect that a significant portion of our future revenue will continue to be derived from a limited number of substrate and HBLED customers. Our customers are not obligated to purchase a specified quantity of our products or to provide us with binding forecasts of product purchases. In addition, our customers may reduce, delay or cancel orders at any time without any significant penalty, and during the past year, we have experienced slower bookings, significant push outs and cancellation of orders. In addition, due to the difficult economic environment, several of our previously large customers have stopped operations entirely. If we lose a major customer or if a customer cancels, reduces or delays orders, our revenue would decline. In addition, customers that have accounted for significant revenue in the past may not continue to generate revenue for us in any future period. Any delay in scheduled shipments of our products could cause net sales to fall below our expectations and the expectations of market analysts or investors, causing our stock price to decline.

Defects in our products could diminish demand for our products.

Our products are complex and may contain defects. In the past we have experienced quality control problems with some of our products, which caused customers to return products to us or reduce orders for our products, such as our recent reduction in orders for our LED products by Agilent, and certain quality control problems experience in our substrate products. If we continue to experience quality control problems, or experience these problems in new products, customers may cancel or reduce orders or purchase products from our competitors. Defects in our products could cause us to incur higher manufacturing costs and suffer product returns and additional service expenses, all of which could adversely impact our operating results.

We are also developing new products and product enhancements, including substrates and compound semiconductor device products. If our new products contain defects when released, our customers may be dissatisfied and we may suffer negative publicity or customer claims against us, lose sales or experience delays in market acceptance of our new products.

Our substrate and opto-electronic semiconductor device products have a long qualification cycle that makes it difficult to plan our expenses and forecast our results.

Customers typically place orders with us for our substrate and opto-electronic semiconductor device products three months to a year or more after our initial contact with them. The sale of our products may be subject to delays due to our customers' lengthy internal budgeting, approval and evaluation processes. During this time, we may incur substantial expenses and expend sales, marketing and management efforts while the customers evaluate our products. These expenditures may not result in sales of our products. If we do not achieve anticipated sales in a period as expected, we may experience an unplanned shortfall in our revenue. As a result, we may not be able to cover expenses, causing our operating results to vary. In addition, if a customer decides not to incorporate our products into its initial design, we may not have another opportunity to sell

products to this customer for many months or even years. In this difficult economic climate, the average sales cycle for our products has lengthened even further and is expected to continue to make it difficult to accurately forecast our future sales. We anticipate that sales of any future substrate and opto-electronic semiconductor device products under development will also have lengthy sales cycles and will, therefore, be subject to risks substantially similar to those inherent in the lengthy sales cycle of our current substrate and opto-electronic semiconductor device products.

As our business matures, we may need to upgrade our systems.

In the past, periods of rapid growth and expansion has strained our management and other resources. The expansion of our manufacturing capacity and the shift of manufacturing operations to China has placed and continues to place a significant strain on our operations and management resources, and we are in the process of upgrading our inventory control systems and may implement additional systems relating to consolidation of our financial results. If we fail to manage these changes effectively, our operations may be disrupted. In addition, the Sarbanes-Oxley Act requires us to improve the quality of our systems and procedures.

To manage our business effectively, we may need to implement additional and improved management information systems, further develop our operating, administrative, financial and accounting systems and controls, add experienced senior level managers, and maintain close coordination among our executive, engineering, accounting, marketing, sales and operations organizations.

If necessary, we will spend substantial sums to support our future growth and shift to China and to comply with the reporting and attestation requirements of the Sarbanes-Oxley Act. We may incur additional unexpected costs. Our systems, procedures or controls may not be adequate to support our operations, and we may be unable to expand quickly enough to exploit potential market opportunities.

If we fail to manage periodic contractions, we may utilize our cash balances and our existing cash and cash equivalent balances could decline.

We have experienced a period of rapid contraction in our business that caused us to reduce our costs in order to conserve our cash resources. However, in the three months ended September 30, 2002, we utilized \$5.0 million in our operating activities and for the year ended December 31, 2002, our cash and cash equivalent balances, exclusive of restricted cash, declined by \$33.5 million to \$24.5 million.

If we fail to manage our contractions successfully we may continue to draw down our cash reserves, which would adversely affect our operating results and financial condition, reduce our value and may impinge our ability to raise debt and equity funding in the future, at a time when we may be required to raise additional cash. As part of our effort to reduce costs, we may lose key staff, production resources, and technology that we will need to grow when end markets recover. These events could reduce our ability to grow profitably as markets recover.

As a result of the difficult economic conditions, we have implemented restructuring and workforce reductions, which may adversely affect the morale and performance of our personnel and our ability to hire new personnel.

In connection with our efforts to streamline operations, reduce costs and bring staffing and structure in line with current demand for our products, we implemented a corporate restructuring beginning in 2001 and reduced our workforce, shifted production activities to China and reduced capital expenditures. Our restructuring may yield unanticipated consequences, such as attrition beyond our planned reduction in workforce and loss of employee morale and decreased performance. In addition, the recent trading levels of our stock have decreased the value of our stock options granted to employees under our stock option plan. As a result of these factors, our remaining personnel may seek employment with larger, more established companies or companies that they perceive as having less volatile stock prices. Continuity of personnel can be very important factors in the sales and production of our products and completion of our research and development efforts.

Any future acquisitions may disrupt our business, dilute stockholder value or distract management attention.

As part of our strategy, we may consider acquisitions of, or significant investments in, businesses that offer products, services and technologies complementary to ours, such as our acquisition of Lyte Optronics in May 1999. Acquisitions entail numerous risks, including:

- we may have difficulty assimilating the operations, products and personnel of the acquired businesses;
- our ongoing business may be disrupted;
- we may incur unanticipated costs;
- our management may be unable to manage the financial and strategic position of acquired or developed products, services and technologies;
- we may be unable to maintain uniform standards, controls and procedures and policies; and
- our relationships with employees and customers may be impaired as a result of any integration.

For example, we incurred substantial costs in connection with our acquisition of Lyte Optronics, including the assumption of approximately \$10.0 million of debt, much of which has been repaid or renegotiated, resulting in a decline of cash available. We have also incurred consistent operating losses for the business since the acquisition.

To the extent that we issue shares of our stock or other rights to purchase stock in connection with any future acquisitions, dilution to our existing stockholders will result and our earnings per share may suffer. Any future acquisitions may not generate additional revenue or provide any benefit to our business.

If any of our facilities is damaged by actions such as fire, explosion, or natural disaster, we may not be able to manufacture our products.

The ongoing operation of our manufacturing and production facilities in California and China is critical to our ability to meet demand for our products. If we are not able to use all or a significant portion of our facilities for prolonged periods for any reason, we will not be able to manufacture products for our customers. For example, a natural disaster, fire or explosion caused by our use of combustible chemicals and high temperatures during our manufacturing processes would render some or all of our facilities inoperable for an indefinite period of time. Actions outside of our control, such as earthquakes, could also damage our facilities, rendering them inoperable. Some of our crystal growth is currently performed at our Fremont, California facilities, which are located near an active seismic fault line. If we are unable to operate our facilities and manufacture our products, we will lose customers and revenue and our business will be harmed.

If we lose key personnel or are unable to hire additional qualified personnel as necessary, we may not be able to successfully manage our business or achieve our objectives.

Our success depends upon the continued service of Morris S. Young, Ph.D., our president, chairman of the board and chief executive officer, as well as other key management and technical personnel. We do not have long-term employment contracts with, or key person life insurance on, any of our key personnel.

We believe our future success will also depend in large part upon our ability to attract and retain highly skilled managerial, engineering, sales and marketing, finance and manufacturing personnel. The competition for these employees is intense and we cannot assure you that we will be successful in attracting and retaining new personnel. The loss of the services of any of our key personnel, the inability to attract or retain qualified personnel in the future or delays in hiring required personnel, particularly engineers, could make it difficult for us to manage our business and meet key objectives, including the timely introduction of new products.

If we are unable to protect our intellectual property, we may lose valuable assets or incur costly litigation.

We rely on a combination of patents, copyrights, trademark and trade secret laws, non-disclosure agreements and other intellectual property protection methods to protect our proprietary technology. However, we believe that, due to the rapid pace of technological innovation in the markets for our products, our ability to establish and maintain a position of technology leadership also depends on the skills of our development personnel.

Despite our efforts to protect our intellectual property, a third party could develop products or processes similar to ours. Our means of protecting our proprietary rights may not be adequate and our competitors may independently develop similar technology, duplicate our products or design around our patents. We believe that at least two of our competitors have begun to ship GaAs substrates produced using a process similar to our VGF technique. Our competitors may also develop and patent improvements to the VGF, LED and VCSEL technologies upon which we rely, and thus may limit any exclusivity we enjoy by virtue of our patents or trade secrets.

It is possible that pending or future United States or foreign patent applications made by us will not be approved, that our issued patents will not protect our intellectual property, or that third parties will challenge the ownership rights or the validity of our patents. In addition, the laws of some foreign countries may not protect our proprietary rights to as great an extent as do the laws of the United States and it may be more difficult to monitor the use of our intellectual property. Our competitors may be able to legitimately ascertain non-patented proprietary technology embedded in our systems. If this occurs, we may not be able to prevent the development of technology substantially similar to ours.

We may have to resort to costly litigation to enforce our intellectual property rights, to protect our trade secrets or know-how or to determine their scope, validity or enforceability. Enforcing or defending our proprietary technology is expensive, could cause us to divert resources and may not prove successful. Our protective measures may prove inadequate to protect our proprietary rights, and if we fail to enforce or protect our rights, we could lose valuable assets.

We might face intellectual property infringement claims that may be costly to resolve and could divert management attention.

Other companies may hold or obtain patents on inventions or may otherwise claim proprietary rights to technology necessary to our business. The markets in which we compete are comprised of competitors who in some cases hold substantial patent portfolios covering aspects of products that could be similar to ours. We could become subject to claims that we are infringing patent, trademark, copyright or other proprietary rights of others, and are currently in discussions with one company concerning alleged patent infringement. Litigation to determine the validity of alleged claims could be time-consuming and result in significant expense to us and divert the efforts of our technical and management personnel, whether or not the litigation is ultimately determined in our favor. If a lawsuit is decided against us, we could be subject to significant liabilities, requiring us to seek costly licenses or preventing us from manufacturing and selling our products. We may not be able to obtain required licensing agreements on terms acceptable to us or at all.

We derive a significant portion of our revenue from international sales, and our ability to sustain and increase our international sales involves significant risks.

Our revenue growth depends in part on the expansion of our international sales and operations. International sales represented 58.2% of our total revenue for the year ended December 31, 2002 and 50.4% for the year ended December 31, 2001. We expect that sales to customers outside the U.S. will continue to represent a significant portion of our revenue, particularly sales to customers in Asia.

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Our dependence on international sales involves a number of risks, including:

- changes in tariffs, import or export restrictions and other trade barriers;
- unexpected changes in regulatory requirements;
- longer periods to collect accounts receivable;
- changes in export license requirements;
- political and economic instability;
- unexpected changes in diplomatic and trade relationships; and
- foreign exchange rate fluctuations.

Our sales are denominated in U.S. dollars, except for sales to our Japanese and some Taiwanese customers, which are denominated in Japanese yen. Thus, increases in the value of the U.S. dollar could increase the price of our products in non-U.S. markets and make our products more expensive than competitors' products in these markets. Also, denominating some sales in Japanese yen subjects us to fluctuations in the exchange rates between the U.S. dollar and the Japanese yen. The functional currencies of our Japanese and Chinese subsidiaries are the local currencies. We incur transaction gains or losses resulting from consolidation of expenses incurred in local currencies for these subsidiaries, as well as in translation of the assets and liabilities of these assets at each balance sheet date. If we do not effectively manage the risks associated with international sales, our revenue, cash flows and financial condition could be adversely affected.

If our expansion in China is more costly than we expect, our operating results will suffer.

As part of our planned reduction of our cost structure, we are building new facilities and expanding existing facilities in China. If we are unable to build and expand our Chinese facilities in a timely manner, we may not be able to reduce the costs of our products as planned. If our expansion in China proves more costly than we anticipate or we incur greater ongoing costs than we expect, our operating results would be adversely affected. If we do not realize expected cost savings once our expansion is complete in China, our margins may be negatively impacted and our operating results may suffer.

Changes in China's political, social and economic environment may affect our financial performance.

Our financial performance may be affected by changes in China's political, social and economic environment. The role of the Chinese central and local governments in the Chinese economy is significant. Chinese policies toward economic liberalization, and laws and policies affecting technology companies, foreign investment, currency exchange rates and other matters could change, resulting in greater restrictions on our ability to do business and operate our manufacturing facilities in China. Any imposition of surcharges or any increase in Chinese tax rates could hurt our operating results. The Chinese government could revoke, terminate or suspend our license for national security and similar reasons without compensation to us. If the government of China were to take any of these actions, we would be prevented from conducting all or part of our business. Any failure on our part to comply with governmental regulations could result in the loss of our ability to manufacture our products in China.

China has from time to time experienced instances of civil unrest and hostilities. Confrontations have occurred between the military and civilians. Events of this nature could influence the Chinese economy, result in nationalization of foreign-owned operations such as ours, and could negatively affect our ability to operate our facilities in China.

The effect of terrorist threats and actions on the general economy could decrease our revenues.

On September 11, 2001, the United States was subject to terrorist attacks at the World Trade Center buildings in New York and the Pentagon in Washington D.C., and continues to be on alert for further terrorist activity. In addition, the United States continues to consider hostile activity with Iraq. The potential near- and long-term impact of these attacks and other terrorist activities, as well as the threat of war may have in regards

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to our suppliers, customers and markets for our products and the U.S. economy, are uncertain. There may be other potential adverse effects on our operating results due to this significant event that we cannot foresee.

Our stock price has been and may continue to be volatile.

Our stock price has fluctuated significantly since we began trading on the Nasdaq National Market. For the year ended December, 2002, the high and low closing sales prices of our common stock were \$16.89 and \$0.97, respectively. A number of factors could cause the price of our common stock to continue to fluctuate substantially, including:

- actual or anticipated fluctuations in our quarterly or annual operating results;
- changes in expectations about our future financial performance or changes in financial estimates of securities analysts;
- announcements of technological innovations by us or our competitors;
- new product introduction by us or our competitors;
- large customer orders or order cancellations; and
- the operating and stock price performance of comparable companies.

In addition, the stock market in general has experienced extreme volatility that often has been unrelated to the operating performance of particular companies. These broad market and industry fluctuations may adversely affect the trading price of our common stock, regardless of our actual operating performance.

If we fail to comply with Nasdaq rules, our common stock may be delisted from the Nasdaq National Market, which could eliminate the trading market for our common stock.

If we fail to meet the criteria for continued listing on The Nasdaq National Market, our common stock may be delisted from The Nasdaq National Market. For example, the sales price of our common stock on the Nasdaq National Market dropped below \$1.00; if the price should be sustained at a level below one \$1.00 for a period of 30 days, and we are thereafter unable to sustain the sales price above \$1.00 for ten consecutive trading days in the subsequent 90 days, our stock could be delisted. If the stock is delisted, we may trade on the over-the-counter market, or even in the pink sheets, which would significantly decrease the liquidity of an investment in AXT common stock. In addition, the stock may be deemed to be penny stock. If our common stock is considered penny stock, it would be subject to rules that impose additional sales practices on broker-dealers who sell our securities. For example, broker-dealers would have to make a special suitability determination for the purchaser and have received the purchaser's written consent to the transaction prior to sale. Also, a disclosure schedule must be prepared prior to any transaction involving a penny stock and disclosure is required about sales commissions payable to both the broker-dealer and the registered representative and current quotations for the securities. Monthly statements are also required to be sent disclosing recent price information for the penny stock held in the account and information on the limited market in penny stock. Because of these additional obligations, some brokers may be unwilling to effect transactions in penny stocks. This could have an adverse effect on the liquidity of our common stock and the ability of investors to sell the common stock.

Provisions in our charter, bylaws or Delaware law may delay or prevent a change in control of our company.

Provisions in our amended and restated certificate of incorporation and bylaws may have the effect of delaying or preventing a merger, acquisition or change of control of us, or changes in our management. These provisions include:

- the division of our board of directors into three separate classes, each with three year terms;
- the right of our board to elect a director to fill a space created by a board vacancy or the expansion of the board;

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- the ability of our board to alter our bylaws;
- the ability of our board to authorize the issuance of up to 2,000,000 shares of blank check preferred stock; and
- the requirement that only our board or the holders of at least 10% of our outstanding shares may call a special meeting of our stockholders.

Furthermore, because we are incorporated in Delaware, we are subject to the provisions of Section 203 of the Delaware General Corporation Law. These provisions prohibit large stockholders, in particular those owning 15% or more of the outstanding voting stock, from consummating a merger or combination with a corporation unless:

- 66 2/3% of the shares of voting stock not owned by these large stockholders approve the merger or combination, or
- the board of directors approves the merger or combination or the transaction which resulted in the large stockholder owning 15% or more of our outstanding voting stock.

We have adopted certain anti-takeover measures that may make it more difficult for a third party to acquire us.

Our board of directors has the authority to issue up to 2,000,000 shares of preferred stock and to determine the price, rights, preferences and privileges of those shares without any further vote or action by the stockholders. The rights of the holders of common stock will be subject to, and may be adversely affected by, the rights of the holders of any preferred stock that may be issued in the future. The issuance of shares of preferred stock, while potentially providing desirable flexibility in connection with possible acquisitions and for other corporate purposes, could have the effect of making it more difficult for a third party to acquire a majority of our outstanding voting stock. We have no present intention to issue shares of preferred stock.

Further, on April 24, 2001, our board of directors adopted a preferred stock purchase rights plan intended to guard against certain takeover tactics. The adoption of this plan was not in response to any proposal to acquire us, and the board is not aware of any such effort. The existence of this plan could also have the effect of making it more difficult for a third party to acquire a majority of our outstanding voting stock. In addition, certain provisions of our certificate of incorporation may have the effect of delaying or preventing a change of control, which could adversely affect the market price of our common stock.

The financial condition of our customers may affect their ability to pay amounts owed to us.

Many of our customers are facing business downturns that have reduced their cash balances and their prospects. We frequently allow our customers to pay for products we ship to them within 30 to 90 days after delivery. Subsequent to our shipping a product some customers have been unable to make payments as due, reducing our cash balances and causing us to incur charges to allow for a possibility that some accounts might not be paid. At least two customers that owed us a significant amount have filed for bankruptcy protection and we are unlikely to receive a substantial portion or any of the amount owed to us as part of a bankruptcy settlement. Other customers may also be forced to file for bankruptcy. If our customers do not pay their accounts when due, we will be required to incur charges that would reduce our earnings.

Legislative actions, higher insurance costs and potential new accounting pronouncements are likely to cause our general and administrative expenses to increase and impact our future financial position and results of operations.

In order to comply with the newly adopted Sarbanes-Oxley Act of 2002, as well as proposed changes to listing standards by Nasdaq, and proposed accounting changes by the Securities and Exchange Commission, we may be required to increase our internal controls, hire additional personnel and additional outside legal, accounting and advisory services, all of which will cause our general and administrative costs to increase. Insurers are likely to increase premiums as a result of the high claims rates incurred over the past year, and so

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our premiums for our various insurance policies, including our directors' and officers' insurance policies, are likely to increase. Proposed changes in the accounting rules, including legislative and other proposals to account for employee stock options as a compensation expense among others, could materially increase the expense that we report under generally accepted accounting principles and adversely affect our operating results.

Liquidity

The Company incurred losses of \$81.2 million during the year ended December 31, 2002 resulting in a \$23.7 million decrease in cash. To achieve profitability, we will need to generate higher revenues while maintaining reasonable cost and expense levels.

The Company anticipates that its existing cash resources will fund any anticipated operating losses, purchases of capital equipment and provide adequate working capital for the next twelve months. The Company's liquidity is affected by many factors including, among others, the extent to which the Company pursues additional capital expenditures, the level of the Company's production efforts, and other factors related to the uncertainties of the industry and global economies. Accordingly, there can be no assurance that events in the future will not require the Company to seek additional capital sooner, or, if so required, that such capital will be available on terms acceptable to the Company if at all.

Item 7A. Qualitative and Quantitative Disclosures About Market Risk

Foreign Currency Risk

Since our Japanese and some Taiwanese invoices are denominated in Japanese yen, doing business in Japan subjects us to fluctuations in exchange rates between the U.S. dollar and the Japanese yen. We incurred a foreign transaction exchange gain of \$28,000 in 2002, a loss of \$357,000 in 2001, and a loss of \$552,000 in 2000. We purchase foreign exchange contracts to hedge against certain trade accounts receivable in Japanese yen. Under these contracts, increases or decreases in currency commitments and balance sheet positions, as translated into U.S. dollars, are primarily offset by realized gains or losses on the hedging contracts. The outstanding commitments with respect to such foreign exchange contracts had a total contract value of approximately \$2.8 million as of December 31, 2002. Many of the contracts were entered into six months prior to the due date and the dates coincide with the receivable terms on customer invoices. By matching the receivable collection date and contract due date, we attempt to economically minimize the impact of foreign exchange fluctuations.

Interest Rate Risk

Cash and cash equivalents earning interest and certain variable rate debt instruments are subject to interest rate fluctuations. The following table sets forth the probable impact of a 10% change in interest rates (in thousands):

Instrument	Balance December 31, 2002	Current Interest Rate	Current Interest Income/ (Expense)	Proforma 10% Interest Rate Decline Income/(Expense)	Proforma 10% Interest Rate Increase Income/(Expense)
Cash and cash equivalents	\$ 13,797	3.80%	\$ 524	\$ 472	\$ 577
Bonds (see Note 7)	9,050	1.60%	(145)	(130)	(159)
Capital lease	765	4.20%			
Capital lease	2,344	3.60%	(84)	(76)	(93)
			\$ 295	\$ 266	\$ 325

Equity Risk

We also maintain minority investments in private and publicly traded companies. These investments are reviewed for other than temporary declines in value on a quarterly basis. Reasons for other than temporary declines in value include whether the related company would have insufficient cash flow to operate for the next twelve months, significant changes in the operating performance and changes in market conditions. As of December 31, 2002, the minority investments we continue to hold totaled \$ 4.9 million at estimated fair value. In 2000, we recorded a \$27.3 million non-cash gain as a result of acquiring Finisar Corporation common stock in connection with Finisar Corporation's acquisition of Demeter Technologies, a company in which we held warrants to purchase preferred stock. In 2001 and 2002, we recorded a \$15.6 million and \$10.8 million non-cash loss respectively, as a result of writing down our investment in Finisar Corporation common stock to market value. These gains and losses are included in other expense.

Item 8. Consolidated Financial Statements and Supplementary Data
Selected Quarterly Results of Operations

The following table sets forth unaudited quarterly results in dollars and percentages for the eight quarters ended December 31, 2002. We believe that all necessary adjustments, consisting only of normal recurring adjustments, have been included in the amounts stated below to present fairly such quarterly information. The operating results for any quarter are not necessarily indicative of results for any subsequent period.

	Quarters Ended							
	Dec. 31, 2002	Sept. 30, 2002	June 30, 2002	Mar. 31, 2002	Dec. 31, 2001	Sept. 30, 2001	June 30, 2001	Mar. 31, 2001
Revenue	\$ 12,256	\$ 14,948	\$ 19,194	\$16,777	\$ 15,371	\$22,783	\$41,272	\$ 40,104
Cost of revenue	22,790	18,491	16,266	16,484	15,892	17,423	25,067	23,809
Gross profit (loss)	(10,534)	(3,543)	2,928	293	(521)	5,360	16,205	16,295
Operating expenses:								
Selling, general and administrative	3,795	4,993	4,658	5,202	4,382	5,826	5,412	5,867
Research and development	1,112	1,308	1,095	1,353	1,370	1,701	2,430	2,703
Restructuring costs	—	15,107	23,979	—	—	—	—	—
Total operating expenses	4,907	21,408	29,732	6,555	5,752	7,527	7,842	8,570
Income (loss) from operations	(15,441)	(24,951)	(26,804)	(6,262)	(6,273)	(2,167)	8,363	7,725
Interest expense	212	364	365	385	444	493	515	629
Other (income) and expense, net	4,517	(303)	9,208	(717)	14,915	(488)	(345)	(709)
Income (loss) before provision for income taxes	(20,170)	(25,012)	(36,377)	(5,930)	(21,632)	(2,172)	8,193	7,805
Provision (benefit) for income taxes	(2,637)	3,661	(4,959)	(2,372)	(7,788)	(782)	2,949	2,810
Net income (loss)	<u>\$(17,533)</u>	<u>\$(28,673)</u>	<u>\$ (31,418)</u>	<u>\$ (3,558)</u>	<u>\$(13,844)</u>	<u>\$ (1,390)</u>	<u>\$ 5,244</u>	<u>\$ 4,995</u>

	Quarters Ended							
	Dec. 31, 2002	Sept. 30, 2002	June 30, 2002	Mar. 31, 2002	Dec. 31, 2001	Sept. 30, 2001	June 30, 2001	Mar. 31, 2001
Revenue	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of revenue	185.9%	123.7%	84.7%	98.3%	103.4%	76.5%	60.7%	59.4%
Gross profit (loss)	(85.9)%	(23.7)%	15.3%	1.7%	(3.4)%	23.5%	39.3%	40.6%
Operating expenses:								
Selling, general and administrative	31.0%	33.4%	24.3%	31.0%	28.5%	25.6%	13.1%	14.6%
Research and development	9.1%	8.8%	5.7%	8.1%	8.9%	7.5%	5.9%	6.7%
Restructuring costs	0.0%	101.1%	124.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Total operating expenses	40.0%	143.2%	154.9%	39.1%	37.4%	33.0%	19.0%	21.4%
Income (loss) from operations	(126.0)%	(166.9)%	(139.6)%	(37.3)%	(40.8)%	(9.5)%	20.3%	19.3%
Interest expense	2.4%	2.4%	1.9%	2.3%	2.9%	2.2%	1.2%	1.6%

Other (income) and expense, net	36.9%	(2.0)%	48.0%	(4.3)%	97.0%	(2.1)%	(0.8)%	(1.8)%
Income (loss) before provision for income taxes	(164.6)%	(167.3)%	(189.5)%	(35.3)%	(140.7)%	(9.5)%	19.9%	19.5%
Provision (benefit) for income taxes	(21.5)%	24.5%	(25.8)%	(14.1)%	(50.7)%	(3.4)%	7.1%	7.0%
Net income (loss)	(143.1)%	(191.8)%	(163.7)%	(21.2)%	(90.1)%	(6.1)%	12.7%	12.5%

Other Consolidated Financial Statements and Supplementary Data required by this item are set forth at the pages indicated at Item 14(a).

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

None.

PART III

The SEC allows us to include information required in this report by referring to other documents or reports we have already or will soon be filing. This is called "Incorporation by Reference." We intend to file our definitive proxy statement pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this report, and certain information therein is incorporated in this report by reference.

Item 10. *Directors and Executive Officers of the Registrant.*

The information required by this Item is incorporated herein by reference to information set forth in our definitive proxy statement to be filed in connection with our annual meeting of stockholders to be held on June 24, 2003, under the section entitled "Proposal No. 1 — Election of Directors."

Information concerning our executive officers is incorporated herein by reference to information set forth in our definitive proxy statement to be filed in connection with our annual meeting of stockholders to be held on June 24, 2003, under the section entitled "Executive Compensation and Other Matters."

The information required by this Item with respect to compliance with Section 16(a) of the Securities Exchange Act of 1934 is incorporated herein by reference to information set forth in the definitive Proxy statement to be filed in connection with our annual meeting of stockholders to be held on June 24, 2003, under the heading "Section 16(a) Beneficial Ownership Reporting Compliance."

We have revised our Insider Trading Policy to allow our directors, officers and other employees covered under the policy to establish, under limited circumstances contemplated by Rule 10b5-1 under the Securities Exchange Act of 1934, written programs that permit automatic trading of our stock or trading of our stock by an independent person (such as an investment bank) who is not aware of material inside information at the time of the trade. On February 29, 2003 Morris S. Young, our Chief Executive Officer, activated a trading plan under Rule 10b5-1. We believe that some other of our directors or officers may establish such programs in future periods.

Item 11. *Executive Compensation.*

The information required by this Item is incorporated herein by reference to information set forth in our definitive Proxy statement to be filed in connection with our annual meeting of stockholders to be held on June 24, 2003, under the section entitled "Executive Compensation and Other Matters."

Item 12. *Security Ownership of Certain Beneficial Owners and Management, and Equity Compensation Plan Information.*

The information required by this Item is incorporated herein by reference to information set forth in our definitive Proxy statement to be filed in connection with our annual meeting of stockholders to be held on June 24, 2003, under the section entitled "Security Ownership of Certain Beneficial Owners and Management" and "Equity Compensation Plan Information."

Item 13. *Certain Relationships and Related Transactions*

Since January 2002, there has not been, nor is there currently proposed, any transaction or series of similar transactions to which we were or are to be a party in which the amount involved exceeds \$60,000, and in which any director, executive officer or holder of more than 5% of any class of our voting securities or members of that person's immediate family had or will have a direct or indirect material interest other than the transactions described below.

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We have entered into an operating lease for warehouse space in Fremont, California with 4160 Business Center, LLC, a real estate holding company, in which Davis Zhang, the president of our substrate division, is the sole shareholder. Lease payments to 4160 Business Center, LLC were approximately \$484,000 for the year ended December 31, 2002.

Item 14. Controls and Procedures

(a) 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 such term is defined under Rule 13a-14(c) promulgated under the Securities Exchange Act of 1934, as amended, within the 90 day period prior to the filing date of this report. Based on this evaluation, our chief executive officer and chief financial officer concluded that our disclosure controls and procedures were effective as of that date.

(b) There have been no significant changes (including corrective actions with regard to significant deficiencies or material weaknesses) in our internal controls or in other factors that could significantly affect these controls subsequent to the date of the evaluation referenced in paragraph (a) above.

PART IV

Item 15. Exhibits, Financial Statement Schedules, and Reports on Form 8-K

(a) The following documents are filed as part of this report:

(1) *Financial Statements:*

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Accountants	42
Consolidated Balance Sheets	43
Consolidated Statements of Income	44
Consolidated Statements of Stockholders' Equity	45
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(2) *Financial Statement Schedules*

All schedules have been omitted because the required information is not present or not present in amounts sufficient to require submission of the schedules or because the information required is included in the Consolidated Financial Statements or Notes thereto.

(3) *Exhibits*

See Index to Exhibits on page 69-70 hereof. The exhibits listed in the accompanying Index to Exhibits are filed as part of, or incorporated by reference into, this report on Form 10K.

(b) Reports on Form 8-K

None

REPORT OF INDEPENDENT ACCOUNTANTS

To the Board of Directors and Stockholders of AXT, Inc.

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of income, of stockholders' equity and of cash flows present fairly, in all material respects, the financial position of AXT, Inc. and its subsidiaries at December 31, 2002 and 2001, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2002 in conformity with accounting principles generally accepted in the United States of America. 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 of these statements in accordance with auditing standards generally accepted in the United States of America, which require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

/s/ PRICEWATERHOUSECOOPERS LLP

San Jose, California

February 7, 2003, except for notes 7, 19 and 21, as to which the date is March 18, 2003

AXT, INC.
CONSOLIDATED BALANCE SHEETS

	December 31,	
	2002	2001
	(In thousands, except per share data)	
ASSETS		
Current assets		
Cash and cash equivalents	\$ 13,797	\$ 37,538
Short-term investments	8,205	25,673
Accounts receivable, net	7,195	15,684
Inventories	37,598	55,587
Prepaid expenses and other current assets	4,002	3,577
Income tax receivable	8,783	—
Assets held for sale	5,957	—
Deferred income taxes	—	10,557
	_____	_____
Total current assets	85,537	148,616
Property, plant and equipment	39,982	82,573
Other assets	5,341	4,511
Goodwill	—	1,107
Restricted deposits	11,150	—
Long-term investments	3,657	6,552
	_____	_____
Total assets	\$145,667	\$243,359
	_____	_____
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	\$ 4,228	\$ 2,943
Accrued liabilities	8,344	13,362
Income tax payable	3,063	308
Current portion of long-term debt	965	2,336
Current portion of capital lease obligation	3,562	4,372
	_____	_____
Total current liabilities	20,162	23,321
Long-term debt, net of current portion	13,289	14,342
Long-term capital lease, net of current portion	4,847	10,002
Deferred income taxes	—	8,099
Other long-term liabilities	1,712	1,273
	_____	_____
Total liabilities	40,010	57,037
	_____	_____
Commitments and Contingencies (Note 19)		
Stockholders' equity:		
Preferred stock, \$.001 par value; 2,000 shares authorized; 883 shares issued and outstanding	3,532	3,532
Common stock, \$.001 par value; 70,000 shares authorized; 22,495 and 22,383 shares issued and outstanding	154,485	153,635
Retained earnings	(52,197)	28,984
Other comprehensive income	(163)	171
	_____	_____
Total stockholders' equity	105,657	186,322
	_____	_____
Total liabilities and stockholders' equity	\$145,667	\$243,359
	_____	_____

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

AXT, INC.

CONSOLIDATED STATEMENTS OF INCOME

	Years Ended December 31,		
	2002	2001	2000
	(In thousands, except per share data)		
Revenue	\$ 63,175	\$ 119,530	\$ 121,503
Cost of revenue	74,031	82,191	73,684
Gross profit (loss)	(10,856)	37,339	47,819
Operating expenses:			
Selling, general and administrative	18,648	21,487	18,041
Research and development	4,868	8,204	8,769
Restructuring costs	39,086	—	6,409
Total operating expenses	62,602	29,691	33,219
Income (loss) from operations	(73,458)	7,648	14,600
Interest expense	1,326	2,081	3,616
Other (income) and expense, net	12,705	13,373	(28,432)
Income (loss) from continuing operations before provision for income taxes	(87,489)	(7,806)	39,416
Provision (benefit) for income taxes	(6,308)	(2,810)	14,978
Income (loss) from continuing operations	(81,181)	(4,996)	24,438
Discontinued operations:			
Loss from discontinued operations, net of tax benefits of \$912	—	—	(1,487)
Loss on disposal, net of tax benefits of \$822	—	—	(1,341)
Net income (loss)	\$ (81,181)	\$ (4,996)	\$ 21,610
Basic income (loss) per share:			
Income (loss) from continuing operations	\$ (3.63)	\$ (0.23)	\$ 1.24
Loss from discontinued operations	—	—	(0.14)
Net income (loss)	(3.63)	(0.23)	1.10
Diluted income (loss) per share:			
Income (loss) from continuing operations	\$ (3.63)	\$ (0.23)	\$ 1.16
Loss from discontinued operations	—	—	(0.13)
Net income (loss)	(3.63)	(0.23)	1.03
Shares used in per share calculations:			
Basic	22,433	22,278	19,677
Diluted	22,433	22,278	21,059

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

AXT, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	Preferred Stock		Common Stock		Deferred Compensation	Retained Earnings	Other Comprehensive Income	Total	Comprehensive Income/(loss)
	Shares	Amount	Shares	Amount					
(In thousands)									
Balance at December 31, 1999	981	\$3,990	18,659	\$ 46,340	\$ (217)	\$ 12,370	\$ (24)	\$ 62,459	\$ 121
Common stock options exercised			711	6,038				6,038	
Issuance of Employee Stock Purchase Plan stock			63	648				648	
Reacquisition and retirement on common stock and Series A preferred stock in connection with merger of Lyte Optronics	(98)	(458)	(225)	458				—	
Issuance of common stock in private placement			234	8,507				8,507	
Issuance of common stock in follow on public offering			2,510	80,812				80,812	
Income tax benefit from stock option exercises				2,945				2,945	
Amortization of deferred compensation					110			110	
Comprehensive income									
Net income						21,610		21,610	21,610
Unrealized gain on marketable securities							2,185	2,185	2,185
Currency translation adjustment							33	33	33
Balance at December 31, 2000	883	\$3,532	21,952	\$145,748	\$ (107)	\$ 33,980	\$ 2,194	\$ 185,347	\$ 23,828
Common stock options exercised			388	3,862				3,862	
Issuance of Employee Stock Purchase Plan stock			43	900				900	
Income tax benefit from stock option exercises				3,125				3,125	
Amortization of deferred compensation					107			107	

Comprehensive income (loss)									
Net income (loss)						(4,996)		(4,996)	(4,996)
Unrealized gain (loss) on marketable securities							(2,052)	(2,052)	(2,052)
Currency translation adjustment							29	29	29
Balance at December 31, 2001	883	\$3,532	22,383	\$153,635	\$ —	\$28,984	\$ 171	\$186,322	\$ (7,019)
Common stock options exercised			88	684				684	
Issuance of Employee Stock Purchase Plan stock			24	166				166	
Comprehensive income (loss)									
Net income (loss)						(81,181)		(81,181)	(81,181)
Unrealized gain (loss) on marketable securities							(21)	(21)	(21)
Currency translation adjustment							(313)	(313)	(313)
Balance at December 31, 2002	883	\$3,532	22,495	\$154,485	\$ —	\$(52,197)	\$ (163)	\$ 105,657	\$ (81,515)

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

AXT, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Years Ended December 31,		
	2002	2001	2000
	(In thousands)		
Cash flows from operating activities:			
Net income (loss)	\$ (81,181)	\$ (4,996)	\$ 21,610
Adjustments to reconcile net income (loss) to cash provided by operations:			
Depreciation	9,493	8,538	6,854
Deferred income taxes	2,533	(5,041)	5,718
Amortization	403	554	548
Stock compensation	—	107	110
Stock option tax benefits	—	3,125	2,945
Non cash restructuring costs — Impairment of PP&E and goodwill	39,086	—	6,249
Non cash (gain)/loss on marketable securities	10,577	15,636	(27,328)
Loss (gain) on disposal of property, plant and equipment	3,404	229	(183)
Changes in assets and liabilities:			
Accounts receivable, net	8,489	11,939	(10,212)
Inventories	17,989	(3,741)	(18,220)
Prepaid expenses	(320)	1,240	5,282
Other assets	(362)	(454)	(369)
Accounts payable	1,285	(7,013)	1,715
Accrued liabilities	(5,019)	(2,967)	9,187
Income taxes	(6,091)	—	—
Other long-term liabilities	439	(12)	(210)
Net cash provided by operating activities	725	17,144	3,696
Cash flows from investing activities:			
Purchases of property, plant and equipment	(14,238)	(25,834)	(26,278)
Investment in marketable securities	(17,869)	(21,591)	—
Investment in other assets	—	(1,307)	(1,599)
Proceeds from sale of marketable securities	17,070	1,034	—
Proceeds from sale of property plant and equipment	—	—	1,805
Increase in restricted cash	(1,000)	—	—
Net cash used in investing activities	(16,037)	(47,698)	(26,072)
Cash flows from financing activities:			
Proceeds from (payments of):			
Issuance of common stock	850	4,762	96,005
Capital lease payments	(5,965)	(4,274)	(3,850)
Capital lease borrowings	—	3,143	—
Short-term bank borrowings	—	(1,353)	(9,945)
Long-term debt borrowings	3,935	—	6,000
Long-term debt payments	(6,936)	(2,800)	(3,344)
Net cash provided by (used in) financing activities	(8,116)	(522)	84,866
Effect of exchange rate changes	(313)	29	33
Net increase (decrease) in cash and cash equivalents	(23,741)	(31,047)	62,523
Cash and cash equivalents at the beginning of the period	37,538	68,585	6,062
Cash and cash equivalents at the end of the period	\$ 13,797	\$ 37,538	\$ 68,585

Non cash activity:

Purchases of property, plant and equipment through financing	\$ 577	\$ 2,170	\$ 8,170
Exchange of Finisar shares for Demeter shares	\$ —	\$ —	\$ 27,328
Supplemental Disclosures:			
Interest paid	\$ 1,326	\$ 2,081	\$ 3,597
Income taxes paid	\$ —	\$ 305	\$ 4,645

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

AXT, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1. The Company and Summary of Accounting Policies

The Company

AXT designs, develops, manufactures and distributes high-performance compound semiconductor substrates, as well as opto-electronic semiconductor devices, such as high-brightness light emitting diodes, or HBLEDs, and laser diodes including vertical cavity surface emitting lasers, or VCSELs, and Fabry-Perot laser diodes. AXT's substrate products are used primarily in wireless communications, lighting display applications, and fiber optic communications. The opto-electronics division manufactures HBLEDs, VCSELs and laser diodes for the illumination markets, including full-color displays, automobile lighting and traffic signals, as well as fiber optic communications.

The Company officially changed its name from American Xtal Technology, Inc. to AXT, Inc. on July 7, 2000.

Liquidity

The Company incurred losses of \$81.2 million during the year ended December 31, 2002 resulting in a \$23.7 million decrease in cash. To achieve profitability, we will need to generate higher revenues while maintaining reasonable cost and expense levels.

The Company anticipates that its existing cash resources will fund any anticipated operating losses, purchases of capital equipment and provide adequate working capital for the next twelve months. The Company's liquidity is affected by many factors including, among others, the extent to which the Company pursues additional capital expenditures, the level of the Company's production efforts, and other factors related to the uncertainties of the industry and global economies. Accordingly, there can be no assurance that events in the future will not require the Company to seek additional capital sooner, or, if so required, that such capital will be available on terms acceptable to the Company if at all.

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 from these estimates.

Principles of Consolidation

The consolidated financial statements include the accounts of the Company and its majority-owned subsidiaries. All significant intercompany accounts and transactions have been eliminated. Investments in business entities in which AXT does not have control, but has the ability to exercise significant influence over operating and financial policies (generally 20-50% ownership), are accounted for by the equity method.

Foreign Currency Translation

The functional currencies of the Company's Japanese and Chinese subsidiaries are the local currencies. Transaction gains and losses resulting from transactions denominated in currencies other than the U.S. dollar for the Company or in the functional currencies for the subsidiaries are included in other (income) expense for the periods presented.

The assets and liabilities of the subsidiaries are translated at the rates of exchange on the balance sheet date. Revenue and expense items are translated at the average rate of exchange for the period. Gains and losses from foreign currency translation are included in other comprehensive income in stockholders' equity.

AXT, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Revenue Recognition

The Company recognizes revenue upon the shipment of its products to the customer provided that the Company has received a signed purchase order, the price is fixed or determinable, title has transferred, collection of resulting receivables is probable, product returns are reasonably estimable, there are no customer acceptance requirements and there are no remaining significant obligations. The Company provides for future returns based on historical experience at the time revenue is recognized. The Company does not specifically provide for warranty related exposure as such exposure has historically been immaterial.

Fair Value of Financial Instruments

The reported amounts of certain of the Company's financial instruments including cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities approximate fair value due to their short maturities. The reported amounts of short-term bank borrowings, loans payable and capital lease obligations approximate fair value due to the market interest rates, which these debts bear.

Concentration of Credit Risk

Financial instruments, which potentially subject the Company to concentration of credit risk consist primarily of trade accounts receivable. The Company performs ongoing credit evaluations of its customers' financial condition, and limits the amount of credit extended when deemed necessary, but generally does not require collateral. The Company invests primarily in money market accounts and commercial paper instruments. Cash equivalents are maintained with high quality institutions and their composition and maturities are regularly monitored by management.

One customer represented greater than 10% of product revenues for the year ended December 31, 2002, and no customer represented greater than 10% of product revenues for the years ended December 31, 2001 and 2000. The companies top five customers represented 35.6% of product revenue for the year ended December 31, 2002 and 28.3% of product revenue for the year ended December 31, 2001.

No customer accounted for 10% or more of the trade accounts receivable balance as of December 31, 2002 and 2001.

Cash Equivalents

The Company considers all highly liquid debt instruments purchased with an original maturity of three months or less to be cash equivalents.

Investments

The Company classifies its investments in marketable securities as available-for-sale securities as prescribed in Financial Accounting Standard No. 115, "Accounting for Certain Investments in Debt and Equity Securities." All investments are carried at fair market value, which is determined based on quoted market prices, with net unrealized gains and losses included in comprehensive income, net of tax. If a decline in fair value is judged to be other than temporary, the cost basis of the individual security is written down to fair value as a new cost basis with the amount of the write down included in other (income) expense.

Inventories

Inventories are stated at the lower of cost or net realizable value. Cost is determined using the weighted average cost method. Finished goods and work-in-process inventories include material, labor and manufacturing overhead costs.

AXT, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Property, Plant and Equipment

Property, plant and equipment are stated at cost less accumulated depreciation computed using the straight-line method over the estimated economic lives of the assets, which vary from three to ten years. Leasehold improvements are amortized over the shorter of the estimated useful life or the term of the lease. We generally depreciate computers and software over 3 years, automobiles over 5 years, office equipment, furniture and fixtures over 3 years, leasehold improvements over 10 years, and buildings over 27.5 years.

Impairment of Long-Lived Assets

Pursuant to Statement of Financial Accounting Standard No. 144, "Accounting for Impairment or Disposal of Long-Lived Assets," the Company reviews long-lived assets based upon a gross cash flow basis and will reserve for impairment whenever events or changes in circumstances indicate the carrying amount of the assets may not be fully recoverable.

Stock-Based Compensation

The Company accounts for stock-based employee compensation arrangements using the intrinsic value method as prescribed in Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees" and related Interpretations thereof. Accordingly, compensation costs for stock options is measured as the excess, if any, of the market price of the Company's stock at the date of grant over the stock option exercise price. In addition, the Company provides additional disclosure provisions as required under Statement of Financial Accounting Standard No. 123, "Accounting for Stock-Based Compensation" and SFAS 148, "Accounting for Stock-Based Compensation — Transition and Disclosure" in Note 16.

Research and Development

Research and development costs are expensed as incurred.

Income Taxes

The Company accounts for deferred income taxes using the liability method, under which the expected future tax consequences of timing differences between the book and tax basis of assets and liabilities are recognized as deferred tax assets and liabilities. Valuation allowances are established when necessary to reduce net deferred tax assets when management estimates, based on available objective evidence, that it is more likely than not that the future income tax benefit represented by the net deferred tax asset will not be realized.

Comprehensive Income

Comprehensive income is defined as the change in equity of a company during a period from transactions and other events and circumstances, excluding transactions resulting from investment by owners and distribution to owners. The difference between net income and comprehensive income for the Company relates to foreign currency translation adjustments and unrealized gains and losses on investment securities. Comprehensive income for the years ended December 31, 2002, 2001 and 2000 is disclosed in the "Consolidated Statements of Stockholders' Equity."

Basic and Diluted Net Income (Loss) Per Share

Basic income (loss) per share is computed by dividing the income (loss) available to holders of common stock for the period by the weighted average number of shares of common stock outstanding during the period. The calculation of diluted income (loss) per share excludes potential common stock if the effect of such stock is antidilutive. Potential common stock consists of common shares issuable upon the exercise of stock options.

AXT, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Reclassifications

Certain reclassifications have been made to the prior years consolidated financial statements to conform to current period presentation.

Recent Accounting Pronouncements

In June 2002, the Financial Accounting Standards Board (FASB) issued Statement of Accounting Standards No. 146, "*Accounting for Costs Associated with Exit or Disposal Activities*." SFAS No. 146 addresses the timing and amount of costs recognized as a result of restructuring and similar activities. The company will apply SFAS No. 146 to activities initiated after December 31, 2002.

In December 2002, the FASB issued Statement of Financial Accounting Standards No. 148 ("SFAS No. 148"), "*Accounting for Stock-Based Compensation — Transition and Disclosure — an amendment to FASB Statement No. 123, Accounting for Stock-Based Compensation*." SFAS No. 148 provides alternative methods of transition for a voluntary change to the fair value based method of accounting for stock-based employee compensation. In addition, SFAS No. 148 amends the disclosure requirements of Statement 123 to require more prominent and more frequent disclosures in financial statements about the effects of stock-based compensation. The transition guidance and annual disclosure provisions of SFAS No. 148 are effective for fiscal years ending after December 15, 2002. The interim disclosure provisions are effective for financial reports containing financial statements for interim periods beginning after December 15, 2002. The adoption of the disclosure provisions of SFAS No. 148 did not have a material impact on our financial position or results of operations.

In November 2002, the FASB issued FASB Interpretation No. 45 (FIN 45), "*Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others*." FIN No. 45 requires that a liability be recorded in the guarantor's balance sheet upon issuance of a guarantee. In addition, FIN No. 45 requires disclosures about the guarantees that an entity has issued, including a reconciliation of changes in the entity's product warranty liabilities. The initial recognition and initial measurement provisions of FIN No. 45 are applicable on a prospective basis to guarantees issued or modified after December 31, 2002, irrespective of the guarantor's fiscal year-end. The disclosure requirements of FIN No. 45 are effective for financial statements of interim or annual periods ending after December 15, 2002. Our adoption of FIN No. 45 did not have a material effect on our consolidated financial statements.

In January 2003, the FASB issued FASB Interpretation No. 46 (FIN 46), "*Consolidation of Variable Interest Entities, an Interpretation of ARB No. 51*." FIN 46 requires certain variable interest entities to be consolidated by the primary beneficiary of the entity if the equity investors in the entity do not have the characteristics of a controlling financial interest or do not have sufficient equity at risk for the entity to finance its activities without additional subordinated financial support from other parties. FIN 46 is effective immediately for all new variable interest entities created or acquired after January 31, 2003. For variable interest entities created or acquired prior to February 1, 2003, the provisions of FIN 46 must be applied for the first interim or annual period beginning after June 15, 2003. The Company is currently evaluating the impact that the adoption of this standard will have on its financial statements.

Note 2. Long-Lived Asset Impairment

In the second quarter of 2002, the Company completed an impairment review of certain manufacturing assets used in the substrate and opto-electronics divisions. The review was undertaken due to the recent history of operating losses, declines in the demand for our products due to macro economic conditions and

AXT, INC.**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

excess capacity resulting in part from the relocation of certain manufacturing operations in the Company's substrate division to China.

Upon completion of the review, the Company determined that the carrying value of the manufacturing assets was not expected to be recoverable and accordingly recorded an impairment charge in order to write-down the related assets to their estimated fair value. The Company determined the amount of the impairment charge by estimating the net present value of expected future cash flows to be generated by the assets. Based on this analysis, the Company recorded non-cash impairment charges of \$14.1 million in the substrate segment and \$9.9 million in the opto-electronics segment for the laser diode operating unit.

In the third quarter of 2002, the Company completed an impairment review of other manufacturing assets in the opto-electronics division. The review was undertaken due to the unexpected operating losses incurred in the third quarter, declines in product demand due to the Company's inability to manufacture high volumes of its LED products to the Company's customers' requirements, and the need for the Company to reduce its current level of production to conserve cash.

Upon completion of the review, the Company determined that the carrying value of the manufacturing assets was not expected to be recoverable and accordingly recorded an impairment charge in order to write-down the related assets to their estimated fair value. The Company determined the amount of the impairment charge by estimating the net present value of expected future cash flows to be generated by the assets. Based on this analysis, the Company recorded a non-cash impairment charge of \$14.0 million in the opto-electronics segment.

Note 3. Goodwill Impairment

The Company adopted the provisions of SFAS 142, "Goodwill and Other Intangible Assets," effective January 1, 2002. Under the transition provisions of SFAS No. 142, there was no goodwill impairment at January 1, 2002 based upon the Company's analysis at that time. However, during the quarter ended September 30, 2002, circumstances developed that indicated the goodwill was likely impaired and the Company performed an impairment analysis as of September 30, 2002. This analysis resulted in a \$1.1 million impairment of goodwill. The circumstances that led to the impairment included a downward revision to the operating forecast for the year and a significant drop in the Company's market capitalization.

Note 4. Inventories

Inventories are stated at the lower of cost or net realizable value. Cost is determined using the weighted average cost method. Finished goods and work-in-process inventories include material, labor and manufacturing overhead costs. The Company routinely evaluates the levels of its inventory in light of current market conditions in order to identify excess and obsolete inventory and provides a valuation allowance for certain inventories based upon the age and quality of the product. In the fourth quarter of 2002, as a result of continuing revenue declines and uncertainty regarding the future, the Company recorded a charge of \$9.7 million to increase our valuation allowance for excess inventories. The charge is included in cost of revenues. The components of inventory are summarized below (in thousands):

	December 31,	
	2002	2001
Raw materials	\$ 17,566	\$ 21,308
Work in process	30,042	30,265
Finished goods	15,108	17,368
Valuation allowances	(25,118)	(13,354)
	<u>\$ 37,598</u>	<u>\$ 55,587</u>

AXT, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Note 5. Asset Held for Sale

During the fourth quarter of 2002, the Company began to market its property located at 4281 Technology Drive, Fremont, California, and in November of 2002, entered into a contract to sell the property to a third party. In accordance with SFAS 144, "*Accounting for the Impairment or Disposal of Long-Lived Assets*," the company recorded a charge of \$3.1 million to write-down the building to its net realizable value of \$6.0 million, and classified the asset as held for sale on the consolidated balance sheet. The charge is included in other expense in the Consolidated Statements of Income.

Note 6. Gain on Demeter Warrants and Loss on Investment in Finisar Corporation Common Stock

In August 2000, the Company entered into a business transfer and acquisition agreement with Demeter Technologies, Inc., a Delaware corporation founded by Theodore S. Young, the former president of the Company's fiber optic division and a former member of the Company's board of directors, and Robert Shih, the former chief technology officer of the Company's opto-electronics division. Under this agreement, the Company agreed to transfer certain non-core rights to Demeter relating to research and development activities in the field of fiber optics. The Company entered into non-competition agreements with Messrs. Shih and Young that prohibit them from certain activities, including the manufacture of certain VCSEL devices. The Company leased to Demeter a portion of its owned facility in El Monte, California, subleased a portion of its rented facility in El Monte, California, leased certain equipment, including an MOCVD machine, and sold certain inventory relating to fiber optics to Demeter. In exchange, Demeter granted to the Company a warrant to purchase up to 4.5 million shares of its Series A convertible preferred stock at a price of \$0.5714 per share. Demeter was purchased by Finisar Corporation and as a result, AXT converted its Demeter warrant for approximately 1.1 million shares of Finisar Corporation common stock on November 21, 2000. On November 21, 2000, a gain of \$27.3 million was recorded in other income as a result of the transaction.

On December 10, 2001, the Company received approximately 86,000 additional shares of common stock of Finisar Corporation that had been held in escrow in accordance with the terms of the acquisition agreement between Demeter and Finisar. A gain of \$1.1 million was recorded in other income as a result of receiving these additional shares. On December 31, 2001, the Company wrote its investment in Finisar Corporation down to current market value, in accordance with SFAS 115, resulting in a realized loss of \$16.7 million recorded in other income and expense.

On February 4, 2002, the Company received approximately 24,000 additional shares of common stock of Finisar Corporation that had been held in escrow in accordance with the terms of the acquisition agreement between Demeter and Finisar. A gain of \$251,000 was recorded in other income as a result of receiving these additional shares. The investment in Finisar Corporation common stock is accounted for as available for sale and classified as a short-term investment. On June 30, 2002, the Company wrote its investment in Finisar Corporation down to current market value, in accordance with SFAS 115, due to a decline in fair market value of the stock below its carrying value for a period exceeding six months, resulting in a realized loss of \$9.1 million recorded in other expense. On December 31, 2002, the Company again wrote its investment in Finisar Corporation down to current market value, due to a further decline in fair market value, resulting in a realized loss of \$1.7 million recorded in other expense. The carrying value of our investment in Finisar Corporation at December 31, 2002, was \$1.1 million.

Note 7. Debt

Credit Facility

At June 30, 2002, the credit facility maintained by the Company with a bank included a \$5 million line of credit with no balance outstanding, term loans in the amount of \$4.8 million and a letter of credit supporting repayment of the Company's industrial revenue bonds with an outstanding amount of \$9.4 million. The credit

AXT, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

facility is collateralized by all corporate personal and real property owned by the Company. As of June 30, 2002, the Company was in default of the credit facility by failure to maintain certain financial covenants required under the terms of the facility. As a result, on September 30, 2002 we modified the credit agreement with our bank, which waived the covenant default, terminated the credit line, amended the financial covenants and added additional collateral to secure repayment of the bonds. At December 31, 2002 the credit facility included a letter of credit supporting our bonds with an outstanding amount of \$9.1 million and foreign exchange and overdraft obligations in the amount of \$1.1 million. The Company has pledged and placed certain investment securities with the trust department of the bank as additional collateral for this facility. As a result, \$10.2 million of our long-term investments are restricted. As of December 31, 2002, we were out of compliance with our tangible net worth covenant as amended on September 30, 2002. We have obtained a waiver from our bank for this covenant default through April 30, 2003. Effective April 7, 2003, our bonds will be supported by a new letter of credit supported by another bank.

Long-Term Debt

The components of long-term debt are summarized below (in thousands):

	December 31,	
	2002	2001
Various notes payable to banks, secured by certain equipment, bearing interest at fixed rates between 4.55% and 4.72%, maturing between July 2006 and May 2007	\$ 1,083	\$ 916
Debenture loan to Bay Area Employment Development Company, guaranteed by the U.S. Small Business Administration, bearing interest at a fixed rate of 7.27%, maturing October 2016	823	857
Taxable revenue bonds, secured by a letter of credit from a bank, bearing interest at the H15 30 day bond yield for commercial paper that was 1.6% on December 31, 2002, maturing December 2023	9,050	9,720
Mortgage notes payable to a bank, secured by property, bearing interest at 150 basis points above the prime rate that was 5.75% on December 31, 2001	—	5,185
Notes payable to a bank, secured by certain equipment in China, bearing interest at a fixed rate of 5.49%, maturing December 2004	3,298	—
	<u>14,254</u>	<u>16,678</u>
Less current portion	(965)	(2,336)
	<u>\$13,289</u>	<u>\$14,342</u>

Maturities of long-term debt at December 31, 2002 were as follows:

2003	965
2004	5,047
2005	965
2006	905
2007	722
Thereafter	5,650
	<u>\$14,254</u>

AXT, INC.**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)****Note 8. Discontinued Operations**

On December 14, 2000, the Company's Board of Directors approved management's plan to exit the Company's unprofitable consumer products business. The plan was substantially complete at December 31, 2001.

Certain information with respect to discontinued operations is summarized below (in thousands):

	January 1, 2000 through December 14, 2000
Revenue	\$ 4,832
Cost of revenue	4,311
Gross profit (loss)	521
Operating expenses:	
Selling, general and administrative	2,899
Research and development	160
Total operating expenses	3,059
Income (loss) from operations	(2,538)
Interest expense	0
Other (income) and expense, net	(139)
Income (loss) before provision for income taxes	(2,399)
Income tax benefit	(912)
Loss from discontinued operations	\$ (1,487)

The charge in 2000 for loss on disposal of the consumer products business includes the following:

Carrying value of net assets in excess of anticipated proceeds	\$ 1,060
Expenses of asset disposal and anticipated operating loss for the period December 15, 2000 through the estimated date of disposal	1,103
Loss on disposal before taxes	2,163
Income tax benefit	(822)
Loss on disposal	\$ 1,341

Note 9. Restructuring Costs

On December 14, 2000, the Company's Board of Directors approved management's plan to exit its unprofitable 650nm laser diode product line within its opto-electronics division. As a result, during the fourth quarter of 2000, the Company recorded a pre-tax restructuring charge of \$8.2 million. The restructuring charge included \$2.1 million for incremental costs and contractual obligations for such items as leasehold termination payments and other facility exit costs incurred as a direct result of this plan.

AXT, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Certain information with respect to restructuring costs is summarized below (in thousands):

	Reserve	Utilized		Balance December 31, 2002
		Cash	Non-cash	
Inventory write-off	\$ 1,844	\$ —	\$ 1,844	\$ —
Property, plant and equipment write-off	3,436	—	3,436	—
Goodwill write-off	848	—	848	—
Other restructuring costs	2,124	749	121	1,254
	<u>\$8,252</u>	<u>\$749</u>	<u>\$6,249</u>	<u>\$ 1,254</u>

The fair value of assets determined to be impaired in accordance with the guidance for assets to be disposed of in SFAS No. 121, "Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to be Disposed of," were the result of management estimates. The above noted exit costs were determined in accordance with EITF No. 94-3, "Liability Recognition for Certain Employee Termination Benefits and Other Costs to Exit an Activity." The restructuring actions, as outlined by the plan, are substantially complete. The remaining costs, which relate to the clean up of a leased facility are expected to be completed by March 31, 2003. The amount reserved for these clean up costs, and included in accrued liabilities in the consolidated balance sheet, was \$1.3 million at December 31, 2002 and \$1.6 million at December 31, 2001.

Note 10. Investments

The Company classifies its investment securities as available-for-sale securities as prescribed by Statement of Financial Accounting Standards No. 115 or SFAS 115, "Accounting for Certain Investments in Debt and Equity Securities." All investments are carried at fair market value, which is determined based on quoted market prices, with net unrealized gains and losses included in comprehensive income, net of tax. The components of investments at December 31, 2002 are summarized below (in thousands):

Available for sale	Cost	Aggregate Fair value	Realized Gain/(loss)	Unrealized Gain/(loss)
Money market	\$ 2,590	\$ 2,590	\$ —	\$ —
Corporate bonds	14,402	14,535	—	133
Government agency bonds	6,319	6,362	—	43
Corporate equity securities (see Note 6)	28,660	1,115	(27,545)	—
	<u>\$ 51,971</u>	<u>\$24,602</u>	<u>\$(27,545)</u>	<u>\$ 176</u>
Recorded as:				
Cash equivalents	\$ 2,590			
Short-term investments	8,205			
Long-term investments	3,657			
Restricted deposits	10,150			
	<u>\$24,602</u>			

AXT, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Note 11. Corporate Affiliates

The Company's corporate affiliates are summarized below (in thousands):

Affiliate	Investment Balance December 31, 2002	Investment Balance December 31, 2001	Accounting Method	Ownership Percentage
Xilingol Tongli Ge Co. Ltd.	\$ 773	\$ 810	Equity	25%
Emeishan Jia Mei High Pure Metals Co., Ltd.	614	629	Equity	25%
Beijing Ji Ya Semiconductor Material Co., Ltd.	1,071	1,071	Consolidated	51%
Nanjing Jin Mei Gallium Co., Ltd.	616	616	Consolidated	88%
Beijing BoYu Manufacturing Co., Ltd	409	—	Consolidated	70%

The investment balances for those affiliates accounted for under the equity method are included within "Other assets" in the consolidated balance sheets.

Undistributed retained earnings relating to the Company's corporate affiliates, was \$861,000 at December 31, 2002 and \$679,000 at December 31, 2001. Net income recorded from the Company's corporate affiliates was \$131,000 for the year ended December 31, 2002 and \$701,000 for 2001.

The Company invested in these companies because each provides materials that are important to the Company's substrate business, each can provide products at lower cost than suppliers, and each has a market beyond that provided by the Company. At December 31, 2002, the Company had no obligations to make further investments in any of these companies, although it may choose to do so under certain conditions.

Note 12. Balance Sheet Detail

The components of selected balance sheet accounts are summarized below (in thousands):

	December 31,	
	2002	2001
Accounts receivable:		
Accounts receivable, gross	13,871	22,353
Allowance for doubtful accounts	(6,676)	(6,669)
	<u>7,195</u>	<u>15,684</u>
Property, plant and equipment:		
Land	\$ 1,722	\$ 2,447
Building	15,849	26,990
Machinery and equipment	13,142	60,984
Leasehold improvements	2,600	3,821
Construction in progress	7,260	11,478
	<u>40,573</u>	<u>105,720</u>
Less: accumulated depreciation and amortization	(591)	(23,147)
	<u>\$39,982</u>	<u>\$ 82,573</u>

AXT, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

	December 31,	
	2002	2001
Accrued liabilities:		
Accrued compensation and other	\$ 1,304	\$ 2,026
Customer prepayments	2,196	6,477
Accrued restructuring costs	1,254	1,621
Accrued discontinued operation costs	—	619
Other	3,590	2,619
	<u>\$8,344</u>	<u>\$13,362</u>

Note 13. Income Taxes

The components of the provision for income taxes are summarized below (in thousands):

	Years Ended December 31,		
	2002	2001	2000
Current:			
Federal	\$(8,841)	\$ 1,917	\$ 7,738
State	—	—	948
Foreign	—	314	155
Total current	<u>(8,841)</u>	<u>2,231</u>	<u>8,841</u>
Deferred:			
Federal	1,301	(3,481)	5,489
State	1,232	(1,560)	648
Total deferred	<u>2,533</u>	<u>(5,041)</u>	<u>6,137</u>
Total provision from continuing operations before discontinued operations	<u>\$(6,308)</u>	<u>\$(2,810)</u>	<u>\$14,978</u>

A reconciliation of the effective income tax rates and the U.S. statutory federal income tax rate is summarized below:

	Years Ended December 31,		
	2002	2001	2000
Statutory federal income tax rate	-35.0%	-35.0%	35.0%
State income taxes, net of federal tax benefits	-2.7%	-5.0%	3.3%
Foreign sales corporation benefit	0.0%	0.0%	-1.4%
Unbenefited losses and credits	29.9%	0.0%	0.0%
Change in valuation allowance	2.8%	0.0%	0.0%
Other	-2.2%	4.0%	1.1%
Effective tax rate	<u>-7.2%</u>	<u>-36.0%</u>	<u>38.0%</u>

AXT, INC.**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

Deferred tax assets and liabilities are summarized below (in thousands):

	Years Ended December 31,	
	2002	2001
Deferred tax assets:		
Accruals and reserves not yet deductible	\$ 15,337	\$ 10,151
Net operating loss	8,923	—
Depreciation	5,519	—
Credits	3,477	997
	<u>\$ 33,256</u>	<u>\$ 11,148</u>
Deferred tax liabilities:		
Unrealized appreciation on Finisar marketable securities	—	(75)
State taxes	(980)	(291)
Gain on receipt of Finisar marketable securities	—	(3,664)
Unrepatriated Foreign Earnings	(1,085)	(967)
Depreciation	—	(3,693)
	<u>\$ (2,065)</u>	<u>\$ (8,690)</u>
Net deferred tax assets	\$ 31,191	\$ 2,458
Valuation allowance	(31,191)	—
Net deferred tax assets	<u>—</u>	<u>2,458</u>

At December 31, 2002, the Company had federal and state net operating loss carryforwards of approximately \$22 million and \$24 million, respectively, which will expire beginning in 2012 and 2005, respectively. In addition, the Company had federal tax credit carryforwards of approximately \$1.1 million, which will expire beginning in 2020. The Company also has state tax credit carryforwards of approximately \$2.4 million which will expire beginning 2007.

The deferred tax assets valuation allowance at December 31, 2002 is attributed to U.S. federal, and state deferred tax assets, which result primarily from future deductible accruals, reserves and tax depreciation expense, net operating loss carryforwards, and tax credit carryforwards. The Company believes that, based on a number of factors, the available objective evidence creates sufficient uncertainty regarding the realizability of the deferred tax assets such that a full valuation allowance has been recorded. These factors include the Company's history of losses, and the lack of carryback capacity to realize deferred tax assets.

In accordance with Section 382 of the Internal Revenue Code, the amounts of and benefits from net operating loss and tax credit carryforwards may be impaired or limited in certain circumstances. Events which cause limitations in the amount of net operating losses or credits that the Company may utilize in any one year include, but are not limited to, a cumulative ownership change of more than 50% as defined, over a three year period.

AXT, INC.**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)****Note 14. Net Income per Share**

A reconciliation of the numerators and denominators of the basic and diluted net income per share calculations is as follows (in thousands, except per share data):

	Years Ended December 31,		
	2002	2001	2000
Numerator:			
Net income (loss)	\$(81,181)	\$ (4,996)	\$ 21,610
Less: Preferred stock dividends	(177)	(177)	—
Net income (loss) available to common stockholders	<u>\$(81,358)</u>	<u>\$ (5,173)</u>	<u>\$ 21,610</u>
Denominator:			
Denominator for basic net income per share — weighted average common shares	22,433	22,278	19,677
Effect of dilutive securities:			
Common stock options	—	—	1,382
Denominator for dilutive net income per share	<u>22,433</u>	<u>22,278</u>	<u>21,059</u>
Basic earnings per share	\$ (3.63)	\$ (0.23)	\$ (1.10)
Diluted earnings per share	\$ (3.63)	\$ (0.23)	\$ 1.03
Options excluded from diluted net income per share as the impact is antidilutive	<u>2,867</u>	<u>2,708</u>	<u>118</u>

Note 15. Stockholders' Equity

In May 1998, the Company completed its initial public offering, or IPO, and issued 2,875,000 shares of its common stock at \$10.00 per share, including the shares from an over-allotment option. The Company received cash of approximately \$25.8 million net of underwriting discounts, commissions and IPO expenses. Upon the closing of the IPO, all outstanding shares of the Company's then convertible preferred stock were automatically converted into shares of common stock.

On May 28, 1999, the Company completed its acquisition of Lyte Optronics, Inc. Under the terms of the acquisition, the Company issued approximately 2,023,000 shares of common stock and 883,000 shares of non-voting and non-convertible preferred stock with a 5.0% cumulative annual dividend rate payable when declared by the board of directors of the Company and \$4 per share liquidation preference over common stock, in exchange for all of the issued and outstanding shares of the capital stock of Lyte.

On July 25, 2000 the Company completed a private securities offering, raising approximately \$8.5 million in exchange for 234,115 shares of common stock.

On September 19, 2000, the Company sold pursuant to an underwritten public offering, 2,510,000 shares of its common stock at a price of \$34.25 per share, including the shares from an over-allotment option exercised by the underwriters of the offering. The Company received cash of approximately \$80.8 million net of underwriting discounts, commissions and expenses. Following the public offering, proceeds were used to repay its line of credit and for general corporate purposes.

AXT, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Note 16. Employee Benefit Plans

Stock Option Plans

In March 1993, the Company's board of directors approved the 1993 Stock Option Plan ("1993 Plan"), which provides for granting of incentive and non-qualified stock options to employees and directors of the Company. Under the 1993 Plan, 880,000 shares of common stock have been reserved for issuance as of December 31, 1998. Options granted under the 1993 Plan are generally for periods not to exceed ten years and are granted at the fair market value of the stock at the date of grant as determined by the board of directors. Options granted under the 1993 Plan generally vest 25.0% upon grant and 25.0% each year thereafter, with full vesting occurring on the third anniversary of the grant date. The Company is no longer granting options under the 1993 Plan. This plan terminates on March 12, 2003.

In July 1997, the Company's board of directors approved the 1997 Stock Option Plan ("1997 Plan"), which provides for granting of incentive and non-qualified stock options to employees and directors of the Company. Under the 1997 Plan, 5,901,501 shares of common stock have been reserved for issuance as of December 31, 2002. Options granted under the 1997 Plan are generally for periods not to exceed ten years (five years if the option is granted to a 10.0% stockholder) and are granted at the fair market value of the stock at the date of grant as determined by the board of directors. Options granted under the 1997 Plan generally vest 25.0% at the end of one year and 2.1% each month thereafter, with full vesting after four years.

The following summarizes the Company's stock option activity under the 1993 Plan and the 1997 Plan, and related weighted average exercise price within each category for each of the years ended December 31, 2000, 2001, and 2002:

	Options Outstanding			Weighted Average Exercise Price per Share
	Options Available For Grant	Number of Shares	Exercise Price per Share	
Balance at December 31, 1999	1,361,783	2,680,102		12.18
Additional shares authorized	2,101,501	—		—
Granted	(1,202,550)	1,202,550	15.06-47.00	30.21
Exercised	—	(711,259)	0.20-22.69	8.49
Cancelled	676,164	(676,164)	\$ 1.90-47.00	17.29
Balance at December 31, 2000	2,936,898	2,495,229		\$20.46
Additional shares authorized	—	—		—
Granted	(1,693,070)	1,693,070	10.30-43.88	16.71
Exercised	—	(388,617)	5.00-39.00	9.94
Cancelled	497,433	(497,433)	\$ 5.00-44.25	22.14
Balance at December 31, 2001	1,741,261	3,302,249		\$19.63
Additional shares authorized	—	—		—
Granted	(1,137,450)	1,137,450	1.92-15.90	3.06
Exercised	—	(23,791)	5.00-9.125	6.94
Cancelled	879,324	(879,324)	\$ 5.00-42.50	20.10
Balance at December 31, 2002	1,483,135	3,536,584		\$ 14.15

AXT, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Information about stock options outstanding at December 31, 2002 is summarized below:

Options Outstanding			Options Exercisable	
Range of Exercise Prices	Number Outstanding	Weighted Average Remaining Contractual Life	Number Outstanding	Weighted Average Exercise Price
\$ 1.92 – 1.92	5,000	9.75	—	\$ —
2.19 – 2.19	1,006,450	9.89	20,974	2.19
5.00 – 10.04	397,287	5.99	333,763	7.16
10.09 – 12.12	485,366	8.87	110,596	12.03
12.38 – 14.89	535,987	8.26	156,747	14.79
15.00 – 22.69	374,761	7.11	215,282	20.15
23.00 – 31.63	391,733	7.55	140,030	26.39
31.88 – 43.63	335,500	7.79	124,711	36.46
43.88 – 43.88	4,000	8.04	1,917	43.88
\$44.38 – 44.38	500	7.13	354	44.38
	<u>3,536,584</u>	<u>8.31</u>	<u>1,104,374</u>	<u>\$ 16.99</u>

Stock-Based Compensation Under APB No. 25

In connection with certain stock option grants the Company recorded deferred compensation costs totaling \$203,000 for the year ended December 31, 1998. Compensation cost is the difference between the exercise price and the deemed fair value at the date of grant. Compensation cost is being amortized over the vesting period relating to these options, of which no amount was amortized for the year ended December 31, 2002, \$107,000 for 2001 and \$110,000 for 2000.

Certain Pro Forma Disclosures

Pro forma information regarding net income and net income per share is required by SFAS No. 123 and SFAS 148, which also requires that information be determined as if the Company had accounted for its employee stock options granted under the fair value method. The fair value for these options was estimated using the Black-Scholes option pricing model.

The Company calculated the fair value of each option grant on the date of grant using the Black-Scholes option pricing model as prescribed by SFAS No. 123 using the following assumptions:

	2002	2001	2000
Risk free interest rate	3.0%	3.9%	5.8%
Expected life (in years)	5.0	5.0	5.0
Dividend yield	0.0%	0.0%	0.0%
Volatility	101.0%	104.0%	124.0%

The weighted average grant-date fair value of options granted during the year ended December 31, 2002 was \$2.39, \$12.97 in 2001 and \$25.73 in 2000.

AXT, INC.**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

Had compensation cost for the Company's options been determined based on the fair value at the grant dates, as prescribed in SFAS 123 and SFAS 148, the Company's pro forma net income and net income per share would have been as summarized below (in thousands except per share data):

	Years Ended December 31,		
	2002	2001	2000
Net income (loss):			
As reported	\$ (81,181)	\$ (4,996)	\$ 21,610
Pro forma option expense	9,182	7,046	5,193
Pro forma net income	\$(90,363)	\$(12,042)	\$16,417
Net income (loss) per share:			
As reported:			
Basic	\$ (3.63)	\$ (0.23)	\$ 1.10
Diluted	(3.63)	(0.23)	1.03
Pro forma net income (loss):			
Basic	\$ (4.04)	\$ (0.54)	\$ 0.83
Diluted	(4.04)	(0.54)	0.78

Because additional option grants are expected to be made each year, the above pro forma disclosures are not representative of pro forma effects on reported net income for future years.

Employee Stock Purchase Plan

In February 1998, the Company's board of directors approved the 1998 Employee Stock Purchase Plan (the "1998 Purchase Plan"). The Company's stockholders approved the 1998 Purchase Plan in March 1998. At December 31, 2002 a total of 900,000 shares of the Company's common stock were reserved for issuance under the 1998 Purchase Plan. A total of 279,000 shares were purchased as of December 31, 2002. The 1998 Purchase Plan permits eligible employees to acquire shares of the Company's common stock through payroll deductions. The common stock purchase price is determined as 85.0% of the lower of the market price of the common stock at the purchase date or the date of offer to the employee.

Retirement Savings Plan

The Company has a 401(k) Savings Plan (the "Savings Plan") which qualifies as a thrift plan under Section 401(k) of the Internal Revenue Code. All full-time U.S. employees are eligible to participate in the Savings Plan after 90 days from the date of hire. Participants may contribute up to 10.0% of their earnings to the Savings Plan with a discretionary matching amount provided by the Company. The Company's contributions to the Savings Plan were \$315,000 for the year ended December 31, 2002, \$456,000 for 2001 and \$236,000 for 2000.

Note 17. Segment and Foreign Operations Information

The Company has three reportable segments: substrates, opto-electronics and discontinued consumer products. The segments in which the Company operates are subject to rapid technological change and significant competition. Also, the number of suppliers of certain materials used by the Company and the number of customers are limited.

AXT, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Selected financial information by business segment is summarized below (in thousands):

	Years Ended December 31,		
	2002	2001	2000
Substrates Division			
Net revenues from external customers	\$ 44,865	\$ 108,800	\$ 113,374
Gross profit (loss)	(8,893)	41,306	52,013
Operating income (loss)	(39,724)	20,222	34,087
Identifiable assets	121,132	202,342	215,527
Opto-electronics			
Net revenues from external customers	\$ 18,310	\$ 10,730	\$ 8,129
Gross profit (loss)	(1,963)	(3,967)	(4,194)
Operating income (loss)	(33,734)	(12,574)	(19,487)
Identifiable assets	24,535	41,017	33,181
Discontinued Consumer Products Division			
Identifiable assets	\$ —	\$ —	\$ 1,512
Total			
Net revenues from external customers	\$ 63,175	\$ 119,530	\$ 121,503
Gross profit (loss)	(10,856)	37,339	47,819
Operating income (loss)	(73,458)	7,648	14,600
Identifiable assets	145,667	243,359	250,220

The Company sells its substrates and opto-electronics products in the United States and in other parts of the world. Also, the Company has operations in Japan and China. Revenues by geographic location based on the country of the customer were as follows (in thousands):

	Years Ended December 31,		
	2002	2001	2000
Net revenues:			
United States	\$26,401	\$ 59,300	\$ 62,905
Europe	5,666	22,008	12,743
Canada	1,256	6,679	6,661
Taiwan	11,351	12,975	13,610
Japan	3,055	8,473	10,934
Malaysia	6,762	2,491	
Asia Pacific	8,684	7,604	14,650
Consolidated	\$63,175	\$119,530	\$121,503

AXT, INC.**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

Property, plant and equipment by geographic location is summarized below (in thousands):

	Years Ended December 31,	
	2002	2001
Property, plant and equipment, net:		
United States	\$ 21,133	\$67,978
China	18,849	14,595
	<u>\$39,982</u>	<u>\$82,573</u>

Note 18. Related Party Transactions

Since January 2002, there has not been, nor is there currently proposed, any transaction or series of similar transactions to which we were or are to be a party in which the amount involved exceeds \$60,000, and in which any director, executive officer or holder of more than 5% of any class of our voting securities or members of that person's immediate family had or will have a direct or indirect material interest other than the transactions described below.

The Company entered into an operating lease for warehouse space in Fremont, CA with 4160 Business Center, LLC, a real estate holding company, in which Davis Zhang, the president of our substrate division, is the sole shareholder. Lease payments to 4160 Business Center, LLC were approximately \$484,000 for the year ended December 31, 2002.

Note 19. Commitments and Contingencies

From time to time we are involved in judicial or administrative proceedings concerning matters arising in the ordinary course of our business, including matters relating to workers' compensation claims, claims of unlawful termination or other employee-related claims. We do not expect that any of these matters, individually or in the aggregate, will have a material adverse effect on our business, financial condition, cash flows or results of operation.

On May 1, 2001, the Santa Clara Center for Occupational Safety and Health filed a complaint for injunctive relief and civil penalties against the Company in the Superior Court of California, County of Alameda, Hayward Division, Case No. H218237-5. The complaint alleged violations of California Business and Professions Code section 17200 et seq., and violations under Proposition 65 and California Health and Safety Code section 25249 et seq. as a result of AXT's use of arsenic and inorganic arsenic compounds in its workplace. On June 24, 2002, the Company participated in a private mediation, and as a result, reached a settlement of all claims, pursuant to which the Company agreed to pay the Santa Clara Center for Occupational Safety and Health an amount equal to \$175,000. The parties have executed a settlement agreement, and the court approved the settlement on December 31, 2002, and dismissal of the case is pending.

The Company has entered into contracts to supply several large customers with GaAs wafers. The contracts guarantee the delivery of a certain number of wafers between January 1, 2001 and December 31, 2003 with a current contract value of \$5.0 million. The contract sales prices are subject to review quarterly and can be adjusted in the event that raw material prices change. In the event of non-delivery of the determined wafer quantities in any monthly delivery period, the Company could be subject to non-performance penalties of between 5% and 10% of the value of the delinquent monthly deliveries. The Company has not received any claims for non-performance penalties due to non-delivery. Partial prepayments received for these supply contracts totaling \$2.2 million are included in accrued liabilities at December 31, 2002. As of December 31, 2002, the Company has met all of its delivery obligations under these contracts and expects to do so for the remainder of the contract terms.

AXT, INC.**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

The Company leases certain office space, manufacturing facilities and property under long-term operating leases expiring at various dates through March 2008. Total rent expense under these operating leases was approximately \$947,000 for the year ended December 31, 2002 and \$779,000 in 2001.

Included in property, plant and equipment is equipment that is leased under non-cancelable leases accounted for as capital leases. These leases were approximately \$8.4 million at December 31, 2002 and \$14 million at December 31, 2001. These leases expire at various dates through 2006.

Total minimum lease payments under the above leases as of December 31, 2002, are summarized below (in thousands):

	Capital Leases	Operating Leases	Total
2003	\$ 4,090	\$ 1,200	\$ 5,290
2004	2,757	1,231	3,988
2005	1,908	1,115	3,023
2006	549	836	1,385
Thereafter	—	771	771
	<u>\$ 9,304</u>	<u>\$ 5,153</u>	<u>\$ 14,457</u>
Less amounts representing interest at 3.6% to 8.8%	(895)		
	<u>8,409</u>		
Less short-term portion	(3,562)		
	<u>\$ 4,847</u>		

Note 20. Foreign Exchange Contracts and Transaction Gains/ Losses

The Company uses short-term forward exchange contracts for hedging purposes to reduce the effects of adverse foreign exchange rate movements. The Company has purchased foreign exchange contracts to hedge against certain trade accounts receivable denominated in Japanese yen. The change in the fair value of the forward contracts is recognized as part of the related foreign currency transactions as they occur. As of December 31, 2002, the Company's outstanding commitments with respect to the foreign exchange contracts, which were commitments to sell Japanese yen, had a total contract value of approximately \$2.8 million.

The Company incurred a foreign transaction exchange gain of \$28,000 for the year ended December 31, 2002, a loss of \$357,000 in 2001 and a loss of \$552,000 in 2000.

Note 21. Subsequent Events

On March 11, 2003, the Company completed the sale of its property located at 4281 Technology Drive, Fremont, California, for \$6.3 million. Net cash proceeds from the sale were \$6.0 million. Under the terms of the sale agreement, the Company has agreed to lease back the property for a five-year period. Accordingly, on March 11, 2003, the company signed an operating lease for 4281 Technology Drive through March 2008. Annual rent under this operating lease is approximately \$600,000. This annual rent is reflected in Note 19, Commitments and Contingencies.

On March 14, 2003, the Company announced a program to repurchase up to 2 million shares of its common stock over a twelve-month period ending March 7, 2004.

CERTIFICATIONS

I, Morris S. Young, Chief Executive Officer of the registrant, certify that:

1. I have reviewed this annual report on Form 10-K of AXT, Inc.;
2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and we have:
 - (a) designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
 - (b) evaluated the effectiveness of the registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the "Evaluation Date"); and
 - (c) presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent function):
 - (a) all significant deficiencies in the design or operation of internal controls which could adversely affect the registrant's ability to record, process, summarize and report financial data and have identified for the registrant's auditors any material weaknesses in internal controls; and
 - (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls; and
6. The registrant's other certifying officer and I have indicated in this annual report whether or not there were significant changes in internal controls or in other factors that could significantly affect the internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

/s/ MORRIS S. YOUNG

Morris S. Young
Chief Executive Officer

Dated: March 21, 2003

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I, Donald L. Tatzin, Chief Financial Officer of the registrant, certify that:

1. I have reviewed this annual report on Form 10-K of AXT, Inc.;
2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and we have:
 - (a) designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
 - (b) evaluated the effectiveness of the registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the "Evaluation Date"); and
 - (c) presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent function):
 - (a) all significant deficiencies in the design or operation of internal controls which could adversely affect the registrant's ability to record, process, summarize and report financial data and have identified for the registrant's auditors any material weaknesses in internal controls; and
 - (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls; and
6. The registrant's other certifying officer and I have indicated in this annual report whether or not there were significant changes in internal controls or in other factors that could significantly affect the internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

/s/ DONALD L. TATZIN

Donald L. Tatzin
Chief Financial Officer

Dated: March 21, 2003

AXT, INC.
EXHIBITS
TO
FORM 10-K ANNUAL REPORT
For the Year Ended
December 31, 2002

Exhibit Number	Description
2.1(1)	Agreement and Plan of Merger between American Xtal Technology, a California corporation, and American Xtal Technology Delaware Corporation, a Delaware corporation.
2.2(4)	Agreement and Plan of Reorganization dated May 27, 1999 (which is incorporated herein by reference to Exhibit 2.1 to the registrant's form 8-K dated May 28, 1999).
2.3(4)	Certificate of Merger dated May 27, 1999, filed with the Secretary of State of the State of Delaware on May 28, 1999 (which is incorporated herein by reference to Exhibit 2.1 to the registrant's form 8-K dated May 28, 1999).
2.4(4)	Articles of Merger dated May 27, 1999, filed with the Secretary of State of Nevada on May 28, 1999 (which is incorporated herein by reference to Exhibit 2.1 to the registrant's form 8-K dated May 28, 1999).
2.5(4)	Agreement and Plan of Reorganization by and among American XTAL Technology, Inc., Monterey Acquisition Corp., Lyte Optronics, Inc. and certain stockholders of Lyte Optronics, Inc. dated May 27, 1999.
3.1(3)	Restated Certificate of Incorporation
3.2(4)	Certificate of Designation, Preferences and Rights of Series A Preferred Stock, as filed with the Secretary of State of the state of Delaware on May 27, 1999 (which is incorporated herein by reference to Exhibit 2.1 to the registrant's form 8-K dated May 28, 1999).
3.3(4)	By Laws
4.0(4)	Rights Agreement
4.0(5)	Rights Agreement
10.1(1)	Form of Indemnification Agreement for directors and officers.*
10.2(1)	1993 Stock Option Plan and forms of agreements thereunder.*
10.3(1)	1997 Stock Option Plan and forms of agreements thereunder.*
10.4(1)	1997 Employee Stock Purchase Plan and forms of agreements thereunder.*
10.5(1)	1998 Employee Stock Purchase Plan and forms of agreements thereunder.*
10.6(1)	Loan Agreement between U.S. Bank National Association and us dated March 4, 1998.
10.7(2)	Purchase and Sale Agreement by and between Limar Realty Corp. #23 and us dated April 1998.
10.8(3)	Loan Agreement between U.S. Bank National Association and us dated September 18, 1998.
10.9(3)	Letter of Credit and Reimbursement Agreement between U.S. Bank National Association and us dated December 1, 1998.
10.10(3)	Bond Purchase Contract between Dain Rauscher Incorporated and us dated December 1, 1998.
10.11(3)	Remarketing Agreement between Dain Rauscher Incorporated and us dated December 1, 1998. haven't there been any material contracts since 1998?
21.1(1)	List of Subsidiaries.
24.1	Power of Attorney (see signature page).
99.1	Certification Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

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Exhibit Number	Description
99.2	Certification Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

- (1) As filed with the SEC in our Registration Statement on Form S-1 on March 17, 1998.
- (2) As filed with the SEC in our Registration Statement on Amendment No. 2 to Form S-1 on May 11, 1998.
- (3) As filed with the SEC in our Annual Report on Form 10-K for the year ended December 31, 1998.
- (4) As filed with the SEC in our Form 8-K on June 14, 1999.
- (5) As filed with the SEC in our Form 8-K on May 30, 2001.

* Indicates a management contract or compensatory plan or arrangement.

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

In connection with the Annual Report of AXT, Inc. (the "Company") on Form 10-K for the year ended December 31, 2002 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), Morris S. Young, as Chief Executive Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

March 21, 2003

/s/ Morris S. Young

Morris S. Young
Chief Executive Officer

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

In connection with the Annual Report of AXT, Inc. (the "Company") on Form 10-K for the year ended December 31, 2002 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), Donald L. Tatzin, as Chief Financial Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

March 21, 2003

/s/ Donald L. Tatzin

Donald L. Tatzin
Chief Financial Officer