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To Our Shareholders

The long awaited recovery in the semiconductor capital equipment industry arrived with a full head of steam in calendar year 2004. For Helix, it provided the opportunity to demonstrate the speed of our response when the industry shifts into high gear. Our customers depend on us to be an exemplary supplier when their business is ramping. Judging from recent recognition of our performance and commitments to our new product and service platforms, we didn't let them down.

Throughout the global electronics industry demand strengthened and new production capacity was added at a rate not seen in several years. The breadth of the recovery was impressive, with strong performance in each of our core markets of semiconductors, data storage and flat panel displays. At the heart of the production tools that delivered this new capacity are the enabling technologies that we develop at Helix. The products and services of Helix Technology Corporation were key to improving the productivity of the industry's new capacity, and thus the operating economics. Helping our customers' operating economics is the surest way to improved performance for Helix.

Our accomplishments in 2004 were built on the foundation of strategic investments made during the downturn, positioning us for the inevitable opportunities that each upturn provides. We were profitable throughout the year, with growth in each of our businesses, and particularly successful in Asia, where our TrueBlue[®] service agreements have been accepted in every country we serve, including the Peoples Republic of China, where we signed our first agreement. Top supplier awards from two of our largest customers validated the importance of our partnerships and our critical role in their success. These accomplishments and many others like them laid the groundwork for the financial success that followed.

Helix sales increased to \$159.7 million in 2004, a 50.8 percent increase over 2003. Gross margin increased to \$63.8 million, a 77.1 percent increase from the prior year and a strong indication of the operating leverage that is a hallmark of Helix Technology Corporation. By holding operating expenses to \$46.4 million, a 12.3% increase over the prior year, our operating income increased to \$17.4 million, compared to an operating loss of \$5.3 million in 2003. Our net income was \$1.05 per diluted share, compared to a 2003 loss of \$0.43 per diluted share.

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The 300mm wafer migration gained momentum in 2004, and will continue to account for the majority of semiconductor capital equipment investment well into the future. For Helix, this means the new product investments of the last few years will represent a growing portion of our revenue. For our customers, the higher performance of these new Helix products integrated in their 300mm tools enhances critical vacuum system performance and improves productivity.

We continue to invest in those emerging markets where the need for more critical vacuum performance is challenging the status quo. In metrology and advanced lithography the performance of our more advanced high vacuum solutions will enable our OEM customers to make the successful transition to 65 nanometer and beyond. As these technologies become more dependent on our high vacuum solutions, Helix is well positioned to provide the exceptional application and field support that our other process customers have come to expect.

Our CTI-Cryogenics operation continued the On-Board[®] *IS* platform transition with more compelling examples of improved operating economics. In the ion implant market, the increasing number and complexity of implant steps must be offset by higher throughput at each new technology node. The new On-Board *IS* product for ion implantation increases the throughput potential of each tool, and our largest implant customers have incorporated this solution into their new tools.

The acquisition of Polycold Systems from Intermagnetics General early in 2005 extends our reach to customers with much larger vacuum systems, such as those used to manufacture flat panel displays and data storage devices. The same operating economics that drive semiconductor device manufacture are affecting displays and storage devices, and their major role in consumer electronics makes their cost and manufacturing productivity requirements even more demanding.

In addition, as the Polycold integration gains momentum, we are seeing more opportunities to take their emerging products to our semiconductor capital equipment customers who know and trust that the Helix infrastructure can only add to their confidence in choosing Polycold solutions.

At Granville-Phillips, next generation combination measurement is changing the way our customers use vacuum measurement in their system controls. They are lowering their cost by using less discrete and more integrated solutions, which saves not only the cost of instrumentation, but the ancillary costs associated with every penetration of these elaborate vacuum process chambers. These integrated measurement solutions provide tighter process control and better tool productivity and our Granville-Phillips product group is a leader in driving this transition.

Our Customer Support Group is now extending the reach of their comprehensive services beyond the traditional support of our own products. Building on the information-based offerings that combine the experience of our field support teams and the enabling power of GOLDLink[®], we are demonstrating the broader reach of this capability. The momentum in our True Blue services program continues to build, as the positive impact of higher equipment availability translates to better productivity in our customers' factories.

The strength of our performance spans all of our product and service areas and gives us confidence that the investments we made in emerging opportunities and improvements in our customers' operating economics are adding to the solutions they have come to expect from Helix Technology Corporation. The investments are paying off for our customers and for Helix.

While the debate over the long-term growth rate of the semiconductor industry rages on, the growing importance of the industry's capital productivity is not up for debate. All of us at Helix Technology Corporation understand and accept our role in this industry challenge for higher productivity. In our own factories, our employees are continuously improving the cycle time, quality and cost of our products. In our development labs, our engineers and scientists must demonstrate that their next generation product concepts contribute to improved tool productivity. And in our back offices, the speed and accuracy of delivering information for decision making or answering customer inquiries is being measured and improved. The mission is clear. And Helix employees thrive on the challenge.

In January of 2005 we made important changes as part of our succession planning process. Robert J. Lepofsky retired as President and Chief Executive Officer of Helix, a position that he has held for the past fifteen years, and assumed the responsibilities of Chairman of the Board of Directors. Dr. Marvin Schorr, who served as our Chairman for the past eight years, will continue as a member of the Board. Succeeding Robert Lepofsky as President and Chief Executive Officer is James Gentilcore, who was also elected a member of the Board.

We want to thank both Marv and Bob for their exemplary leadership of the Board and the Company, and for the clear path they have set for us to continue building on the record of outstanding corporate governance and profitable Company growth. Our shareholders, employees and customers have benefited from their leadership, vision, and commitment to Helix. We are fortunate for their continued involvement and influence on our future.

We thank each of you for your continued support as we address the challenges of an industry in constant transition, providing abundant opportunities for those that are ready. At Helix Technology Corporation, we are ready.



James Gentilcore
President
Chief Executive Officer

**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, 2004,
or

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

For the transition period from _____ to _____

Commission file number 0-6866

HELIX TECHNOLOGY CORPORATION

(Exact name of registrant as specified in its charter)

Delaware (State of Incorporation)	04-2423640 (I.R.S. Employer Identification No.)
Mansfield Corporate Center, Nine Hampshire Street, Mansfield, Massachusetts (Address of principal executive offices)	02048-9171 (Zip Code)

Registrant's telephone number, including area code: **(508) 337-5500**

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

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

Common Stock, \$1 Par Value

(Title of class)

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

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

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

Aggregate market value of the registrant's common stock held by non-affiliates of the registrant as of July 2, 2004, based upon the closing price of a share of the registrant's common stock as reported by the Nasdaq National Market on that date: \$453,840,267

Number of shares outstanding of the registrant's Common Stock, \$1 Par Value, as of February 25, 2005: 26,114,229

DOCUMENTS INCORPORATED BY REFERENCE

<u>Document Description</u>	<u>Part of Form 10-K into Which Incorporated</u>
Portions of the registrant's Definitive Proxy Statement with respect to the 2005 Annual Meeting of Stockholders to be filed with the SEC no later than 120 days after the close of the Company's fiscal year	Part III

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PART I

Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements. These forward-looking statements appear principally in the sections entitled "Business" and "Management's Discussion and Analysis of Financial Condition and Results of Operations." Forward-looking statements may appear in other sections of this report as well. Generally, the forward-looking statements in this report use words like "expect," "anticipate," "plan," "intend," "believe," "seek," "estimate," and similar expressions.

The forward-looking statements include, but are not limited to, statements regarding:

- Our strategic plans;
- The outlook for our business and industry;
- Anticipated sources of future revenues;
- Anticipated expenses, spending and savings from our cost reduction program;
- Anticipated levels of capital expenditures; and
- The sufficiency of capital to meet working capital and capital expenditure requirements.

Forward-looking statements are not guarantees of future performance and involve certain risks, uncertainties, and assumptions. Important factors that could cause our future results to differ materially from those expressed in any forward-looking statements made by us or on our behalf include, but are not limited to, market acceptance of and demand for our products, the success of our strategic initiatives, including our global support operations and new product introductions, the health of the global semiconductor capital equipment market and the timing and scope of any change in the current industry conditions, our success in sustaining order bookings, and the other risk factors contained in Exhibit 99.1 to this Annual Report on Form 10-K. As a result of the foregoing, we may experience material fluctuations in our operating results on a quarterly basis, which could materially affect our business, financial position, results of operations and stock price. We undertake no obligation to update the information contained in this report to reflect subsequently occurring events or circumstances.

ITEM 1. BUSINESS.

Helix Technology Corporation ("Company") is a world leader in the development, manufacture, and application of innovative vacuum technology solutions for the semiconductor, data storage, and flat panel display markets. Our vacuum systems provide enabling technology for several key steps within the semiconductor manufacturing process, including ion implantation, physical vapor deposition, chemical vapor deposition and etching. Semiconductor manufacturers use our systems to create and maintain a vacuum environment, which is critical to their manufacturing processes. We are a leading provider of vacuum systems technology to the world's largest semiconductor capital equipment and semiconductor manufacturers, placing us at a critical point in their advanced technology manufacturing process. We have long-standing customer relationships with many semiconductor capital equipment manufacturers, including Applied Materials, Axcelis, Novellus, Unaxis, Varian Semiconductor and Veeco, as well as semiconductor manufacturers such as AMD, Atmel, Freescale, Fujitsu, Infineon, Intel, Micron, NEC, Philips, Samsung, STMicroelectronics, Texas Instruments and TSMC. Our products are also used in a broad range of industrial manufacturing applications and advanced research and development laboratories.

We also provide an extensive range of global support and vacuum system monitoring services that lower our end-users' total costs of ownership. We increase our customers' system uptime through rapid response to potential operating problems. We also develop and deliver enhancements to our customers' installed base of production tools. Our service offerings include our TrueBlueSM Service Agreements, our GUTS[®] (Guaranteed Up Time Support) customer response system and our GOLDLink[®] (Global On-Line Diagnostics) support system, which provides a remote e-diagnostics solution that allows us to monitor, in real time, the vacuum system performance of our customers' production tools. Our GOLDLink capability has made us a leading total solution provider in the emerging market for Internet-based, proactive e-diagnostics for the semiconductor and semiconductor capital equipment industries.

On December 15, 2004, we entered into an agreement to acquire IGC Polycold Systems Inc. ("Polycold"), a producer of high-speed water vapor cryopumping and cryogenic cooling products, for \$49.2 million in cash at closing and up to \$3.3 million in transaction-related tax payments. The acquisition closed on February 15, 2005. Polycold's product lines, which include water vapor cryopumps, liquid nitrogen alternatives, detector coolers and gas chillers, will complement and extend our existing product offerings.

Industry Overview

In recent years the semiconductor industry has experienced significant growth in both the volume and complexity of devices manufactured. The growth in the volume of semiconductors produced has been driven by the increased demand for products historically using semiconductors, including telecommunications equipment, consumer electronics, personal computers and wireless communication devices. Semiconductor use is also increasing in new product areas ranging from automobiles to children's toys, the growth of the Internet, and the proliferation of applications in the data storage and data transfer industry. Furthermore, growing consumer demand for smaller, more sophisticated electronic products, such as mobile phones, laptop computers and wireless networking equipment, has increased the complexity of the semiconductors integrated into these products.

To meet these demands, semiconductor manufacturers have sought volume and efficiency improvements through increased equipment utilization, higher manufacturing yields, the addition of manufacturing equipment in existing facilities and the construction of new fabrication facilities. To achieve greater economies of production, the semiconductor industry is currently transitioning from building semiconductor wafers that are 200 millimeters in diameter to wafers that are 300 millimeters in diameter, with the goal of producing more chips per wafer, thus lowering the cost per chip. This transition to new 300-millimeter equipment is expected to continue over the next several years and represents one of the primary drivers of growth in the semiconductor capital equipment industry in the near term.

The production of advanced semiconductor chips is an extremely complex and logistically challenging manufacturing activity. To create integrated circuits, or semiconductor chips, a semiconductor manufacturer uses several sequential process steps including ion implantation; chemical vapor deposition and physical vapor deposition, which are referred to as CVD and PVD; and etching. Ion implantation equipment injects charged ions into the wafer to change a material's characteristics. CVD and PVD equipment is used to deposit materials onto the surface of the wafer. Etching equipment removes unwanted materials from the wafer. These steps, which comprise the initial fabrication of the integrated circuit and are referred to in the industry as front-end processes, are repeated many times to create the desired pattern on the silicon wafer. Following these front-end processes, the wafer is cut into individual devices, or chips, which then undergo additional assembly and testing steps.

Removing unwanted gases and other impurities is an integral aspect of several stages of the semiconductor fabrication process, particularly the deposition, ion implantation and etching stages. In order to achieve optimal production yields, semiconductor manufacturers must also ensure that each process operates at carefully controlled pressure levels. Impurities in the fabrication process or incorrect pressure levels can lower production yields, thereby significantly increasing the cost per usable semiconductor chip produced. To meet their manufacturing objectives, semiconductor manufacturers require high vacuum pumps to remove all potentially contaminating gases from the manufacturing process. In addition, in light of the importance of proper pressure measurement throughout the fabrication process, vacuum measurement systems that are capable of monitoring and maintaining appropriate pressure levels are critical to ensuring high product yields and preventing device defects.

Helix Solution

We are a leading manufacturer of highly specialized vacuum pumping and measurement systems that meet the demanding process requirements of manufacturers in the semiconductor, data storage and flat panel display markets. We also provide original equipment manufacturers, or OEMs, and end-users of our systems an extensive range of global support services, from vacuum systems design assistance to vacuum process performance monitoring. We believe our vacuum technology solutions increase productivity in the fabrication facility, thereby increasing the value of an OEM's production tool and increasing the device maker's return on investment. We also believe our leadership position in vacuum pumping and measurement systems stems from five key competitive advantages:

Comprehensive, Integrated Vacuum Solutions. We combine our innovative vacuum pumping and measurement components with our proprietary On-Board[®] diagnostic and control technology to provide comprehensive, high-performance vacuum solutions. Our On-Board technology is based upon a comprehensive control architecture that serves as a foundation for the development of highly integrated product offerings. We provide both the hardware and software elements that integrate process control, diagnostics and communication capabilities for all components within the vacuum system. This integration capability extends to vacuum system components manufactured by other suppliers and allows our products to interoperate with their products. Our integrated solutions directly address our end-users' concerns by increasing system uptime, lowering the total cost of ownership, and facilitating the move to remote e-diagnostics of critical enabling processes. We further leverage the information collected by our On-Board technology to provide enhanced customer support services and a range of information-based services.

Broad Customer Base. We have long-standing customer relationships with both OEMs and end-users of semiconductor capital equipment. Over the last three years, an average of approximately 49% of our net sales has come directly from end-users. We believe our strong relationships with end-users provide us with a competitive advantage over many other suppliers to the semiconductor capital

equipment industry. Our work with both OEMs and end-users provides us with unique insights into emerging technologies and applications. We understand our customers' specific needs, and we incorporate our insights into our innovative product offerings. Our balanced mix of OEM and end-user customers and status as a supplier to essentially all of the major front-end OEMs in our segment demonstrate our leading position in the industry.

Superior Global Customer Support. Continuous production tool operation is critical for our customers. We believe providing a high level of service and support gives us a competitive advantage and enhances our ability to build long-term customer relationships. We continue to build upon the solid relationships that have been established with our customers through the introduction of proactive TrueBlue Service Agreements. Helix TrueBlue Service Agreements allow our customers to realize the benefits of improved performance, increased productivity, ease of business transactions, and the application of knowledge in solving more of their problems. Our leading-edge technology and world-class customer support resources are leveraged as an integral part of our service and support capabilities. Through our GUTS rapid response offering, we provide our customers anywhere in the world access 24 hours a day to a trained Helix employee who can diagnose a problem and initiate a corrective action within one hour. GOLDLink allows us to help our customers monitor the operating performance of their manufacturing facilities and recommend preventative courses of action before problems occur. We have more than ten service and support offices around the world, and as of December 31, 2004, 163, or 27%, of our employees were dedicated to our global customer support activities.

World-Class, Responsive Manufacturing Operations. We have established a fast-cycle-time manufacturing process that provides us with the flexibility to meet the rapidly changing requirements of our customers. We have harnessed our significant manufacturing expertise and our long-standing supplier relationships to build a "just-in-time" manufacturing process that utilizes outsourced subassembly for certain components and allows us to better manage the cyclicity of our business. Our "just-in-time" process allows us to respond to our OEM customers' rapidly changing product needs and help them operate their manufacturing processes at peak efficiency levels.

Technological Leadership in Complex Vacuum Solutions. Since our inception in 1967 we have participated in the vacuum technology industry and have applied this knowledge to the development of sophisticated vacuum systems for advanced technology applications, such as the building of integrated circuits. Our team of scientists, product development personnel, manufacturing specialists and hardware and software engineers is focused on advancements in vacuum technology. Our customers recognize us as experts capable of assisting them in the design and selection of vacuum systems and components for their new product initiatives and fabrication facilities. As of December 31, 2004, we had 184 patents issued and 60 patents pending relating to the design and development of our products and systems.

Products and Services

Vacuum Pumping Components and Systems

Our CTI-Cryogenics cryopumps and systems create an impurity-free vacuum environment for both the PVD and ion implantation markets. Our pumps offer customers rapid, customizable pump speeds, quick system pumpdown and impurity-free vacuum pumping processes without the use of fluids, lubricants or moving parts, ensuring high product yields and process throughputs. Our On-Board system enables central monitoring and control, either in-fab or at remote sites, of every significant function of both individual pumps and entire vacuum networks. We currently supply essentially all major front-end semiconductor capital equipment OEMs and semiconductor manufacturers.

We also provide waterpumps and turbopumps, under the TurboPlus[®] line of products, to support the CVD and etch processes. Our waterpumps are high-performance vacuum pumps that optimize the performance of CVD and etch systems by increasing water vapor pumping speed by a factor of five or more, improving system throughput and providing better process results. TurboPlus Vacuum Pumps offer the process advantages of throughput pumping from the turbopump and the uptime benefits of high-speed water vapor pumping, integrated into a compact package with a single, easy-to-use interface.

Over the last three years, net sales of our CTI-Cryogenics products and related support services represented the majority of our consolidated net sales.

We completed our acquisition of Polycold during February 2005. Polycold designs and manufactures a line of closed-loop cryogenic refrigeration systems for vacuum deposition, process heat transfer, and other cooling applications with heat removal from 0.5 watts to 3600 watts and cooling to temperatures as low as -203 Celsius. Its products include water vapor cryopumps, liquid nitrogen alternatives, detector coolers and gas chillers. Polycold's products are used in a broad range of markets, such as semiconductors, flat panel displays, optical networking, detector cooling for drug discovery, aerospace, telescopic, and laboratory requirements, ophthalmic and glass surface coating, web coating, packaging and decorative coating processes.

Vacuum Measurement Components and Systems

Our Granville-Phillips STABIL-ION[®], CONVECTRON[®] and MICRO-ION[®] vacuum measurement components and systems are used in the PVD, ion implantation, CVD, and etch processes. Our vacuum gauging products are also integrated into analytical instruments, primarily mass spectrometers. STABIL-ION, CONVECTRON and MICRO-ION systems are individually calibrated at numerous pressure values, resulting in a stable and accurate gauge that does not change calibration with time of use. This stable calibration is essential to starting the production process at the same true pressure on every production run. It also provides improved gauge-to-gauge reproducibility, which is essential for process replication.

Companies depend on our measurement systems to provide repeatable readings, ensuring that processes start at the desired pressure. Non-repeatable gauges can shift over time, causing two different effects:

- If the gauge reads lower than the actual pressure, a process can be started when the pressure is too high, possibly causing product defects.
- If the gauge reads higher than the actual pressure, the system will pump down to a pressure lower than necessary for a process. This is equivalent to system downtime.

Over the last three years, net sales of our Granville-Phillips products and related services represented between 16% and 20% of our net sales.

Global Customer Support

To our customers, even a few minutes of production downtime is unacceptable. Given the magnitude of the investment in plant and equipment and the value of the work-in-process, which is expected to increase with the move to 300-millimeter production equipment, tool availability is a priority for our customers.

From the industry standard of GUTS to the pioneering e-Diagnostic implementation of GOLDLink support, we have continually demonstrated our commitment to serving our customer base with the most advanced, innovative tools available.

We introduced our GUTS rapid response system in 1986. Our GUTS rapid response system is broadly recognized for delivering superior responsiveness to problems whenever and wherever they may occur. Every call to our customer service center is answered by a capable, empowered employee who has the resources to diagnose a customer problem and initiate corrective action, including dispatching a technician or part to the customer in less than one hour.

While our GUTS rapid response system continues to be a leader in reactive customer support, the industry is moving toward enhanced service offerings that rely on proactive problem solving to boost customer productivity. Extended service agreements, which leverage our core competencies and rely on key technology and capabilities, such as Internet-based remote e-diagnostics, can further enhance production efficiency and throughput. With the introduction of TrueBlue Service Agreements, we are well positioned to extend the benefits of e-diagnostics using our On-Board Information Network and our GOLDLink capability. Coupled with our On-Board technology, the GOLDLink network provides us with the ability to access performance data of key vacuum system components, including third-party products, right at the production tool. GOLDLink consists of three key components: hardware and software located on tools in the manufacturing facility, our customer support center and support engineers, and the networks connecting the tools and our support operations.

Our GOLDLink capability allows our customers to redirect their employees to focus on their core competencies by leveraging our vacuum technology and control core competencies. Our ability to detect performance anomalies before they cause a system failure minimizes our customers' risk of significant tool downtime and can result in increased plant productivity.

In the past few years, we received approximately 30% to 37% of our net sales from our global customer support, including the delivery and installation of spare parts, retrofits and upgrades.

Customers

We market and sell our products and services primarily to large original equipment and end-user manufacturers of semiconductor, data storage, flat panel display, and other industrial applications. Net sales to OEMs represented 54%, 49%, and 50% of our net sales for 2004, 2003 and 2002, respectively.

Semiconductor Customers

We sell our products and services primarily to semiconductor capital equipment manufacturers and end-users for incorporation into equipment used to make integrated circuits. Our products are currently used in a variety of applications including CVD, PVD, ion implantation and etch. We are also building products for use in the lithography process of semiconductor manufacturing. Precise vacuum pressure levels are critical in enabling the production of integrated circuits. We anticipate that the semiconductor capital equipment industry will continue to be a substantial part of our business for the foreseeable future.

Data Storage Customers

We sell products and services to data storage equipment manufacturers and to data storage device manufacturers for use in producing a variety of products including CDs; computer hard disks, including both media and thin-film heads; CD-ROMs; and DVDs. These products use a PVD process to produce optical and magnetic thin-film layers, as well as a protective wear layer.

Flat Panel Display Customers

We sell our products and services to equipment manufacturers and manufacturers of flat panel displays, which have fabrication processes similar to those employed in manufacturing integrated circuits. Flat panel technology produces bright, sharp, large, color-rich images on flat screens for products ranging from hand-held computer games, to laptop and desktop computer monitors, to large-screen televisions.

Other Customers

We sell our products and services to OEMs and producers of end products in a variety of industrial markets. Our products are used in a variety of analytical instruments and industrial and scientific research products. Thin-film optical coatings are used in the manufacture of many industrial products including architectural glass, eyeglasses, lenses, and front surface mirrors. Thin films of diamond-like coatings and other materials are currently applied to products to strengthen and harden surfaces on such diverse products as tools, razor blades, automotive parts, and hip joint replacements.

The table below represents some of our customers in each of our primary target markets:

Semiconductors

AMD
Atmel
Freescale
Fujitsu
Infineon
Intel
Micron
NEC
Philips
Samsung
STMicroelectronics
Texas Instruments
TSMC

Semiconductor Equipment

Applied Materials
Axcelis
Novellus
Varian Semiconductor
Veeco

Data Storage

Seagate
Unaxis
Veeco

Flat Panel Displays

AKT
LG Philips

Analytical Instruments

Agilent
Riber

Our one reportable segment is the development, manufacture, sale and support of cryogenic and vacuum equipment. Our largest customer is Applied Materials, the world's largest manufacturer of semiconductor capital equipment, representing 28%, 20% and 27%, of our net sales for 2004, 2003 and 2002, respectively. Our 10 largest customers accounted for 53%, 44%, and 43%, of our net sales for 2004, 2003, and 2002, respectively.

Sales and Marketing

We sell our products and services, primarily through direct sales personnel, to customers in the United States, Europe, and the Pacific Rim. Our sales and support personnel are located at our headquarters in Mansfield, Massachusetts, and in regional offices in Longmont, Colorado; Santa Clara, California; Austin, Texas; Tempe, Arizona; Portland, Oregon; Amsterdam, the Netherlands; Darmstadt, Germany;

Orsay, France; Dunfermline, Scotland; Tokyo, Japan; Hsinchu, Taiwan; and Shanghai and Hong Kong, China. We also have distributors and representatives in other major markets. See Note H, "Segment Information," of the Notes to Consolidated Financial Statements for further discussion of our U.S. and international sales.

We market our products worldwide to companies in our target customer segments. We use several marketing programs focused on our targeted markets to support the sale and distribution of our products. We use exhibitions at a limited number of prominent tradeshows and conferences and presentations at technology seminars to promote awareness of the Company and its products. We also utilize promotional product literature and advertise and publish technical articles in select trade and technical journals.

Manufacturing

We manufacture our pump and compressor components at our facility in Mansfield, Massachusetts, and our measurement gauge components at our Longmont, Colorado, facility. Our use of a lean manufacturing organization, including fast cycle times, embedded quality control, and supply chain management, positions us to meet or exceed our customers' demands.

Our manufacturing activities consist of the assembly and testing of components and subassemblies, which are then integrated into our final products. Once final testing of all subassemblies is completed, the final product is subjected to a series of reliability enhancing operations prior to shipment to customers. We purchase a wide range of electronic, mechanical, and electrical components, some of which are designed to our specifications. We outsource some of our subassembly work. We consider our ability to meet our customers' significantly fluctuating product demands at consistently short lead times using demand flow and lean manufacturing techniques to be a distinct competitive advantage.

Our business is, generally, not dependent on the availability of raw materials or components from any single source. Certain components, however, may be available from only one or two qualified sources. Our policy is to develop alternative sources for components and, where possible, to avoid using scarce raw materials in our products.

Research and Development

Our industry continues to experience rapid technological change, requiring us to frequently introduce new products and enhancements. We believe that our success will depend upon our ability to identify and provide total systems solutions for our customers' problems. We seek to develop new products and enhancements to our existing products that meet changing customer requirements in our current and new markets. We have in the past made, and expect to continue to make, substantial investments in product and technological development. We believe our experience and relationships will remain important factors to enable us to develop products to meet our customers' needs and penetrate our target markets. Through our direct sales process we monitor changing customer needs, changes in the marketplace and emerging industry standards, and are therefore better able to focus our research and development efforts to address these evolving industry requirements.

We expended \$10.8 million in 2004, \$10.1 million in 2003, and \$14.7 million in 2002 on research and development efforts. We have continued our commitment to invest in new product development to maintain our technological and market leadership, including new products for commercial applications, development of products to meet the requirements of 300-millimeter wafer production tools, and enhancements of our core products to improve reliability and manufacturability and increased performance and broader application of GOLDLink capabilities. We perform our research and product development activities at our headquarters in Mansfield, Massachusetts, and at our Longmont, Colorado, facility.

Joint Venture with ULVAC

We participate in a joint venture, ULVAC Cryogenics, Inc., or UCI, with ULVAC Corporation of Chigasaki, Japan. Formed in 1981, UCI manufactures and sells cryogenic vacuum pumps, principally to ULVAC, one of the largest semiconductor and flat panel OEMs in Japan. Each company owns 50% of UCI and we made an initial cash investment of approximately \$100,000, with no subsequent cash investments. The joint venture arrangement includes a license and technology agreement from us and a management and consultation agreement from ULVAC.

Competition

The markets for our products and services are highly competitive and are characterized by ongoing technological development and changing customer requirements. We believe that market-driven pressures on our customers to increase productivity and reduce costs are prevalent throughout the markets for our products. In markets in which we have an established presence, we compete primarily on the basis of product performance, applications expertise, and historical customer relationships and support. In new markets for our products,

we compete primarily on the basis of product performance, price, and range of features. Other significant competitive factors in our markets include product reliability, on-time delivery, technology, and the ability to adaptively provide solutions for our customers' evolving needs.

We have foreign and domestic competitors for each of our product lines. Some of these competitors are subsidiaries or divisions of larger corporations and have greater resources than we have. If these competitors bring technologically superior products to market in the future, they could overcome our competitive advantages. Our ability to continue to compete successfully depends on our ability to make timely introductions of system enhancements and new products and services, particularly relating to the new 300-millimeter technology, while continuing to provide excellent pre- and post-sales support on existing products and services. We believe we will be required to maintain a high level of investment in research and development and sales and marketing in order to remain competitive.

We are among a relatively small number of companies in the vacuum technology market. If one of our competitors acquires, or is acquired by, another company in this sector, it could result in a stronger competitor with greater resources than we have. Alternatively, if one of our customers were to acquire a vacuum technology company so that it could supply its own requirements, our net sales would decrease.

Employees

As of December 31, 2004, we had 501 permanent and 100 temporary employees worldwide, of which 483 were employed in North America, 78 in Asia and 40 in Europe. As of December 31, 2004, none of our employees based in the United States were represented by a union, and we have never experienced a work stoppage, slowdown or strike. We consider our relationship with our employees to be good.

Environmental Affairs

We are subject to environmental laws and regulations in the countries in which we operate that regulate, among other things: air emissions; water discharges; and the generation, use, storage, transportation, handling and disposal of solid and hazardous wastes produced by our manufacturing and research and development activities. As with other companies engaged in like businesses, the nature of our operations exposes us to the risk of environmental liabilities, claims, penalties and orders. We believe, however, that our operations are in substantial compliance with applicable environmental laws and regulations and that there are no pending environmental matters that would have a material impact on our business.

Intellectual Property

We rely on patent, copyright, trademark and trade secret protection, as well as contractual restrictions, in the United States and in other countries to protect our proprietary rights in our products and our business. As of December 31, 2004, we had 99 patents in the United States and 85 patents in other countries, as well as 60 patent applications (21 in the United States and 39 in other countries) on file with various patent agencies worldwide. These patents expire at various years through 2021.

We have a number of trademarks that we consider important to our business. These trademarks are protected by registration in the United States and other countries in which we market our products.

Backlog

We had a backlog of orders of approximately \$13.4 million that we believed to be firm at December 31, 2004, compared with \$15.0 million at December 31, 2003. We expect to recognize revenue from essentially all of the December 31, 2004 backlog during 2005.

Available Information

Our Internet address is www.helixtechnology.com. We make available free of charge through our website our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Information contained on the website is not part of this report.

ITEM 2. PROPERTIES.

We occupy approximately 290,900 square feet worldwide, as described in the table below.

<u>Location</u>	<u>Size (Sq. Ft.)</u>	<u>Lease Expires</u>	<u>Functions</u>
Massachusetts	160,000 14,000	2006(1) 2005	Corporate headquarters, engineering, manufacturing, sales and marketing, customer support, repair center, and administration
Colorado	60,000	2015	Engineering, manufacturing, and sales and marketing
California	11,000	2005	Sales office, customer support, and repair center
Texas	6,000	2007	Sales office and customer support
Scotland	1,000	2005	Sales office and customer support
Germany	6,000	2008	Sales office and customer support
France	6,900	2006	Sales office, customer support, and repair center
Japan	8,100	2006	Sales office, customer support, and repair center
Taiwan	9,600	2006	Sales office, customer support, and repair center
China	8,300	2005	Sales office, customer support, and repair center

(1) The lease on this facility provides for renewal options for up to fifteen additional years.

We believe we have adequate facilities to meet our currently anticipated requirements and that suitable additional or substitute facilities will be available if required.

ITEM 3. LEGAL PROCEEDINGS.

We may be involved in the normal course of business in ordinary routine litigation incidental to the business. We are not a party to any proceedings that involve amounts that would have a material effect on our financial position or results of operations if such proceedings were resolved unfavorably.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS.

During the quarter ended December 31, 2004, no matters were submitted to a vote of security holders through the solicitation of proxies or otherwise.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES.

Our common stock is traded on the Nasdaq National Market under the symbol HELX. At December 31, 2004, there were 26,114,229 shares of common stock outstanding and approximately 506 common stockholders of record.

Price Range of Common Stock and Cash Dividend Per Common Share

The following table sets forth the high and low sale prices per share of our common stock during each of the quarters for the two most recent fiscal years.

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2004				
High	\$27.90	\$26.18	\$19.64	\$17.61
Low	\$20.37	\$16.95	\$12.62	\$12.53
Cash dividends per share	\$ 0.04	\$ 0.04	\$ 0.08	\$ 0.08
2003				
High	\$14.20	\$14.28	\$19.28	\$22.28
Low	\$ 6.95	\$ 8.35	\$12.89	\$14.90
Cash dividends per share	\$ 0.04	\$ 0.04	\$ 0.04	\$ 0.04

On January 27, 2005, the Board of Directors declared a quarterly cash dividend of \$0.08 per common share payable on February 17, 2005, to common stockholders of record at the close of business on February 7, 2005.

ITEM 6. SELECTED CONSOLIDATED FINANCIAL DATA.

The following table summarizes certain selected consolidated financial data that should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes included elsewhere herein.

<i>(in thousands except per share data)</i>	December 31,				
	2004	2003	2002	2001	2000
Net sales	\$ 159,674	\$ 105,883	\$ 100,241	\$ 112,994	\$ 253,085
Net income (loss) (1)	\$ 27,511	\$ (11,136)	\$ (19,418)	\$ (5,940)	\$ 45,870
Net income (loss) per weighted average share, basic	\$ 1.05	\$ (0.43)	\$ (0.77)	\$ (0.26)	\$ 2.04
Net income (loss) per weighted average share, diluted	\$ 1.05	\$ (0.43)	\$ (0.77)	\$ (0.26)	\$ 2.02
Cash dividends per share	\$ 0.24	\$ 0.16	\$ 0.28	\$ 0.44	\$ 0.48
Total assets	\$ 169,564	\$ 145,990	\$ 159,471	\$ 113,580	\$ 141,968
Long-term obligations (2)	\$ 6,403	\$ 8,352	\$ 8,928	\$ 6,758	\$ 5,586
Weighted average shares, basic	26,110	26,099	25,364	22,565	22,498
Weighted average shares, diluted	26,187	26,099	25,364	22,565	22,762

- (1) Net income for the year ended December 31, 2004, reflects a reversal totaling \$8,935,000 of valuation allowance against net deferred tax assets and a net tax benefit of \$4,534,000 related to the settlement of an IRS audit. (See Management's Discussion and Analysis - Provision (Benefit) for Income Taxes.) Net loss for the year ended December 31, 2003, reflects a \$10,674,000 charge to establish a full valuation allowance against net deferred tax assets. Net loss for the year ended December 31, 2002, reflects \$13,214,000 of a litigation settlement, restructurings and other charges. Net loss for the year ended December 31, 2001, reflects a restructuring charge of \$1,047,000 related to workforce reductions.
- (2) Long-term obligations consist of accrued retirement costs relating to our defined benefit pension plan and Supplemental Key Executive Retirement Plan.

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

You should read the following discussion and analysis together with our financial statements, related notes and other financial information appearing elsewhere in this report. In addition to historical information, the following discussion and other parts of this report contain forward-looking information that involves risks and uncertainties. Our actual results could differ materially from those anticipated by such forward-looking information due to competitive factors and other factors discussed under "Forward-Looking Statements" in Part 1 and under "Important Factors That May Affect Future Results" in Exhibit 99.1 to this Annual Report on Form 10-K.

Overview

We are a world leader in the development, manufacture, and application of innovative vacuum technology solutions for the semiconductor, data storage, and flat panel display markets. Our vacuum systems provide enabling technology for several key steps within the semiconductor manufacturing process, including ion implantation, physical vapor deposition, chemical vapor deposition and etching. Semiconductor manufacturers use our systems to create and maintain a vacuum environment, which is critical to their manufacturing processes. We are a leading provider of vacuum systems technology to the world's largest semiconductor capital equipment and semiconductor manufacturers, placing us at a critical point in their advanced technology manufacturing process. We have long-standing customer relationships with many semiconductor capital equipment manufacturers, including Applied Materials, Axcelis, Novellus, Unaxis, Varian Semiconductor and Veeco, as well as semiconductor manufacturers such as AMD, Atmel, Freescale, Fujitsu, Infineon, Intel, Micron, NEC, Philips, Samsung, STMicroelectronics, Texas Instruments, and TSMC. Our products are also used in a broad range of industrial manufacturing applications and advanced research and development laboratories.

We also provide an extensive range of global support and vacuum system monitoring services that lower our end-users' total costs of ownership. We increase our customers' system uptime through rapid response to potential operating problems. We also develop and deliver enhancements to our customers' installed base of production tools. Our service offerings include our TrueBlue Service Agreements, our GUTS (Guaranteed Up Time Support) customer response system and our innovative GOLDLink (Global On-Line Diagnostics) support system, which provides a remote e-diagnostics solution that allows us to monitor, in real time, the vacuum system performance of our customers' production tools. Our GOLDLink capability has made us a leading total solution provider in the emerging market for Internet-based, proactive e-diagnostics for the semiconductor and semiconductor capital equipment industries.

The principal market we serve is the global semiconductor capital equipment industry, a highly cyclical business. As a result, we have experienced significant variations in net sales, expenses, and results of operations in the periods presented, and such variations are likely to continue.

Critical Accounting Policies

Our discussion and analysis of our results of operations and liquidity and capital resources are based on our consolidated financial statements which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and disclosure of contingent assets and liabilities. On an ongoing basis, we evaluate our estimates and judgments, including those related to revenue recognition, adequacy of reserves, valuation of investments and income taxes. We base our estimates on historical and anticipated results and trends and on various other assumptions that we believe are reasonable under the circumstances, including assumptions as to future events. These estimates form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. By their nature, estimates are subject to an inherent degree of uncertainty. Actual results may differ from our estimates. We believe that the following significant accounting policies and assumptions may involve a higher degree of judgment and complexity than others.

Revenue Recognition and Accounts Receivable. We recognize net sales from product sales upon shipment provided title and risk of loss have been transferred to the customer, there is persuasive evidence of an arrangement, fees are fixed or determinable, and collection is reasonably assured. We generally have no obligations to customers after the date that product is shipped other than pursuant to warranty obligations. Returns and customer credits are infrequent and recorded as a reduction to sales. Discounts from list prices are recorded as a reduction to sales at the time of sale. Net sales from global customer support are recognized as performed or ratably over the period of the related agreements. Upgrade sales result from an end-user's desire to enhance some aspect of its existing Helix products. Net sales from upgrade sales requiring us to complete the installation is recognized upon completion of the installation and customer acceptance. Net sales from upgrade sales that do not require us to provide installation are recognized upon product shipment presuming all other revenue recognition criteria are met. We enter into multiple-element contracts that include the sale of both products and services. Revenues from contracts with multiple-element arrangements, such as those including products

and services, are recognized as each element is earned based on the relative fair value of each element. The fair value of these elements is determined based upon prices charged to customers when the elements are sold separately.

As part of a sale, we offer customers a warranty on defects in materials and workmanship. We continuously monitor and track the related product returns and record a provision for the estimated amount of such future returns based on notification we receive of pending returns. While such returns have historically been within our expectations and the provisions established, we cannot guarantee that we will continue to experience the same return rates that we have in the past. Any significant increase in material and workmanship defect rates and the resulting credit returns could have a material adverse impact on our operating results for the period or periods in which such returns materialize. We also maintain allowances for doubtful accounts for estimated losses resulting from the inability of our customers to make required payments. If the financial condition of our customers were to deteriorate resulting in an impairment of their ability to make payments, additional allowances might be required.

Inventory and Reserves for Excess and Obsolescence. We value inventory at the lower of cost (first-in, first-out method) or market. We regularly review inventory quantities on hand and record a provision to write down inventory to its estimated net realizable value, if less than cost. This estimate is based upon management's assumptions of future material usage and obsolescence, which are a result of future demand and market conditions. If actual market conditions become less favorable than those projected by management, additional inventory provisions may be required. If inventory is written down to its net realizable value and subsequently there is an increased demand for the inventory at a higher value, the increased value of the inventory is not realized until the inventory is sold, which will result in improved margins in the period in which the product is sold.

Tax Contingencies. Tax contingencies are recorded to address potential exposures involving tax positions we have taken that could be challenged by taxing authorities. These potential exposures result from the varying application of statutes, rules, regulations and interpretations. Our estimate of the value of our tax contingencies contains assumptions based on past experiences and judgments about potential actions by taxing jurisdictions.

Deferred Income Taxes. Each reporting period we estimate our ability to realize our net deferred tax assets. Realization of our net deferred tax assets is dependent upon our generating sufficient taxable income in the appropriate tax jurisdictions in future years to obtain benefit from the reversal of net deductible temporary differences and from tax loss and tax credit carryforwards. We reassessed our need for a valuation allowance and determined under applicable accounting criteria that a full valuation allowance was required in the third quarter of 2003. During the fourth quarter of 2004, we determined the available positive evidence carried more weight than the historical negative evidence and concluded it was more likely than not that the net deferred tax assets would be realized in future periods. Therefore, a significant portion of the valuation allowance was released.

Retirement Obligations. We have retirement obligations that are developed from actuarial valuations. Inherent in these valuations are key assumptions, including discount rates, rates of compensation increases, and expected long-term rates of return on plan assets, which are usually updated on an annual basis at the beginning of each fiscal year. We are required to consider current market conditions, including changes in interest rates, in making these assumptions. Changes in the related retirement benefit costs may occur due to changes in assumptions.

RESULTS OF OPERATIONS

Fiscal Year Ended December 31, 2004, Compared to the Fiscal Year Ended December 31, 2003

Revenue and Gross Margin

The following table presents our revenue and gross margin:

<i>(in thousands)</i>	<u>2004</u>	<u>2003</u>	<u>\$ Change</u>	<u>% Change</u>
Net sales	\$ 159,674	\$ 105,883	\$ 53,791	50.8%
Cost of sales	<u>95,849</u>	<u>69,836</u>	<u>26,013</u>	<u>37.2</u>
Gross margin	<u>\$ 63,825</u>	<u>\$ 36,047</u>	<u>\$ 27,778</u>	<u>77.1%</u>

The increase in net sales was driven primarily by the recovery in the semiconductor capital equipment manufacturing sector. In 2004, this highly cyclical sector experienced a strong recovery in demand from the bottom of the cycle we experienced in 2003 and 2002. Sales into this sector increased by approximately 81% in 2004 compared to 2003, while product sales into the non-semiconductor market increased by approximately 37%. Internationally, our business grew by approximately \$10.5 million, with Germany and Japan

accounting for almost 80% of the increase, again demonstrating the demand in the industry. Approximately 27% of the international increase was attributable to the favorable impact of foreign currency exchange rates, specifically the Euro and Japanese yen.

The gross margin as a percentage of net sales for 2004 was 40.0% compared with 34.0% for 2003. The improvement in the gross margin percentage for 2004 was primarily attributable to the higher absorption of fixed costs due to the higher sales volume. A slight improvement in our variable production costs, specifically personnel-related costs, was offset by slight increases in the cost of materials.

Operating Expenses

The following table presents our operating expenses:

<i>(in thousands)</i>	<u>2004</u>	<u>2003</u>	<u>\$</u> <u>Change</u>	<u>%</u> <u>Change</u>
Research and development	\$ 10,826	\$ 10,082	\$ 744	7.4%
Selling, general and administrative	<u>35,623</u>	<u>31,280</u>	<u>4,343</u>	<u>13.9</u>
Total operating expenses	<u>\$ 46,449</u>	<u>\$ 41,362</u>	<u>\$ 5,087</u>	<u>12.3%</u>

As a strategic matter, we are committed to developing technologies to support a new generation of products for 300-millimeter-capable production tools, to expand our support capability, and to improve our core component product lines. In terms of absolute dollars spent, we increased our research and development ("R&D") expenses in 2004 by about 7.4% compared to 2003. However, because of the significant increase in our net sales in 2004, as a percentage of net sales, R&D expenses declined to 6.8% from 9.5% in 2004 and 2003, respectively.

The increase in SG&A expenses is attributable to increased costs of regulatory compliance, higher variable compensation expenses as a result of higher operating profits and higher selling expenses as a result of higher commissionable sales. As a percentage of net sales, selling, general and administrative ("SG&A") expenses were 22.3% and 29.5% in 2004 and 2003, respectively.

Joint Venture Income

Income from our joint venture in Japan increased 197%, from \$1.2 million in 2003 to \$3.5 million in 2004. The increase over 2003 is attributable to the growth of the flat panel display portion of the electronics capital equipment market.

Interest Income and Other, Net

Interest income and other, net, slightly increased to \$1.1 million in 2004 from \$0.9 million in 2003. This reflects higher 2004 average cash and investment balances. Interest income was earned primarily from investments in cash equivalents, municipal government agencies and tax-free bonds, and investment-grade securities.

Provision (Benefit) for Income Taxes

We had a pretax income of \$21.9 million in 2004 and a benefit for income taxes of \$5.6 million, resulting in an effective tax rate benefit of 25.3%. The 2004 tax rate differs from the U.S. statutory rate primarily due to the utilization of unbenefitted prior-year net operating losses and the release of the valuation allowance associated with certain deferred tax assets, which aggregated \$8.9 million. Additionally, subsequent to our press release and Form 8-K filing on January 28, 2005, we received verification of a settlement with the IRS concerning the IRS' examination of our fiscal 1997 through 2002 income tax returns. As a result, we recognized a favorable tax benefit of \$4.5 million, net of additional valuation allowance required.

We had a pretax loss of \$3.2 million in 2003 and a corresponding provision of \$7.9 million. This provision was primarily attributable to the establishment of the valuation allowance against our deferred tax assets in accordance with Statement of Financial Accounting Standards ("SFAS") 109, "Accounting for Income Taxes".

In October 2004, the American Jobs Creation Act of 2004 ("AJCA") was signed into law. The AJCA contains a series of provisions, several of which are pertinent to us. The AJCA creates a temporary incentive for U.S. multinational corporations to repatriate accumulated income abroad by providing an 85% dividends received deduction for certain dividends from controlled foreign corporations. It has been our practice to permanently reinvest all foreign earnings into our foreign operations, and we currently still

plan to continue to reinvest our foreign earnings permanently into our foreign operations. Should we determine that we plan to repatriate any of our foreign earnings, we will be required to establish a deferred tax liability on such earnings.

The AJCA eliminates the extraterritorial income exclusion for transactions occurring after December 31, 2004. However, the AJCA provides transitional relief, allowing an exclusion of 80% (of the exclusion previously allowable) for transactions occurring in 2005 and 60% for transactions occurring in 2006.

The AJCA also provides U.S. corporations with an income tax deduction equal to a stipulated percentage of qualified income from domestic production activities ("qualified activities"). The deduction, which cannot exceed 50% of W-2 wages paid, is phased in as follows: 3% of qualified activities 2005 and 2006, 6% in 2007 through 2009, and 9% in 2010 and thereafter. The impact of the AJCA on our tax rate is not yet known.

Fiscal Year Ended December 31, 2003, Compared to the Fiscal Year Ended December 31, 2002

Revenue and Gross Margin

The following table presents our revenue and gross margin:

<i>(in thousands)</i>	<u>2003</u>	<u>2002</u>	<u>\$ Change</u>	<u>% Change</u>
Net sales	\$ 105,883	\$ 100,241	\$ 5,642	5.6%
Cost of sales	<u>69,836</u>	<u>73,037</u>	<u>(3,201)</u>	<u>(4.4)</u>
Gross margin	<u>\$ 36,047</u>	<u>\$ 27,204</u>	<u>\$ 8,843</u>	<u>32.5%</u>

During most of 2003, we continued to experience the significant slowdown in the global market for semiconductor capital equipment that began in 2001. In the last quarter of 2003, however, we had an increase in both orders and sales as the industry began to show signs of expansion. During 2003, pricing was essentially unchanged. The majority of the increase in net sales was realized in our international operations which benefited from the expansion in the semiconductor marketplace. International net sales increased from \$24.0 million in 2002 to \$30.6 million in 2003, an increase of approximately 27%, of which Germany, Taiwan, and Japan accounted for almost 80%. Approximately 40% of the international increase is attributable to the favorable impact of foreign currency exchange rates, specifically the Euro and Japanese yen.

The gross margin as a percentage of net sales for 2003 was 34.0%, compared with 27.1% for 2002. The improvement in gross margin percentage for 2003 is primarily due to the lower overhead costs resulting from our cost reduction actions taken in the fourth quarter of 2002, favorable material costs, and the 2002 fourth quarter charge for excess and obsolete inventory of approximately \$1.7 million. The cost reduction actions attributable to manufacturing realized savings of approximately \$2.0 million in indirect labor. Favorable material costs yielded savings of approximately \$2.0 million. These lower costs were partially offset by some temporary increases in production and customer support costs incurred in the middle of the year relating to our new generation of vacuum technology totaling approximately \$0.6 million. These costs were incurred to improve functionality of one of our newer product lines. In addition, the lower manufacturing costs were offset by an increase of approximately \$1.8 million of our internal cost allocations absorbed within cost of goods sold for depreciation associated with our information system and costs associated with our customer support engineers.

Operating Expenses

The following table presents our operating expenses:

<i>(in thousands)</i>	<u>2003</u>	<u>2002</u>	<u>\$ Change</u>	<u>% Change</u>
Research and development	\$ 10,082	\$ 14,670	\$ (4,588)	(31.3)%
Selling, general and administrative	31,280	34,918	(3,638)	(10.4)
Litigation settlement costs	--	2,800	(2,800)	(100.0)
Restructuring and other charges	<u>--</u>	<u>8,714</u>	<u>(8,714)</u>	<u>(100.0)</u>
Total operating expenses	<u>\$ 41,362</u>	<u>\$ 61,102</u>	<u>\$ (19,740)</u>	<u>(32.3)%</u>

As a percentage of net sales, R&D expenses were 9.5% and 14.6% in 2003 and 2002, respectively. The decrease in overall R&D expenses in 2003 compared to 2002 is due primarily to the cost reduction actions taken in the fourth quarter of 2002. Staff reductions within R&D contributed approximately \$4.6 million to the decline.

As a percentage of net sales, SG&A expenses were 29.5% and 34.8% in 2003 and 2002, respectively. The decrease in SG&A in 2003 compared to 2002 included approximately \$2.0 million attributable to lower internal cost allocations for depreciation associated with our information system and costs associated with our customer support engineers. In addition, approximately \$1.4 million of this decline is attributable to cost savings realized from the restructuring program implemented in the fourth quarter of 2002, specifically personnel related costs.

In 2002, the litigation settlement costs were associated with the settlement of a lawsuit related to certain discontinued products.

In 2002, we initiated a worldwide cost-reduction program and the suspension of an internal-use software development program in response to the continued duration and severity of the slowdown in the semiconductor capital equipment industry. The cost-reduction program included severance and fringe benefits to terminate approximately 130 employees and included closure or consolidation of selected facilities worldwide. This program was substantially completed in 2003.

Joint Venture Income

Income from our joint venture in Japan for 2003 increased to \$1.2 million from \$0.6 million in 2002. The improvement over 2002 reflects improvement in the flat panel display portion of the semiconductor capital equipment market.

Interest Income and Other, Net

Interest income and other, net, was \$0.9 million for both 2003 and 2002. This reflects higher 2003 average cash balances offset by lower interest rates. Interest income was earned primarily from investments in cash equivalents, municipal government agencies and tax-free bonds, and investment-grade securities.

Provision (Benefit) for Income Taxes

We had a pretax loss of \$3.2 million in 2003, compared with a pretax loss of \$32.4 million for 2002. In 2003 we recorded an income tax provision of \$7.9 million. This provision was primarily attributable to the establishment of the valuation allowance against our deferred tax assets in accordance with SFAS 109, "Accounting for Income Taxes" and to record state and foreign income taxes for 2003. If we generate future taxable income domestically against which these tax attributes may be applied, some portion or all of the valuation allowance would be reversed and increase net income reported in future periods. The effective tax rate for 2002 was 40%. The tax rates differ from the U.S. statutory rate primarily due to tax credits and undistributed nontaxable equity income from our joint venture. These tax credits and equity income increase our tax rate on pretax losses and decrease our tax rate on pretax income.

Quarterly Financial Results

The following table presents selected unaudited financial information for the eight quarters in the period ended December 31, 2004. The results for any quarter are not necessarily indicative of future quarterly results and, accordingly, period-to-period comparisons should not be relied upon as an indication of future performance.

	Quarter Ended							
	Q1 2003	Q2 2003	Q3 2003	Q4 2003	Q1 2004	Q2 2004	Q3 2004	Q4 2004
<i>(in thousands except per share data)</i>								
Net sales	\$ 23,623	\$ 24,555	\$ 25,973	\$ 31,732	\$ 40,376	\$ 44,024	\$ 40,353	\$ 34,921
Gross margin	7,817	7,528	8,840	11,862	15,800	18,058	16,223	13,744
Operating income (loss)	(2,634)	(2,616)	(1,070)	1,005	4,888	6,657	4,610	1,221
Net income (loss)	(1,412)	(1,413)	(9,104)	793	4,672	6,346	5,769	10,724
Net income (loss) per weighted average share, basic	(0.05)	(0.05)	(0.35)	0.03	0.18	0.24	0.22	0.41
Net income (loss) per weighted average share, diluted	\$ (0.05)	\$ (0.05)	\$ (0.35)	\$ 0.03	\$ 0.18	\$ 0.24	\$ 0.22	\$ 0.41

Liquidity and Capital Resources

Comparison of Fiscal 2004 to 2003

Cash and cash equivalents and investments were \$76.3 million and \$67.4 million at December 31, 2004 and 2003, respectively, an increase of \$8.9 million.

Cash provided by operating activities was \$17.9 million in 2004 compared to \$11.0 million in 2003. The increase in 2004 compared to 2003 was primarily attributable to improved profitability in our business. Non-cash charges declined in 2004, as 2003 non-cash charges included the establishment of a valuation allowance against deferred income taxes. Receivables increased primarily due to higher sales volumes and to a lesser extent, a result of our days sales outstanding increasing to 62 days as of December 31, 2004, compared to 60 days as of December 31, 2003. The cash provided by operating activities for 2003 was primarily due to our receipt of \$12.0 million in tax refunds, which resulted from the carryback of net operating losses, and partially offset by \$3.7 million of severance and facility closure payments related to the 2002 restructuring.

Our working capital at December 31, 2004, increased by approximately \$22.6 million from December 31, 2003. The increase is primarily due to the higher cash and investment balances attributable to cash generated from our business operations. Working capital was also positively impacted from an increase in deferred income taxes attributable to the reversal of a significant portion of the valuation allowance. Partially offsetting these increases were payments of cash dividends to our stockholders and capital expenditures.

In 2004, we spent \$2.8 million in capital expenditures to support existing infrastructure. In 2003 we spent \$2.8 million to support the existing infrastructure and the implementation of our global information system in our European operations, which went live in October 2003. We continue to closely manage our capital expenditures.

Cash dividends paid to our stockholders during 2004 were \$6.3 million, compared with \$4.2 million for 2003. We paid a dividend of \$0.04 per share in the first and second quarters of 2004. After considering the significant improvement in our financial performance and the strength of our balance sheet and cash position, our Board of Directors increased the dividend to \$0.08 per share in the third and fourth quarters of 2004. We paid a quarterly common stock dividend of \$0.04 per share in 2003. In February 2005, we paid approximately \$2.1 million related to a cash dividend of \$0.08 per share declared in January 2005.

In December 2004, we entered into a definitive agreement with Intermagnetics General Corporation ("IGC") and Polycold, a wholly owned subsidiary of IGC, to acquire all of the issued and outstanding stock of Polycold for \$49.2 million in cash at closing and up to \$3.3 million in transaction-related tax payments. The acquisition closed in February 2005. We used a portion of our existing cash and cash equivalents and investments to fund this acquisition. We currently expect the transaction-related tax payments to total approximately \$0.5 million.

We manage our foreign exchange rate risk arising from intercompany foreign currency denominated transactions through the use of foreign currency forward contracts. The gains and losses on these transactions are not material.

We believe that our existing funds and anticipated cash flow from operations will satisfy our working capital and capital expenditure requirements for at least the next 12 months.

Comparison of Fiscal 2003 to 2002

Cash and cash equivalents and investments were \$67.4 million and \$63.3 million at December 31, 2003 and 2002, respectively, an increase of \$4.1 million.

Cash provided by operating activities in 2003 was \$11.0 million, compared with cash used in operating activities of \$7.1 million in 2002. The cash provided by operating activities for 2003 was primarily due to our receipt of \$12.0 million in tax refunds, resulting from the carryback of the 2002 net operating loss, and the impact of our net loss after adjusting for the non-cash charges, specifically \$8.7 million for deferred income taxes and \$5.9 million for depreciation and amortization. This increase was offset by an increase in accounts receivable of approximately \$6.0 million due to the improvement in fourth quarter sales, by \$3.7 million of severance and facility closure payments related to the 2002 restructuring activity, and by a \$1.4 million payment to fund our pension plan.

Our working capital at December 31, 2003, declined by approximately \$11.2 million from December 31, 2002. This decline is primarily attributable to the establishment of a valuation allowance against our deferred tax assets resulting in a net change of \$8.7 million, the payment of cash dividends of \$4.2 million, and capital expenditures of \$2.8 million. These were offset by the increase in accounts receivable of approximately \$6.0 million which resulted from the improvement in fourth quarter sales.

In 2003, we spent \$2.8 million in capital expenditures to support the existing infrastructure and the implementation of our global information system in our European operations, which went live in October 2003. In 2002, we spent \$5.5 million, principally for the implementation of our global information system in the U.S., which went live during July 2002.

Cash dividends paid to our stockholders during 2003 were \$4.2 million, compared with \$7.0 million for 2002. We paid a quarterly common stock dividend of \$0.04 per share in 2003. After paying a quarterly dividend of \$0.08 per share for the first three quarters of 2002, our Board of Directors reduced the quarterly dividend to \$0.04 per share in October 2002, due to the continuing uncertain business environment and lack of visibility in the semiconductor capital equipment market.

Contractual Obligations

The following represents our contractual obligations that may impact our liquidity as of December 31, 2004:

<i>(in thousands)</i>	Total	Less than 1 Year	1 - 3 Years	3 - 5 Years	More than 5 Years
Operating leases	\$ 12,778	\$ 4,306	\$ 4,432	\$ 1,204	\$ 2,836
Retirement costs	9,729	3,326	3,800	600	2,003
Purchase orders	13,220	13,220	--	--	--
Total	<u>\$ 35,727</u>	<u>\$ 20,852</u>	<u>\$ 8,232</u>	<u>\$ 1,804</u>	<u>\$ 4,839</u>

We lease facilities, vehicles and equipment under long-term operating leases. Retirement costs consist of \$7.7 million associated with our defined benefit pension plan and \$2.0 million for our Supplemental Key Executive Retirement Plan. The purchase orders are for manufacturing and non-manufacturing related goods and services. While the purchase orders are generally cancelable without penalty, certain vendor agreements provide for percentage-based cancellation fees or minimum restocking charges based on the nature of the product or service.

Legal Proceedings

We may be involved in various legal proceedings in the normal course of business. We are not a party to any proceedings that involve amounts that would have a material effect on our financial position or results of operations if such proceedings were resolved unfavorably.

Recent Accounting Pronouncements

In March 2004, the Financial Accounting Standards Board ("FASB") approved the consensus reached on the Emerging Issues Task Force ("EITF") Issue No. 03-01, "The Meaning of Other-Than-Temporary Impairment and Its Application to Certain Investments." EITF 03-01 provides guidance on determining when an investment is considered impaired, whether that impairment is other than temporary, and the measurement of an impairment loss. EITF 03-01 also provides new disclosure requirements for other-than-temporary impairments on debt and equity investments. In September 2004, the FASB delayed until further notice the effective date of the measurement and recognition guidance contained in EITF 03-01. The disclosure requirements of EITF 03-01 are effective for annual financial statements for fiscal years ending after December 15, 2003. The adoption of EITF 03-01 did not have a material impact on our financial position or results of operations.

In October 2004, the FASB approved the consensus reached on EITF No. 04-10, "Applying Paragraph 19 of FASB Statement No. 131, "Disclosures about Segments of an Enterprise and Related Information," in Determining Whether to Aggregate Operating Segments That Do Not Meet the Quantitative Thresholds." EITF 04-10 provides guidance on evaluating the aggregation criteria when determining whether operating segments that do not meet the quantitative thresholds may be aggregated in accordance with paragraph 19 of SFAS 131. The adoption of EITF 04-10 is not expected to have a material impact on our financial position or results of operations.

In November 2004, the FASB issued SFAS No. 151, "Inventory Costs, An Amendment of ARB No. 43, Chapter 4." This Statement amends ARB No. 43, Chapter 4, to clarify that abnormal amounts of idle facility, freight, handling costs, and wasted materials (spoilage) should be recognized as current-period charges. In addition, this Statement requires that allocation of fixed production overheads to the costs of conversion be based on the normal capacity of the production facilities. This Statement is effective for inventory costs incurred during fiscal years beginning after June 15, 2005. Earlier application is permitted for inventory costs incurred during fiscal years beginning after November 23, 2004. The provisions of Statement 151 should be applied prospectively. We are still evaluating the impact of SFAS No. 151; however, we do not believe it will have a material impact on our financial position or results of operations.

In December 2004, the FASB issued SFAS No. 123 (revised 2004), "Share-Based Payment." SFAS No. 123 revised eliminates the alternative to use APB Opinion No. 25's intrinsic value method of accounting that was provided in SFAS No. 123 as originally issued. Under Opinion 25, issuing stock options to employees generally resulted in recognition of no compensation cost. SFAS No. 123 revised requires companies to recognize the cost of employee services received in exchange for equity instruments, based on the grant-date fair value of those instruments (with limited exceptions). SFAS No. 123 revised is effective for public companies for all employee awards of share-based payment granted, modified, or settled in any interim or annual period beginning after June 15, 2005. Companies may choose from one of three methods when transitioning to the new standard, which may include restatement of prior annual and interim periods or no restatement of interim periods prior to the effective date. We will adopt the standard as of the effective date and are in the process of evaluating the impact of this standard on our financial statements.

In December 2004, the FASB issued two FASB Staff Positions (FSP) that provide accounting guidance on how companies should account for the effects of the American Jobs Creation Act of 2004 that was signed into law on October 22, 2004. FSP FAS 109-1, "Application of FASB Statement No. 109, "Accounting for Income Taxes," to the Tax Deduction on Qualified Production Activities Provided by the American Jobs Creation Act of 2004," states that the manufacturers' deduction provided for under this legislation should be accounted for as a special deduction instead of a tax rate change. FSP FAS 109-2, "Accounting and Disclosure Guidance for the Foreign Earnings Repatriation Provision within the American Jobs Creation Act of 2004," allows a company additional time to evaluate the effects of the legislation on any plan for reinvestment or repatriation of foreign earnings for purposes of applying SFAS No. 109, "Accounting for Income Taxes." These FSPs may affect how a company accounts for deferred income taxes. These FSPs are effective December 21, 2004. We are currently evaluating the impact from these FSPs on our results of operations and financial position.

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

Foreign Currency Exchange Rate Risk

A portion of our business is conducted outside the United States through our foreign subsidiaries. Our foreign subsidiaries maintain their accounting records in their local currencies. Consequently, fluctuations in exchange rates affect the period-to-period comparability of results. To reduce the risks associated with foreign currency rate fluctuations, we have entered into forward exchange contracts on a continuing basis to offset the currency exposures. The gains and losses on these transactions partially offset the unrealized and realized foreign exchange gains and losses of the underlying exposures. The net gains and losses were immaterial for the years presented and were included in cost of sales. We plan to continue to use forward exchange contracts to mitigate the impact of exchange rate fluctuations. The notional amount of our outstanding foreign currency contracts at December 31, 2004 and 2003, was \$7.1 million and \$6.7 million, respectively. The potential fair value loss for a hypothetical 10% adverse change in forward currency exchange rates at both December 31, 2004 and 2003, would be \$0.7 million, which would be essentially offset by corresponding gains related to underlying assets. The potential loss was estimated calculating the fair value of the forward exchange contracts at December 31, 2004 and 2003, and comparing that with the value calculated using the hypothetical forward currency exchange rates.

Credit Risk

We are exposed to concentration of credit risk in cash and cash equivalents, investments, trade receivables, and short-term foreign exchange forward contracts. We place our cash and cash equivalents with our primary bank, a major financial institution with a high-quality credit rating. Our investments consist of money market funds, municipal and other tax-free bonds, or investment-grade securities. We enter into short-term foreign currency exchange contracts with our primary bank.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY FINANCIAL DATA.

The Financial Statements appear in Item 15 of this report.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES.

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of our disclosure controls and procedures, as such term is defined under Rule 13a-15(e) promulgated under the Securities Exchange Act of 1934, as amended (the Exchange Act). Based on this evaluation, our principal

executive officer and our principal financial officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this annual report.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation under the framework in *Internal Control - Integrated Framework*, our management concluded that our internal control over financial reporting was effective as of December 31, 2004.

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

ITEM 9B. OTHER INFORMATION.

None.

PART III

ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT.

Officers are elected annually by the Board and serve at the discretion of the Board.

Set forth below is information regarding our current executive officers:

Name and Title	Age	Business Experience
James Gentilcore President and Chief Executive Officer	52	Mr. Gentilcore joined us as our Executive Vice President and Chief Operating Officer in December 2002. Prior to joining Helix, Mr. Gentilcore spent six years with Advanced Energy Industries, Inc., a manufacturer of integrated subsystems for the semiconductor industry, most recently as Chief Operating Officer. From 1990 to 1996, Mr. Gentilcore served as Corporate Vice President of Marketing at MKS Instruments Inc., a manufacturer of process instrumentation and subsystems for the semiconductor industry. Effective January 1, 2005, Mr. Gentilcore was appointed President and Chief Executive Officer.
Paul Kawa Interim Chief Financial Officer	42	Mr. Kawa joined us as our Corporate Controller in August 2004. From November 2000 to August 2004, Mr. Kawa served first as Director, U.S. Accounting Operations, and most recently as Director, Corporate Accounting, of BearingPoint, Inc., a large international business and technology consulting firm. From 1998 through 2000, Mr. Kawa held finance positions with Amtrol, Inc., a manufacturer and distributor of water systems and plumbing and heating products, and refrigerant gas containers, including Vice President, Finance and Controller, North America; and Director, Financial Planning and Reporting. Mr. Kawa began his career with Ernst & Young where he spent approximately 7 years. Effective February 28, 2005, Mr. Kawa was appointed Interim Chief Financial Officer.
Robert E. Anastasi Executive Vice President	58	Mr. Anastasi has served as Executive Vice President since February 2001. Prior to that he served as a Senior Vice President from July 1997 until February 2001 and as a Vice President from June 1991 to July 1997.
Mark E. Jalbert Senior Vice President	52	Mr. Jalbert was elected as Senior Vice President in December 2002. Prior to that he served as Senior Vice President of Global Customer Operations from September 2001 until December 2002, Vice President of Sales from 1998 to September 2001, Director of Sales from 1997 to 1998, and Regional Sales Manager from 1988 to 1997.

Additional information required by this item is incorporated herein by reference to the registrant's Definitive Proxy Statement with respect to the 2005 Annual Meeting of Stockholders to be filed with the SEC no later than 120 days after the close of the Company's fiscal year, pursuant to Regulation 14A.

We have adopted a Code of Business Conduct that applies to all our employees and directors. In addition, we have adopted a Code of Ethics for Senior Financial Officers which imposes additional standards on our principal executive officer and all senior financial officers. The Code of Business Conduct and the Code of Ethics for Senior Financial Officers are available through our website at www.helixtechnology.com. Information contained on the website is not part of this report. If we grant any waiver of either code with respect to the conduct of executive officers or directors, we will publicly disclose such waivers as required by applicable law.

ITEM 11. EXECUTIVE COMPENSATION.

Information required by this item is incorporated herein by reference to the registrant's Definitive Proxy Statement with respect to the 2005 Annual Meeting of Stockholders to be filed with the SEC no later than 120 days after the close of the Company's fiscal year, pursuant to Regulation 14A.

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

Information required by this item is incorporated herein by reference to the registrant's Definitive Proxy Statement with respect to the 2005 Annual Meeting of Stockholders to be filed with the SEC no later than 120 days after the close of the Company's fiscal year, pursuant to Regulation 14A.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS.

Information required by this item is incorporated herein by reference to the registrant's Definitive Proxy Statement with respect to the 2005 Annual Meeting of Stockholders to be filed with the SEC no later than 120 days after the close of the Company's fiscal year, pursuant to Regulation 14A.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES.

Information required by this item is incorporated herein by reference to the registrant's Definitive Proxy Statement with respect to the 2005 Annual Meeting of Stockholders to be filed with the SEC no later than 120 days after the close of the Company's fiscal year, pursuant to Regulation 14A.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.

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

	<u>Page</u>
1. Financial Statements	
Report of Independent Registered Public Accounting Firm	26
Consolidated Balance Sheets as of December 31, 2004 and 2003	28
Consolidated Statements of Operations for the years ended December 31, 2004, 2003, and 2002	29
Consolidated Statements of Stockholders' Equity for the years ended December 31, 2004, 2003, and 2002	30
Consolidated Statements of Cash Flows for the years ended December 31, 2004, 2003, and 2002	31
Notes to Consolidated Financial Statements	32
2. Financial Statement Schedule for the years ended December 31, 2004, 2003, and 2002	51
3. Exhibits	

The Exhibits filed as part of this report are listed on the Exhibit Index immediately preceding the exhibits, which Exhibit Index is incorporated herein by reference.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, this 16th day of March 2005.

HELIX TECHNOLOGY CORPORATION
(Registrant)

By: /s/ James Gentilcore
James Gentilcore
President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant on this 16th day of March 2005, in the capacities indicated.

Signatures

Titles

/s/ James Gentilcore
James Gentilcore

President and Chief Executive Officer
(Principal Executive Officer)

/s/ Paul Kawa
Paul Kawa

Interim Chief Financial Officer
(Principal Financial and Accounting Officer)

/s/ Gideon Argov
Gideon Argov Director

/s/ Frank Gabron
Frank Gabron Director

/s/ James Gentilcore
James Gentilcore Director

/s/ Robert H. Hayes
Robert H. Hayes Director

/s/ Robert J. Lepofsky
Robert J. Lepofsky Director and Chairman of the Board

/s/ Marvin G. Schorr
Marvin G. Schorr Director

/s/ Alfred Woollacott III
Alfred Woollacott III Director

/s/ Mark S. Wrighton
Mark S. Wrighton Director

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Helix Technology Corporation:

We have completed an integrated audit of Helix Technology Corporation's 2004 consolidated financial statements and of its internal control over financial reporting as of December 31, 2004, and audits of its 2003 and 2002 consolidated financial statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Our opinions, based on our audits, are presented below.

Consolidated financial statements and financial statement schedule

In our opinion, the consolidated financial statements listed in the index appearing under Item 15(a)(1) present fairly, in all material respects, the financial position of Helix Technology Corporation and its subsidiaries at December 31, 2004 and 2003, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2004, in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule listed in the index appearing under Item 15(a)(2) presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. These financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and financial statement schedule based on our audits. We conducted our audits of these statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit of financial statements 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.

Internal control over financial reporting

Also, in our opinion, management's assessment, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A, that the Company maintained effective internal control over financial reporting as of December 31, 2004, based on criteria established in *Internal Control – Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), is fairly stated, in all material respects, based on those criteria. Furthermore, in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2004, based on criteria established in *Internal Control – Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting. Our responsibility is to express opinions on management's assessment and on the effectiveness of the Company's internal control over financial reporting based on our audit. We conducted our audit of internal control over financial reporting in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. An audit of internal control over financial reporting includes obtaining an understanding of internal control over financial reporting, evaluating management's assessment, testing and evaluating the design and operating effectiveness of internal control, and performing such other procedures as we consider necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinions.

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

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

/s/ PricewaterhouseCoopers LLP
PricewaterhouseCoopers LLP

Boston, Massachusetts
March 16, 2005

HELIX TECHNOLOGY CORPORATION
CONSOLIDATED BALANCE SHEETS

	<u>December 31,</u>	
	<u>2004</u>	<u>2003</u>
<i>(in thousands except share data)</i>		
ASSETS		
Current:		
Cash and cash equivalents	\$ 6,462	\$ 12,334
Investments	69,874	55,053
Receivables-net of allowances of \$305 in 2004 and \$438 in 2003	24,100	21,033
Inventories	21,595	22,032
Income tax receivable	2,014	--
Deferred income taxes	7,717	--
Other current assets	2,313	1,934
Total current assets	<u>134,075</u>	<u>112,386</u>
Property, plant, and equipment	68,003	64,908
Less: accumulated depreciation	<u>(49,063)</u>	<u>(44,085)</u>
Net property, plant, and equipment	18,940	20,823
Other assets	16,549	12,781
TOTAL ASSETS	<u><u>\$ 169,564</u></u>	<u><u>\$ 145,990</u></u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current:		
Accounts payable	\$ 5,951	\$ 8,918
Payroll and compensation	1,690	1,628
Retirement costs	3,326	1,758
Income taxes	4,288	4,383
Other accrued liabilities	2,662	2,145
Total current liabilities	<u>17,917</u>	<u>18,832</u>
Retirement costs	6,403	8,352
Deferred income taxes	1,103	--
Total liabilities	<u>25,423</u>	<u>27,184</u>
Commitments and contingencies (Note E)		
Stockholders' equity:		
Preferred stock, \$1 par value; authorized 2,000,000 shares; issued and outstanding: none	--	--
Common stock, \$1 par value; authorized 60,000,000 shares; issued 26,114,229 in 2004 and 26,103,204 in 2003; outstanding 26,114,229 in 2004 and 26,099,364 in 2003	26,114	26,103
Capital in excess of par value	76,413	76,405
Treasury stock, at cost, \$1 par value; 0 shares in 2004 and 3,840 shares in 2003	--	(232)
Retained earnings	37,745	16,500
Accumulated other comprehensive income	3,869	30
Total stockholders' equity	<u>144,141</u>	<u>118,806</u>
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	<u><u>\$ 169,564</u></u>	<u><u>\$ 145,990</u></u>

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

HELIX TECHNOLOGY CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS

	For the years ended December 31,		
	2004	2003	2002
<i>(in thousands except per share data)</i>			
Net sales	\$ 159,674	\$ 105,883	\$ 100,241
Costs and expenses:			
Cost of sales	95,849	69,836	73,037
Research and development	10,826	10,082	14,670
Selling, general and administrative	35,623	31,280	34,918
Litigation settlement costs	--	--	2,800
Restructurings and other charges	--	--	8,714
	<u>142,298</u>	<u>111,198</u>	<u>134,139</u>
Operating income (loss)	17,376	(5,315)	(33,898)
Joint venture income	3,508	1,181	639
Interest income and other, net	1,065	913	896
Income (loss) before taxes	21,949	(3,221)	(32,363)
Income tax provision (benefit)	(5,562)	7,915	(12,945)
Net income (loss)	<u>\$ 27,511</u>	<u>\$ (11,136)</u>	<u>\$ (19,418)</u>
Net income (loss) per weighted average share:			
Basic	\$ 1.05	\$ (0.43)	\$ (0.77)
Diluted	\$ 1.05	\$ (0.43)	\$ (0.77)
Weighted average shares:			
Basic	26,110	26,099	25,364
Diluted	26,187	26,099	25,364

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

HELIX TECHNOLOGY CORPORATION
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

<i>(in thousands except share data)</i>	Shares	Par Value	Capital in Excess of Par	Treasury Stock	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total Stockholders' Equity	Statements of Comprehensive Income (Loss)
Balance, January 1, 2002	22,611,204	\$22,611	\$13,878	\$(232)	\$58,261	\$(1,551)	\$92,967	
Comprehensive income (loss), net of tax:								
Net loss		--	--	--	(19,418)	--	(19,418)	\$(19,418)
Other comprehensive loss:								
Foreign currency translation adjustments		--	--	--	--	(229)	(229)	(229)
Unrealized loss on available-for-sale investments		--	--	--	--	(66)	(66)	(66)
Other comprehensive loss		--	--	--	--	(295)		(295)
Comprehensive loss								\$(19,713)
Shares issued for public offering	3,450,000	3,450	61,796	--	--	--	65,246	
Shares issued for stock options	42,000	42	670	--	--	--	712	
Income tax effect from exercise of stock options		--	61	--	--	--	61	
Cash dividends, \$0.28 per share		--	--	--	(7,031)	--	(7,031)	
Balance, December 31, 2002	<u>26,103,204</u>	<u>26,103</u>	<u>76,405</u>	<u>(232)</u>	<u>31,812</u>	<u>(1,846)</u>	<u>132,242</u>	
Comprehensive income (loss), net of tax:								
Net loss		--	--	--	(11,136)	--	(11,136)	\$(11,136)
Other comprehensive income:								
Foreign currency translation adjustments		--	--	--	--	1,845	1,845	1,845
Unrealized gain on available-for-sale investments		--	--	--	--	31	31	31
Other comprehensive income		--	--	--	--	1,876		1,876
Comprehensive loss								\$(9,260)
Cash dividends, \$0.16 per share		--	--	--	(4,176)	--	(4,176)	
Balance, December 31, 2003	<u>26,103,204</u>	<u>26,103</u>	<u>76,405</u>	<u>(232)</u>	<u>16,500</u>	<u>30</u>	<u>118,806</u>	
Comprehensive income (loss), net of tax:								
Net income		--	--	--	27,511	--	27,511	\$27,511
Other comprehensive income (loss):								
Foreign currency translation adjustments		--	--	--	--	3,873	3,873	3,873
Unrealized loss on available-for-sale investments		--	--	--	--	(34)	(34)	(34)
Other comprehensive income		--	--	--	--	3,839		3,839
Comprehensive income								\$31,350
Shares issued for stock options	17,875	18	247	--	--	--	265	
Income tax effect from exercise of stock options		--	62	--	--	--	62	
Shares tendered for exercise of stock options		--	--	(76)	--	--	(76)	
Retirement of treasury stock	(6,850)	(7)	(301)	308	--	--	--	
Cash dividends, \$0.24 per share		--	--	--	(6,266)	--	(6,266)	
Balance, December 31, 2004	<u>26,114,229</u>	<u>\$26,114</u>	<u>\$76,413</u>	<u>\$ --</u>	<u>\$37,745</u>	<u>\$3,869</u>	<u>\$144,141</u>	

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

HELIX TECHNOLOGY CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS

<i>(in thousands)</i>	For the years ended December 31,		
	2004	2003	2002
Cash flows from operating activities:			
Net income (loss)	\$ 27,511	\$ (11,136)	\$ (19,418)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	5,313	5,962	6,404
Deferred income taxes	(6,614)	8,708	(3,001)
Undistributed earnings of joint venture, other	(1,892)	1,187	(282)
Income tax effect from exercise of stock options	62	--	61
Noncash asset write-downs and other charges	111	293	6,033
Change in operating assets and liabilities:			
Receivables	(2,498)	(5,997)	(3,039)
Inventories	1,716	1,914	1,647
Income tax receivable	(2,014)	10,246	(2,902)
Other assets	(741)	(101)	744
Accounts payable	(3,002)	159	(346)
Accrued restructuring costs	(522)	(3,655)	4,344
Other accrued expenses	466	3,451	2,618
Net cash provided by (used in) operating activities	<u>17,896</u>	<u>11,031</u>	<u>(7,137)</u>
Cash flows from investing activities:			
Capital expenditures	(2,836)	(2,817)	(5,465)
Purchase of investments	(70,408)	(157,515)	(154,257)
Sales and maturities of investments	55,553	160,391	105,563
Net cash (used in) provided by investing activities	<u>(17,691)</u>	<u>59</u>	<u>(54,159)</u>
Cash flows from financing activities:			
Net proceeds from stock offering	--	--	65,246
Net cash provided by employee stock plans	189	--	712
Cash dividends paid	(6,266)	(4,176)	(7,031)
Net cash (used in) provided by financing activities	<u>(6,077)</u>	<u>(4,176)</u>	<u>58,927</u>
Net (decrease) increase in cash and cash equivalents	<u>(5,872)</u>	<u>6,914</u>	<u>(2,369)</u>
Cash and cash equivalents, January 1	12,334	5,420	7,789
Cash and cash equivalents, December 31	<u>\$ 6,462</u>	<u>\$ 12,334</u>	<u>\$ 5,420</u>
Income taxes paid	<u>\$ 2,859</u>	<u>\$ 612</u>	<u>\$ 378</u>

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

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

A. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The Company

Helix Technology Corporation is a world leader in the development, manufacturing, application and support of innovative vacuum technology solutions for the semiconductor, data storage and flat panel display markets.

Principles of Consolidation

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries after elimination of all intercompany transactions. The investment in and operating results of the Company's 50%-owned joint venture are included on the basis of the equity method of accounting.

Fiscal Year

The Company's fiscal year ends on December 31. For quarterly reporting, the Company employs a 4-week, 4-week, 5-week reporting period.

Use of Estimates

The preparation of these financial statements in conformity with accounting principles generally accepted in the United States of America requires the Company to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and disclosure of contingent assets and liabilities. On an ongoing basis, management evaluates these estimates and judgments, including those related to revenue recognition, adequacy of reserves, valuation of investments and income taxes. The Company bases these estimates on historical and anticipated results and trends and on various other assumptions that the Company believes are reasonable under the circumstances, including assumptions as to future events. These estimates form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. By their nature, estimates are subject to an inherent degree of uncertainty. Actual results may differ from these estimates.

Foreign Currency Translation

The functional currency for the Company's foreign subsidiaries is the applicable local currency. Assets and liabilities of subsidiaries outside the United States of America are translated into U.S. dollars using current exchange rates. Revenue and expense accounts are translated at the average rates in effect during the year. The effects of foreign currency translation adjustments are included in accumulated other comprehensive income as a component of stockholders' equity. Transaction gains/losses were not material. The effect of foreign currency exchange rates on cash and cash equivalents was not material.

Reclassifications

In connection with the preparation of this report, the Company concluded that it was appropriate to classify its auction rate securities as current investments. Previously, such investments had been classified as cash and cash equivalents. Accordingly the Company revised the classification to report these securities as current investments on its Consolidated Balance Sheet as of December 31, 2003. The Company also made corresponding adjustments to its Consolidated Statements of Cash Flows for the years ended December 31, 2003 and 2002, to reflect the gross purchases and sales of these securities as investing activities rather than as a component of cash and cash equivalents. This change in classification does not affect previously reported cash flows from operations or from financing activities in the previously reported Consolidated Statements of Cash Flows, or the previously reported Consolidated Statements of Operations for any period.

As of December 31, 2003, \$12.1 million of these current investments were classified as cash and cash equivalents on the Consolidated Balance Sheet. For the years ended December 31, 2003 and 2002, net cash provided by (used in) investing activities related to these current investments of \$9.2 million and \$(21.3) million, respectively, were included in cash and cash equivalents in the Consolidated Statements of Cash Flows.

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

A. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (continued)

Certain other reclassifications have been made to prior year's consolidated financial statements to conform with the current presentation.

Cash, Cash Equivalents and Investments

Cash and cash equivalents include demand deposits, money market accounts, and other highly liquid investments with original maturities of three months or less at the date of purchase, and those with greater than three months are considered to be investments. The Company's investments are classified as available-for-sale securities, and the difference in the cost and fair value of these investments is included in other comprehensive income until maturity or sale of the investment, at which time it is included in interest income and other, net. Interest income was \$1,147,000 in 2004, \$1,066,000 in 2003 and \$1,025,000 in 2002. The Company's investments consist of the following:

<i>(in thousands)</i>	December 31,			
	2004		2003	
	Cost	Fair Value	Cost	Fair Value
Auction rate securities	\$ 64,669	\$ 64,674	\$ 44,733	\$ 44,733
U. S. government agencies	2,511	2,481	--	--
Municipal bonds	2,723	2,719	7,146	7,115
Corporate bonds	--	--	3,169	3,205
	\$ 69,903	\$ 69,874	\$ 55,048	\$ 55,053

At December 31, 2004, investments had contractual maturity dates ranging from January 2005 through July 2041. Despite the long-term contractual maturities of certain auction rate securities, all of these investments are available for immediate sale, and the Company intends to liquidate the securities within one year.

Credit Risk

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist principally of cash and cash equivalents, short-term investments, short-term foreign exchange contracts, and trade receivables. Cash and cash equivalents are placed with major financial institutions with high-quality credit ratings. The Company's investments consist of money market funds, municipal government agencies and tax-free bonds or investment-grade securities. The short-term foreign currency exchange contracts are entered into with the Company's primary bank. The Company's customers are concentrated primarily in one industry segment, the semiconductor manufacturing industry, and, historically, a significant portion of the Company's sales have been to a limited number of customers within this industry. The Company performs credit evaluations of its customers' financial condition and may require deposits on large orders but does not require collateral or other security to support customer receivables.

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

A. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (continued)

Inventories

<i>(in thousands)</i>	<u>December 31,</u>	
	<u>2004</u>	<u>2003</u>
Finished goods	\$ 7,743	\$ 8,087
Work in process	9,439	8,849
Materials and parts	<u>4,413</u>	<u>5,096</u>
	<u>\$ 21,595</u>	<u>\$ 22,032</u>

Inventories are stated at the lower of cost or market on a first-in, first-out basis. Cost includes material, labor and applicable manufacturing and engineering overhead costs. The Company regularly reviews inventory quantities on hand and records a provision to write down excess and obsolete inventory to its estimated net realizable value based upon management's assumptions of future material usage and obsolescence, which are a result of future demand and market conditions. Total excess and obsolete inventory charges to cost of sales were \$548,000 in 2004, \$220,000 in 2003 and \$2,877,000 in 2002.

Property, Plant, and Equipment

Property, plant, and equipment is stated at cost.

<i>(in thousands)</i>	<u>December 31,</u>	
	<u>2004</u>	<u>2003</u>
Machinery and equipment	\$ 28,683	\$ 27,455
Computers and equipment	30,641	29,386
Leasehold improvements	7,798	6,928
Construction in progress	<u>881</u>	<u>1,139</u>
	<u>\$ 68,003</u>	<u>\$ 64,908</u>

Depreciation is provided on the straight-line method over the estimated useful lives of the assets. Leasehold improvements are amortized over the lesser of their useful life or the remaining life of the lease. Estimated useful lives of machinery and equipment, and computers and equipment, are from 3 to 5 years and 3 to 10 years, respectively.

Maintenance and repairs are charged to expense as incurred and betterments are capitalized. The cost of assets sold or retired and related depreciation are removed from the accounts at the time of sale and any resulting gain or loss is reflected in income.

Capitalized Software Costs

The Company capitalizes internal-use software development costs in accordance with the provisions of SOP 98-1, "Accounting for the Costs of Computer Software Developed or Obtained for Internal Use." The capitalized cost is amortized beginning when it is placed into service on a straight-line basis over its estimated life, ranging from 3 to 10 years.

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

A. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (continued)

Revenue Recognition

The Company recognizes net sales from product sales upon shipment provided title and risk of loss have been transferred to the customer, there is persuasive evidence of an arrangement, fees are fixed or determinable, and collection is reasonably assured. The Company generally has no obligations to customers after the date that product is shipped other than pursuant to warranty obligations. Returns and customer credits are infrequent and recorded as a reduction to sales. Discounts from list prices are recorded as a reduction to sales at the time of sale. Net sales from global customer support are recognized as performed or ratably over the period of the related agreements. Upgrade sales result from an end-user's desire to enhance some aspect of its existing Helix products. Net sales from upgrade sales requiring the Company to complete the installation is recognized upon completion of the installation and customer acceptance. Net sales from upgrade sales that do not require the Company to provide installation are recognized upon product shipment presuming all other revenue recognition criteria are met. The Company enters into multiple-element contracts that include the sale of both products and services. Revenues from contracts with multiple-element arrangements, such as those including products and services, are recognized as each element is earned based on the relative fair value of each element. The fair value of these elements is determined based upon prices charged to customers when the elements are sold separately.

As part of a sale, the Company offers customers a warranty on defects in materials and workmanship. The Company continuously monitors and tracks the related product returns and records a provision for the estimated amount of such future returns based on notification the Company receives of pending returns. While such returns have historically been within the Company's expectations and the provisions established, the Company cannot guarantee that it will continue to experience the same return rates that it has in the past. Any significant increase in material and workmanship defect rates and the resulting credit returns could have a material adverse impact on the Company's operating results for the period or periods in which such returns materialize. The Company also maintains allowances for doubtful accounts for estimated losses resulting from the inability of its customers to make required payments. If the financial condition of the Company's customers were to deteriorate resulting in an impairment of their ability to make payments, additional allowances might be required.

Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable are recorded at the invoiced amount and do not bear interest. The allowance for doubtful accounts is the Company's best estimate of the amount of probable credit losses in the existing accounts receivable. The allowance is evaluated based upon the creditworthiness of customers, historical experience, the age of the receivable and current market and economic conditions. The Company reviews the allowance for doubtful accounts monthly. Account balances are charged off against operating expenses when the Company feels it is probable the receivable will not be recovered.

Research and Development Costs

Research and development costs are expensed as incurred.

Shipping and Handling Costs

The Company classifies shipping and handling costs in cost of sales.

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

A. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (continued)

Impairment of Long-Lived Assets

The Company periodically evaluates the recoverability of long-lived assets whenever events and changes in circumstances indicate that the carrying amount of an asset may not be fully recoverable. When indicators of impairment are present, the carrying values of the asset are evaluated in relation to the operating performance and future undiscounted cash flows of the underlying business. If the carrying amount is less than future undiscounted cash flows, the net book value of the underlying asset is adjusted to fair value based on the expected discounted cash flows. Fair values are based on estimates of market prices and assumptions concerning the amount and timing of estimated future cash flows and assumed discount rates, reflecting varying degrees of perceived risk. The Company recorded \$2,863,000 of impairment charges related to the suspension of an internal-use software development program in 2002.

Stock Compensation

Options for the purchase of the Company's stock have been granted to officers, directors and key employees under various nonqualified stock option agreements. The Company accounts for these grants under the recognition and measurement principles of APB Opinion No. 25, "Accounting for Stock Issued to Employees," and related interpretations. No stock-based employee compensation cost is reflected in net income (loss), as all options granted under those plans had an exercise price equal to the market value of the underlying common stock on the date of grant. If the recognition provisions of Statement of Financial Accounting Standards ("SFAS") No. 148, "Accounting for Stock-Based Compensation - Transition and Disclosure - an Amendment of FASB Statement No. 123", had been adopted, the effect on net income (loss) and basic and diluted net income (loss) per share would have been as follows:

<i>(in thousands except per share data)</i>	For the years ended December 31,		
	2004	2003	2002
Net income (loss), as reported	\$ 27,511	\$ (11,136)	\$ (19,418)
Deduct: Total stock-based employee compensation expense determined under fair value based method for all awards, net of related tax effects	946	998	648
Pro forma net income (loss)	\$ 26,565	\$ (12,134)	\$ (20,066)
Earnings per share:			
Basic-as reported	\$ 1.05	\$ (0.43)	\$ (0.77)
Basic-pro forma	\$ 1.02	\$ (0.46)	\$ (0.79)
Diluted-as reported	\$ 1.05	\$ (0.43)	\$ (0.77)
Diluted-pro forma	\$ 1.01	\$ (0.46)	\$ (0.79)

The weighted average fair value of options granted during 2004, 2003, and 2002 was \$9.99, \$4.54 and \$8.52, respectively. The fair value of each option grant is estimated on the date of grant using the Black-Scholes option-pricing model with the following weighted average assumptions:

	2004	2003	2002
Dividend yield	1.3%	1.4%	2.1%
Expected stock price volatility	60%	60%	59%
Risk-free interest rate	4.10%	3.43%	4.49%
Expected holding period (years)	6.3	6.3	6.3

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

A. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (continued)

Income Taxes

Deferred tax liabilities and assets are recognized for the expected future tax consequences of events that have been included in the financial statements or tax returns. Deferred tax liabilities and assets are determined based on the difference between the tax basis of assets and liabilities and their reported amounts using enacted tax rates in effect for the year in which the differences are expected to reverse. Tax credits are generally recognized as reductions of income tax provisions in the year in which the credits arise. The measurement of deferred tax assets is reduced by a valuation allowance if, based upon available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized. The Company has not provided for federal income taxes applicable to undistributed earnings of its foreign subsidiaries and its 50%-owned joint venture since these earnings are indefinitely reinvested.

Net Income (Loss) Per Share

Basic net income (loss) per common share is based on the weighted average number of common shares outstanding during the year. Diluted net income (loss) per common share reflects the potential dilution that could occur if outstanding stock options were exercised and converted into common stock at the beginning of the period.

The following table sets forth the computation of basic and diluted net income (loss) per weighted average common share:

	For the years ended December 31,		
	2004	2003	2002
<i>(in thousands except per share data)</i>			
Net income (loss)	<u>\$ 27,511</u>	<u>\$ (11,136)</u>	<u>\$ (19,418)</u>
Basic weighted average shares outstanding	26,110	26,099	25,364
Weighted average common equivalent shares (1)	<u>77</u>	<u>--</u>	<u>--</u>
Diluted weighted average shares outstanding	26,187	26,099	25,364
Net income (loss) per weighted average share, basic	<u>\$ 1.05</u>	<u>\$ (0.43)</u>	<u>\$ (0.77)</u>
Net income (loss) per weighted average share, diluted	<u>\$ 1.05</u>	<u>\$ (0.43)</u>	<u>\$ (0.77)</u>

(1) Common equivalent shares represent shares issuable upon exercise of stock options (using the treasury stock method). Weighted options to acquire 526,000, 720,000 and 552,000 shares of common stock as of December 31, 2004, 2003 and 2002, respectively, were excluded from the calculation of diluted earnings per share because of their antidilutive effect.

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

B. OTHER ASSETS

The Company owns 50% of a joint venture company, Ulvac Cryogenics, Inc., with an unrelated Japanese manufacturer to produce, sell and distribute cryogenic vacuum pumps in Japan.

Condensed results of operations for the joint venture for each of the three fiscal years ended September 30 are as follows:

<i>(in thousands)</i>	<u>2004</u>	<u>2003</u>	<u>2002</u>
Net sales	\$ 47,691	\$ 28,309	\$ 21,256
Gross profit	\$ 15,650	\$ 7,302	\$ 5,133
Net income	\$ 4,929	\$ 1,159	\$ 399
Helix joint venture income, including royalty income and equity income	\$ 3,508	\$ 1,181	\$ 639

The Company receives periodic distributions from the joint venture in the form of dividends. Dividends received were \$427,000 in 2004, \$192,000 in 2003 and \$88,000 in 2002.

Condensed balance sheet information as of September 30 is as follows:

<i>(in thousands)</i>	<u>2004</u>	<u>2003</u>
Current assets	\$ 47,614	\$ 31,899
Noncurrent assets	6,562	5,877
Total assets	<u>\$ 54,176</u>	<u>\$ 37,776</u>
Current liabilities	\$ 20,887	\$ 10,985
Long-term liabilities	1,865	1,744
Stockholders' equity	31,424	25,047
Total liabilities and stockholders' equity	<u>\$ 54,176</u>	<u>\$ 37,776</u>

The Company's net investment in the joint venture of approximately \$15,712,000 and \$12,352,000 at December 31, 2004 and 2003, respectively, is reported in other assets. The Company's net investment reflects a cumulative translation gain of \$1,642,000 and \$491,000 at December 31, 2004 and 2003, respectively. This currency translation gain, which is included in stockholders' equity, resulted from translating the balance sheet of the joint venture into U.S. dollars.

C. RESTRUCTURINGS AND OTHER CHARGES

During the fourth quarter of 2002, restructuring and other charges recorded were associated with the initiation of a worldwide cost-reduction program and the suspension of an internal-use software development program in response to the continued duration and severity of the slowdown in the semiconductor capital equipment industry. The \$8,714,000 charged to restructurings and other charges is comprised of \$3,046,000 of employee severance costs; \$2,805,000 to consolidate leased facilities; and \$2,863,000 to write off certain software.

The employee costs of \$3,046,000 primarily consist of severance and fringe benefits to terminate approximately 130 employees. The affected employees, most of whom were located in the United States, were primarily full-time nonmanufacturing employees. Notification and termination benefits were communicated to employees in the fourth quarter of 2002. The majority of the terminations took place in 2002 with the remaining terminations completed in 2003. The Company realized approximately \$2,000,000 in quarterly savings from the reduction in force.

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

C. RESTRUCTURINGS AND OTHER CHARGES (continued)

The \$2,805,000 of net exit costs related to facility closures that resulted from the planned consolidation of customer support facilities located in Massachusetts; facility reductions of satellite sales and customer support facilities located in Texas and Arizona; and consolidation of sales and support centers located in Europe and Japan. These accrued costs reflect payments required under operating lease contracts in excess of expected sub-lease rentals and costs for writing down related leasehold improvements at the affected facilities. The consolidation of these facilities resulted in quarterly cost savings of approximately \$400,000.

The Company suspended an internal-use software development program given current market conditions and timing of market application, resulting in a \$2,863,000 charge.

The following table summarizes the components of the restructurings and other charges, the cash payments, non-cash activities, and the remaining accrual as of December 31, 2004:

<i>(in thousands)</i>	Employee Severance and Fringe Benefit Costs	Facility Closure Costs	Asset Write- Downs	Total Restructurings and Other Charges
2002 restructuring charges	\$ 3,046	\$ 1,486	\$ 4,182	\$ 8,714
Non-cash activity	--	20	(4,182)	(4,162)
Cash payments	(208)	--	--	(208)
Balance at December 31, 2002	<u>2,838</u>	<u>1,506</u>	<u>--</u>	<u>4,344</u>
Non-cash adjustments	(301)	301	--	--
Cash payments	(2,537)	(1,118)	--	(3,655)
Balance at December 31, 2003	<u>--</u>	<u>689</u>	<u>--</u>	<u>689</u>
Cash payments	--	(522)	--	(522)
Balance at December 31, 2004	<u>\$ --</u>	<u>\$ 167</u>	<u>\$ --</u>	<u>\$ 167</u>

The remaining accrual balance associated with facility closure costs represents facility restoration charges and payments due on remaining lease terms through 2006.

D. EMPLOYEE BENEFIT PLANS

A noncontributory defined benefit pension plan and a Section 401(k) defined contribution plan function together as the Company's retirement program, covering substantially all of the Company's U.S. employees. Employees begin participating in the pension plan after completing one year of service. They vest in the benefits after completing five years of service or reaching age 65 while still employed with the Company. The benefits under this plan are based on years of service and final average compensation.

The following tables set forth the funded status of the defined benefit pension plan and the amount reflected in the Company's consolidated balance sheets, projected benefit obligation, and fair value of assets of the plan. The Company uses the end of the fiscal year as a measurement date to determine pension benefit measurements for the pension plan.

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

D. EMPLOYEE BENEFIT PLANS (continued)

Reconciliation of Projected Benefit Obligation

<i>(in thousands)</i>	<u>2004</u>	<u>2003</u>
Benefit obligation January 1	\$ 17,998	\$ 14,664
Service cost	1,801	1,634
Interest cost	1,117	1,153
Actuarial loss	258	2,442
Benefits paid	<u>(1,280)</u>	<u>(1,895)</u>
Benefit obligation December 31	<u>\$ 19,894</u>	<u>\$ 17,998</u>

Weighted-average assumptions used to determine benefit obligations, end of year

	<u>December 31,</u>	
	<u>2004</u>	<u>2003</u>
Discount rate	5.75%	6.00%
Rate of compensation increase	4.00%	4.00%

Reconciliation of Fair Value of Assets

<i>(in thousands)</i>	<u>2004</u>	<u>2003</u>
Fair value of assets January 1	\$ 6,861	\$ 6,273
Actual return on plan assets	675	1,089
Employer contribution	3,116	1,394
Benefits paid	<u>(1,280)</u>	<u>(1,895)</u>
Fair value of assets December 31	<u>\$ 9,372</u>	<u>\$ 6,861</u>

Employer contributions and benefits paid in the above table include only those amounts contributed directly to, or paid directly from, plan assets. The expected long-term rate of return on these plan assets was 8.5% in 2004 and 9.0% in 2003.

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

D. EMPLOYEE BENEFIT PLANS (continued)

The asset allocation for the Company's pension plan at the end of 2004 and 2003, and the target allocation for 2005, by asset category, are as follows:

<u>Asset Category</u>	<u>Target Allocation 2005</u>	<u>Percentage of Plan Assets at Year End</u>	
		<u>2004</u>	<u>2003</u>
Equity securities	40% - 70%	66%	67%
Fixed income securities	35% - 55%	33%	32%
Cash	0% - 10%	1%	1%
Total		<u>100%</u>	<u>100%</u>

The Company's pension plan assets are managed by an outside investment manager. Assets are rebalanced at the end of each quarter. The Company's investment strategy with respect to pension assets is to maximize return while protecting principal. The investment manager will have the flexibility to adjust the asset allocation and move funds to the asset class that offers the most opportunity for investment returns.

Reconciliation of Funded Status

	<u>December 31,</u>	
	<u>2004</u>	<u>2003</u>
<i>(in thousands)</i>		
Projected benefit obligation	\$ (19,894)	\$ (17,998)
Fair value of plan assets	9,372	6,861
Funded status	(10,522)	(11,137)
Unrecognized prior service cost	85	100
Unrecognized net actuarial loss	3,332	3,189
Accrued pension cost	<u>\$ (7,105)</u>	<u>\$ (7,848)</u>

At the end of 2004 and 2003, the projected benefit obligation, accumulated benefit obligation, and fair value of plan assets for the pension plan was as follows.

	<u>December 31,</u>	
	<u>2004</u>	<u>2003</u>
<i>(in thousands)</i>		
Projected benefit obligation	\$ 19,894	\$ 17,998
Accumulated benefit obligation	11,716	10,882
Fair value of plan assets	9,372	6,861

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

D. EMPLOYEE BENEFIT PLANS (continued)

The benefit payments are expected to be paid in the following years:

(in thousands)

2005	\$	271
2006		433
2007		448
2008		1,207
2009		701
2010-2014		8,432

The Company's funding policy is to contribute an amount equal to the minimum funding requirements under the Employee Retirement Income Security Act of 1974 ("ERISA"). The Company may contribute additional amounts if appropriate to its tax and cash position and plan funded status. The minimum funding requirement under ERISA in 2005 is \$298,000; however, the Company expects to contribute \$2.1 million to the plan to meet certain funding targets.

The Company's net pension cost included the following components:

(in thousands)

	<u>2004</u>	<u>2003</u>	<u>2002</u>
Service cost	\$ 1,801	\$ 1,634	\$ 1,615
Interest cost	1,117	1,153	902
Expected return on assets	(604)	(666)	(669)
Net amortization of:			
Prior service cost	15	16	16
Net actuarial loss (gain)	43	--	(75)
Transition obligation	--	(27)	(39)
Net periodic pension cost	<u>\$ 2,372</u>	<u>\$ 2,110</u>	<u>\$ 1,750</u>

Weighted-average assumptions used to determine net cost were:

	<u>2004</u>	<u>2003</u>	<u>2002</u>
Discount rate for obligations	6.00%	6.75%	7.25%
Rate of compensation increase	4.00%	4.25%	5.00%
Long-term rate of return on assets	8.50%	9.00%	9.00%

The long-term rate of return on assets was developed through analysis of historical market returns, current market conditions and the fund's past experience. Estimates of future market returns by asset category are lower than actual long-term historical returns in order to reflect current market conditions.

The Company's Employee Savings Plan is qualified under Section 401(k), and is designed to supplement retirement income. The Company contributes a percentage of the participants' contributions up to a defined maximum amount. Company matching

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

D. EMPLOYEE BENEFIT PLANS (continued)

contributions are made 50 percent in cash and 50 percent in the Company's common stock and become 50 percent vested at the end of an employee's second year of service and vest 25 percent per year of service thereafter until becoming fully vested at the end of four years of service. The contributions expense, net of forfeitures, was \$1,380,000 in 2004, \$1,281,000 in 2003 and \$1,756,000 in 2002.

The Company has a Supplemental Key Executive Retirement Plan which is designed to supplement benefits paid to participants under Company-funded, tax-qualified retirement plans. The Company recorded additional retirement costs of \$267,000 in 2004, \$283,000 in 2003 and \$264,000 in 2002 in connection with this plan. At the end of 2004 and 2003, the Company had \$2,011,000 and \$1,744,000, respectively, accrued for benefits payable under the Supplemental Key Executive Retirement Plan.

E. COMMITMENTS AND CONTINGENCIES

The Company leases certain facilities and equipment under long-term operating leases.

Future minimum lease payments under the noncancelable operating leases are:

<i>(in thousands)</i>	Operating Leases
2005	\$ 4,306
2006	3,663
2007	769
2008	634
2009	570
Later years	2,836
Total	<u>\$ 12,778</u>

Total rental expense under operating leases was \$4,817,000 in 2004, \$5,011,000 in 2003 and \$6,034,000 in 2002.

The Company enters into short-term foreign currency forward contracts with its primary bank to minimize the effect of foreign currency exchange rate fluctuations on certain intercompany transactions with its wholly owned European, Taiwanese, and Japanese subsidiaries. These derivative instruments are not designated as hedging instruments; therefore, gains and losses on these transactions are recorded in cost of sales. The gains and losses on these instruments partially offset the realized and unrealized foreign exchange gains and losses of the underlying exposures. The net gains and losses were not material for the years ended December 31, 2004, 2003 and 2002. The notional amounts of the Company's outstanding foreign currency forward contracts at December 31, 2004 and 2003, were \$7,057,000 and \$6,653,000, respectively.

The Company concluded a settlement with Raytheon Company pursuant to an Agreement in Principle dated July 11, 2002, in connection with an action brought in 1998 in Massachusetts Superior Court, and involving allegations of defects in certain components the Company discontinued selling in 1994. While the Company continuously denied all claims, the Company and its insurers concluded that it was in the Company's best interest to reach an out-of-court settlement to avoid the distraction and expense of a jury trial. Under the terms of the settlement, the Company paid \$2.8 million, and insurance providers paid an additional \$2.1 million and essentially all of the legal costs associated with the litigation.

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

E. COMMITMENTS AND CONTINGENCIES (continued)

The Company may be involved in the normal course in ordinary routine litigation incidental to the business. The Company is not a party to any proceedings that involve amounts that would have a material effect on its financial position or results of operations if such proceedings were resolved unfavorably.

Guarantees and Indemnification Obligations

In November 2002, the Financial Accounting Standards Board ("FASB") issued FASB Interpretations ("FIN") No. 45, "Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others," an interpretation of FASB Statements No. 5, 57, and 107 and rescission of FASB Interpretation No. 34. FIN No. 45 requires that a guarantor recognize, at the inception of a guarantee, a liability for the fair value of the obligation undertaken by issuing the guarantee and requires additional disclosures to be made by a guarantor in its interim and annual financial statements about its obligations under certain guarantees it has issued. The adoption of FIN No. 45 did not have a material effect on the Company's financial position or results of operations. The following is a summary of agreements that the Company has determined are within the scope of FIN No. 45.

The Company enters into standard indemnification agreements in its ordinary course of business. Pursuant to these agreements, the Company indemnifies, holds harmless, and agrees to reimburse the indemnified party for losses suffered or incurred by the indemnified party, generally the Company's business partners or customers, in connection with patent, copyright or other intellectual property infringement claims by any third party with respect to the Company's current products, as well as claims relating to property damage or personal injury resulting from the performance of services by the Company or its subcontractors. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is unlimited. Historically, costs to defend lawsuits or settle claims relating to such indemnity agreements have been minimal, and accordingly the Company believes the estimated fair value of these agreements is immaterial.

The Company's products and services are generally sold with warranty coverage for periods ranging from 12 to 18 months after shipment. Parts and labor are covered under the terms of the warranty agreement. The warranty provision is based on historical experience by product family.

Changes in the warranty reserves for 2004 and 2003 were as follows:

(in thousands)

Balance at December 31, 2002	\$ 293
Provisions for warranty	1,250
Consumption of reserves	<u>(1,072)</u>
Balance at December 31, 2003	471
Provisions for warranty	788
Consumption of reserves	<u>(845)</u>
Balance at December 31, 2004	<u><u>\$ 414</u></u>

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

F. STOCKHOLDERS' EQUITY

On March 19, 2002, the Company completed a public offering of 3,450,000 shares of its common stock. The Company realized proceeds of \$65.2 million, net of underwriting fees and discounts and offering expenses.

Options for the purchase of shares of the Company's common stock have been granted to officers, directors, and key employees under various nonqualified stock option agreements. The terms of these agreements provide that the options vest over a period of four years and are exercisable over a number of years from the date of grant for a maximum of ten years at not less than the fair market value at the date of grant.

Options expire at various dates through the year 2014. At December 31, 2004 and 2003, respectively, 1,782,375 and 1,800,250 shares of common stock were reserved for stock options. At December 31, 2004, 2003 and 2002, respectively, 412,125, 316,625 and 201,375 nonqualified stock options were exercisable.

The following table summarizes information concerning outstanding and exercisable options at December 31, 2004:

Range of Exercise Prices	Options Outstanding			Options Exercisable	
	Number Outstanding	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price	Number Exercisable	Weighted Average Exercise Price
\$ 8.17 - \$11.24	205,750	8.14	\$ 9.54	80,000	\$ 9.81
\$15.00 - \$19.25	216,000	7.95	\$18.00	48,000	\$16.94
\$20.10 - \$20.81	246,125	4.70	\$20.51	193,125	\$20.62
\$23.11 - \$27.73	91,000	4.88	\$25.58	81,000	\$25.32
\$65.97 - \$65.97	10,000	5.15	\$65.97	10,000	\$65.97
\$ 8.17 - \$65.97	<u>768,875</u>	6.56	\$18.06	<u>412,125</u>	\$20.12

At December 31, 2004, the Company had 1,013,500 shares available for future issuance under equity compensation plans for its employees and directors.

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

F. STOCKHOLDERS' EQUITY (continued)

The following table summarizes option activity for the years ended 2004, 2003, and 2002:

<u>Options Outstanding</u>	<u>Number of Common Shares</u>	<u>Weighted Average Exercise Price</u>
January 1, 2002	468,375	\$22.47
Options granted	235,000	\$16.93
Options exercised	(42,000)	\$16.95
Options canceled	(42,375)	\$25.99
December 31, 2002	<u>619,000</u>	\$20.50
Options granted	153,000	\$ 8.60
Options exercised	--	--
Options canceled	(15,250)	\$20.45
December 31, 2003	<u>756,750</u>	\$18.10
Options granted	191,000	\$18.45
Options exercised	(17,875)	\$14.82
Options canceled	(161,000)	\$19.05
December 31, 2004	<u><u>768,875</u></u>	\$18.06

G. INCOME TAXES

The components of income (loss) before income taxes and the related provision for (benefit from) income taxes are presented below:

<i>(in thousands)</i>	<u>For the years ended December 31,</u>		
	<u>2004</u>	<u>2003</u>	<u>2002</u>
Income (loss) before income taxes:			
Domestic	\$ 15,637	\$ (5,758)	\$ (33,446)
Foreign	6,312	2,537	1,083
	<u>\$ 21,949</u>	<u>\$ (3,221)</u>	<u>\$ (32,363)</u>
Income tax provision (benefit):			
Current:			
Federal	\$ (1,316)	\$ 100	\$ (10,504)
Foreign	2,163	1,051	425
State	205	--	135
	<u>1,052</u>	<u>1,151</u>	<u>(9,944)</u>
Deferred:			
Federal	(4,142)	4,959	(2,135)
Foreign	(415)	--	--
State	(2,057)	1,805	(866)
	<u>(6,614)</u>	<u>6,764</u>	<u>(3,001)</u>
Total provision for (benefit from) income taxes	<u>\$ (5,562)</u>	<u>\$ 7,915</u>	<u>\$ (12,945)</u>

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

G. INCOME TAXES (continued)

The Company's deferred tax assets and (liabilities) are comprised of the following:

<i>(in thousands)</i>	December 31,	
	2004	2003
Deferred tax assets:		
Inventory valuation	\$ 2,131	\$ 1,940
Compensation and benefit plans	3,742	3,733
Leases	43	73
Net operating loss and tax credit carryforwards	4,603	6,253
Restructuring costs	254	200
Other	1,211	330
Total deferred tax assets	11,984	12,529
Deferred tax liabilities:		
Depreciation	(3,120)	(1,810)
Other	(36)	(45)
Total deferred tax liabilities	(3,156)	(1,855)
Less: valuation allowance	(2,214)	(10,674)
Net deferred tax assets	\$ 6,614	\$ --

At December 31, 2004, the Company had state net operating loss carryforwards of approximately \$33,700,000, with expiration dates ranging from 2006 through 2021. At December 31, 2004, the Company also had foreign tax credit carryforwards and research and development tax credits of approximately \$2,214,000 and \$625,000, respectively, with expiration dates ranging from 2010 through 2014.

The table below reconciles the expected U.S. federal income tax (benefit) provision to the recorded income tax (benefit) provision in the statements of operations:

<i>(in thousands)</i>	December 31,		
	2004	2003	2002
Federal tax computed at statutory rate of 35%	\$ 7,682	\$ (1,127)	\$ (11,327)
State income taxes, net of federal income tax benefit	646	(173)	(811)
Effect of foreign operations	(420)	(646)	(70)
R&D tax credits	--	(384)	(400)
Tax settlements	(5,009)	--	--
Other, net	(1)	(429)	(337)
Income tax (benefit) provision before valuation allowance	2,898	(2,759)	(12,945)
Increase (decrease) in valuation allowance	(8,460)	10,674	--
Income tax (benefit) provision	\$ (5,562)	\$ 7,915	\$ (12,945)

SFAS No. 109, "Accounting for Income Taxes," requires the Company to evaluate the recoverability of its deferred tax assets on an ongoing basis. An assessment is required to consider all available positive and negative evidence to determine, based on such evidence, whether it is more likely than not that some portion or all of the Company's net deferred tax assets will be realized in future periods.

As a result of management's review performed under SFAS No. 109, during 2003, the Company was required to establish a full valuation allowance against net deferred tax assets. Due to operating profitability in 2004, the Company reversed \$4,145,000 of the valuation

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

G. INCOME TAXES (continued)

allowance, primarily related to utilization of unbenefitted federal net operating loss carryforwards. In addition, during the fourth quarter of 2004, management determined that available positive evidence outweighed the historical negative evidence to support the release of \$4,790,000 of valuation allowance. The positive evidence management considered included the full utilization of federal net operating loss carryforwards during 2004, results of operations for 2004 and 2003 and anticipated operating income for future periods in sufficient amounts to realize the net deferred tax assets. The Company also increased the valuation allowance by \$475,000 related to additional foreign tax credit carryforwards determined as part of the IRS settlement. (See Note J, "Subsequent Events" for further details.) As a result of these factors, the valuation allowance decreased from \$10,674,000 at December 31, 2003, to \$2,214,000 at December 31, 2004. The valuation allowance at December 31, 2004, primarily relates to foreign tax credit carryforwards for which the utilization in future periods is uncertain.

H. SEGMENT INFORMATION

Line of Business and Foreign Operations

The Company operates in one reportable segment: the development, manufacture, sale, and support of cryogenic and vacuum equipment. The Company's management currently uses consolidated financial information in determining how to allocate resources and assess performance.

The consolidated financial statements include the accounts of wholly owned international subsidiaries that operate customer support facilities to sell and service products manufactured in the United States. A summary of United States and international operations follows for the years ended December 31:

<i>(in thousands)</i>	<u>United States</u>	<u>International</u>	<u>Consolidated</u>
2004			
Net sales	\$ 118,573	\$ 41,101	\$ 159,674
Long-lived assets	\$ 32,948	\$ 2,541	\$ 35,489
2003			
Net sales	\$ 75,306	\$ 30,577	\$ 105,883
Long-lived assets	\$ 30,811	\$ 2,793	\$ 33,604
2002			
Net sales	\$ 76,228	\$ 24,013	\$ 100,241
Long-lived assets	\$ 32,647	\$ 3,736	\$ 36,383

Export Sales and Significant Customers

The Company's export sales of \$14,174,000 in 2004, \$9,374,000 in 2003 and \$10,212,000 in 2002 are included in U.S. results.

The Company's largest customer, including outsourcing partners, represented 28%, 20% and 27% of net sales for 2004, 2003, and 2002, respectively.

I. RECENT ACCOUNTING PRONOUNCEMENTS

In March 2004, the FASB approved the consensus reached on the Emerging Issues Task Force ("EITF") Issue No. 03-01, "The Meaning of Other-Than-Temporary Impairment and Its Application to Certain Investments." EITF 03-01 provides guidance on determining when an investment is considered impaired, whether that impairment is other than temporary, and the measurement of an

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

I. RECENT ACCOUNTING PRONOUNCEMENTS (continued)

impairment loss. EITF 03-01 also provides new disclosure requirements for other-than-temporary impairments on debt and equity investments. In September 2004, the FASB delayed until further notice the effective date of the measurement and recognition guidance contained in EITF 03-01. The disclosure requirements of EITF 03-01 are effective for annual financial statements for fiscal years ending after December 15, 2003. The adoption of EITF 03-01 did not have a material impact on the Company's financial position or results of operations.

In October 2004, the FASB approved the consensus reached on EITF No. 04-10, "Applying Paragraph 19 of FASB Statement No. 131, "Disclosures about Segments of an Enterprise and Related Information," in Determining Whether to Aggregate Operating Segments That Do Not Meet the Quantitative Thresholds." EITF 04-10 provides guidance on evaluating the aggregation criteria when determining whether operating segments that do not meet the quantitative thresholds may be aggregated in accordance with paragraph 19 of SFAS 131. The adoption of EITF 04-10 is not expected to have a material impact on the Company's financial position or results of operations.

In November 2004, the FASB issued SFAS No. 151, "Inventory Costs, An Amendment of ARB No. 43, Chapter 4." This Statement amends ARB No. 43, Chapter 4, to clarify that abnormal amounts of idle facility, freight, handling costs, and wasted materials (spoilage) should be recognized as current-period charges. In addition, SFAS No. 151 requires that allocation of fixed production overheads to the costs of conversion be based on the normal capacity of the production facilities. SFAS No. 151 is effective for inventory costs incurred during fiscal years beginning after June 15, 2005. Earlier application is permitted for inventory costs incurred during fiscal years beginning after November 23, 2004. The provisions of SFAS No. 151 should be applied prospectively. The Company is still evaluating the impact of SFAS No. 151; however, the Company does not believe it will have a material impact on its financial position or results of operations.

In December 2004, the FASB issued SFAS No. 123 (revised 2004), "Share-Based Payment" SFAS No. 123 revised eliminates the alternative to use APB Opinion No. 25's intrinsic value method of accounting that was provided in SFAS No. 123 as originally issued. Under Opinion 25, issuing stock options to employees generally resulted in recognition of no compensation cost. SFAS No. 123 revised requires companies to recognize the cost of employee services received in exchange for equity instruments, based on the grant-date fair value of those instruments (with limited exceptions). SFAS No. 123 revised is effective for public companies for all employee awards of share-based payment granted, modified, or settled in any interim or annual period beginning after June 15, 2005. Companies may choose from one of three methods when transitioning to the new standard, which may include restatement of prior annual and interim periods or no restatement of interim periods prior to the effective date. The Company will adopt the standard as of the effective date and is in the process of evaluating the impact of this standard on its financial statements.

In December 2004, the FASB issued two FASB Staff Positions (FSP) that provide accounting guidance on how companies should account for the effects of the American Jobs Creation Act of 2004 that was signed into law on October 22, 2004. FSP FAS 109-1, "Application of FASB Statement No. 109, "Accounting for Income Taxes," to the Tax Deduction on Qualified Production Activities Provided by the American Jobs Creation Act of 2004," states that the manufacturers' deduction provided for under this legislation should be accounted for as a special deduction instead of a tax rate change. FSP FAS 109-2, "Accounting and Disclosure Guidance for the Foreign Earnings Repatriation Provision within the American Jobs Creation Act of 2004," allows a company additional time to evaluate the effects of the legislation on any plan for reinvestment or repatriation of foreign earnings for purposes of applying SFAS No. 109, "Accounting for Income Taxes." These FSPs may affect how a company accounts for deferred income taxes. These FSPs are effective December 21, 2004. The Company is currently evaluating the impact from these FSPs on its results of operations and financial position.

J. SUBSEQUENT EVENTS

Acquisition of Polycold

In December 2004, the Company entered into a definitive agreement with Intermagnetics General Corporation ("IGC") and Polycold, a wholly owned subsidiary of IGC, to acquire all of the issued and outstanding stock of Polycold for \$49.2 million in cash at closing and up to \$3.3 million in transaction-related tax payments. Polycold is a producer of high-speed water vapor cryopumping and

HELIX TECHNOLOGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

J. SUBSEQUENT EVENTS (continued)

cryogenic cooling products. The acquisition closed on February 15, 2005. The Company used a portion of its cash and cash equivalents and investments, which as of December 31, 2004, totaled \$76.3 million, to fund this acquisition. The Company currently expects the transaction-related tax payments to total approximately \$0.5 million.

Tax Settlement

Subsequent to the Company's press release and Form 8-K filing on January 28, 2005, announcing 2004 fourth quarter and full year financial results, the Company received verification of a settlement with the IRS concerning the IRS' examination of the Company's fiscal 1997 through 2002 income tax returns. As a result of this settlement, the Company increased its income tax benefit in the fourth quarter of 2004 by \$4.5 million, resulting in a revised net income for the twelve months ended December 31, 2004, of \$27.5 million, or \$1.05 per diluted share. In addition, as of December 31, 2004, net deferred income tax assets and income tax receivable increased by \$2.5 million and \$0.4 million, respectively, and income taxes payable declined by \$1.6 million. These adjustments are considered a Type 1 subsequent event under generally accepted accounting principles and are reflected in the Company's 2004 financial statements.

HELIX TECHNOLOGY CORPORATION

SCHEDULE II--VALUATION AND QUALIFYING ACCOUNTS

For the Years Ended December 31, 2004, 2003, and 2002

(in thousands)

Description	Balance at Beginning of Period	Additions to (Reductions from) Costs and Expenses	Deductions from Reserves	Balance at End of Period
Year ended December 31, 2004				
Allowance for doubtful accounts	\$ 438	\$ (51)	\$ 82	\$ 305
Reserve for restructuring activities	\$ 689	\$ --	\$ 522	\$ 167
Year ended December 31, 2003				
Allowance for doubtful accounts	\$ 641	\$ 174	\$ 377	\$ 438
Reserve for restructuring activities	\$ 4,344	\$ --	\$ 3,655	\$ 689
Year ended December 31, 2002				
Allowance for doubtful accounts	\$ 400	\$ 318	\$ 77	\$ 641
Reserve for restructuring activities	\$ --	\$ 8,714	\$ 4,370	\$ 4,344

EXHIBIT INDEX

- 2.1 Stock Purchase Agreement among Intermagnetics General Corporation, IGC Polycold Systems Inc. and Helix Technology Corporation, dated as of December 15, 2004. Filed as Exhibit 10.3 to the Company's Form 8-K filed December 20, 2004 and incorporated herein by reference.
- 3.1 Restated Certificate of Incorporation, as amended on May 7, 1987, May 18, 1988, April 20, 1995, and April 29, 1998. Filed as Exhibit 3.1 to the Company's Current Report on Form 8-K filed May 15, 1998, and incorporated herein by reference.
- 3.2 Amended and restated bylaws, as of February 24, 2005. Filed herewith.
- 10.1 Basic agreement between the Company and Ulvac Corporation dated August 17, 1981. Filed as Exhibit 10.13 to a Registration Statement on Form S-2, Registration No. 2-84880, and incorporated herein by reference.
- 10.2 Lease agreement dated July 24, 1984, as amended July 26, 1999, between Long Gate LLC as Lessor and the Company as Lessee. Filed as Exhibit 10.2 to the Company's Form 10-K for the Year Ended December 31, 1999, and incorporated herein by reference.
- 10.3 Lease agreement dated May 23, 1991, between Mansfield Corporate Center Limited Partnership as Lessor and the Company as Lessee. Filed as Exhibit 10-(14) to the Company's Form 10-K for the Year Ended December 31, 1991, and incorporated herein by reference.
- 10.4 Lease agreement dated August 7, 1998, between Mitsubishi Jisho Co., Ltd. as Lessor and the Company as Lessee. Filed as Exhibit 10-(5) to the Company's Form 10-K for the Year Ended December 31, 1998, and incorporated herein by reference.
- 10.5 Lease agreement dated May 14, 1999, between MUM IV, LLC as Lessor and the Company as Lessee. Filed as Exhibit 10.6 to the Company's Form 10-K for the Year Ended December 31, 1999, and incorporated herein by reference.
- 10.6 The Company's informal incentive bonus plan. Filed as Exhibit 10.9 to a Registration Statement on Form S-2, Registration No. 2-84880 and incorporated herein by reference.*
- 10.7 The Company's Supplemental Key Executive Retirement Plan effective February 13, 1992. Filed as Exhibit 14-(14) to the Company's Form 10-K for the Year Ended December 31, 1992 and incorporated herein by reference.*
- 10.8 The Company's 1996 Equity Incentive Plan, as amended and restated. Filed as Exhibit 10.1 to the Company's Form 10-Q for the quarter ended July 2, 2004, and incorporated herein by reference.*
- 10.9 The Company's Supplemental Benefit Plan of Helix Technology Corporation, effective April 1, 1999. Filed as Exhibit 10.15 to the Company's Form 10-K for the Year Ended December 31, 1999, and incorporated herein by reference.*
- 10.10 Directors' Deferred Compensation Plan. Filed as Exhibit 10.15 to the Company's Form 10-K for the Year Ended December 31, 2001, and incorporated herein by reference.*
- 10.11 The Company's Amended and Restated Stock Option Plan for Non-Employee Directors. Filed as Exhibit 10.11 to the Company's Form 10-K for the Year Ended December 31, 2001, and incorporated herein by reference.*

- 10.12 The Company's 2005 Executive Performance Compensation Program. Filed as Exhibit 10.1 to the Company's Form 8-K filed December 20, 2004, and incorporated herein by reference.*
- 10.13 The Company's 2005 Directors Compensation Program. Filed as Exhibit 10.2 to the Company's Form 8-K filed December 20, 2004, and incorporated herein by reference.*
- 10.14 Employment Agreement dated, November 10, 2003, between the Company and Robert J. Lepofsky (supersedes all other prior Agreements). Filed as Exhibit 10.12 to the Company's Form 10-K for the year ended December 31, 2003, and incorporated herein by reference.*
- 10.15 Employment Agreement dated August 1, 2002, between the Company and Robert E. Anastasi (supersedes all other prior Agreements). Filed as Exhibit 10.1 to the Company's Form 10-Q for the Quarter Ended September 27, 2002, and incorporated herein by reference.*
- 10.16 Employment Agreement dated June 2, 2003, between the Company and Jay Zager (supersedes all other prior agreements). Filed as Exhibit 10.1 to the Company's Form 10-Q for the Quarter Ended June 27, 2003, and incorporated herein by reference.*
- 10.17 Employment Agreement dated November 1, 2002, between the Company and Mark E. Jalbert. Filed as Exhibit 10.15 to the Company's Form 10-K for the year ending December 31, 2002, and incorporated herein by reference.*
- 10.18 Employment Agreement dated December 9, 2002, between the Company and James Gentilcore. Filed as Exhibit 10.16 to the Company's Form 10-K for the year ending December 31, 2002, and incorporated herein by reference.*
- 21.1 Subsidiaries of the Registrant. Filed herewith.
- 23.1 Consent of Independent Registered Public Accounting Firm. Filed herewith.
- 31.1 Certification of the Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. Filed herewith.
- 31.2 Certification of the Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. Filed herewith.
- 32.1 Certification of the Principal Executive Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. Filed herewith.
- 32.2 Certification of the Principal Financial Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. Filed herewith.
- 99.1 Important Factors That May Affect Future Results. Filed herewith.

* Denotes management contract or compensation plan.

EXHIBIT 21. SUBSIDIARIES OF THE REGISTRANT

<u>Subsidiary</u>	<u>Place Organized</u>
Helix Securities Corporation	Massachusetts
CTI-Cryogenics, Inc.	Barbados
Helix Technology UK Limited	England
Helix Technology SA	France
Helix Technology GmbH	Germany
Helix Technology K.K.	Japan
Granville-Phillips Company	Delaware
Helix Vacuum Technology Ltd.	Taiwan
Helix Technology Limited	China (Hong Kong)
CTI-Nuclear, Inc.	Ohio
Helix Technology (Shanghai) Limited	China
Helix Polycold Systems Inc.	Delaware

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (No. 333-116587, 333-104624, 333-09247 and 333-09245) of Helix Technology Corporation of our report dated March 16, 2005, relating to the financial statements, financial statement schedule, management's assessment of the effectiveness of internal control over financial reporting and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
PricewaterhouseCoopers LLP

Boston, Massachusetts
March 16, 2005

Important Factors That May Affect Future Results

From time to time, we may make forward-looking public statements, such as statements concerning our strategic plans; the outlook for our business and industry; anticipated expenses; anticipated sources of future revenues; and the sufficiency of capital to meet working capital and capital expenditure requirements, as well as other estimates relating to future operations. Forward-looking statements may be in reports filed under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), in press releases, or in informal statements made with the approval of an authorized executive officer. The words or phrases "will likely result," "are expected to," "will continue," "is anticipated," "estimate," "project," "believe," "could," "intend," "may," "opportunity," "plan," "potential" or similar terms and expressions are intended to identify "forward-looking statements" within the meaning of Section 21E of the Exchange Act and Section 27A of the Securities Act of 1933, as amended, as enacted by the Private Securities Litigation Reform Act of 1995.

We wish to caution you not to place undue reliance on these forward-looking statements that speak only as of the date on which they are made. In addition, we wish to advise you that the factors listed below, as well as other factors we have not currently identified, could affect our financial or other performance and could cause our actual results for future periods to differ materially from any opinions or statements expressed with respect to future periods or events in any current statement.

We will not undertake and we specifically decline any obligation to publicly release revisions to these forward-looking statements to reflect either circumstances after the date of the statements or the occurrence of events that may cause us to reevaluate our forward-looking statements.

In connection with the "Safe Harbor" provisions of the Private Securities Litigation Reform Act, we are hereby filing the following cautionary statements identifying important factors that could cause our actual results to differ materially from those projected in forward-looking statements made by us or on our behalf:

The semiconductor equipment industry is highly cyclical and unpredictable.

The semiconductor equipment industry is characterized by up and down business cycles; the timing, length and volatility of which are difficult to predict. Our business depends in large part upon the capital expenditures of semiconductor manufacturers, which in turn depend on the current and anticipated market demand for integrated circuits and products utilizing integrated circuits. Sudden changes in demand for semiconductors have affected and will continue to affect the timing and amounts of our customers' capital equipment purchases and investments in new technology.

During periods of increasing demand for semiconductor manufacturing equipment, we must have sufficient manufacturing capacity and inventory to meet customer demand and must be able to attract, hire, assimilate and retain a sufficient number of qualified individuals. If we are unable to effectively manage our resources and production capacity during an industry upturn, there could be a material adverse effect on our business, financial condition and results of operations. Conversely, in downturns, we must be able to appropriately align our cost structure with prevailing market conditions and effectively motivate and retain key employees.

We derive a significant portion of our sales from a limited number of customers, and our sales could decline significantly if we lose a customer or if a customer cancels, reduces or delays an order.

Historically, we have derived a significant portion of net sales from a limited number of customers. In 2004 our ten largest customers accounted for approximately 53% of our net sales and a single customer, Applied Materials, accounted for approximately 28% of our net sales. We anticipate that a small number of customers will continue to account for a large portion of our net sales for the foreseeable future. The loss, reduction or delay of any orders from these customers could significantly reduce our sales and harm our reputation in our industry.

Industry consolidation and outsourcing of the manufacture of semiconductors may reduce the number of our potential customers.

The substantial expense of building, upgrading or expanding a semiconductor fabrication facility is increasingly causing semiconductor companies to contract with foundries, which manufacture semiconductors designed by others. As manufacturing shifts to foundries, the number of our potential customers could decrease, which would increase our dependence on our remaining customers. In addition, consolidation within the semiconductor manufacturing industry is increasing. If semiconductor manufacturing is consolidated within a small number of foundries and other large companies, our failure to win any significant contracts to supply equipment to any of those customers could seriously harm our reputation and materially and adversely affect our results of operations. In addition, industry consolidation may cause delays in the purchase of our products and cause a reexamination of strategic and purchasing decisions by our current and potential customers. We could lose valuable relationships with key personnel of a customer due to budget cuts, layoffs or other disruptions caused by industry consolidation.

If we fail to develop and sell new or enhanced products and services for semiconductor manufacturers, we will not be able to compete effectively.

Rapid technological innovation in semiconductor manufacturing processes requires the semiconductor equipment industry to anticipate or respond quickly to evolving customer requirements and could render our current product offerings obsolete. We believe that our continued success will depend significantly on our ability to quickly develop, manufacture and introduce new products and product enhancements that address our customers' needs, including their customer support requirements. The timely development of new or enhanced products is a complex and uncertain process. We may experience design, manufacturing, marketing or other difficulties that could delay or prevent the development, introduction or commercialization of any new or enhanced products. We may not anticipate successfully and accurately technological or market trends, or manage successfully long development cycles. We may be required to collaborate with third parties to develop these products and may not be able to do so on a timely and cost-effective basis, if at all. If we are not successful in marketing and selling these products to customers with whom we have formed long-term relationships, our net sales could be adversely affected. If any of our new or enhanced products have reliability or quality problems, such problems may result in reduced orders, higher manufacturing costs, delays in collecting accounts receivable, and additional service and warranty expense. If we are not able to develop new products or enhancements to existing products on a timely and cost-effective basis, or if the new products or product enhancements that we introduce fail to achieve market acceptance, our ability to grow our business would be harmed and competitors could achieve greater market share.

If we are unable to continue to provide satisfactory levels of maintenance and warranty support to customers, our reputation may be adversely affected, we may be unable to attract new customers and we may lose existing customers.

We provide a high level of customer and product support to help our customers maximize production yields by minimizing downtime due to scheduled and unscheduled maintenance. If our customer service personnel fail to continue to provide prompt and effective product maintenance and warranty support to our customers, or if our diagnostic solutions technology operates at less than the level of performance required to minimize maintenance downtime, then our reputation and the reputation of our products and services could be damaged, which would adversely affect our net sales.

If we fail to compete successfully in the highly competitive semiconductor equipment industry, our sales and profitability will decline.

We encounter aggressive competition in the market for semiconductor manufacturing equipment. Many of our current and potential competitors have greater resources than we have, including capital, name recognition, technical and marketing resources, customer service and support resources, and manufacturing capabilities. We believe that, to remain competitive, we must offer a broad range of products, maintain customer service and support centers worldwide, and invest significant resources in product and process research and development in order to develop new products and enhance our existing products in a timely manner. Competitors with substantially greater resources than we have may be better positioned to compete successfully in the industry.

We expect our current competitors to continue to improve the design and performance of their existing products and processes and to introduce new products and processes with improved price and performance characteristics. Our product sales may be threatened by new technologies, products or market trends, and we may have to adjust the prices of our products and services to stay competitive. In addition, new competitors may emerge in the markets we serve. Moreover, a relatively small number of firms compete in the vacuum technology market. An acquisition of or by, one of our competitors in the sector may result in a substantially strengthened competitor

with greater financial, engineering, manufacturing, marketing and customer support resources than we have. If our current or future competitors enter into strategic relationships with leading semiconductor manufacturers covering products similar to those sold or being developed by us, our ability to sell products to those manufacturers may be adversely affected. We cannot assure you that we will be able to compete successfully with our existing competitors or with new competitors.

Downturns in the semiconductor industry make it difficult to anticipate or expand sales.

We anticipate that a significant portion of any new orders will depend upon demand from semiconductor manufacturers that build, upgrade or expand fabrication facilities. If, as a result of an industry downturn, these prospective customers postpone or abandon their plans to build, upgrade or expand fabrication facilities, or otherwise reduce or fail to make capital expenditures, demand for our systems may decline. We may be unable to generate significant new orders for our systems, which would adversely affect our sales levels.

In addition, the high rate of technical innovation in the semiconductor industry requires continual investments in engineering, research and development, marketing and global support services to develop and sell new products and to maintain extensive customer support capabilities. These investments create significant fixed costs that limit our ability to reduce expenses during downturns in proportion to declining sales.

We do not have long-term purchase agreements with our customers, and as a result, our customers could stop purchasing our products and services at any time.

We generally do not obtain firm, long-term volume purchase commitments from our customers, and we generally experience short lead-times for customer orders. In addition, customer orders can be canceled and volume levels can be reduced or delayed. We may be unable to replace canceled, delayed, or reduced orders with new business.

Our dependence upon a limited number of suppliers for many components and subassemblies could result in increased costs or delays in the manufacture and sale of our products.

We rely to a substantial extent on outside vendors to manufacture many components and subassemblies for our products. We obtain many of these components and subassemblies from either a sole source or a limited group of suppliers. Because of our reliance on outside vendors generally, and on a limited group of suppliers in some cases, we may be unable to obtain an adequate supply of required components on a timely basis, at a price and on other terms acceptable to us, or at all.

In addition, we often quote prices to our customers and accept customer orders for our products prior to purchasing components and subassemblies from our suppliers. If our suppliers increase the cost of components or subassemblies, we may not have alternative sources of supply and may not be able to raise the prices of our products to cover all or part of the increased cost of components, which may harm our results of operations.

The manufacture of some of these components and subassemblies is a complex process and requires long lead times. As a result, we have in the past and may in the future experience delays or shortages. If we are unable to obtain adequate and timely deliveries of required components or subassemblies, we may have to seek alternative sources of supply or manufacture these components internally. This could delay our ability to manufacture or to ship our systems on a timely basis, causing us to lose sales, incur additional costs, delay new product introductions and suffer harm to our reputation.

Claims based on defects in our products or errors in performing product-related services could result in costly litigation against us.

Our products and services are used in several key steps in the fabrication of semiconductors, which is a complex and expensive process. As a result, any failure of our systems could interrupt our customers' production schedules, which would result in costly unscheduled downtime. We may be subject to significant liability claims or liquidated damages pursuant to contracts with our customers as a result of any malfunction of our systems. Our insurance may not, or may not be sufficient to, cover us against liability claims or may not continue to be available to us. Liability claims could also require us to spend significant time and money in litigation. As a result, any of these claims, whether or not successful, could seriously damage our reputation and harm our business, financial condition and results of operations.

Sales to foreign markets constituted approximately 34.6% of our net sales in 2004. Therefore our net sales and results of operations could be adversely affected by downturns in economic conditions in countries outside the United States and other risks associated with international operations.

Sales of our products and services to customers outside the United States, including exports from our U.S. facilities, accounted for approximately 34.6% of our net sales in 2004. We anticipate that international sales will continue to account for a significant portion of our net sales. We may expand the sales and marketing activities for our products and services to markets outside the United States, particularly the Asia-Pacific market, and hire additional international personnel. Because of our dependence upon international sales, we are subject to a number of risks, including:

- Unexpected changes in laws or regulations resulting in more burdensome governmental controls, tariffs, restrictions, embargoes or export license requirements;
- Difficulties in obtaining required export licenses;
- Volatility in currency exchange rates;
- Political and economic instability, particularly in the Asia-Pacific market;
- Difficulties in accounts receivable collections;
- Extended payment terms beyond those customarily offered in the United States;
- Difficulties in managing distributors or representatives outside the United States;
- Difficulties in staffing and managing foreign subsidiary operations; and
- Potentially adverse tax consequences.

Substantially all of our sales to date have been denominated in U.S. dollars. Our products become less price-competitive in countries with currencies that are declining in value in comparison to the dollar. This could cause us to lose sales or force us to lower our prices, which would reduce our gross margins. If it becomes necessary for us to make sales denominated in foreign currencies, we will become more exposed to the risk of currency conversion rate fluctuations.

Our proprietary technology is important to the continued success of our business. Our failure to protect this proprietary technology may significantly impair our competitive position.

Our ability to compete effectively with other companies depends, in part, on our ability to protect our technology assets by obtaining and enforcing patents. We have a number of patents in the United States and other countries and additional applications are pending for new developments in our equipment and processes. Although we seek to protect our intellectual property rights through patents, we cannot be certain that:

- We will be able to protect our technology adequately;
- Competitors will not be able to develop similar technology independently;
- Any of our pending patent applications will be issued;
- Claims allowed under any issued patents will be broad enough to protect our technology; or
- Intellectual property laws will protect our intellectual property rights.

Our competitive position is also dependent upon unpatented trade secrets. Trade secrets are difficult to protect. Our competitors may independently develop proprietary information and techniques that are substantially equivalent to ours or otherwise gain access to our trade secrets, such as through unauthorized or inadvertent disclosure of our trade secrets.

We may be unable to integrate Polycold's operations successfully and retain key Polycold employees.

Our acquisition of Polycold involves the integration of two companies that previously operated independently. Although the businesses of the two companies are complementary, the integration of the respective departments, systems, business units, operating procedures, information technologies, and personnel will present a significant challenge to management, which may detract from developing our existing business. We cannot assure you that we will be able to integrate and manage these operations effectively or maintain or improve the historical financial performances of Helix and Polycold. The failure to integrate these systems and procedures successfully could have a material adverse effect on our results of operations and financial condition.

The difficulties of combining our operations with Polycold include:

- integrating Polycold's operations, resources, and products;
- coordinating geographically distant operations;
- combining different corporate cultures;
- assimilating personnel with diverse business backgrounds and training;
- retaining key employees;
- maintaining customer satisfaction;
- coordinating sales and marketing activities; and
- managing any potential, unknown liabilities associated with the transaction and the combined operations.

We may become involved in litigation relating to our intellectual property rights, which may result in substantial expense and may divert our attention from the implementation of our business strategy.

We believe that the success of our business depends, in part, on obtaining patent protection for our key technology, defending our issued patents and preserving our trade secrets. Litigation may be necessary in order to enforce our patents, copyrights or other intellectual property rights, to protect our trade secrets, to determine the validity and scope of the proprietary rights of others or to defend against claims of infringement. These types of litigation could result in substantial costs and diversion of resources and could harm our business, financial condition and results of operations. Moreover, litigation may not adequately protect our intellectual property rights.

In addition, we may be sued by third parties that claim our products infringe on their intellectual property rights. This risk is exacerbated by the fact that the validity and breadth of claims covered in vacuum technology patents involve complex legal and factual questions. Any litigation or claims against us, whether valid or not, could result in substantial costs, place a significant strain on our financial resources, divert management resources and harm our reputation. Such claims could result in awards of substantial damages, which could have a significant adverse effect on our results of operations. In addition, intellectual property litigation or claims could force us to:

- Cease selling, incorporating or using any of our products that incorporate the challenged intellectual property, which would adversely affect our net sales;
- Obtain a license from the holder of the infringed intellectual property right, which license may not be available on reasonable terms, if at all; and
- Redesign our products, which would be costly and time-consuming.

We may not be able to maintain and expand our business if we are not able to retain, hire and integrate additional qualified personnel.

Our success depends in large part upon our ability to attract and retain qualified, experienced employees to operate and expand our business. There is substantial competition for experienced engineering, technical, financial, sales and marketing personnel in our industry. In particular, we must attract and retain highly skilled design and process engineers. Competition for such personnel is intense. The cyclical nature of our business also causes our staffing needs to fluctuate unexpectedly. During periods when our need for employees increases, we often depend on temporary employees. Temporary employees become scarce during up business cycles and often require additional training. If we are unable to retain our existing key personnel, or attract and retain additional qualified personnel, we may from time to time experience inadequate levels of staffing to develop, manufacture and market our products and perform services for our customers. As a result, our growth could be limited due to our lack of capacity to develop and market our products to our customers, or we could fail to meet our delivery commitments or experience deterioration in service levels or decreased customer satisfaction, all of which could adversely affect us and cause the value of our common stock to decline.

Our sales and results of operations are subject to significant fluctuations, which could cause our stock price to decline.

Our sales and results of operations have fluctuated significantly from quarter to quarter in the past, and we expect them to continue to vary in the future due to the cyclical nature of the semiconductor equipment industry and a variety of other factors, many of which are beyond our control. Downward fluctuations in our quarterly results have historically resulted in decreases in the price of our common stock. Some of the factors that could affect our quarterly sales and results of operations include:

- Changes or slowdowns in economic conditions in the semiconductor and semiconductor capital equipment industries and other industries in which our customers operate;
- The timing and volume of orders placed by major customers;
- Customer cancellations of previously placed orders and shipment delays;
- Variations in customers' capital spending budgets or inventory management practices;
- Our ability to develop, manufacture, introduce and support our current product lines as well as new products and product enhancements;
- Announcements, new product introductions and reductions in the prices of products offered by our competitors;
- Our ability to obtain sufficient supplies of sole-or limited-source components and subassemblies for our products; and
- Our ability to realize forecasted sales for a particular period.

Our results of operations in one or more future quarters may fall below the expectations of analysts and investors. In those circumstances, the trading price of our common stock would likely decrease.

We may need additional financing in the future, and we may be required to issue additional securities. Any additional financing may result in restrictions on our operations or substantial dilution to our stockholders.

We may need to raise additional funds in the future, for example; to develop new technologies, support our expansion, respond to competitive pressures, acquire complementary businesses, or respond to unanticipated situations. We may try to raise additional funds through public or private financings, strategic relationships, or other arrangements. Our ability to obtain debt or equity funding will depend on a number of factors, including market conditions, our operating performance and investor interest. Additional funding may not be available to us on acceptable terms or at all. If adequate funds are not available, we may be required to revise our business plan to reduce expenditures, including curtailing our growth strategies, foregoing acquisitions or reducing our product development efforts. If we succeed in raising additional funds through the issuance of equity or convertible securities, the issuance could result in substantial dilution to existing stockholders. If we raise additional funds through the issuance of debt securities or preferred stock,

these new securities would have rights, preferences and privileges senior to those of the holders of our common stock. The terms of these securities, as well as any borrowings under our credit agreement, could impose restrictions on our operations.

We may be unable to pay dividends in the future.

Our stockholders may receive dividends out of legally available funds if, and when, they are declared by our Board of Directors. Our policy has been to pay dividends out of cash in excess of the needs of the business. Currently, we declare dividends quarterly at a rate of \$0.08 per share of common stock. We may incur additional indebtedness in the future that may prohibit or further restrict our ability to declare and pay dividends. We may also be restricted from paying dividends in the future due to restrictions imposed by state corporation laws, our financial condition and results of operations, capital requirements, covenants contained in our financing agreements, management's assessment of future capital needs and other factors considered by our Board of Directors.

The war on terrorism and increasing political and social turmoil, including terrorist and military actions, increase the difficulty for us, our vendors and our customers to forecast accurately and plan future business activities, and could affect the current upturn of the semiconductor industry and have a material adverse effect on our business, financial condition and results of operations.

The war on terrorism and recent political and social turmoil can be expected to put further pressure on economic conditions in the United States and worldwide. These political, social and economic conditions make it difficult for us, our suppliers and our customers to forecast accurately and plan future business activities. The current upturn of the semiconductor industry could be affected, and our business, financial condition and results of operations may be materially adversely affected by a fluctuation in net sales relative to our forecasted value, as we may not be able to vary our incurred expenses in response to net sales actually realized.