BROOKS AUTOMATION INC
Form 10-K
November 18, 2009

Table of Contents

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
Form 10-K

(Mark One)

þ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For fiscal year ended September 30, 2009

or

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

Commission File Number: 0-25434

Brooks Automation, Inc.
(Exact name of Registrant as Specified in Its Charter)

Delaware	**04-3040660**
(State or Other Jurisdiction of Incorporation or Organization)	*(I.R.S. Employer Identification No.)*
15 Elizabeth Drive **Chelmsford, Massachusetts** *(Address of Principal Executive Offices)*	**01824** *(Zip Code)*

978-262-2400
(Registrant s Telephone Number, Including Area Code)

Securities registered pursuant to Section 12(b) of the Act:
Common Stock, $0.01 par value

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

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes o No þ

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. Yes o No þ

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 þ No o

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

files). Yes o No o

Indicate by check mark if disclosure of delinquent filers pursuant to Rule 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 the Form 10-K. o

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of large accelerated filer, accelerated filer and smaller reporting company in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer o Accelerated filer þ Non-accelerated filer o Smaller reporting company o
(Do not check if a smaller reporting company)

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

The aggregate market value of the registrant s Common Stock, $0.01 par value, held by nonaffiliates of the registrant as of March 31, 2009, was approximately $289,118,600 based on the closing price per share of $4.61 on that date on the Nasdaq Stock Market. As of March 31, 2009, 64,298,734 shares of the registrant s Common Stock, $0.01 par value, were outstanding. As of November 10, 2009, 64,407,278 shares of the registrant s Common Stock, $0.01, par value, were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant s Proxy Statement involving the election of directors, which is expected to be filed within 120 days after the end of the registrant s fiscal year, are incorporated by reference in Part III of this Report.

TABLE OF CONTENTS

Table of Contents

PART I

Item 1. *Business*

Brooks Automation, Inc. (Brooks , we , us , or our), a Delaware Corporation, is a leading provider of automation, vacuum and instrumentation solutions and is a highly valued business partner to original equipment manufacturers (OEM) and equipment users throughout the world. We serve markets where equipment productivity and availability is a critical factor for our customers success. Our largest served market is the semiconductor manufacturing industry. We also provide unique solutions to customers in data storage, advanced display, analytical instruments and solar markets. We develop and deliver differentiated solutions that range from proprietary products to highly respected manufacturing services.

Our company was founded in 1978 initially to develop and market automated substrate handling equipment for semiconductor manufacturing and became a publicly traded company in February 1995. Since that time, we have grown significantly from a niche supplier of wafer handling robot modules for vacuum-based processes into a broader based supplier of products and services most notably through the consolidation with Helix Technology Corporation in 2005.

Markets

Our primary served market is the global semiconductor industry, a highly cyclical industry which has a long term growth profile, both in terms of unit volumes and device complexity. This growth is increasingly focused in Asia. The end products for semiconductor devices include computers, telecommunications equipment, automotive, consumer electronics and wireless communications devices. In addition to this primary market, we have been increasing our presence in global markets outside of the semiconductor industry, primarily for our vacuum-related technologies and services. Much like semiconductors, markets such as data storage, advanced flat panel displays, industrial instruments and solar have begun to experience an increasing need for the technologies and services that we provide.

Our fiscal 2009 and 2008 revenues by end market were as follows:

	2009	2008
Semiconductor	71%	77%
Industrial	14%	10%
Other	15%	13%
	100%	100%

The production of advanced semiconductor chips is an extremely complex and logistically challenging manufacturing activity. To create the tens of millions of microscopic transistors and connect them both horizontally and in vertical layers in order to produce a functioning integrated circuit, or IC chip, the silicon wafers must go through hundreds of process steps that require complex processing equipment, or tools, to create the integrated circuits. A large production fab may have more than 70 different types of process and metrology tools, totaling as many as 500 tools or more. Up to 40% of these tools perform processes in a vacuum, such as removing, depositing, or measuring material on wafer surfaces. Wafers can go through as many as 400 different process steps before fabrication is complete. 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. As the complexity of semiconductors continues to increase, the number of process steps that occur in a vacuum environment also increases, resulting in a greater need for both automation and vacuum technology solutions due to the sensitive handling requirements and increased number of tools. The requirement for efficient, higher throughput and extremely clean manufacturing for semiconductor wafer fabs and other high performance electronic-based products has created a substantial market for substrate handling automation (moving the wafers around and between tools in a semiconductor fab), tool automation (the use of robots and modules used in conjunction with and inside process tools that move wafers from station to station), and vacuum systems technology to create and sustain the environment necessary to fabricate various products.

Table of Contents

Products

In the semiconductor industry, wafer handling robotics have emerged as a critical technology in determining the efficacy and productivity of the complex tools which process 300mm wafers in the world s most advanced wafer fabs. A tool is built around a process chamber using automation technology provided by a company such as Brooks, to move wafers into and out of the chamber. Today, OEMs build their tools using a cluster architecture, whereby several process chambers are mounted to one central frame that processes wafers. We specialize in developing and building the handling system, as well as the vacuum technology used in these tools. Our products can be provided as an individual component or as a complete handling system. Automation products are provided to support both atmospheric and vacuum based processes.

We provide high vacuum pumps and instrumentation which are required in certain process steps to condition the processing environment and to optimize that environment by maintaining pressure consistency of the known process gas. To achieve optimal production yields, semiconductor manufacturers must ensure that each process operates at carefully controlled pressure levels. Impurities or incorrect pressure levels can lower production yields, thereby significantly increasing the cost per useable semiconductor chip produced. We provide various pressure measurement instruments that form part of this pressure control loop on production processing equipment. Some key vacuum processes include: dry etching and dry stripping, chemical vapor deposition, or CVD, physical vapor deposition, or PVD, and ion implantation.

In order to facilitate the handling and transportation of wafers into a process tool, an equipment front-end module, or EFEM, is utilized. An EFEM serves as an atmospheric interface for wafers being fabricated by tools that use either atmospheric or vacuum processes. In addition to proprietary products, we also provide Extended Factory services to build EFEMs and other sub-systems which are based on an OEM specified design. We believe that we are the largest worldwide manufacturer of EFEMs through our Gresham, Oregon and Wuxi, China facilities.

Current Trends

Our primary served market is the global semiconductor industry. The demand for semiconductors and semiconductor manufacturing equipment is highly cyclical. We believe it is both reasonable and prudent to expect that the global semiconductor industry will experience market conditions that fluctuate unpredictably and at times, severely. During fiscal 2006 and continuing into fiscal 2007, Brooks benefited from a cyclical upturn in demand for its products and services, which helped drive revenues to record levels. That cyclical expansion turned to a downturn in the fourth quarter of fiscal 2007 that continued through the second quarter of fiscal 2009. The decline was particularly pronounced in the first two quarters of fiscal 2009 with a sharp contraction of capital spending in all of our served markets as well as reduced demand by OEMs as a result of inventory corrections. The decline in market valuations for public companies and increased borrowing rates as a result of the credit crisis resulted in significant impairments to the carrying value of our goodwill, intangible assets and certain fixed assets. We recognized $203.6 million of impairments to our goodwill and certain long-lived assets during our fourth quarter of 2008, and we recognized additional impairment charges to goodwill and certain long-lived assets of $106.9 million during the second quarter of 2009.

The major tool manufacturers in the semiconductor capital equipment market have been changing their business models to outsource the manufacturing of key subsystems including wafer handling systems. This trend of outsourcing has accelerated through the semiconductor industry s transition to cluster tools, which have increased the need for reliability and performance. Furthermore, our OEM customers believe that they generate more value for their customers by leveraging their expertise in process technology, rather than electro-mechanical technology. Since the early 2000s, many of the major OEMs began to look outside their captive capabilities to suppliers, like us, who could provide them with fully integrated and tested systems. We continue to benefit from these trends.

Our customers serving the global semiconductor industry continue to experience a material shift in the fabrication of wafers from North American and European based facilities to wafer fabs and foundries located in Asia. We have positioned our Extended Factory business in Wuxi, China to become a critical partner of major OEMs as they execute supply chain strategies within that region. In addition to this regional shift, the

Table of Contents

global semiconductor industry is one that is continuously focused on cost reduction. As such, companies that are a part of, or a supplier to, this industry are expected to support their customers focus on reducing the costs of operating and maintaining their manufacturing network.

Segments

In connection with our fiscal 2009 restructuring programs, we have realigned our management structure and our underlying internal financial reporting structure. Effective as of the beginning of our second fiscal quarter of 2009, we implemented a new internal reporting structure which includes three segments: Critical Solutions Group, Systems Solutions Group and Global Customer Operations.

The Critical Solutions Group segment provides a variety of products critical to technology equipment productivity and availability. Those products include robots and robotic modules for atmospheric and vacuum applications and cryogenic vacuum pumping, thermal management and vacuum measurement solutions used to create, measure and control critical process vacuum applications.

The Systems Solutions Group segment provides a range of products and engineering and manufacturing services, which include our Extended Factory services, that enable our customers to effectively develop and source high quality, high reliability, process tools for semi-conductor and adjacent market applications.

The Global Customer Operations segment provides an extensive range of support services including on and off-site repair services, on and off-site diagnostic support services, and installation services to enable our customers to maximize process tool uptime and productivity. This segment also provides services and spare parts for our Automated Material Handling Systems (AMHS) product line. Revenues from the sales of spare parts that are not related to a repair or replacement transaction, or are not AMHS products, are included within the product revenues of the other operating segments.

Our fiscal 2009 and 2008 segment revenues by end market were as follows:

	Fiscal Year Ended September 30, 2009		
	Critical Solutions	Systems Solutions	Global Customer Operations
Semiconductor	56%	82%	86%
Industrial	27%		8%
Other	17%	18%	6%
	100%	100%	100%

	Fiscal Year Ended September 30, 2008		
	Critical Solutions	Systems Solutions	Global Customer Operations
Semiconductor	66%	88%	80%
Industrial	18%		11%

Other	16%	12%	9%
	100%	100%	100%

Customers

Within the semiconductor industry, we sell our products and services to nearly every major semiconductor chip manufacturer and OEM in the world, including all of the top ten chip companies and nine of the top ten equipment companies. Our customers outside the semiconductor industry are broadly diversified. We have major customers in North America, Europe and Asia. Additionally, although much of our equipment sales ship to United States OEMs, many of those products ultimately are utilized in international markets. See Part I, Item 1A, Risk Factors for a discussion of the risks related to foreign operations.

Table of Contents

Relatively few customers account for a substantial portion of our revenues, with the top 10 customers accounting for approximately 44% of our business in fiscal 2009. We have one customer, Applied Materials, Inc., that accounted for more than 10% of our overall revenues for the year.

Sales, Marketing and Customer Support

We market and sell most of our products and services in Asia, Europe, the Middle East and North America through our direct sales organization. The sales process for our products is often multilevel, involving a team comprised of individuals from sales, marketing, engineering, operations and senior management. In many cases a customer is assigned a team that engages the customer at different levels of its organization to facilitate planning, provide product customization when required, and to ensure open communication and support. Some of our vacuum and instrumentation products and services for certain international markets are sold through local country distributors. Additionally, we serve the Japanese market for our robotics and automation products and services through our Yaskawa Brooks Automation (YBA) joint venture with Yaskawa Electric Corporation of Japan.

Our marketing activities include participation in trade shows, delivery of seminars, participation in industry forums, distribution of sales literature, publication of press releases and articles in business and industry publications. To enhance communication and support, particularly with our international customers, we maintain sales and service centers in Asian, European, Middle Eastern and North American locations. These facilities, together with our headquarters, maintain local support capability and demonstration equipment for customers to evaluate. Customers are encouraged to discuss features and applications of our demonstration equipment with our engineers located at these facilities.

Competition

We operate in a variety of niches of varying breadth and with differing competitors and competitive dynamics. The semiconductor fab and process equipment manufacturing industries are highly competitive and characterized by continual changes and improvements in technology. The majority of equipment automation is still done in-house by OEMs. Our competitors among external vacuum automation suppliers are primarily Japanese companies such as Daihan, Daikin and Rorze. Also, contract manufacturing companies such as Sanmina, Jabil, Benchmark and Flextronics are offering limited assembly and manufacturing services to OEMs. Our competitors among vacuum components suppliers include Sumitomo Heavy Industries, Genesis, MKS Instruments and Inficon. We have a significant share of the market for vacuum cryogenic pumps.

Atmospheric tool automation is outsourced to a larger degree and has a larger field of competitors due to the lower barriers to entry. We compete directly with other equipment automation suppliers of atmospheric modules and systems such as Hirata, Kawasaki, Genmark, Rorze, Sankyo, TDK and Shinko. Contract manufacturers are also providing assembly and manufacturing services for atmospheric systems.

We believe our customers will purchase our equipment automation products and vacuum subsystems as long as we continue to provide the necessary throughput, reliability, contamination control and accuracy for their advanced processing tools at an acceptable price point. We believe that we have competitive offerings with respect to all of these factors; however, we cannot guarantee that we will be successful in selling our products to OEMs who currently satisfy their automation needs in-house or from other independent suppliers, regardless of the performance or price of our products.

Research and Development

Our research and development efforts are focused on developing new products and also enhancing the functionality, degree of integration, reliability and performance of our existing products. Our engineering, marketing, operations and management personnel leverage their close collaborative relationships with many of their counterparts in customer organizations in an effort to proactively identify market demands with an ability to refocus our research and development investment to meet our customer demands. With the rapid pace of change that characterizes semiconductor technology, it is essential for us to provide high-performance and reliable products in order for us to maintain our leadership position.

Table of Contents

Manufacturing

Our manufacturing operations are used for product assembly, integration and testing. We have adopted quality assurance procedures that include standard design practices, component selection procedures, vendor control procedures and comprehensive reliability testing and analysis to ensure the performance of our products. Our major manufacturing facilities are located in Chelmsford, Massachusetts; Petaluma, California; Longmont, Colorado; Monterrey, Mexico; Gresham, Oregon; and Wuxi, China. The latter two facilities are utilized by our Extended Factory business as critical manufacturing support for semiconductor OEMs, particularly in their geographic sourcing strategies.

We utilize a just-in-time manufacturing strategy, based on the concepts of demand flow technology, for a large portion of our manufacturing process. We believe that this strategy, coupled with the outsourcing of non-critical components such as machined parts, wire harnesses and PC boards, reduces our fixed operating costs, improves our working capital efficiency, reduces our manufacturing cycle times and improves our flexibility to rapidly adjust production capacities. While we often use single source suppliers for certain key components and common assemblies to achieve quality control and the benefits of economies of scale, we believe that these parts and materials are readily available from other supply sources. We will continue to broaden the sourcing of our components to low cost regions, more specifically Asia.

Patents and Proprietary Rights

We rely on patents, trade secret laws, confidentiality procedures, copyrights, trademarks and licensing agreements to protect our technology. Our United States patents expire at various times through March 2027. Due to the rapid technological change that characterizes the semiconductor, flat panel display and related process equipment industries, we believe that the improvement of existing technology, reliance upon trade secrets and unpatented proprietary know-how and the development of new products may be as important as patent protection in establishing and maintaining a competitive advantage. To protect trade secrets and know-how, it is our policy to require all technical and management personnel to enter into proprietary information and nondisclosure agreements. We cannot guarantee that these efforts will meaningfully protect our trade secrets.

We have successfully licensed our FOUP (front-opening unified pod) load port technology to significant FOUP manufacturers and continue to pursue the licensing of this technology to the residual participants in the market that we believe are utilizing our intellectual property.

Backlog

Backlog for our products as of September 30, 2009, totaled $69.5 million as compared to $63.8 million at September 30, 2008. Backlog consists of purchase orders for which a customer has scheduled delivery within the next 12 months. Backlog consists of orders principally for hardware and service agreements. Orders included in the backlog may be cancelled or rescheduled by customers without significant penalty. Backlog as of any particular date should not be relied upon as indicative of our revenues for any future period. A substantial percentage of current business generates no backlog because we deliver our products and services in the same period in which the order is received.

Financial Information about Segments and Geographic Areas

We have provided the information required by Items 101(b) and 101(d) of Regulation S-K in Note 16, Segment and Geographic Information, to our Consolidated Financial Statements set forth in Item 8 to this Annual Report on Form 10-K. We are incorporating that information into this section by reference.

Employees

At September 30, 2009, we had 1,198 full time employees. In addition, we utilized 125 part time employees and contractors. Approximately 50 employees in our facility in Jena, Germany are covered by a collective bargaining agreement. We consider our relationships with these and all employees to be good.

Table of Contents

Available Information

We file annual, quarterly, and current reports, proxy statements, and other documents with the Securities and Exchange Commission (SEC) under the Securities Exchange Act of 1934. The public may read and copy any materials that we file with the SEC at the SEC s Public Reference Room at 100 F Street, NE, Washington, DC 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. Also, the SEC maintains an Internet website that contains reports, proxy and information statements, and other information regarding issuers, including Brooks Automation, Inc., that file electronically with the SEC. The public can obtain any documents that we file with the SEC at www.sec.gov.

Our internet website address is http://www.brooks.com. Through our website, we make available, free of charge, our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and any amendments to those reports, as soon as reasonably practicable after such materials are electronically filed, or furnished to, the SEC. These SEC reports can be accessed through the investor relations section of our website. The information found on our website is not part of this or any other report we file with or furnish to the SEC.

Item 1A. ***Risk Factors***

Factors That May Affect Future Results

You should carefully consider the risks described below and the other information in this report before deciding to invest in shares of our common stock. These are the risks and uncertainties we believe are most important for you to consider. Additional risks and uncertainties not presently known to us, which we currently deem immaterial or which are similar to those faced by other companies in our industry or business in general, may also impair our business operations. If any of the following risks or uncertainties actually occur, our business, financial condition and operating results would likely suffer. In that event, the market price of our common stock could decline and you could lose all or part of your investment.

Risks Relating to Our Industry

Due in part to the cyclical nature of the semiconductor manufacturing industry and related industries, as well as due to volatility in worldwide capital and equity markets, we have recently incurred operating losses and may have future losses.

Our business is largely dependent on capital expenditures in the semiconductor manufacturing industry and other businesses employing similar manufacturing technology. The semiconductor manufacturing industry in turn depends on current and anticipated demand for integrated circuits and the products that use them. In recent years and at present, these businesses have experienced unpredictable and volatile business cycles due in large part to rapid changes in demand and manufacturing capacity for semiconductors, and these cycles have had a negative impact on our business, sometimes causing declining revenues and operation losses. Ongoing volatility in worldwide capital and equity markets is likely to have a similarly negative impact on our business. Recent economic developments on an international scale could lead to substantially diminished demand for our products and those of our customers which incorporate our products, especially in the semiconductor manufacturing industry. We could continue to experience future operating losses during an industry downturn and a period of uncertain demand. If an industry downturn continues for an extended period of time, our business could be materially harmed. Conversely, if demand improves rapidly, we could have insufficient inventory and manufacturing capacity to meet our customer needs on a timely basis, which could result in the loss of customers and various other expenses that could reduce gross margins and profitability.

We face competition which may lead to price pressure and otherwise adversely affect our sales.

We face competition throughout the world in each of our product areas. This comes from competitors as discussed in Part I, Item 1, Business Competition as well as internal robotic capabilities at larger OEMs. Many of our competitors have substantial engineering, manufacturing, marketing and customer support

Table of Contents

capabilities. We expect our competitors to continue to improve the performance of their current products and to introduce new products and technologies that could adversely affect sales of our current and future products and services. New products and technologies developed by our competitors or more efficient production of their products could require us to make significant price reductions or decide not to compete for certain orders. If we fail to respond adequately to pricing pressures or fail to develop products with improved performance or developments with respect to the other factors on which we compete, we could lose customers or orders. If we are unable to compete effectively, our business and prospects could be materially harmed.

Risks Relating to Brooks

Our operating results could fluctuate significantly, which could negatively impact our business.

Our revenues, operating margins and other operating results could fluctuate significantly from quarter to quarter depending upon a variety of factors, including:

- demand for our products as a result of the cyclical nature of the semiconductor manufacturing industry and the markets upon which it depends or otherwise;
- changes in the timing and terms of product orders by our customers as a result of our customer concentration or otherwise;
- changes in the mix of products and services that we offer;
- timing and market acceptance of our new product introductions;
- delays or problems in the planned introduction of new products, or in the performance of any such products following delivery to customers;
- our competitors announcements of new products, services or technological innovations, which can, among other things, render our products less competitive due to the rapid technological change in our industry;
- the timing and related costs of any acquisitions, divestitures or other strategic transactions;
- our ability to reduce our costs in response to decreased demand for our products and services;
- disruptions in our manufacturing process or in the supply of components to us;
- write-offs for excess or obsolete inventory; and
- competitive pricing pressures.

As a result of these risks, we believe that quarter to quarter comparisons of our revenue and operating results may not be meaningful, and that these comparisons may not be an accurate indicator of our future performance.

If we do not continue to introduce new products and services that reflect advances in technology in a timely and effective manner, our products and services may become obsolete and our operating results will suffer.

Our success is dependent on our ability to respond to the technological change present in the markets we serve. The success of our product development and introduction depends on our ability to:

accurately identify and define new market opportunities and products;

obtain market acceptance of our products;

timely innovate, develop and commercialize new technologies and applications;

adjust to changing market conditions;

differentiate our offerings from our competitors offerings;

Table of Contents

obtain intellectual property rights where necessary;

continue to develop a comprehensive, integrated product and service strategy;

properly price our products and services; and

design our products to high standards of manufacturability such that they meet customer requirements.

If we cannot succeed in responding in a timely manner to technological and/or market changes or if the new products that we introduce do not achieve market acceptance, it could diminish our competitive position which could materially harm our business and our prospects.

The global nature of our business exposes us to multiple risks.

For the fiscal years ended September 30, 2009 and 2008, approximately 47% and 36%, respectively, of our revenues were derived from sales outside North America. We expect that international sales, including increased sales in Asia, will continue to account for a significant portion of our revenues. We maintain a global footprint of sales, service and repair operations. As a result of our international operations, we are exposed to many risks and uncertainties, including:

longer sales-cycles and time to collection;

tariff and international trade barriers;

fewer legal protections for intellectual property and contract rights abroad;

different and changing legal and regulatory requirements in the jurisdictions in which we operate;

government currency control and restrictions on repatriation of earnings;

fluctuations in foreign currency exchange and interest rates; and

political and economic changes, hostilities and other disruptions in regions where we operate.

Negative developments in any of these areas in one or more countries could result in a reduction in demand for our products, the cancellation or delay of orders already placed, threats to our intellectual property, difficulty in collecting receivables, and a higher cost of doing business, any of which could materially harm our business and profitability.

Failure to retain key personnel could impair our ability to execute our business strategy.

The continuing service of our executive officers and essential engineering, technical and management personnel, together with our ability to attract and retain such personnel, is an important factor in our continuing ability to execute our strategy. There is substantial competition to attract such employees and the loss of any such key employees could have a material adverse effect on our business and operating results. The same could be true if we were to experience a high turnover rate among engineering and technical personnel and we were unable to replace them.

We may be subject to claims of infringement of third-party intellectual property rights, or demands that we license third-party technology, which could result in significant expense and prevent us from using our technology.

We rely upon patents, trade secret laws, confidentiality procedures, copyrights, trademarks and licensing agreements to protect our technology. Due to the rapid technological change that characterizes the semiconductor- and flat panel display process equipment industries, we believe that the improvement of existing technology, reliance upon trade secrets and unpatented proprietary know-how and the development of new products may be as important as patent protection in establishing and maintaining competitive advantage. To protect trade secrets and know-how, it is our policy to require all technical and management personnel to enter into nondisclosure agreements. We cannot guarantee that these efforts will meaningfully protect our trade secrets.

Table of Contents

There has been substantial litigation regarding patent and other intellectual property rights in the semiconductor related industries. We have in the past been, and may in the future be, notified that we may be infringing intellectual property rights possessed by other third parties. We cannot guarantee that infringement claims by third parties or other claims for indemnification by customers or end users of our products resulting from infringement claims will not be asserted in the future or that such assertions, if proven to be true, will not materially and adversely affect our business, financial condition and results of operations.

We cannot predict the extent to which we might be required to seek licenses or alter our products so that they no longer infringe the rights of others. We also cannot guarantee that licenses will be available or the terms of any licenses we may be required to obtain will be reasonable. Similarly, changing our products or processes to avoid infringing the rights of others may be costly or impractical and could detract from the value of our products. If a judgment of infringement were obtained against us, we could be required to pay substantial damages and a court could issue an order preventing us from selling one or more of our products. Further the cost and diversion of management attention brought about by such litigation could be substantial, even if we were to prevail. Any of these events could result in significant expense to us and may materially harm our business and our prospects.

Our failure to protect our intellectual property could adversely affect our future operations.

Our ability to compete is significantly affected by our ability to protect our intellectual property. Existing trade secret, trademark and copyright laws offer only limited protection, and certain of our patents could be invalidated or circumvented. In addition, the laws of some countries in which our products are or may be developed, manufactured or sold may not fully protect our products. We cannot guarantee that the steps we have taken to protect our intellectual property will be adequate to prevent the misappropriation of our technology. Other companies could independently develop similar or superior technology without violating our intellectual property rights. In the future, it may be necessary to engage in litigation or like activities to enforce our intellectual property rights, to protect our trade secrets or to determine the validity and scope of proprietary rights of others, including our customers. This could require us to incur significant expenses and to divert the efforts and attention of our management and technical personnel from our business operations.

If the site of the majority of our manufacturing operations were to experience a significant disruption in operations, our business could be materially harmed.

The majority of our manufacturing facilities are concentrated in one location. If the operations of these facilities were disrupted as a result of a natural disaster, fire, power or other utility outage, work stoppage or other similar event, our business could be seriously harmed because we may be unable to manufacture and ship products and parts to our customers in a timely fashion.

Our business could be materially harmed if one or more key suppliers fail to continuously deliver key components of acceptable cost and quality.

We currently obtain many of our key components on an as-needed, purchase order basis from numerous suppliers. In some cases we have only a single source of supply for necessary components and materials used in the manufacturing of our products. Further, we are increasing our sourcing of products in Asia, and particularly in China, and we do not have a previous course of dealing with many of these suppliers. We do not generally have long-term supply contracts with any of these suppliers, and many of them have undertaken cost-containment measures in light of the recent downturn in the semiconductor industry. In the event of a continuing industry upturn, these suppliers could face significant challenges in delivering components on a timely basis. Our inability to obtain components or materials in required quantities or of acceptable cost and quality and with the necessary continuity of supply could result in delays or reductions in product shipments to our customers. In addition, if a supplier or sub-supplier alters their

manufacturing processes and suffers a production stoppage for any reason or modifies or discontinues their products, this could result in a delay or reduction in product shipments to our customers. Any of these contingencies could cause us to lose customers, result in delayed or lost revenue and otherwise materially harm our business.

Table of Contents

Our stock price is volatile.

The market price of our common stock has fluctuated widely. From the beginning of fiscal year 2008 through the end of fiscal year 2009, our stock price fluctuated between a high of $15.01 per share and a low of $2.58 per share. Consequently, the current market price of our common stock may not be indicative of future market prices, and we may be unable to sustain or increase the value of an investment in our common stock. Factors affecting our stock price may include:

variations in operating results from quarter to quarter;

changes in earnings estimates by analysts or our failure to meet analysts expectations;

changes in the market price per share of our public company customers;

market conditions in the semiconductor and other industries into which we sell products;

general economic conditions;

political changes, hostilities or natural disasters such as hurricanes and floods;

low trading volume of our common stock; and

the number of firms making a market in our common stock.

In addition, the stock market has recently experienced significant price and volume fluctuations. These fluctuations have particularly affected the market prices of the securities of high technology companies like ours. These market fluctuations could adversely affect the market price of our common stock.

Risks Relating to Our Customers

Because we rely on a limited number of customers for a large portion of our revenues, the loss of one or more of these customers could materially harm our business.

We receive a significant portion of our revenues in each fiscal period from a relatively limited number of customers, and that trend is likely to continue. Sales to our ten largest customers accounted for approximately 44%, 52% and 54% of our total revenues in the fiscal years ended September 30, 2009, 2008 and 2007, respectively. The loss of one or more of these major customers, a significant decrease in orders from one of these customers, or the inability of one or more customers to make payments to us when they are due could materially affect our revenue, business and reputation.

Because of the lengthy sales cycles of many of our products, we may incur significant expenses before we generate any revenues related to those products.

Our customers may need several months to test and evaluate our products. This increases the possibility that a customer may decide to cancel or change plans, which could reduce or eliminate our sales to that customer. The impact of this risk can be magnified during the periods in which we introduce a number of new products, as has been the case in recent years. As a result of this lengthy sales cycle, we may incur significant research and development expenses, and selling, general and administrative expenses before we generate the related revenues for these products, and we may never generate the anticipated revenues if our customer cancels or changes its plans.

In addition, many of our products will not be sold directly to the end-user but will be components of other products. As a result, we rely on OEMs to select our products from among alternative offerings to be incorporated into their equipment at the design stage; so-called design-ins. The OEMs decisions often precede the generation of volume sales, if any, by a year or more. Moreover, if we are unable to achieve these design-ins from an OEM, we would have difficulty selling our products to that OEM because changing suppliers involves significant cost, time, effort and risk on the part of that OEM.

Table of Contents

Customers generally do not make long term commitments to purchase our products and our customers may cease purchasing our products at any time.

Sales of our products are often made pursuant to individual purchase orders and not under long-term commitments and contracts. Our customers frequently do not provide any assurance of minimum or future sales and are not prohibited from purchasing products from our competitors at any time. Accordingly, we are exposed to competitive pricing pressures on each order. Our customers also engage in the practice of purchasing products from more than one manufacturer to avoid dependence on sole-source suppliers for certain of their needs. The existence of these practices makes it more difficult for us to increase price, gain new customers and win repeat business from existing customers.

Item 1B. ***Unresolved Staff Comments***

None.

Item 2. ***Properties***

Our corporate headquarters and primary manufacturing/research and development facilities are currently located in three buildings in Chelmsford, Massachusetts, which we purchased in January 2001. We lease a fourth building in Chelmsford adjacent to the three that we own. In summary, we maintain the following active principal facilities: