

BROOKS AUTOMATION INC

Form 10-K

November 28, 2011

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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 fiscal year ended September 30, 2011
- 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: 0-25434

Brooks Automation, Inc.

(Exact name of Registrant as Specified in Its Charter)

Delaware

*(State or Other Jurisdiction of
Incorporation or Organization)*

04-3040660

*(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:

Title of Each Class
Common Stock, \$0.01 par value

Name of Each Exchange on Which Registered
The NASDAQ Stock Market LLC

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 ☐ No ☒

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 ☐ No ☒

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

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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 ☒ No ☐

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. ☐

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 <input checked="" type="checkbox"/>	Accelerated filer <input type="checkbox"/>	Non-accelerated filer <input type="checkbox"/>	Smaller reporting company <input type="checkbox"/>
(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 ☐ No ☒

The aggregate market value of the registrant's Common Stock, \$0.01 par value, held by nonaffiliates of the registrant as of March 31, 2011, was approximately \$884,316,500 based on the closing price per share of \$13.73 on that date on the Nasdaq Stock Market. As of March 31, 2011, 66,150,294 shares of the registrant's Common Stock, \$0.01 par value, were outstanding. As of November 10, 2011, 66,275,320 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.

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Brooks Automation, Inc. (Brooks , we , us , or our), a Delaware corporation, is a leading worldwide provider of automation, vacuum and instrumentation solutions for multiple markets including semiconductor manufacturing, life sciences, and clean energy. Our technologies, engineering competencies and global service capabilities provide customers speed to market and ensure high uptime and rapid response, which equate to superior value in their mission-critical controlled environments. Since 1978, we have been a leading partner to the global semiconductor manufacturing markets and through product development initiatives and strategic business acquisitions we have expanded our reach to meet the needs of customers in life sciences, analytical and research markets, and clean energy solutions. Brooks is headquartered in Chelmsford, MA with full service operations in North America, Europe and Asia.

Our company initially developed and marketed automated handling equipment for front end semiconductor manufacturing tools and became a publicly traded company in February 1995. Through both internal product development and significant business acquisition activity we became the leading provider of these automation solutions in this market. Since that time, we have diversified both the markets we serve as well as our core product capabilities. A notable step in our diversification was the acquisition of Helix Technology Corporation in 2005 which provided us with leading technology solutions in vacuum and instrumentation equipment and which allowed us to serve a broader set of markets.

During the period 2006 through June 2011 we acquired and then further developed a significant contract manufacturing business providing leading wafer front-end equipment manufacturers with an extension of their own assembly and test capability to better focus on their core processes and to offer flexibility during industry cycles. In June 2011, we divested this business in order to focus on technology solutions for other markets. Because we continue to have significant commerce with this business (both providing automation components for integration in the tools built by the contract manufacturing business and as a supplier of certain sub-contracted sub-systems), the disposition did not qualify for discontinued operations treatment. Accordingly, we continue to present the historical results of the business as continuing operations in our consolidated financial statements.

We recently identified life sciences as a strategically underserved market with favorable growth opportunities where Brooks' core competencies of automation and cold temperature management of a controlled environment could provide enabling technology solutions. During 2011 we made two strategic acquisitions to penetrate this market. In April 2011, we acquired RTS Life Sciences, a Manchester, UK-based business, and in July 2011, we acquired Nexus Biosystems, Inc., a Poway, CA-based business with a significant presence in Oberdiessbach, Switzerland. We are currently integrating these businesses that now operate as Brooks Life Science Systems (BLSS).

Markets

Our fiscal 2011 and 2010 revenues by end market were as follows:

	2011	2010
Semiconductor capital equipment	65%	71%
Service and spares	13%	13%

Industrial capital equipment	11%	8%
Life sciences	2%	
Other adjacent markets	9%	8%
	100%	100%

The markets we serve are changing rapidly as a result of our internal product and sales initiatives, our acquisitions and divestiture and the cyclical nature of the semiconductor capital equipment market. Our divested contract manufacturing business exclusively served semiconductor product end markets whereas our most recent acquisitions exclusively serve life sciences markets. We remain committed to growing our semiconductor market

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share and during fiscal year 2011, semiconductor end market product revenues, excluding contract manufacturing revenues, increased by 18% from the prior year. Industrial and other adjacent market revenues increased 42% during that same period.

Semiconductor capital equipment

The global semiconductor capital equipment industry is a highly cyclical industry with a long term growth profile driven by the expanded use of semiconductor devices and the device complexity, each necessitating incremental equipment purchases. This growth is increasingly focused in Asia. 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. Advanced chip processing used to form three dimensional structures of the previously patterned integrated circuit is emerging. This processing, often referred to as wafer level packaging, is typically performed at what would be considered the back-end processing of a chip. To accomplish this work, there is an extension of some front-end processes into the back-end, thereby increasing the market for automation solutions.

Service and spares

Whereas sales for production equipment are typically made to original equipment manufacturers (OEMs), the service and spares support of that equipment is more typically a relationship with the end-user manufacturer who is using that equipment in a productive capacity. While the majority of the market that we currently address with our service and spares activities is the semiconductor manufacturing market, we are actively looking to increase our service offerings in the life science market.

Industrial capital equipment

There are a variety of industrial manufacturing operations that require either a vacuum or significant cooling for effective deposition of films or coatings. The expansion of technologies such as touch screen equipment is driving greater application of these operations and the requirement for the associated vacuum and instrumentation solutions that we provide. These deposition processes are typically performed on equipment that cycle from an uncontrolled atmospheric environment for loading and unloading to a controlled vacuum environment for processing. The transition to the controlled vacuum environment requires removal of large amounts of moisture inherent from the air in a typical operation. This moisture removal is accomplished by deep cooling of coils within the vacuum chamber and the increased need for the equipment necessary to deliver refrigerant supply to those coils results in increased demand for our products.

Life Sciences

There is a broad market of devices, systems and consumables that support the pharmaceutical, biotechnology, health care research and diagnostics industries in the advanced handling, processing, storage and distribution of biological and compound samples. At the heart of these activities is sample storage. Facilities that store biological

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samples are commonly called biobanks or biorepositories. Such sample storage is generally more effective in maintaining a controlled environment, tracking samples, and reliably and quickly handling samples, if the store is automated. These automated sample management systems are at the heart of the complete sample handling process. With the advent of personalized medicine linking DNA to optimal treatment regimens, the expansion of mass storage of key biological material to support rapidly expanding comparative and longitudinal studies, and the accumulation of samples taken from surgical and other procedures, we believe that the numbers of samples in storage is expanding at between 25 – 30% per annum on a global basis. We believe that this expansion, together with manual stores that become overwhelmed by the numbers of samples they accumulate, will drive a solid growth in automated sample management equipment.

Other adjacent markets

There are a variety of markets that have adopted, or are adopting, similar manufacturing methods to those utilized by the semiconductor industry. Frequently, these markets have common customers but technology applications in the end markets are still maturing. We serve a variety of these evolving markets including light emitting diode (LED) applications. High Brightness LED (HBLED) is a potential clean energy solution replacing incandescent lighting sources. We believe that the application of HBLED solutions to these general illumination applications is expected to expand as manufacturing processes for these products advance, resulting in lower costs of production and more attractive pricing for these products. Organic LED (OLED) solutions provide lower power consumption for high clarity video. OLED applications are gaining traction in the mobile computing and telecommunications device markets. Other evolving markets which utilize our products include microelectronic mechanical systems (MEMS) manufacturing and solar panel manufacturing. MEMS applications, which include accelerometers, self tuning antennae and pressure gauges, are expanding in automotive, mobile computing and telecommunications device markets. We believe that solar panel production is also expanding, and our products are used in the production of thin film solar panels which require cooling to effectuate deposition and adhesion.

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 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 the HBLED market we have worked with leading manufacturers to develop advanced automation solutions that improve the productivity of processes that were previously manual. In other adjacent markets we either provide standard vacuum and instrumentation solutions or have adapted our automation solutions to specific payload, throughput and tool architecture requirements.

For the life science markets we provide automated sample management systems that store samples (e.g.: DNA, blood, drug compounds, biologics) in a controlled environment and automate the process of storing samples (typically in racks or plates) and the subsequent extractions of specifically selected samples from those racks or plates. The storage environments ensure samples are preserved within a narrow temperature band for long periods

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and provide for absolute accuracy in the identification and selection of samples. We are an early pioneer in bringing to market stores that operate as low as minus 80°C.

In providing comprehensive solutions to the life science markets we also provide systems for automated blood fractionation, sealing and de-sealing equipment for samples stored on plates and automated cappers and de-cappers for samples stored in tubes. We also provide consumables in the form of sample plates, micro-plates and tubes.

Segments

In the third and fourth quarters of fiscal 2011 we realigned our management structure and its underlying financial reporting structure. As a result of this realignment, we now report financial results in four segments: Brooks Product Solutions; Brooks Life Science Systems; Brooks Global Services; and Contract Manufacturing.

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

The Brooks Life Science Systems segment provides automated sample management systems including automated sample storage, automated blood fractionation equipment, sample preparation and handling equipment, consumables, parts and support services to a wide range of life science customers including pharmaceutical companies, biotechnology companies, biobanks, national laboratories, research institutes and research universities.

The Brooks Global Services 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 end-user customers with spare part support services to maximize customer tool productivity. The segment predominantly serves semiconductor industry customers.

The business of the Contract Manufacturing segment which provided outsourced contract manufacturing services to semiconductor equipment manufacturers was sold in June 2011.

Customers

Within the semiconductor industry, we sell our products and services to most of the major semiconductor chip manufacturers and OEMs in the world. 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. The Brooks Global Services business provides support to leading fabs and foundries across the globe.

Our life sciences systems solutions are used by pharmaceutical customers (including the top twenty), national laboratories, biological drug development companies, research institutes and research hospitals. There is no continuing concentration of customers for BLSS although given the size of particular projects, an individual customer may be significant to the life science segment in a given quarter or fiscal year.

Relatively few customers account for a substantial portion of our revenues, with the top 10 customers accounting for approximately 55% of our business in fiscal 2011. We have two customers, Applied Materials, Inc. and Lam Research Corporation, that each accounted for more than 10% of our overall revenues for the year.

In our assessment of customer concentration, we primarily consider the OEM who designs the proprietary tool as our customer since they make the design-in decision rather than an intermediary contract manufacturer who is the entity to whom we invoice. For fiscal 2011, no contract manufacturer represented more than 10% of revenues. In addition, if the sale of our Contract Manufacturing segment occurred on October 1, 2010, none of our contract manufacturing customers would have exceeded 10% of our fiscal year 2011 revenues.

Table of Contents**Sales, Marketing and Customer Support**

We market and sell most of our semiconductor, industrial and other adjacent market 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 through our Yaskawa Brooks Automation (YBA) joint venture with Yaskawa Electric Corporation of Japan.

We market to most of our life sciences customers through our direct Brooks Life Science Systems sales force. In regions with emerging life science industries such as China, India and the Middle East, we leverage local distributors to assist in the sales process. The sales process for our larger sample management systems may take 6-18 months to complete and it involves a team comprised of individuals from sales, marketing, engineering and senior management.

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 Asia, Europe, the Middle East and North America. 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.

Net revenues for the years ended September 30, 2011, 2010 and 2009 based upon the source of the order by geographic area are as follows (in thousands):

	Year Ended September 30,		
	2011	2010	2009
North America	\$ 349,456	\$ 322,542	\$ 115,734
Asia/Pacific	244,524	203,172	68,393
Europe	94,125	67,258	34,579
	\$ 688,105	\$ 592,972	\$ 218,706

Competition

We operate in a variety of niches of varying breadth and with differing competitors and competitive dynamics. The semiconductor and adjacent market, and process equipment manufacturing industries are highly competitive and characterized by continual changes and improvements in technology. The significant portion of equipment automation is still done in-house by OEMs. Our competitors among external vacuum automation suppliers are primarily Japanese companies such as Daihen, Daikin and Rorze. Our competitors among vacuum components suppliers include Sumitomo Heavy Industries, Genesis and Telemark. We have a significant share of the market for vacuum cryogenic pumps and mixed gas cryo-chillers. Competitors in markets for our instrumentation products include MKS Instruments and Inficon. Atmospheric tool automation is typically less demanding and has a larger field of competitors. We compete directly with other equipment automation suppliers of atmospheric modules and systems such as Hirata, Kawasaki, Genmark, Rorze, Sankyo, TDK and Symphonia. Contract manufacturers such as Celestica

and Flextronics are also providing assembly and manufacturing services for atmospheric systems.

Our Life Science Systems business competes with a number of smaller private companies in providing automated sample management systems. These competitors include Hamilton, Matrical, HighRes Biosolutions, Liconic, TTP and Tusbakimoto Chain.

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 in our products at

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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 the markets we serve, it is essential for us to provide high-performance and reliable products in order for us to maintain our leadership position.

Our research and development spending for fiscal years 2011, 2010 and 2009 was \$39.8 million, \$31.2 million and \$31.6 million, respectively. We expect to increase the pace of spending for research and development in the near term to support new generations of products, most notably for automated sample management.

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; Poway, California; Petaluma, California; Longmont, Colorado; Monterrey, Mexico; Yongin-City, South Korea and Manchester, UK. We also provide service and spare parts support to end users throughout the world. Many of our service customers are based outside of the U.S., with many in Asia. We have service and support locations close to these customers to provide rapid response to their service needs. We have service and support locations in Chelmsford, Massachusetts; Chu Bei City, Taiwan; Yongin City, South Korea; Yokohama, Japan; Shanghai, China; Singapore; Jena, Germany; Oberdiessbach, Switzerland; and, Israel.

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 expect to continue to broaden the sourcing of our components to low cost regions, including 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 April 2030. Due to the rapid technological change that characterizes the life sciences, 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.

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Backlog

Backlog for our products as of September 30, 2011, totaled \$99.7 million as compared to \$106.4 million at September 30, 2010. 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.

Employees

At September 30, 2011, we had 1,433 full time employees. In addition, we utilized 217 part time employees and contractors. Approximately 46 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.

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, as amended (the Exchange Act). 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 occurs, 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 previously 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, 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 an impact on our business, sometimes causing declining revenues and operating losses. We could experience future operating losses during an

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industry downturn. If an industry downturn continues for an extended period of time, our business could be materially harmed. Conversely, in periods of rapidly increasing demand, 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 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;

changes in the demand for 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;

new products, services or technological innovations by our competitors, 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.

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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;
- 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, 2011 and 2010, approximately 49% and 46%, 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 or less certain 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, particularly in Asia and Europe; and
- political and economic instability, 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.

Our business could be materially harmed if we fail to adequately integrate the operations of the businesses that we have acquired or may acquire.

We have made in the past, and may make in the future, acquisitions or significant investments in businesses with complementary products, services and/or technologies. Our acquisitions present numerous risks, including:

difficulties in integrating the operations, technologies, products and personnel of the acquired companies and realizing the anticipated synergies of the combined businesses;

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defining and executing a comprehensive product strategy;

managing the risks of entering markets or types of businesses in which we have limited or no direct experience;

the potential loss of key employees, customers and strategic partners of ours or of acquired companies;

unanticipated problems or latent liabilities, such as problems with the quality of the installed base of the target company's products or infringement of another Company's intellectual property by a target Company's activities or products;

problems associated with compliance with the target company's existing contracts;

difficulties in managing geographically dispersed operations; and

the diversion of management's attention from normal daily operations of the business.

If we acquire a new business, we may be required to expend significant funds, incur additional debt or issue additional securities, which may negatively affect our operations and be dilutive to our stockholders. In periods following an acquisition, we will be required to evaluate goodwill and acquisition-related intangible assets for impairment. When such assets are found to be impaired, they will be written down to estimated fair value, with a charge against earnings. The failure to adequately address these risks could materially harm our business and financial results.

Entering new markets introduces new competitors and commercial risks.

A key part of our growth strategy is to continue expanding into markets beyond the semiconductor manufacturing market, as evidenced by our recent acquisitions of RTS and Nexus Biosystems in the life sciences market. As part of this strategy, we expect to diversify our product sales by leveraging our core technologies, which requires investments and resources which may not be available as needed. We cannot guarantee that we will be successful in leveraging our capabilities into the life sciences market or any other new markets to meet all the needs of these new customers and to compete favorably. Because a significant portion of our growth potential may be dependent on our ability to increase sales to markets beyond semiconductor manufacturing, an inability to successfully enter new markets may adversely impact future financial results.

Changes in 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.

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

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intellectual property rights possessed by 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. Our success depends in part on our ability to obtain and enforce patent protection for our products both in the United States and in other countries. We own numerous U.S. and foreign patents, and we intend to file additional applications, as appropriate, for patents covering our products and technology. Our current patents will expire from time to time through April 2030 and new patents may not be issued for any pending or future patent applications, and the claims allowed under any issued patents may not be sufficiently broad to protect our technology. Any issued patents owned by or licensed to us may be challenged, invalidated or circumvented, and the rights under these patents may not provide us with competitive advantages. In addition, the laws of some countries in which our products are or may b