KLA TENCOR CORP
Form 10-K
August 08, 2014
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K
(Mark One)

x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the Fiscal Year Ended June 30, 2014

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 000-09992

KLA-TENCOR CORPORATION
(Exact name of registrant as specified in its charter)

Delaware	04-2564110
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)
One Technology Drive, Milpitas, California	95035
(Address of Principal Executive Offices)	(Zip Code)

Registrant's Telephone Number, Including Area Code: (408) 875-3000

Securities Registered Pursuant to Section 12(b) of the Act:

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock, $0.001 par value per share	The NASDAQ Global Select Market

Securities Registered Pursuant to Section 12(g) of the Act:
None
(Title of Class)

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

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes o No x

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 x No o

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No o

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

Form 10-K. x

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.

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

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

The aggregate market value of the voting and non-voting common stock held by non-affiliates of the registrant based upon the closing price of the registrant’s stock, as of December 31, 2013, was approximately $10.7 billion.

The registrant had 165,368,152 shares of common stock outstanding as of July 17, 2014.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Proxy Statement for the 2014 Annual Meeting of Stockholders to be held on November 5, 2014 (“Proxy Statement”), and to be filed pursuant to Regulation 14A within 120 days after the registrant’s fiscal year ended June 30, 2014, are incorporated by reference into Part III of this report.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This report contains certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. All statements other than statements of historical fact may be forward-looking statements. You can identify these and other forward-looking statements by the use of words such as “may,” “will,” “could,” “would,” “should,” “expects,” “plans,” “anticipates,” “relies,” “believes,” “estimates,” “predict “potential,” “continue,” “thinks,” “seeks,” or the negative of such terms, or other comparable terminology. Forward-looking statements also include the assumptions underlying or relating to any of the foregoing statements. Such forward-looking statements include, among others, forecasts of the future results of our operations; orders for our products and capital equipment generally; sales of semiconductors; the allocation of capital spending by our customers (and, in particular, the percentage of spending that our customers allocate to process control); growth of revenue in the semiconductor industry, the semiconductor capital equipment industry and our business; technological trends in the semiconductor industry; future developments or trends in the global capital and financial markets; our future product offerings and product features; the success and market acceptance of new products; timing of shipment of backlog; our future product shipments and product and service revenues; our future gross margins; our future research and development expenses and selling, general and administrative expenses; our ability to successfully maintain cost discipline; international sales and operations; our ability to maintain or improve our existing competitive position; success of our product offerings; creation and funding of programs for research and development; attraction and retention of employees; results of our investment in leading edge technologies; the effects of hedging transactions; the effect of the sale of trade receivables and promissory notes from customers; our future income tax rate; future payments of dividends to our stockholders; the completion of any acquisitions of third parties, or the technology or assets thereof; benefits received from any acquisitions and development of acquired technologies; sufficiency of our existing cash balance, investments and cash generated from operations to meet our operating and working capital requirements; future changes in, and our future compliance with legal requirements; and the adoption and impact of new accounting pronouncements.

Our actual results may differ significantly from those projected in the forward-looking statements in this report. Factors that might cause or contribute to such differences include, but are not limited to, those discussed in Item 1A, “Risk Factors” in this Annual Report on Form 10-K, as well as in Item 1, “Business” and Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in this report. You should carefully review these risks and also review the risks described in other documents we file from time to time with the Securities and Exchange Commission, including the Quarterly Reports on Form 10-Q that we will file in the fiscal year ending June 30, 2015. You are cautioned not to place undue reliance on these forward-looking statements, and we expressly assume no obligation and do not intend to update the forward-looking statements in this report after the date hereof.

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PART I

ITEM 1. BUSINESS

The Company

KLA-Tencor Corporation ("KLA-Tencor" or the "Company" and also referred to as "we" or "our") is a leading supplier of process control and yield management solutions for the semiconductor and related nanoelectronics industries. Our products are also used in a number of other high technology industries, including the light emitting diode ("LED") and data storage industries, as well as general materials research.

Within our primary area of focus, our comprehensive portfolio of defect inspection and metrology products, and related service, software and other offerings, helps integrated circuit ("IC" or "chip") manufacturers manage yield throughout the entire semiconductor fabrication process—from research and development to final volume production. These products and solutions are designed to help customers accelerate their development and production ramp cycles, to achieve higher and more stable semiconductor die yields, and to improve overall profitability.

KLA-Tencor's products and services are used by the vast majority of bare wafer, IC, lithography reticle ("reticle" or "mask") and disk manufacturers around the world. These customers turn to us for inline wafer and IC defect monitoring, review and classification; reticle defect inspection and metrology; packaging and interconnect inspection; critical dimension ("CD") metrology; pattern overlay metrology; film thickness, surface topography and composition measurements; measurement of in-chamber process conditions, wafer shape and stress metrology; computational lithography tools; and overall yield and fab-wide data management and analysis systems. Our advanced products, coupled with our unique yield management services, allow us to deliver the solutions our customers need to accelerate their yield learning rates and significantly reduce their risks and costs.

Certain industry and technical terms used in this section are defined in the subsection entitled "Glossary" found at the end of this Item 1.

KLA-Tencor was formed in April 1997 through the merger of KLA Instruments Corporation and Tencor Instruments, two long-time leaders in the semiconductor equipment industry that originally began operations in 1975 and 1976, respectively.

Additional information about KLA-Tencor is available on our website at www.kla-tencor.com. Our Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, are available free of charge on our website as soon as reasonably practicable after we electronically file them with or furnish them to the Securities and Exchange Commission ("SEC"). Information contained on our website is not part of this Annual Report on Form 10-K or our other filings with the SEC. Additionally, these filings may be obtained through the SEC's website (www.sec.gov), which contains reports, proxy and information statements, and other information regarding issuers that file electronically. Documents that are not available through the SEC's website may also be obtained by mailing a request to the U.S. Securities and Exchange Commission, Office of FOIA/PA Operations, 100 F Street N.E., Mail Stop 2736, Washington, DC 20549, by submitting an online request to the SEC at www.sec.gov or by sending a fax to the SEC at 1-202-772-9337.

Industry

General Background

The semiconductor industry is KLA-Tencor's core focus. The semiconductor fabrication process begins with a bare silicon wafer—a round disk that is typically 150 millimeters, 200 millimeters or 300 millimeters in diameter, about as thick as a credit card and gray in color. The process of manufacturing wafers is in itself highly sophisticated, involving the creation of large ingots of silicon by pulling them out of a vat of molten silicon. The ingots are then sliced into wafers. Prime silicon wafers are then polished to a mirror finish. Other, more specialized wafers, such as epitaxial silicon ("epi"), silicon-on-insulator ("SOI"), gallium nitride ("GaN") and silicon carbide ("SiC"), are also common in the semiconductor industry.

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The manufacturing cycle of an IC is grouped into three phases: design, fabrication and testing. IC design involves the architectural layout of the circuit, as well as design verification and reticle generation. The fabrication of a chip is accomplished by depositing a series of film layers that act as conductors, semiconductors or insulators on bare wafers. The deposition of these film layers is interspersed with numerous other process steps that create circuit patterns, remove portions of the film layers, and perform other functions such as heat treatment, measurement and inspection. Most advanced chip designs require hundreds of individual steps, many of which are performed multiple times. Most chips consist of two main structures: the lower structure, typically consisting of transistors or capacitors which perform the “smart” functions of the chip; and the upper “interconnect” structure, typically consisting of circuitry which connects the components in the lower structure. When all of the layers on the wafer have been fabricated, each chip on the wafer is tested for functionality. The wafer is then cut into individual devices, and those chips that passed functional testing are packaged. Final testing is performed on all packaged chips.

Current Trends

The rapid growth of consumer demand for mobile devices, including smartphones, tablets and wearable devices, is currently driving the electronics industry and, as a result, the semiconductor industry as well. Contained within each of these latest consumer devices are advanced semiconductors that are helping enable the features consumers want in device performance, such as smaller product form factors, lower power requirements, bigger and brighter screens and speed, at a lower cost. Alongside this market growth, the industry continues to witness a high rate of change in technology, with the emergence of new techniques and architectures in production today, such as three-dimensional (“3-D”) transistors, advanced patterning lithography and semiconductors with critical dimensions at 28 nanometer and below. KLA-Tencor's inspection and measurement technologies play a key role in enabling the success of our customers' advanced semiconductor manufacturing processes.

Companies that anticipate future market demands by developing and refining new technologies and manufacturing processes are better positioned to lead in the semiconductor market. Accelerating the yield ramp and maximizing production yields of high-performance devices are key goals of modern semiconductor manufacturing. Ramping to high-volume production ahead of competitors can dramatically increase the revenue an IC manufacturer realizes for a given product. During past industry cycles, semiconductor manufacturers generally contended with a few key new technologies or market trends, such as a specific design rule shrink. In today’s market, driven by consumer demand for low-cost electronic goods, the leading semiconductor manufacturers are investing in simultaneous production integration of multiple new process technologies, some requiring new substrate and film materials, new geometries and advanced lithography techniques.

While many of these technologies have been adopted at the development and pilot production stages of chip manufacturing, significant challenges and risks associated with each technology have affected their adoption into full-volume production. For example, as design rules decrease, yields become more sensitive to the size and density of defects, while device performance characteristics (namely speed, capacity or power management) become more sensitive to parameters such as line width and film thickness variation. New process materials, such as high-k dielectrics, SOI wafers and immersion lithography-capable photoresists, require extensive characterization before they can be used in the manufacturing process. Moving several of these advanced technologies into production at once only adds to the risks that chipmakers face.

The continuing evolution of semiconductor devices to smaller geometries and more complex multi-level circuitry has significantly increased the performance and cost requirements of the capital equipment used to manufacture these devices. Construction of an advanced wafer fabrication facility today can cost over $5 billion, substantially more than previous-generation facilities. In addition, chipmakers are demanding increased productivity and higher returns from their manufacturing equipment and are also seeking ways to extend the performance of their existing equipment.

By developing new process control and yield management tools that help chipmakers accelerate the adoption of these new technologies into volume production, we enable our customers to better leverage these increasingly expensive facilities and significantly improve their return on investment (“ROI”). Once customers’ production lines are operating at high volume, our tools help ensure that yields are stable and process excursions are identified for quick resolution. In addition, the move to each new generation’s smaller design rules, coupled with new materials and device innovation, has increased in-process variability, which requires an increase in inspection and metrology sampling.

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KLA-Tencor systems not only analyze defectivity and metrology issues at critical points in the wafer, reticle and IC manufacturing processes, but also provide information to our customers so that they can identify and address the underlying process problems. The ability to locate the source of defects and resolve the underlying process issues enables our customers to improve control over their manufacturing processes. This helps them increase their yield of high-performance parts and deliver their products to market faster—thus maximizing their profit. With our broad portfolio of application-focused technologies and our dedicated yield technology expertise, we are in position to be a key supplier of comprehensive yield management solutions for customers' next-generation products, helping our customers respond to the challenges posed by shrinking device sizes, the transition to new production materials, new device and circuit architecture, more demanding lithography processes, and new back-end packaging techniques.

Products

KLA-Tencor is engaged primarily in the design, manufacture and marketing of process control and yield management solutions for the semiconductor and related nanoelectronics industries and provides a comprehensive portfolio of defect inspection and metrology products, and related service, software and other offerings.

KLA-Tencor's defect inspection and metrology products and related offerings can be broadly categorized into the following groups: Chip Manufacturing, Wafer Manufacturing, Reticle Manufacturing, LED and Compound Semiconductor Manufacturing, Data Storage Media/Head Manufacturing, Microelectromechanical Systems ("MEMS") Manufacturing, and General Purpose/Lab Applications. The more significant of these products are included in the product table at the end of this "Products" section. Every year, we introduce a number of new products; some of the new products we introduced in the fiscal year ended June 30, 2014 are described below. We also provide refurbished KLA-Tencor tools as part of our K-T Certified™ program for customers manufacturing larger design-rule devices, as well as comprehensive service and support for our products.

Chip Manufacturing

KLA-Tencor's comprehensive portfolio of defect inspection and metrology products, and related service, software and other offerings, helps chip manufacturers manage yield throughout the entire semiconductor fabrication process—from research and development to final volume production. These products and solutions are designed to help customers accelerate their development and production ramp cycles, to achieve higher and more stable semiconductor die yields, and to improve overall profitability.

Front-End Defect Inspection

KLA-Tencor's front-end defect inspection tools cover a broad range of yield applications within the IC manufacturing environment, including: research and development; incoming wafer qualification; reticle qualification; and tool, process and line monitoring. Patterned and unpatterned wafer inspectors find particles, pattern defects and electrical issues on the front surface, back surface and edge of the wafer, allowing engineers to detect and monitor critical yield excursions. Fabs rely on our high sensitivity reticle inspection systems to identify defects in reticles at an early stage, to prevent reticle defects from printing on production wafers. The defect data generated by our inspectors is compiled and reduced to relevant root-cause and yield-analysis information with our suite of data management tools. By implementing our front-end defect inspection and analysis systems, chipmakers are able to take quick corrective action, resulting in faster yield improvement and better time to market.

During the fiscal year ended June 30, 2014, we launched several front-end defect inspection products that help accelerate yield for next-generation design node devices. In July 2013, we launched the 2910 Series broadband plasma patterned wafer inspection systems that are used to discover and monitor defects to support advanced IC development and ramp. This was followed in May 2014 with our launch of the Teron™ SL650, a reticle inspection system that utilizes 193nm illumination and multiple STARlight™ technologies to assess incoming reticle quality, monitor reticle degradation and detect yield-critical reticle defects.

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The products that we launched during the fiscal year ended June 30, 2014 further strengthened our broad range of offerings that support the front-end defect inspection market. In the field of patterned wafer inspection, we offer our 2910 Series, 2900 Series, 2830 Series, 2820 Series and 2810 Series systems (for broadband plasma defect inspection); our Puma™ 9650 Series and Puma 9500 Series systems (for laser scanning defect inspection); our eS805™ Series and eS800 Series systems (for electron-beam defect inspection); our 8900 system (for macro defect inspection); and our CIRCL™ cluster tool (for macro defect inspection and review of all wafer surfaces - front side, edge and back side). In the field of unpatterned wafer and surface inspection, we offer the Surfscan® SP3 Series (wafer defect inspection systems for process tool qualification and monitoring using blanket films and bare wafers); and the SURFmonitor™ (integrated on the Surfscan SP3 Series), which enables surface quality measurements and capture of low-contrast defects. For reticle inspection, we offer our X5.2™ and Teron SL650 Series products, which are photomask inspection systems that allow IC fabs to qualify incoming reticles and inspect production reticles for contaminants and other process-related changes. In addition, we offer a number of other products for the front-end defect inspection market, as reflected in the product table at the conclusion of this “Products” section.

Back-End Defect Inspection

KLA-Tencor offers standalone inspection systems for various applications in the field of semiconductor packaging (i.e., at the back-end of the semiconductor manufacturing process). Our Component Inspector (“CI”) products inspect various semiconductor components that are handled in a tray, such as microprocessors or memory chips. Component inspection capability includes 3-D coplanarity inspection, measurement of the evenness of the contacts and two-dimensional surface inspection. In October 2013, we introduced the ICOS® T640, which provides automated, optical inspection of back-end ICs. It offers dual tapers for fast output and scalability to support a wide range of packages and sizes.

Defect Review

KLA-Tencor’s defect review systems capture high resolution images of the defects detected by inspection tools. These images enable defect classification, helping chipmakers to identify and resolve yield issues. KLA-Tencor’s suite of defect inspectors, defect review and classification tools and data management systems form a broad solution for finding, identifying and tracking yield-critical defects and process issues. In July 2013, we introduced the eDR™-7100, an electron-beam wafer defect review and classification system that utilizes a fourth-generation immersion column and an advanced stage to quickly and accurately re-locate, image and classify yield-critical defects.

Metrology

KLA-Tencor’s array of metrology solutions addresses IC, substrate and medical device manufacturing, as well as scientific research and other applications. Precise metrology and control of pattern dimensions, film thicknesses, layer-to-layer alignment, pattern placement, surface topography and electro-optical properties are important in many industries as critical dimensions narrow, film thicknesses shrink to countable numbers of atomic layers and devices become more complex.

KLA-Tencor offers a broad range of systems that support the metrology market. The Archer™ Series of overlay metrology tools enable characterization of overlay error on lithography process layers for advanced patterning technologies. The SpectraShape™ family of optical CD and shape metrology systems fully characterize and monitor the critical dimensions and 3-D shapes of geometrically complex features incorporated by some IC manufacturers in their latest generation devices. Finally, the Aleris™ family of film metrology tools provides reliable and precise measurement of film thickness, refractive index, stress and composition for a broad range of film layers. In addition, we offer a number of other products for the metrology market, as reflected in the product table at the conclusion of this “Products” section.

In-Situ Process Monitoring

KLA-Tencor’s SensArray® SensorWafers are a portfolio of advanced wireless and wired temperature monitoring wafers that capture the effect of the process environment on production wafers. These SensorWafers provide unique insight into thermal uniformity and profile temperature under real production conditions. SensArray products are used in many semiconductor and flat panel display fabrication processes, including lithography, etch and deposition. In August 2013, we introduced the SensArray HighTemp-350XP which provides in-situ wireless wafer temperature measurements for elevated temperature IC processes.

Lithography Modeling

KLA-Tencor's PROLITH™ product line provides researchers at advanced IC manufacturers, lithography hardware suppliers, track companies and material providers with virtual lithography software to explore critical-feature designs, manufacturability and process-limited yield of proposed lithographic technologies without the time and expense of printing hundreds of test wafers using experimental materials and prototype process equipment.

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In December 2013, we introduced PROLITH X5, which provides simulation capability for all lithography technologies with particular emphasis on 193nm immersion lithography, spacer-based Self-Aligned Double Patterning ("SADP") and thick resist lithography for 3-D interconnects and MEMS manufacturing.

Wafer Manufacturing

KLA-Tencor's portfolio of products focused on the demands of wafer manufacturers includes inspection, metrology and data management systems. Specialized inspection tools assess surface quality and detect, count and bin defects during the wafer manufacturing process and as a critical part of outgoing inspection. Wafer geometry tools ensure that the wafer is extremely flat and uniform in thickness, with precisely controlled surface topography. Specifications for wafer defectivity, geometry and surface quality are tightening as the dimensions of transistors become so small that the geometry of the substrate can substantially affect transistor performance.

Our wafer inspection portfolio is anchored by the Surfscan SP3 Series defect inspection systems designed to enable development and production monitoring of polished wafers, epi wafers and engineered substrates. The SURFmonitor module characterizes wafer surface quality and captures the low-contrast defects. The WaferSight™ platform offers bare wafer geometry and nanotopography metrology capabilities. Other products that we offer for the wafer manufacturing market are highlighted in the product table at the conclusion of this "Products" section.

Reticle Manufacturing

Error-free reticles, or masks, are necessary to achieving high semiconductor device yields, since reticle defects can be replicated in every die on production wafers. KLA-Tencor offers high sensitivity reticle inspection and metrology systems for mask shops, designed to help them manufacture reticles that are free of pattern defects that could print on the wafers and meet pattern placement and critical dimension uniformity specifications.

Our reticle inspection portfolio includes the Teron 600 Series for development and manufacturing of advanced optical and extreme ultraviolet ("EUV") masks, the TeraScan™ 500XR system for mask shop production of reticles for the 32nm node and above and our X5.2 and Teron SL650 products for reticle quality control capability for IC fabs. These products include the capability for mapping critical dimension uniformity across the reticle. In addition, we offer the LMS IPRO line of reticle metrology systems for measuring pattern placement error. If the pattern on the reticle is displaced from its intended location, overlay error can result on the wafer, which can lead to electrical continuity issues affecting yield, performance or reliability of the IC device.

LED and Compound Semiconductor Manufacturing

LEDs are becoming more commonly used in solid-state lighting, television and notebook backlighting, and automotive applications. As LED device makers target aggressive cost and performance targets, they place significant emphasis on improved process control and yield during the manufacturing process.

KLA-Tencor offers a portfolio of three systems to help LED manufacturers reduce production costs and increase product output: Candela® 8620, Klarity® LED and WI-2280. The Candela 8620 substrate and epi wafer inspection system provides automated inspection and quality control of LED substrates, detecting defects that can impact device performance, yield and field reliability. Klarity LED is an automated defect data management and analysis system for LED yield enhancement. The WI-2280 system is a patterned wafer inspection tool that is designed specifically for defect inspection and two-dimensional metrology for LED applications.

Our primary products for compound semiconductor manufacturing include Candela CS20 and the P-Series Stylus Profiler, used for the inspection of substrates, epi-layers and process films. In addition, the Candela CS920, introduced in March 2014, is used by power device manufacturers for defect inspection and classification on SiC substrate and epi wafers.

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Data Storage Media/Head Manufacturing

Advancements in data storage are being driven by a wave of innovative consumer electronics with small form factors and immense storage capacities, as well as an increasing need for high-volume storage options to back up modern methods of remote computing and networking (such as cloud computing). Our process control and yield management solutions are designed to enable customers to rapidly understand and resolve complex manufacturing problems, which can help improve time to market and product yields. In the front-end and back-end of thin-film head wafer manufacturing, we offer the same process control equipment that we serve to the semiconductor industry. In addition, we offer an extensive range of test equipment and surface profilers with particular strength in photolithography. In substrate and media manufacturing, we offer metrology and defect inspection solutions with KLA-Tencor’s optical surface analyzers.

MEMS Manufacturing

The increasing demand for MEMS technology is coming from diverse industries such as automotive, space and consumer electronics. MEMS have the potential to revolutionize nearly every product category by bringing together silicon-based microelectronics with micromachining technology, making possible the realization of complete systems-on-a-chip. KLA-Tencor offers tools and techniques for this emerging market, such as defect inspection and review, optical inspection and surface profiling, which were first developed for the integrated circuit industry.

General Purpose/Lab Applications

A range of industries, including general scientific and materials research and optoelectronics, require measurements of surface topography to either control their processes or research new material characteristics. Typical measurement parameters that our tools address include flatness, roughness, curvature, peak-to-valley, asperity, waviness, texture, volume, sphericity, slope, density, stress, bearing ratio and distance (mainly in the micron to nanometer range). In November 2013, we introduced the MicroXAM-800 optical interferometer designed for 3-D measurement of surface topography across a broad range of research and development ("R&D") and production applications.

K-T Certified

K-T Certified is our certified refurbished tools program that delivers fully refurbished and tested KLA-Tencor tools to our customers with guaranteed performance. In addition to high-quality pre-owned 300mm and sub-200mm tools for the integrated circuit, reticle, substrate, MEMS and data storage markets, K-T Certified also offers system software and hardware performance upgrades to extend the capabilities of existing equipment. When a customer needs to move to the next manufacturing node, K-T Certified can help maximize the value of the customer's existing assets through K-T Certified's repurchase, trade-in and redeployment services.

K-T Services

Our K-T Services program enables our customers in all business sectors to maintain the high performance and productivity of our products through a flexible portfolio of services. Whether a manufacturing site is producing integrated circuits, wafers or reticles, K-T Services delivers yield management expertise spanning advanced technology nodes, including collaboration with customers to determine the best products and services to meet technology requirements and optimize cost of ownership. Our comprehensive services include: proactive management of tools to identify and improve performance; expertise in optics, image processing and motion control with worldwide service engineers, technical support teams and knowledge management systems; and an extensive parts network to ensure worldwide availability of parts.

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Product Table

The following table presents a representative list of the products that we offered during the course of the fiscal year ended June 30, 2014:

MARKETS	APPLICATIONS	PRODUCTS
Chip Manufacturing		
	Patterned Wafer	2910 Series, 2900 Series, 2830 Series, 2820 Series, 2810 Series Puma™ 9650, Puma 9500 Series, eS805™ Series, eS800 Series
Front-End Defect Inspection	Macro and Edge	CIRCL™ with LDS-3400, CV310i, BDR300™ and INS modules
	Unpatterned Wafer/Surface	8900 Surfscan® SP3 Series SURFmonitor™
	Reticle	X5.2™ Teron™ SL650
	Data Management	Klarity® product family
Back-End Defect Inspection	Component Inspection	ICOS® CI product family
Defect Review	Electron-beam	eDR™-7100 Series, eDR-7000 Series
Metrology	Overlay	Archer™ Series
	Optical CD and Shape	SpectraShape™ product family
	Film Thickness/Index	Aleris™ product family
	Wafer Geometry and Topography	WaferSight™ Series SURFmonitor
	Ion Implant and Anneal	Therma-Probe®
	Surface Metrology	HRP® -350 P-Series product family
	Resistivity	RS product family
	Data Management	K-T Analyzer®
In-Situ Process Monitoring	Lithography	SensArray® product family
	Plasma Etch	SensArray product family
	Implant and Wet	SensArray PlasmaSuite
Lithography Modeling	Virtual Lithography Software	PROLITH™ and related product families

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MARKETS AND APPLICATIONS	PRODUCTS
Wafer Manufacturing	
Surface and Defect Inspection	Surfscan SP3 Series SURFmonitor
Wafer Geometry and Nanotopography Metrology	WaferSight Series SURFmonitor
Data Management	FabVision™
Reticle Manufacturing	
Defect Inspection	TeraScan™XR Teron 600 Series
Pattern Placement Metrology	LMS IPRO Series
LED and Compound Semiconductor Manufacturing	
Patterned Wafer Inspection	WI product family
Defect Inspection (substrates and epi wafers)	Candela® product family
Surface Metrology	P-Series product family
Data Management	Klarity LED
Data Storage Media/Head Manufacturing	
Thin-Film Head Metrology and Inspection	Aleris product family HRP -250 K-T Analyzer P-Series product family
Virtual Lithography	PROLITH
In-Situ Process Monitoring	SensArray product family
Transparent and Metal Substrate Inspection	Candela product family
Yield Management	Klarity Defect
MEMS Manufacturing	
Surface Metrology: Stylus Profiling	P-Series product family HRP product family
Surface Metrology: Optical Profiling	MicroXAM Series
Optical Inspection	WI product family
General Purpose/Lab Applications	
Surface Metrology: Stylus Profiling	P-Series product family Alpha-Step® product family HRP product family
Surface Metrology: Optical Profiling	MicroXAM Series
Process Chamber Conditions	SensArray product family

The product information shown in the tables above excludes the products that were solely offered through our K-T Certified refurbished tools program.

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Customers

To support our growing global customer base, we maintain a significant presence throughout Asia, the United States and Europe, staffed with local sales and applications engineers, customer and field service engineers and yield management consultants. We count among our largest customers the leading semiconductor manufacturers in each of these regions.

For the fiscal years ended June 30, 2014, 2013 and 2012, the following customers each accounted for more than 10% of total revenues:

Year ended June 30,		
2014	2013	2012
Intel Corporation	Intel Corporation	Samsung Electronics Co., Ltd.
Samsung Electronics Co., Ltd.	Taiwan Semiconductor Manufacturing Company Limited	Taiwan Semiconductor Manufacturing Company Limited
Taiwan Semiconductor Manufacturing Company Limited		

Our business depends upon the capital expenditures of semiconductor manufacturers, which in turn is driven by the current and anticipated market demand for ICs and products utilizing ICs. We do not consider our business to be seasonal in nature, but it is cyclical with respect to the capital equipment procurement practices of semiconductor manufacturers, and it is impacted by the investment patterns of such manufacturers in different global markets. Downturns in the semiconductor industry or slowdowns in the worldwide economy could have a material adverse effect on our future business and financial results.

Sales, Service and Marketing

Our sales, service and marketing efforts are aimed at building long-term relationships with our customers. We focus on providing a single and comprehensive resource for the full breadth of process control and yield management products and services. Our customers benefit from the simplified planning and coordination, as well as the increased equipment compatibility, that are realized as a result of dealing with a single supplier for multiple products and services. Our revenues are derived primarily from product sales, mostly through our direct sales force.

We believe that the size and location of our field sales, service and applications engineering, and marketing organizations represent a competitive advantage in our served markets. We have direct sales forces in Asia, the United States and Europe. We maintain an export compliance program that is designed to meet the requirements of the United States Departments of Commerce and State.

As of June 30, 2014, we employed approximately 2,411 sales and related personnel, service engineers and applications engineers. In addition to sales and service offices in the United States, we conduct sales, marketing and services out of wholly-owned subsidiaries or branches in other countries, including Belgium, China, France, Germany, Hong Kong, India, Israel, Italy, Japan, Singapore, South Korea, Taiwan and the United Kingdom. International revenues accounted for approximately 76%, 70% and 79% of our total revenues in the fiscal years ended June 30, 2014, 2013 and 2012, respectively. Additional information regarding our revenues from foreign operations for our last three fiscal years can be found in Note 17, “Segment Reporting and Geographic Information” to the Consolidated Financial Statements.

We believe that sales outside the United States will continue to be a significant percentage of our total revenues. Our future performance will depend, in part, on our ability to continue to compete successfully in Asia, one of the largest markets for our equipment. Our ability to compete in this area is dependent upon the continuation of favorable trading relationships between countries in the region and the United States, and our continuing ability to maintain satisfactory relationships with leading semiconductor companies in the region.

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International sales and operations may be adversely affected by the imposition of governmental controls, restrictions on export technology, political instability, trade restrictions, changes in tariffs and the difficulties associated with staffing and managing international operations. In addition, international sales may be adversely affected by the economic conditions in each country and by fluctuations in currency exchange rates, and such fluctuations may negatively impact our ability to compete on price with local providers or the value of revenues we generate from our international business. Although we attempt to manage some of the currency risk inherent in non-U.S. dollar product sales through hedging activities, there can be no assurance that such efforts will be adequate. These factors, as well as any of the other risk factors related to our international business and operations that are described in Item 1A, "Risk Factors," could have a material adverse effect on our future business and financial results.

Backlog

Our shipment backlog for systems and associated warranty totaled $977 million and $817 million as of June 30, 2014 and 2013, respectively, and primarily consists of sales orders where written customer requests have been received and the delivery is anticipated within the next 12 months. Orders for service contracts and unreleased products are excluded from shipment backlog. All orders are subject to cancellation or delay by the customer, often with limited or no penalties. We make adjustments for shipment backlog obtained from acquired companies, sales order cancellations, customer delivery date changes and currency adjustments. Shipment backlog is not subject to normal accounting controls for information that is either reported in or derived from our basic financial statements. In addition, the concept of shipment backlog is not defined in the accounting literature, making comparisons between periods and with other companies difficult and potentially misleading.

Our revenue backlog, which includes the gross value of sales orders where physical deliveries have been completed, but for which revenue has not been recognized pursuant to our policy for revenue recognition, totaled $269 million and $271 million as of June 30, 2014 and 2013, respectively. Orders for service contracts are excluded from revenue backlog.

Because customers can potentially change delivery schedules or delay or cancel orders, and because some orders are received and shipped within the same quarter, our shipment backlog at any particular date is not necessarily indicative of business volumes or actual sales for any succeeding periods. The cyclicality of the semiconductor industry combined with the lead times from our suppliers sometimes result in timing disparities between, on the one hand, our ability to manufacture, deliver and install products and, on the other, the requirements of our customers. In our efforts to balance the requirements of our customers with the availability of resources, management of our operating model and other factors, we often must exercise discretion and judgment as to the timing and prioritization of manufacturing, deliveries and installations of products, which may impact the timing of revenue recognition with respect to such products.

Research and Development

The market for yield management and process monitoring systems is characterized by rapid technological development and product innovation. These technical innovations are inherently complex and require long development cycles and appropriate professional staffing. We believe that continued and timely development of new products and enhancements to existing products are necessary to maintain our competitive position. Accordingly, we devote a significant portion of our human and financial resources to research and development programs and seek to maintain close relationships with customers to remain responsive to their needs. In addition, we may enter into certain strategic development and engineering programs whereby certain government agencies or other third parties fund a portion of our research and development costs. As of June 30, 2014, we employed approximately 1,537 research and development personnel.

Our key research and development activities during the fiscal year ended June 30, 2014 involved the development of process control and yield management equipment aimed at addressing the challenges posed by shrinking device sizes, the transition to new production materials, new device and circuit architecture, more demanding lithography processes and new back-end packaging techniques. For information regarding our research and development expenses during the last three fiscal years, including costs offset by our strategic development and engineering programs, see Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" in this Annual Report on Form 10-K.

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The strength of our competitive positions in many of our existing markets is largely due to our leading technology, which is the result of our continuing significant investments in product research and development. Even during down cycles in the semiconductor industry, we have remained committed to significant engineering efforts toward both product improvement and new product development in order to enhance our competitive position. New product introductions, however, may contribute to fluctuations in operating results, since customers may defer ordering existing products, and, if new products have reliability or quality problems, those problems may result in reduced orders, higher manufacturing costs, delays in acceptance of and payment for new products, and additional service and warranty expenses. There can be no assurance that we will successfully develop and manufacture new products, or that new products introduced by us will be accepted in the marketplace. If we do not successfully introduce new products, our results of operations will be adversely affected.

Manufacturing, Raw Materials and Supplies

We perform system design, assembly and testing in-house and utilize an outsourcing strategy for the manufacture of components and major subassemblies. Our in-house manufacturing activities consist primarily of assembling and testing components and subassemblies that are acquired through third-party vendors and integrating those subassemblies into our finished products. Our principal manufacturing activities take place in the United States (Milpitas, California), Singapore, Israel, Germany and China. As of June 30, 2014, we employed approximately 1,010 manufacturing personnel.

Some critical parts, components and subassemblies (collectively, “parts”) that we use are designed by us and manufactured by suppliers in accordance with our specifications, while other parts are standard commercial products. We use numerous vendors to supply parts and raw materials for the manufacture and support of our products. Although we make reasonable efforts to ensure that these parts and raw materials are available from multiple suppliers, this is not always possible, and certain parts and raw materials included in our systems may be obtained only from a single supplier or a limited group of suppliers. Through our business interruption planning, we endeavor to minimize the risk of production interruption by, among other things, monitoring the financial condition of suppliers of key parts and raw materials, identifying (but not necessarily qualifying) possible alternative suppliers of such parts and materials, and ensuring adequate inventories of key parts and raw materials are available to maintain manufacturing schedules.

Although we seek to reduce our dependence on sole and limited source suppliers, in some cases the partial or complete loss of certain of these sources, or disruptions within our suppliers' often-complex supply chains, could disrupt scheduled deliveries to customers, damage customer relationships and have a material adverse effect on our results of operations.

Competition

The worldwide market for process control and yield management systems is highly competitive. In each of our product markets, we face competition from established and potential competitors, some of which may have greater financial, research, engineering, manufacturing and marketing resources than we have, such as Applied Materials, Inc., ASML Holding N.V. and Hitachi High-Technologies Corporation. We may also face future competition from new market entrants from other overseas and domestic sources. We expect our competitors to continue to improve the design and performance of their current products and processes and to introduce new products and processes with improved price and performance characteristics. We believe that, to remain competitive, we will require significant financial resources to offer a broad range of products, to maintain customer service and support centers worldwide, and to invest in product and process research and development.

We believe that, while price and delivery are important competitive factors, the customers’ overriding requirement is for systems that easily and effectively incorporate automated and highly accurate inspection and metrology capabilities into their existing manufacturing processes to enhance productivity. Significant competitive factors in the market for process control and yield management systems include system performance, ease of use, reliability, interoperability with the existing installed base and technical service and support, as well as overall cost of ownership. Management believes that we are well positioned in the market with respect to both our products and services. However, any loss of competitive position could negatively impact our prices, customer orders, revenues, gross margins and market share, any of which would negatively impact our operating results and financial condition.

Acquisitions and Alliances

We continuously evaluate strategic acquisitions and alliances to expand our technologies, product offerings and distribution capabilities. Acquisitions involve numerous risks, including management issues and costs in connection with integration of the operations, technologies and products of the acquired companies, and the potential loss of key employees of the acquired companies. The inability to manage these risks effectively could negatively impact our operating results and financial condition.

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Patents and Other Proprietary Rights

We protect our proprietary technology through reliance on a variety of intellectual property laws, including patent, copyright and trade secret. We have filed and obtained a number of patents in the United States and abroad and intend to continue pursuing the legal protection of our technology through intellectual property laws. In addition, from time to time we acquire license rights under United States and foreign patents and other proprietary rights of third parties, and we attempt to protect our trade secrets and other proprietary information through confidentiality and other agreements with our customers, suppliers, employees and consultants and through other security measures.

Although we consider patents and other intellectual property significant to our business, due to the rapid pace of innovation within the process control and yield management systems industry, we believe that our protection through patent and other intellectual property rights is less important than factors such as our technological expertise, continuing development of new systems, market penetration, installed base and the ability to provide comprehensive support and service to customers worldwide.

No assurance can be given that patents will be issued on any of our applications, that license assignments will be made as anticipated, or that our patents, licenses or other proprietary rights will be sufficiently broad to protect our technology. No assurance can be given that any patents issued to or licensed by us will not be challenged, invalidated or circumvented or that the rights granted thereunder will provide us with a competitive advantage. In addition, there can be no assurance that we will be able to protect our technology or that competitors will not be able to independently develop similar or functionally competitive technology.

Environmental Matters

We are subject to a variety of federal, state and local governmental laws and regulations related to the protection of the environment, including without limitation the management of hazardous materials that we use in our business operations. Compliance with these environmental laws and regulations has not had, and is not expected to have, a material effect on our capital expenditures, financial condition, results of operations or competitive position. However, any failure to comply with environmental laws and regulations may subject us to a range of consequences, including fines, suspension of certain of our business activities, limitations on our ability to sell our products, obligations to remediate environmental contamination, and criminal and civil liabilities or other sanctions. In addition, changes in environmental laws and regulations could require us to invest in potentially costly pollution control equipment, alter our manufacturing processes or use substitute materials. Our failure to comply with these laws and regulations could subject us to future liabilities.

Employees

As of June 30, 2014, we employed approximately 6,060 people. Except for our employees in Belgium (where a trade union delegation recently came into being following a formal request thereto by the representative unions, which we did not challenge) and our employees in the German operations of our MIE business unit (who are represented by an employee work council), none of our employees are represented by a labor union. We have not experienced work stoppages and believe that our employee relations are good.

Competition is intense in the recruiting of personnel in the semiconductor and semiconductor equipment industry. We believe that our future success will depend, in part, on our continued ability to hire and retain qualified management, marketing and technical employees.

Glossary

This section provides definitions for certain industry and technical terms commonly used in our business, which are used elsewhere in this Item 1:

back-end	Process steps that make up the second half of the semiconductor manufacturing process, from contact through completion of the wafer prior to electrical test.
broadband	An illumination source with a wide spectral bandwidth.
critical dimension (CD)	The dimension of a specified geometry (such as the width of a patterned line or the distance between two lines) that must be within design tolerances in order to maintain semiconductor device performance consistency.

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design rules	Rules that set forth the allowable dimensions of particular features used in the design and layout of integrated circuits.
die	The term for a single semiconductor chip on a wafer.
electron-beam	An illumination source comprised of a stream of electrons emitted by a single source.
epitaxial silicon (epi)	A substrate technology based on growing a crystalline silicon layer on top of a silicon wafer. The added layer, where the structure and orientation are matched to those of the silicon wafer, includes dopants (impurities) to imbue the substrate with special electronic properties.
excursion	For a manufacturing step or process, a deviation from normal operating conditions that can lead to decreased performance or yield of the final product.
fab	The main manufacturing facility for processing semiconductor wafers.
front-end	The processes that make up the first half of the semiconductor manufacturing process, from wafer start through final contact window processing.
in-situ	Refers to processing steps or tests that are done without moving the wafer. Latin for “in original position.”
interconnect	A highly conductive material, usually copper or aluminum, that carries electrical signals to different parts of a die.
lithography	A process in which a masked pattern is projected onto a photosensitive coating that covers a substrate.
mask shop	A manufacturer that produces the reticles used by semiconductor manufacturers.
metrology	The science of measurement to determine dimensions, quantity or capacity. In the semiconductor industry, typical measurements include critical dimension, overlay and film thickness.
microelectromechanical systems (MEMS)	Micron-sized mechanical devices powered by electricity, created using processes similar to those used to manufacture IC devices.
micron	A metric unit of linear measure that equals 1/1,000,000 meter (10^{-6}m), or 10,000 angstroms (the diameter of a human hair is approximately 75 microns).
nanometer (nm)	One billionth (10^{-9}) of a meter.
narrowband	An illumination source with a narrow spectral bandwidth, such as a laser.
patterned	For semiconductor manufacturing and industries using similar processing technologies, refers to substrates that have electronic circuits (transistors, interconnects, etc.) fabricated on the surface.

photoresist	A radiation-sensitive material that, when properly applied to a variety of substrates and then properly exposed and developed, masks portions of the substrate with a high degree of integrity.
process control	The ability to maintain specifications of products and equipment during manufacturing operations.
reticle	A very flat glass plate that contains the patterns to be reproduced on a wafer.
silicon-on-insulator (SOI)	A substrate technology comprised of a thin top silicon layer separated from the silicon substrate by a thin insulating layer of glass or silicon dioxide, used to improve performance and reduce the power consumption of IC circuits.

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substrate	A wafer on which layers of various materials are added during the process of manufacturing semiconductor devices or circuits.
unpatterned	For semiconductor manufacturing and industries using similar processing technologies, refers to substrates that do not have electronic circuits (transistors, interconnects, etc.) fabricated on the surface. These can include bare silicon wafers, other bare substrates or substrates on which blanket films have been deposited.
yield management	The ability of a semiconductor manufacturer to oversee, manage and control its manufacturing processes so as to maximize the percentage of manufactured wafers or die that conform to pre-determined specifications.

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The definitions above are from internal sources, as well as the SEMATECH Dictionary of Semiconductor Terms.

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ITEM 1A. RISK FACTORS

A description of factors that could materially affect our business, financial condition or operating results is provided below.

Risks Associated with Our Industry

Ongoing changes in the technology industry, as well as the semiconductor industry in particular, could expose our business to significant risks.

The semiconductor equipment industry and other industries that we serve are constantly developing and changing over time. Many of the risks associated with operating in these industries are comparable to the risks faced by all technology companies, such as the uncertainty of future growth rates in the industries that we serve, pricing trends in the end-markets for consumer electronics and other products (which place a growing emphasis on our customers' cost of ownership), changes in our customers' capital spending patterns and, in general, an environment of constant change and development, including decreasing product and component dimensions; use of new materials; and increasingly complex device structures, applications and process steps. If we fail to appropriately adjust our cost structure and operations to adapt to any of these trends, or, with respect to technological advances, if we do not timely develop new technologies and products that successfully anticipate and address these changes, we could experience a material adverse effect on our business, financial condition and operating results.

In addition, we face a number of risks specific to ongoing changes in the semiconductor industry, as the significant majority of our sales are made to semiconductor manufacturers. Some of the trends that our management monitors in operating our business include the following:

- the increasing cost of building and operating fabrication facilities and the impact of such increases on our customers' investment decisions;
- differing market growth rates and capital requirements for different applications, such as memory, logic and foundry;
- the emergence of disruptive technologies that change the prevailing semiconductor manufacturing processes (or the economics associated with semiconductor manufacturing) and, as a result, also impact the inspection and metrology requirements associated with such processes;
- the possible introduction of integrated products by our larger competitors that offer inspection and metrology functionality in addition to managing other semiconductor manufacturing processes;
- changes in semiconductor manufacturing processes that are extremely costly for our customers to implement and, accordingly, impact the amount of their budgets that are available for process control equipment;
- the possibility that next-generation technological advances within the semiconductor manufacturing industry could actually reverse the historical trend of declining cost per transistor, and the impact that such reversal would have upon our industry and business;
- the bifurcation of the semiconductor manufacturing industry into (a) leading edge manufacturers driving continued research and development into next-generation products and technologies and (b) other manufacturers that are content with existing (including previous generation) products and technologies;
- the ever escalating cost of next-generation product development, which may result in joint development programs between us and our customers or government entities to help fund such programs that could restrict our control of, ownership of and profitability from the products and technologies developed through those programs;
- the potential industry transition from 300mm to 450mm wafers; and
- the entry by some semiconductor manufacturers into collaboration or sharing arrangements for capacity, cost or risk with other manufacturers, as well as increased outsourcing of their manufacturing activities, and greater focus only on specific markets or applications, whether in response to adverse market conditions or other market pressures.

Any of the changes described above may negatively affect our customers' rate of investment in the capital equipment that we produce, which could result in downward pressure on our prices, customer orders, revenues and gross margins. If we do not successfully manage the risks resulting from any of these or other potential changes in our industries, our business, financial condition and operating results could be adversely impacted.

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We are exposed to risks associated with a highly concentrated customer base.

Our customer base, particularly in the semiconductor industry, historically has been, and is becoming increasingly, highly concentrated. In this environment, orders from a relatively limited number of manufacturers have accounted for, and are expected to continue to account for, a substantial portion of our sales. This increasing concentration exposes our business, financial condition and operating results to a number of risks, including the following:

- The mix and type of customers, and sales to any single customer, may vary significantly from quarter to quarter and from year to year, which exposes our business and operating results to increased volatility tied to individual customers.
- New orders from our foundry customers in the past several years have constituted a significant portion of our total orders. This concentration increases the impact that future business or technology changes within the foundry industry may have on our business, financial condition and operating results.
- In a highly concentrated business environment, if a particular customer does not place an order, or if they delay or cancel orders, we may not be able to replace the business. Furthermore, because our products are configured to customer specifications, any changes, delays or cancellations of orders may result in significant, non-recoverable costs.
- In recent years, our customer base has become increasingly concentrated due to corporate consolidation, acquisitions and business closures. As a result of this consolidation, the customers that survive the consolidation represent a greater portion of our sales. Those surviving customers may have more aggressive policies regarding engaging alternative, second-source suppliers for the products we offer and, in addition, may seek, and on occasion receive, pricing, payment, intellectual property-related, or other commercial terms that are less favorable to us. Any of these changes could negatively impact our prices, customer orders, revenues and gross margins.
- Certain customers have undergone significant ownership changes, created alliances with other companies, experienced management changes or have outsourced manufacturing activities, any of which may result in additional complexities in managing customer relationships and transactions.
- The highly concentrated business environment also increases our exposure to risks related to the financial condition of each of our customers. For example, as a result of the challenging economic environment during fiscal year 2009, we were (and in some cases continue to be) exposed to additional risks related to the continued financial viability of certain of our customers. To the extent our customers experience liquidity issues in the future, we may be required to incur additional bad debt expense with respect to receivables owed to us by those customers. In addition, customers with liquidity issues may be forced to discontinue operations or may be acquired by one of our customers, and in either case such event would have the effect of further consolidating our customer base.

Any of these factors could have a material adverse effect on our business, financial condition and operating results.

The semiconductor equipment industry is highly cyclical. The purchasing decisions of our customers are highly dependent on the economies of both the local markets in which they are located and the semiconductor industry worldwide. If we fail to respond to industry cycles, our business could be seriously harmed.

The timing, length and severity of the up-and-down cycles in the semiconductor equipment industry are difficult to predict. The cyclical nature of the primary industry in which we operate is largely a function of our customers' capital spending patterns and need for expanded manufacturing capacity, which in turn are affected by factors such as capacity utilization, consumer demand for products, inventory levels and our customers' access to capital. This cyclicality affects our ability to accurately predict future revenue and, in some cases, future expense levels. During down cycles in our industry, the financial results of our customers may be negatively impacted, which could result not only in a decrease in, or cancellation or delay of, orders (which are generally subject to cancellation or delay by the customer with limited or no penalty) but also a weakening of their financial condition that could impair their ability to pay for our products or our ability to recognize revenue from certain customers. Our ability to recognize revenue from a particular customer may also be negatively impacted by the customer's funding status, which could be weakened not only by adverse business conditions or inaccessibility to capital markets for any number of macroeconomic or company-specific reasons, but also by funding limitations imposed by the customer's unique corporate structure. Any of these factors could negatively impact our business, operating results and financial condition.

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When cyclical fluctuations result in lower than expected revenue levels, operating results may be adversely affected and cost reduction measures may be necessary in order for us to remain competitive and financially sound. During periods of declining revenues, as was experienced during fiscal year 2009, we must be in a position to adjust our cost and expense structure to prevailing market conditions and to continue to motivate and retain our key employees. If we fail to respond, or if our attempts to respond fail to accomplish our intended results, then our business could be seriously harmed. Furthermore, any workforce reductions and cost reduction actions that we adopt in response to down cycles may result in additional restructuring charges, disruptions in our operations and loss of key personnel. In addition, during periods of rapid growth, we must be able to increase manufacturing capacity and personnel to meet customer demand. We can provide no assurance that these objectives can be met in a timely manner in response to industry cycles. Each of these factors could adversely impact our operating results and financial condition.

In addition, our management typically provides quarterly forecasts for certain financial metrics, which, when made, are based on business and operational forecasts that are believed to be reasonable at the time. However, largely due to the cyclicality of our business and the industries in which we operate, and the fact that business conditions in our industries can change very rapidly as part of these cycles, our actual results may vary (and have varied in the past) from forecasted results. These variations can occur for any number of reasons, including, but not limited to, unexpected changes in the volume or timing of customer orders, product shipments or product acceptances; an inability to adjust our operations rapidly enough to adapt to changing business conditions; or a different than anticipated effective tax rate. The impact on our business of delays or cancellations of customer orders may be exacerbated by the short lead times that our customers expect between order placement and product shipment. This is because order delays and cancellations may lead not only to lower revenues, but also, due to the advance work we must do in anticipation of receiving a product order in order to meet the expected lead times, to significant inventory write-offs and manufacturing inefficiencies that decrease our gross margin. Any of these factors could materially and adversely affect our financial results for a particular quarter and could cause those results to differ materially from financial forecasts we have previously provided. We provide these forecasts with the intent of giving investors and analysts a better understanding of management's expectations for the future, but parties reviewing such forecasts must recognize that such forecasts are comprised of, and are themselves, forward-looking statements subject to the risks and uncertainties described in this Item 1A and elsewhere in this report and in our other public filings and public statements. If our operating or financial results for a particular period differ from our forecasts or the expectations of investment analysts, or if we revise our forecasts, the market price of our common stock could decline.

Risks Related to Our Business Model and Capital Structure

If we do not develop and introduce new products and technologies in a timely manner in response to changing market conditions or customer requirements, our business could be seriously harmed.

Success in the semiconductor equipment industry depends, in part, on continual improvement of existing technologies and rapid innovation of new solutions. For example, the size of semiconductor devices continues to shrink, and the industry is currently transitioning to the use of new materials and innovative fab processes. While we expect these trends will increase our customers’ reliance on diagnostic products such as ours, we cannot be sure that these trends will directly improve our business. These and other evolving customer needs require us to respond with continued development programs and to cut back or discontinue older programs, which may no longer have industry-wide support. Technical innovations are inherently complex and require long development cycles and appropriate staffing of highly qualified employees. Our competitive advantage and future business success depend on our ability to accurately predict evolving industry standards, to develop and introduce new products that successfully address changing customer needs, to win market acceptance of these new products and to manufacture these new products in a timely and cost-effective manner.

In this environment, we must continue to make significant investments in research and development in order to enhance the performance, features and functionality of our products, to keep pace with competitive products and to satisfy customer demands. Substantial research and development costs typically are incurred before we confirm the technical feasibility and commercial viability of a new product, and not all development activities result in commercially viable products. There can be no assurance that revenues from future products or product enhancements will be sufficient to recover the development costs associated with such products or enhancements. In addition, we

cannot be sure that these products or enhancements will receive market acceptance or that we will be able to sell these products at prices that are favorable to us. Our business will be seriously harmed if we are unable to sell our products at favorable prices or if the market in which we operate does not accept our products.

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In addition, the complexity of our products exposes us to other risks. We regularly recognize revenue from a sale upon shipment of the applicable product to the customer (even before receiving the customer's formal acceptance of that product) in certain situations, including sales of products for which installation is considered perfunctory, transactions in which the product is sold to an independent distributor and we have no installation obligations, and sales of products where we have previously delivered the same product to the same customer location and that prior delivery has been accepted. However, our products are very technologically complex and rely on the interconnection of numerous subcomponents (all of which must perform to their respective specifications), so it is conceivable that a product for which we recognize revenue upon shipment may ultimately fail to meet the overall product's required specifications. In such a situation, the customer may be entitled to certain remedies, which could materially and adversely affect our operating results for various periods and, as a result, our stock price.

Our success is dependent in part on our technology and other proprietary rights. If we are unable to maintain our lead or protect our proprietary technology, we may lose valuable assets.

Our success is dependent in part on our technology and other proprietary rights. We own various United States and international patents and have additional pending patent applications relating to some of our products and technologies. The process of seeking patent protection is lengthy and expensive, and we cannot be certain that pending or future applications will actually result in issued patents or that issued patents will be of sufficient scope or strength to provide meaningful protection or commercial advantage to us. Other companies and individuals, including our larger competitors, may develop technologies and obtain patents relating to our business that are similar or superior to our technology or may design around the patents we own, adversely affecting our business. In addition, we at times engage in collaborative technology development efforts with our customers and suppliers, and these collaborations may constitute a key component of certain of our ongoing technology and product research and development projects. The termination of any such collaboration, or delays caused by disputes or other unanticipated challenges that may arise in connection with any such collaboration, could significantly impair our research and development efforts, which could have a material adverse impact on our business and operations.

We also maintain trademarks on certain of our products and services and claim copyright protection for certain proprietary software and documentation. However, we can give no assurance that our trademarks and copyrights will be upheld or successfully deter infringement by third parties.

While patent, copyright and trademark protection for our intellectual property is important, we believe our future success in highly dynamic markets is most dependent upon the technical competence and creative skills of our personnel. We attempt to protect our trade secrets and other proprietary information through confidentiality and other agreements with our customers, suppliers, employees and consultants and through other security measures. We also maintain exclusive and non-exclusive licenses with third parties for strategic technology used in certain products. However, these employees, consultants and third parties may breach these agreements, and we may not have adequate remedies for wrongdoing. In addition, the laws of certain territories in which we develop, manufacture or sell our products may not protect our intellectual property rights to the same extent as do the laws of the United States. In any event, the extent to which we can protect our trade secrets through the use of confidentiality agreements is limited, and our success will depend to a significant extent on our ability to innovate ahead of our competitors.

Our future performance depends, in part, upon our ability to continue to compete successfully worldwide.

Our industry includes large manufacturers with substantial resources to support customers worldwide. Some of our competitors are diversified companies with greater financial resources and more extensive research, engineering, manufacturing, marketing, and customer service and support capabilities than we possess. We face competition from companies whose strategy is to provide a broad array of products and services, some of which compete with the products and services that we offer. These competitors may bundle their products in a manner that may discourage customers from purchasing our products, including pricing such competitive tools significantly below our product offerings. In addition, we face competition from smaller emerging semiconductor equipment companies whose strategy is to provide a portion of the products and services that we offer, using innovative technology to sell products into specialized markets. The strength of our competitive positions in many of our existing markets is largely due to our leading technology, which is the result of continuing significant investments in product research and development. However, we may enter new markets, whether through acquisitions or new internal product development, in which

competition is based primarily on product pricing, not technological superiority. Further, some new growth markets that emerge may not require leading technologies. Loss of competitive position in any of the markets we serve, or an inability to sell our products on favorable commercial terms in new markets we may enter, could negatively affect our prices, customer orders, revenues, gross margins and market share, any of which would negatively affect our operating results and financial condition.

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Our business would be harmed if we do not receive parts sufficient in number and performance to meet our production requirements and product specifications in a timely and cost-effective manner.

We use a wide range of materials in the production of our products, including custom electronic and mechanical components, and we use numerous suppliers to supply these materials. We generally do not have guaranteed supply arrangements with our suppliers. Because of the variability and uniqueness of customers' orders, we do not maintain an extensive inventory of materials for manufacturing. Through our business interruption planning, we seek to minimize the risk of production and service interruptions and/or shortages of key parts by, among other things, monitoring the financial stability of key suppliers, identifying (but not necessarily qualifying) possible alternative suppliers and maintaining appropriate inventories of key parts. Although we make reasonable efforts to ensure that parts are available from multiple suppliers, key parts may be available only from a single supplier or a limited group of suppliers. Also, key parts we obtain from some of our suppliers incorporate the suppliers' proprietary intellectual property; in those cases we are increasingly reliant on third parties for high-performance, high-technology components, which reduces the amount of control we have over the availability and protection of the technology and intellectual property that is used in our products. In addition, if certain of our key suppliers experience liquidity issues and are forced to discontinue operations, which is a heightened risk during economic downturns, that would affect their ability to deliver parts and could result in delays for our products. Similarly, especially with respect to suppliers of high-technology components, our suppliers themselves have increasingly complex supply chains, and delays or disruptions at any stage of their supply chains may prevent us from obtaining parts in a timely manner and result in delays for our products. Our operating results and business may be adversely impacted if we are unable to obtain parts to meet our production requirements and product specifications, or if we are only able to do so on unfavorable terms. Furthermore, a supplier may discontinue production of a particular part for any number of reasons, including the supplier's financial condition or business operational decisions, which would require us to purchase, in a single transaction, a large number of such discontinued parts in order to ensure that a continuous supply of such parts remains available to our customers. Such "end-of-life" parts purchases could result in significant expenditures by us in a particular period, and ultimately any unused parts may result in a significant inventory write-off in a future period, either of which could have a material and adverse impact on our financial condition and results of operations for the applicable periods.

If we fail to operate our business in accordance with our business plan, our operating results, business and stock price may be significantly and adversely impacted.

We attempt to operate our business in accordance with a business plan that is established annually, revised frequently (generally quarterly), and reviewed by management even more frequently (at least monthly). Our business plan is developed based on a number of factors, many of which require estimates and assumptions, such as our expectations of the economic environment, future business levels, our customers' willingness and ability to place orders, lead-times, and future revenue and cash flow. Our budgeted operating expenses, for example, are based in part on our future revenue expectations. However, our ability to achieve our anticipated revenue levels is a function of numerous factors, including the volatile and cyclical nature of our primary industry, customer order cancellations, macroeconomic changes, operational matters regarding particular agreements, our ability to manage customer deliveries and resources for the installation and acceptance of our products (for products where customer acceptance is required before we can recognize revenue from such sales), our ability to manage delays or accelerations by customers in taking deliveries and the acceptance of our products (for products where customer acceptance is required before we can recognize revenue from such sales), our ability to operate our business and sales processes effectively, and a number of the other risk factors set forth in this Item 1A.

Because our expenses are in most cases relatively fixed in the short term, any revenue shortfall below expectations could have an immediate and significant adverse effect on our operating results. Similarly, if we fail to manage our expenses effectively or otherwise fail to maintain rigorous cost controls, we could experience greater than anticipated expenses during an operating period, which would also negatively affect our results of operations. If we fail to operate our business consistent with our business plan, our operating results in any period may be significantly and adversely impacted. Such an outcome could cause customers, suppliers or investors to view us as less stable, or could cause us to fail to meet financial analysts' revenue or earnings estimates, any of which could have a material adverse impact on

our business, financial condition or stock price.

In addition, our management is constantly striving to balance the requirements and demands of our customers with the availability of resources, the need to manage our operating model and other factors. In furtherance of those efforts, we often must exercise discretion and judgment as to the timing and prioritization of manufacturing, deliveries, installations and payment scheduling. Any such decisions may impact our ability to recognize revenue, including the fiscal period during which such revenue may be recognized, with respect to such products, which could have a material adverse effect on our business, financial condition or stock price.

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There can be no assurance that we will continue to declare cash dividends at all or in any particular amounts.

Our Board of Directors first instituted a quarterly dividend during the fiscal year ended June 30, 2005. Since that time, we have announced a number of increases in the amount of our quarterly dividend level. We intend to continue to pay quarterly dividends subject to capital availability and periodic determinations by our Board of Directors that cash dividends are in the best interest of our stockholders and are in compliance with all laws and agreements applicable to the declaration and payment of cash dividends by us. Future dividends may be affected by, among other factors: our views on potential future capital requirements for investments in acquisitions and the funding of our research and development; legal risks; stock repurchase programs; changes in federal and state income tax laws or corporate laws; and changes to our business model. Our dividend payments may change from time to time, and we cannot provide assurance that we will continue to declare dividends at all or in any particular amounts. A reduction in our dividend payments could have a negative effect on our stock price.

There are risks associated with our outstanding indebtedness.

As of June 30, 2014, we had $750 million aggregate principal amount of outstanding indebtedness represented by our senior notes that will mature in 2018, and we may incur additional indebtedness in the future. Our ability to pay interest and repay the principal for our indebtedness is dependent upon our ability to manage our business operations and the other risk factors discussed in this section. There can be no assurance that we will be able to manage any of these risks successfully.

In addition, changes by any rating agency to our outlook or credit rating could negatively affect the value and liquidity of both our debt and equity securities. Factors that can affect our credit rating include changes in our operating performance, the economic environment, conditions in the semiconductor and semiconductor equipment industries, our financial position, and changes in our business strategy.

In certain circumstances involving a change of control followed by a downgrade of the rating of our senior notes, we will be required to make an offer to repurchase the senior notes at a purchase price equal to 101% of the aggregate principal amount of the notes repurchased, plus accrued and unpaid interest. We cannot make any assurance that we will have sufficient financial resources at such time or will be able to arrange financing to pay the repurchase price of the senior notes. Our ability to repurchase the senior notes in such event may be limited by law, by the indenture associated with the senior notes, or by the terms of other agreements to which we may be party at such time. If we fail to repurchase the senior notes as required by the indenture, it would constitute an event of default under the indenture governing the senior notes which, in turn, may also constitute an event of default under other of our obligations.

We are exposed to risks related to our commercial terms and conditions, including our indemnification of third parties, as well as the performance of our products.

Although our standard commercial documentation sets forth the terms and conditions that we intend to apply to commercial transactions with our business partners, counterparties to such transactions may not explicitly agree to our terms and conditions. In situations where we engage in business with a third party without an explicit master agreement regarding the applicable terms and conditions, or where the commercial documentation applicable to the transaction is subject to varying interpretations, we may have disputes with those third parties regarding the applicable terms and conditions of our business relationship with them. Such disputes could lead to a deterioration of our commercial relationship with those parties, costly and time-consuming litigation, or additional concessions or obligations being offered by us to resolve such disputes, or could impact our revenue or cost recognition. Any of these outcomes could materially and adversely affect our business, financial condition and results of operations.

In addition, in our commercial agreements, from time to time in the normal course of business we indemnify third parties with whom we enter into contractual relationships, including customers and lessors, with respect to certain matters. We have agreed, under certain conditions, to hold these third parties harmless against specified losses, such as those arising from a breach of representations or covenants, other third party claims that our products when used for their intended purposes infringe the intellectual property rights of such other third parties, or other claims made against certain parties. We may be compelled to enter into or accrue for probable settlements of alleged indemnification obligations, or we may be subject to potential liability arising from our customers' involvements in legal disputes. In addition, notwithstanding the provisions related to limitations on our liability that we seek to include in our business agreements, the counterparties to such agreements may dispute our interpretation or application of

such provisions, and a court of law may not interpret or apply such provisions in our favor, any of which could result in an obligation for us to pay material damages to third parties and engage in costly legal proceedings. It is difficult to determine the maximum potential amount of liability under any indemnification obligations, whether or not asserted, due to our limited history of prior indemnification claims and the unique facts and circumstances that are likely to be involved in any particular claim. Our business, financial condition and results of operations in a reported fiscal period could be materially and adversely affected if we expend significant amounts in defending or settling any purported claims, regardless of their merit or outcomes.

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We are also exposed to potential costs associated with unexpected product performance issues. Our products and production processes are extremely complex and thus could contain unexpected product defects, especially when products are first introduced. Unexpected product performance issues could result in significant costs being incurred by us, including increased service or warranty costs, providing product replacements for (or modifications to) defective products, litigation related to defective products, reimbursement for damages caused by our products, product recalls, or product write-offs or disposal costs. These costs could be substantial and could have an adverse impact upon our business, financial condition and operating results. In addition, our reputation with our customers could be damaged as a result of such product defects, which could reduce demand for our products and negatively impact our business.

Furthermore, we occasionally enter into volume purchase agreements with our larger customers, and these agreements may provide for certain volume purchase incentives, such as credits toward future purchases. We believe that these arrangements are beneficial to our long-term business, as they are designed to encourage our customers to purchase higher volumes of our products. However, these arrangements could require us to recognize a reduced level of revenue for the products that are initially purchased, to account for the potential future credits or other volume purchase incentives. As a result, these volume purchase arrangements, while expected to be beneficial to our business over time, could materially and adversely affect our results of operations in near-term periods, including the revenue we can recognize on product sales and therefore our gross margins.

In addition, we may in limited circumstances enter into agreements that contain other types of customer-specific pricing, discount, rebate or credit commitments offered by us, which may adversely impact our revenues, margins or financial results. Furthermore, we may give these customers limited audit or inspection rights to enable them to confirm that we are complying with these commitments. If a customer elects to exercise its audit or inspection rights, we may be required to expend significant resources to support the audit or inspection, as well as to defend or settle any dispute with a customer that could potentially arise out of such audit or inspection. To date, we have made no accruals in our consolidated financial statements for this contingency. While we have not in the past incurred significant expenses for resolving disputes regarding these types of commitments, we cannot make any assurance that we will not incur any such liabilities in the future. One significant customer recently exercised its audit rights, but we cannot predict the outcome of that audit at this time. Our business, financial condition and results of operations in a reported fiscal period could be materially and adversely affected if we expend significant amounts in supporting an audit or inspection, or defending or settling any purported claims, regardless of their merit or outcomes.

There are risks associated with our receipt of government funding for research and development.

We are exposed to additional risks related to our receipt of external funding for certain strategic development programs from various governments and government agencies, both domestically and internationally. Governments and government agencies typically have the right to terminate funding programs at any time in their sole discretion, or a project may be terminated by mutual agreement if the parties determine that the project's goals or milestones are not being achieved, so there is no assurance that these sources of external funding will continue to be available to us in the future. In addition, under the terms of these government grants, the applicable granting agency typically has the right to audit the costs that we incur, directly and indirectly, in connection with such programs. Any such audit could result in modifications to, or even termination of, the applicable government funding program. For example, if an audit were to identify any costs as being improperly allocated to the applicable program, those costs would not be reimbursed, and any such costs that had already been reimbursed would have to be refunded. We do not know the outcome of any future audits. Any adverse finding resulting from any such audit could lead to penalties (financial or otherwise), termination of funding programs, suspension of payments, fines and suspension or prohibition from receiving future government funding from the applicable government or government agency, any of which could adversely impact our operating results, financial condition and ability to operate our business.

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We have recorded significant restructuring, inventory write-off and asset impairment charges in the past and may do so again in the future, which could have a material negative impact on our business.

During the fiscal year ended June 30, 2009, we recorded material restructuring charges of $38.7 million related to our global workforce reduction, large excess inventory write-offs of $85.6 million, and material impairment charges of $446.7 million related to our goodwill and purchased intangible assets. If we again encounter challenging economic conditions, we may implement additional cost reduction actions, discontinue certain business operations or make other organizational changes, which would require us to take additional, potentially material, restructuring charges related to, among other things, employee terminations or exit costs. We may also be required to write-off additional inventory if our product build plans or usage of service inventory decline. Also, as our lead times from suppliers increase (due to the increasing complexity of the parts and components they provide) and the lead times demanded by our customers decrease (due to the time pressures they face when introducing new products or technology or bringing new facilities into production), we may be compelled to increase our commitments, and therefore our risk exposure, to inventory purchases to meet our customers' demands in a timely manner, and that inventory may need to be written-off if demand for the underlying product declines for any reason. Such additional write-offs could constitute material charges.

As noted above, we recorded a material charge during the fiscal year ended June 30, 2009 related to the impairment of our goodwill and purchased intangible assets. Goodwill represents the excess of costs over the net fair value of net assets acquired in a business combination. Goodwill is not amortized, but is instead tested for impairment at least annually in accordance with authoritative guidance for goodwill. Purchased intangible assets with estimable useful lives are amortized over their respective estimated useful lives using the straight-line method, and are reviewed for impairment in accordance with authoritative guidance for long-lived assets. The valuation of goodwill and intangible assets requires assumptions and estimates of many critical factors, including revenue and market growth, operating cash flows, market multiples, and discount rates. A substantial decline in our stock price, or any other adverse change in market conditions, particularly if such change has the effect of changing one of the critical assumptions or estimates we previously used to calculate the value of our goodwill or intangible assets (and, as applicable, the amount of any previous impairment charge), could result in a change to the estimation of fair value that could result in an additional impairment charge.

Any such additional material charges, whether related to restructuring or goodwill or purchased intangible asset impairment, may have a material negative impact on our operating results and related financial statements.

We are exposed to risks related to our financial arrangements with respect to receivables factoring and banking arrangements.

We enter into factoring arrangements with financial institutions to sell certain of our trade receivables and promissory notes from customers without recourse. In addition, we maintain bank accounts with several domestic and foreign financial institutions, any of which may prove not to be financially viable. If we were to stop entering into these factoring arrangements, our operating results, financial condition and cash flows could be adversely impacted by delays or failures in collecting trade receivables. However, by entering into these arrangements, and by engaging these financial institutions for banking services, we are exposed to additional risks. If any of these financial institutions experiences financial difficulties or is otherwise unable to honor the terms of our factoring or deposit arrangements, we may experience material financial losses due to the failure of such arrangements or a lack of access to our funds, any of which could have an adverse impact upon our operating results, financial condition and cash flows.

We are subject to the risks of additional government actions in the event we were to breach the terms of any settlement arrangement into which we have entered.

In connection with the settlement of certain government actions and other legal proceedings related to our historical stock option practices, we have explicitly agreed as a condition to such settlements that we will comply with certain laws, such as the books and records provisions of the federal securities laws. If we were to violate any such law, we might not only be subject to the significant penalties applicable to such violation, but our past settlements may also be impacted by such violation, which could give rise to additional government actions or other legal proceedings. Any such additional actions or proceedings may require us to expend significant management time and incur significant accounting, legal and other expenses, and may divert attention and resources from the operation of our business.

These expenditures and diversions, as well as an adverse resolution of any such action or proceeding, could have a material adverse effect on our business, financial condition and results of operations.

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General Commercial, Operational, Financial and Regulatory Risks

We are exposed to risks associated with a weakening in the condition of the financial markets and the global economy.

The severe tightening of the credit markets, turmoil in the financial markets and weakening of the global economy that were experienced during the fiscal year ended June 30, 2009 contributed to slowdowns in the industries in which we operate, which slowdowns could recur or worsen if economic conditions were to deteriorate again.

The markets for semiconductors, and therefore our business, are ultimately driven by the global demand for electronic devices by consumers and businesses. Economic uncertainty frequently leads to reduced consumer and business spending, which caused our customers to decrease, cancel or delay their equipment and service orders from us in the economic slowdown during fiscal year 2009. In addition, the tightening of credit markets and concerns regarding the availability of credit that accompanied that slowdown made it more difficult for our customers to raise capital, whether debt or equity, to finance their purchases of capital equipment, including the products we sell. Reduced demand, combined with delays in our customers' ability to obtain financing (or the unavailability of such financing), has at times in the past adversely affected our product and service sales and revenues and therefore has harmed our business and operating results, and our operating results and financial condition may again be adversely impacted if economic conditions decline from their current levels.

In addition, a decline in the condition of the global financial markets could adversely impact the market values or liquidity of our investments. Our investment portfolio includes corporate and government securities, money market funds and other types of debt and equity investments. Although we believe our portfolio continues to be comprised of sound investments due to the quality and (where applicable) credit ratings and government guarantees of the underlying investments, a decline in the capital and financial markets would adversely impact the market value of our investments and their liquidity. If the market value of such investments were to decline, or if we were to have to sell some of our investments under illiquid market conditions, we may be required to recognize an impairment charge on such investments or a loss on such sales, either of which could have an adverse effect on our financial condition and operating results.

If we are unable to timely and appropriately adapt to changes resulting from difficult macroeconomic conditions, our business, financial condition or results of operations may be materially and adversely affected.

A majority of our annual revenues are derived from outside the United States, and we maintain significant operations outside the United States. We are exposed to numerous risks as a result of the international nature of our business and operations.

A majority of our annual revenues are derived from outside the United States, and we maintain significant operations outside the United States. We expect that these conditions will continue in the foreseeable future. Managing global operations and sites located throughout the world presents a number of challenges, including but not limited to:

- managing cultural diversity and organizational alignment;
- exposure to the unique characteristics of each region in the global semiconductor market, which can cause capital equipment investment patterns to vary significantly from period to period;
- periodic local or international economic downturns;
- potential adverse tax consequences, including withholding tax rules that may limit the repatriation of our earnings, and higher effective income tax rates in foreign countries where we do business;
- government controls, either by the United States or other countries, that restrict our business overseas or the import or export of semiconductor products or increase the cost of our operations;
- compliance with customs regulations in the countries in which we do business;
- tariffs or other trade barriers (including those applied to our products or to parts and supplies that we purchase);
- political instability, natural disasters, legal or regulatory changes, acts of war or terrorism in regions where we have operations or where we do business;
- fluctuations in interest and currency exchange rates. Fluctuations in currency exchange rates may adversely impact our ability to compete on price with local providers or the value of revenues we generate from our international business. Although we attempt to manage near-term currency risks through the use of hedging instruments, there can be no assurance that such efforts will be adequate;

- longer payment cycles and difficulties in collecting accounts receivable outside of the United States;
- difficulties in managing foreign distributors (including monitoring and ensuring our distributors' compliance with all applicable United States and local laws); and
- inadequate protection or enforcement of our intellectual property and other legal rights in foreign jurisdictions.

Any of the factors above could have a significant negative impact on our business and results of operations.

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We might be involved in claims or disputes related to intellectual property or other confidential information that may be costly to resolve, prevent us from selling or using the challenged technology and seriously harm our operating results and financial condition.

As is typical in the semiconductor equipment industry, from time to time we have received communications from other parties asserting the existence of patent rights, copyrights, trademark rights or other intellectual property rights which they believe cover certain of our products, processes, technologies or information. In addition, we occasionally receive notification from customers who believe that we owe them indemnification or other obligations related to intellectual property claims made against such customers by third parties. With respect to intellectual property infringement disputes, our customary practice is to evaluate such infringement assertions and to consider whether to seek licenses where appropriate. However, we cannot ensure that licenses can be obtained or, if obtained, will be on acceptable terms or that costly litigation or other administrative proceedings will not occur. The inability to obtain necessary licenses or other rights on reasonable terms could seriously harm our results of operations and financial condition. Furthermore, we may potentially be subject to claims by customers, suppliers or other business partners, or by governmental law enforcement agencies, related to our receipt, distribution and/or use of third-party intellectual property or confidential information. Legal proceedings and claims, regardless of their merit, and associated internal investigations with respect to intellectual property or confidential information disputes are often expensive to prosecute, defend or conduct; may divert management's attention and other company resources; and/or may result in restrictions on our ability to sell our products, settlements on significantly adverse terms or adverse judgments for damages, injunctive relief, penalties and fines, any of which could have a significant negative effect on our business, results of operations and financial condition. There can be no assurance regarding the outcome of future legal proceedings, claims or investigations. The instigation of legal proceedings or claims, our inability to favorably resolve or settle such proceedings or claims, or the determination of any adverse findings against us or any of our employees in connection with such proceedings or claims could materially and adversely affect our business, financial condition and results of operations, as well as our business reputation.

We are exposed to various risks related to the legal (including environmental), regulatory and tax environments in which we perform our operations and conduct our business.

We are subject to various risks related to compliance with new, existing, different, inconsistent or even conflicting laws, rules and regulations enacted by legislative bodies and/or regulatory agencies in the countries in which we operate and with which we must comply, including environmental, safety, antitrust, anti-corruption/anti-bribery, unclaimed property and export control regulations. Our failure or inability to comply with existing or future laws, rules or regulations, or changes to existing laws, rules or regulations (including changes that result in inconsistent or conflicting laws, rules or regulations), in the countries in which we operate could result in violations of contractual or regulatory obligations that may adversely affect our operating results, financial condition and ability to conduct our business. From time to time, we may receive inquiries or audit notices from governmental or regulatory bodies, or we may participate in voluntary disclosure programs, related to legal, regulatory or tax compliance matters, and these inquiries, notices or programs may result in significant financial cost (including investigation expenses, defense costs, assessments and penalties), reputational harm and other consequences that could materially and adversely affect our operating results and financial condition.

Our properties and many aspects of our business operations are subject to various domestic and international environmental laws and regulations, including those that control and restrict the use, transportation, emission, discharge, storage and disposal of certain chemicals, gases and other substances. Any failure to comply with applicable environmental laws, regulations or requirements may subject us to a range of consequences, including fines, suspension of certain of our business activities, limitations on our ability to sell our products, obligations to remediate environmental contamination, and criminal and civil liabilities or other sanctions. In addition, changes in environmental regulations (including regulations relating to climate change and greenhouse gas emissions) could require us to invest in potentially costly pollution control equipment, alter our manufacturing processes or use substitute (potentially more expensive and/or rarer) materials. Further, we use hazardous and other regulated materials that subject us to risks of strict liability for damages caused by any release, regardless of fault. We also face increasing complexity in our manufacturing, product design and procurement operations as we adjust to new and prospective

requirements relating to the materials composition of our products, including restrictions on lead and other substances and requirements to track the sources of certain metals and other materials. The cost of complying, or of failing to comply, with these and other regulatory restrictions or contractual obligations could adversely affect our operating results, financial condition and ability to conduct our business.

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In addition, we may from time to time be involved in legal proceedings or claims regarding employment, contracts, product performance, product liability, antitrust, environmental regulations, securities, unfair competition and other matters (in addition to proceedings and claims related to intellectual property matters, which are separately discussed elsewhere in this Item 1A). These legal proceedings and claims, regardless of their merit, may be time-consuming and expensive to prosecute or defend, divert management's attention and resources, and/or inhibit our ability to sell our products. There can be no assurance regarding the outcome of current or future legal proceedings or claims, which could adversely affect our operating results, financial condition and ability to operate our business.

Recent regulations related to "conflict minerals" may force us to incur additional expenses, may result in damage to our business reputation and may adversely impact our ability to conduct our business.

In August 2012, under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, the SEC adopted new requirements for companies that use certain minerals and derivative metals (referred to as "conflict minerals," regardless of their actual country of origin) in their products. Some of these metals are commonly used in electronic equipment and devices, including our products. These new requirements require companies to annually investigate, disclose and report whether or not such metals originated from the Democratic Republic of Congo or adjoining countries. Our first report was filed on June 2, 2014 for the 2013 calendar year. We have an extremely complex supply chain, with numerous suppliers (many of whom are not obligated by the new law to investigate their own supply chains) for the components and parts used in each of our products. As a result, we may incur significant costs to comply with the diligence and disclosure requirements, including costs related to determining the source of any of the relevant metals used in our products. In addition, because our supply chain is so complex, we may not be able to sufficiently verify the origin of all the relevant metals used in our products through the due diligence procedures that we implement, which may harm our business reputation. Though we do not anticipate that our customers will need to know our conflict mineral status to satisfy their own SEC reporting obligations (if any), we may also face difficulties in satisfying customers if they nonetheless require that we prove or certify that our products are "conflict free." Key components and parts that can be shown to be "conflict free" may not be available to us in sufficient quantity, or at all, or may only be available at significantly higher cost to us. If we are not able to meet customer requirements, customers may choose to disqualify us as a supplier. Any of these outcomes could adversely impact our business, financial condition or operating results.

We depend on key personnel to manage our business effectively, and if we are unable to attract, retain and motivate our key employees, our sales and product development could be harmed.

Our employees are vital to our success, and our key management, engineering and other employees are difficult to replace. We generally do not have employment contracts with our key employees. Further, we do not maintain key person life insurance on any of our employees. The expansion of high technology companies worldwide has increased demand and competition for qualified personnel. If we are unable to retain key personnel, or if we are not able to attract, assimilate and retain additional highly qualified employees to meet our needs in the future, our business and operations could be harmed.

We outsource a number of services to third-party service providers, which decreases our control over the performance of these functions. Disruptions or delays at our third-party service providers could adversely impact our operations.

We outsource a number of services, including our transportation and logistics management of spare parts and certain accounting functions, to domestic and overseas third-party service providers. While outsourcing arrangements may lower our cost of operations, they also reduce our direct control over the services rendered. It is uncertain what effect such diminished control will have on the quality or quantity of products delivered or services rendered, on our ability to quickly respond to changing market conditions, or on our ability to ensure compliance with all applicable domestic and foreign laws and regulations. In addition, many of these outsourced service providers, including certain hosted software applications that we use for confidential data storage, employ "cloud computing" technology for such storage (which refers to an information technology hosting and delivery system in which data is not stored within the user's physical infrastructure but instead is delivered to and consumed by the user as an Internet-based service). These providers' cloud computing systems may be susceptible to "cyber incidents," such as intentional cyber attacks aimed at theft of sensitive data or inadvertent cyber-security compromises, that are outside of our control. If we do not effectively develop and manage our outsourcing strategies, if required export and other governmental approvals are

not timely obtained, if our third-party service providers do not perform as anticipated or do not adequately protect our data from cyber-related security breaches, or if there are delays or difficulties in enhancing business processes, we may experience operational difficulties (such as limitations on our ability to ship products), increased costs, manufacturing or service interruptions or delays, loss of intellectual property rights or other sensitive data, quality and compliance issues, and challenges in managing our product inventory or recording and reporting financial and management information, any of which could materially and adversely affect our business, financial condition and results of operations.

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We rely upon certain critical information systems for our daily business operations. Our inability to use or access these information systems at critical points in time could unfavorably impact the timeliness and efficiency of our business operations.

Our global operations are linked by information systems, including telecommunications, the internet, our corporate intranet, network communications, email and various computer hardware and software applications. Despite our implementation of network security measures, our tools and servers are vulnerable to computer viruses, break-ins and similar disruptions from unauthorized tampering with our computer systems and tools located at customer sites, or could be subject to system failures or malfunctions for other reasons. System failures or malfunctioning, such as difficulties with our customer relationship management ("CRM") system, could disrupt our operations and our ability to timely and accurately process and report key components of our financial results. Our enterprise resource planning ("ERP") system is integral to our ability to accurately and efficiently maintain our books and records, record transactions, provide critical information to our management, and prepare our financial statements. Any disruptions or difficulties that may occur in connection with our ERP system or other systems (whether in connection with the regular operation, periodic enhancements, modifications or upgrades of such systems or the integration of our acquired businesses into such systems) could adversely affect our ability to complete important business processes, such as the evaluation of our internal control over financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act of 2002. Any such event could have an adverse effect on our business, operating results and financial condition.

Acquisitions are an important element of our strategy but, because of the uncertainties involved, we may not find suitable acquisition candidates and we may not be able to successfully integrate and manage acquired businesses. We are also exposed to risks in connection with strategic alliances into which we may enter.

In addition to our efforts to develop new technologies from internal sources, part of our growth strategy is to pursue acquisitions and acquire new technologies from external sources. As part of this effort, we may make acquisitions of, or significant investments in, businesses with complementary products, services and/or technologies. There can be no assurance that we will find suitable acquisition candidates or that acquisitions we complete will be successful. In addition, we may use equity to finance future acquisitions, which would increase our number of shares outstanding and be dilutive to current stockholders.

If we are unable to successfully integrate and manage acquired businesses or if acquired businesses perform poorly, then our business and financial results may suffer. It is possible that the businesses we have acquired, as well as businesses that we may acquire in the future, may perform worse than expected or prove to be more difficult to integrate and manage than anticipated. In addition, we may lose key employees of the acquired companies. As a result, risks associated with acquisition transactions may give rise to a material adverse effect on our business and financial results for a number of reasons, including:

- we may have to devote unanticipated financial and management resources to acquired businesses;
- the combination of businesses may cause the loss of key personnel or an interruption of, or loss of momentum in, the activities of our company and/or the acquired business;
- we may not be able to realize expected operating efficiencies or product integration benefits from our acquisitions;
- we may experience challenges in entering into new market segments for which we have not previously manufactured and sold products;
- we may face difficulties in coordinating geographically separated organizations, systems and facilities;
- the customers, distributors, suppliers, employees and others with whom the companies we acquire have business dealings may have a potentially adverse reaction to the acquisition;
- we may have to write-off goodwill or other intangible assets; and
- we may incur unforeseen obligations or liabilities in connection with acquisitions.

At times, we may also enter into strategic alliances with customers, suppliers or other business partners with respect to development of technology and intellectual property. These alliances typically require significant investments of capital and exchange of proprietary, highly sensitive information. The success of these alliances depends on various factors over which we may have limited or no control and requires ongoing and effective cooperation with our strategic partners. Mergers and acquisitions and strategic alliances are inherently subject to significant risks, and the inability to effectively manage these risks could materially and adversely affect our business, financial condition and

operating results.

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Disruption of our manufacturing facilities or other operations, or in the operations of our customers, due to earthquake, flood, other natural catastrophic events, health epidemics or terrorism could result in cancellation of orders, delays in deliveries or other business activities, or loss of customers and could seriously harm our business.

We have significant manufacturing operations in the United States, Singapore, Israel, Germany and China. In addition, our business is international in nature, with our sales, service and administrative personnel and our customers located in numerous countries throughout the world. Operations at our manufacturing facilities and our assembly subcontractors, as well as our other operations and those of our customers, are subject to disruption for a variety of reasons, including work stoppages, acts of war, terrorism, health epidemics, fire, earthquake, volcanic eruptions, energy shortages, flooding or other natural disasters. Such disruption could cause delays in, among other things, shipments of products to our customers, our ability to perform services requested by our customers, or the installation and acceptance of our products at customer sites. We cannot ensure that alternate means of conducting our operations (whether through alternate production capacity or service providers or otherwise) would be available if a major disruption were to occur or that, if such alternate means were available, they could be obtained on favorable terms.

In addition, as part of our cost-cutting actions, we have consolidated several operating facilities. Our California operations are now primarily centralized in our Milpitas facility. The consolidation of our California operations into a single campus could further concentrate the risks related to any of the disruptive events described above, such as acts of war or terrorism, earthquakes, fires or other natural disasters, if any such event were to impact our Milpitas facility. We are predominantly uninsured for losses and interruptions caused by terrorist acts and acts of war. If international political instability continues or increases, our business and results of operations could be harmed.

The threat of terrorism targeted at, or acts of war in, the regions of the world in which we do business increases the uncertainty in our markets. Any act of terrorism or war that affects the economy or the semiconductor industry could adversely affect our business. Increased international political instability in various parts of the world, disruption in air transportation and further enhanced security measures as a result of terrorist attacks may hinder our ability to do business and may increase our costs of operations. We maintain significant manufacturing and research and development operations in Israel, an area that has historically experienced a high degree of political instability, and we are therefore exposed to risks associated with future instability in that region. Such instability could directly impact our ability to operate our business (or our customers' ability to operate their businesses) in the affected region, cause us to incur increased costs in transportation, make such transportation unreliable, increase our insurance costs, and cause international currency markets to fluctuate. Such instability could also have the same effects on our suppliers and their ability to timely deliver their products. If international political instability continues or increases in any region in which we do business, our business and results of operations could be harmed. We are predominantly uninsured for losses and interruptions caused by terrorist acts and acts of war.

We self-insure certain risks including earthquake risk. If one or more of the uninsured events occurs, we could suffer major financial loss.

We purchase insurance to help mitigate the economic impact of certain insurable risks; however, certain risks are uninsurable, are insurable only at significant cost or cannot be mitigated with insurance. Accordingly, we may experience a loss that is not covered by insurance, either because we do not carry applicable insurance or because the loss exceeds the applicable policy amount or is less than the deductible amount of the applicable policy. For example, we do not currently hold earthquake insurance. An earthquake could significantly disrupt our manufacturing operations, a significant portion of which are conducted in California, an area highly susceptible to earthquakes. It could also significantly delay our research and engineering efforts on new products, much of which is also conducted in California. We take steps to minimize the damage that would be caused by an earthquake, but there is no certainty that our efforts will prove successful in the event of an earthquake. We self-insure earthquake risks because we believe this is a prudent financial decision based on our large cash reserves and the high cost and limited coverage available in the earthquake insurance market. Certain other risks are also self-insured either based on a similar cost-benefit analysis, or based on the unavailability of insurance. If one or more of the uninsured events occurs, we could suffer major financial loss.

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We are exposed to foreign currency exchange rate fluctuations. Although we hedge certain currency risks, we may still be adversely affected by changes in foreign currency exchange rates or declining economic conditions in these countries.

We have some exposure to fluctuations in foreign currency exchange rates, primarily the Euro and the Japanese Yen. We have international subsidiaries that operate and sell our products globally. In addition, an increasing proportion of our manufacturing activities are conducted outside of the United States, and many of the costs associated with such activities are denominated in foreign currencies. We routinely hedge our exposures to certain foreign currencies with certain financial institutions in an effort to minimize the impact of certain currency exchange rate fluctuations, but these hedges may be inadequate to protect us from currency exchange rate fluctuations. To the extent that these hedges are inadequate or if there are significant currency exchange rate fluctuations in currencies for which we do not have hedges in place, our reported financial results or the way we conduct our business could be adversely affected. Furthermore, if a financial counterparty to our hedges experiences financial difficulties or is otherwise unable to honor the terms of the foreign currency hedge, we may experience material financial losses.

We are exposed to fluctuations in interest rates and the market values of our portfolio investments; impairment of our investments could harm our earnings. In addition, we and our stockholders are exposed to risks related to the volatility of the market for our common stock.

Our investment portfolio primarily consists of both corporate and government debt securities that have a maximum effective maturity of three years. The longer the duration of these securities, the more susceptible they are to changes in market interest rates and bond yields. As market interest rates and bond yields increase, those securities with a lower yield-at-cost show a mark-to-market unrealized loss. We have the ability to realize the full value of all these investments upon maturity. However, an impairment of the fair market value of our investments, even if unrealized, must be reflected in our financial statements for the applicable period and may therefore have a material adverse effect on our results of operations for that period.

In addition, the market price for our common stock is volatile and has fluctuated significantly during recent years. The trading price of our common stock could continue to be highly volatile and fluctuate widely in response to various factors, including without limitation conditions in the semiconductor industry and other industries in which we operate, fluctuations in the global economy or capital markets, our operating results or other performance metrics, or adverse consequences experienced by us as a result of any of the risks described elsewhere in this Item 1A. Volatility in the market price of our common stock could cause an investor in our common stock to experience a loss on the value of their investment in us and could also adversely impact our ability to raise capital through the sale of our common stock or to use our common stock as consideration to acquire other companies.

We are exposed to risks in connection with tax and regulatory compliance audits in various jurisdictions.

We are subject to tax and regulatory compliance audits (such as related to customs or product safety requirements) in various jurisdictions, and such jurisdictions may assess additional income or other taxes, penalties, fines or other prohibitions against us. Although we believe our tax estimates are reasonable and that our products and practices comply with applicable regulations, the final determination of any such audit and any related litigation could be materially different from our historical income tax provisions and accruals related to income taxes and other contingencies. The results of an audit or litigation could have a material adverse effect on our operating results or cash flows in the period or periods for which that determination is made.

A change in our effective tax rate can have a significant adverse impact on our business.

We earn profits in, and are therefore potentially subject to taxes in, the U.S. and numerous foreign jurisdictions, including Singapore, Israel and the Cayman Islands, the countries in which we earn the majority of our non-U.S. profits. Due to economic, political or other conditions, tax rates in those jurisdictions may be subject to significant change. A number of factors may adversely impact our future effective tax rates, such as the jurisdictions in which our profits are determined to be earned and taxed; changes in the tax rates imposed by those jurisdictions; the resolution of issues arising from tax audits with various tax authorities; changes in the valuation of our deferred tax assets and liabilities; adjustments to estimated taxes upon finalization of various tax returns; increases in expenses not deductible for tax purposes, including write-offs of acquired in-process research and development and impairment of goodwill in connection with acquisitions; changes in available tax credits; changes in stock-based compensation expense; changes

in tax laws or the interpretation of such tax laws (for example, proposals for fundamental United States international tax reform); changes in generally accepted accounting principles; and the repatriation of earnings from outside the United States for which we have not previously provided for United States taxes. A change in our effective tax rate can materially and adversely impact our results from operations.

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Compliance with federal securities laws, rules and regulations, as well as NASDAQ requirements, is becoming increasingly complex, and the significant attention and expense we must devote to those areas may have an adverse impact on our business.

Federal securities laws, rules and regulations, as well as NASDAQ rules and regulations, require companies to maintain extensive corporate governance measures, impose comprehensive reporting and disclosure requirements, set strict independence and financial expertise standards for audit and other committee members and impose civil and criminal penalties for companies and their chief executive officers, chief financial officers and directors for securities law violations. These laws, rules and regulations have increased, and in the future are expected to continue to increase, the scope, complexity and cost of our corporate governance, reporting and disclosure practices, which could harm our results of operations and divert management's attention from business operations.

A change in accounting standards or practices or a change in existing taxation rules or practices (or changes in interpretations of such standards, practices or rules) can have a significant effect on our reported results and may even affect reporting of transactions completed before the change is effective.

New accounting pronouncements and taxation rules and varying interpretations of accounting pronouncements and taxation rules have occurred and will continue to occur in the future. Changes to (or revised interpretations or applications of) existing tax or accounting rules or the questioning of current or past practices may adversely affect our reported financial results or the way we conduct our business.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

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ITEM 2. PROPERTIES

Information regarding our principal properties as of June 30, 2014 is set forth below:

Location	Type	Principal Use	Square Footage	Ownership
Milpitas, CA	Office, plant and warehouse	Principal Executive Offices, Research, Engineering, Marketing, Manufacturing, Service and Sales Administration	727,302	Owned
Westwood, MA[(1)]	Office and plant	Engineering, Marketing, Manufacturing and Service	116,908	Leased
Leuven, Belgium[(1)]	Office, plant and warehouse	Engineering, Marketing and Service and Sales Administration	99,315	Owned
Shenzhen, China	Office and plant	Sales, Service and Manufacturing	33,571	Leased
Shanghai, China	Office	Research, Service and Sales Administration	41,184	Leased
Weilburg, Germany	Office and plant	Engineering, Marketing, Manufacturing, Service and Sales Administration	138,119	Leased
Chennai, India	Office			