VEECO INSTRUMENTS INC
Form 10-K
February 22, 2017
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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 December 31, 2016

OR

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

Commission file number 0-16244

VEECO INSTRUMENTS INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware	**11-2989601**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
Terminal Drive **Plainview, New York**	**11803**
(Address of Principal Executive Offices)	(Zip Code)

Registrant s telephone number, including area code:

(516) 677-0200

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

(Title of each class)	(Name of each exchange on which registered)
Common Stock, par value $0.01 per share	**The NASDAQ Stock Market**

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

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes 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 Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes 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 references 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 o	Accelerated filer x
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 Act). o Yes x No

The aggregate market value of the common stock held by non-affiliates of the registrant at July 1, 2016 (the last business day of the registrant s most recently completed second quarter) was $655,733,038 based on the closing price of $16.38 on the NASDAQ Stock Market on that date.

The number of shares of each of the registrant s classes of common stock outstanding on February 14, 2017 was 40,595,406 shares of common stock, par value $0.01 per share.

DOCUMENTS INCORPORATED BY REFERENCE

Certain portions of the definitive Proxy Statement to be used in connection with the Registrant s 2017 Annual Meeting of Stockholders are incorporated by reference into Part III of this Form 10-K.

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VEECO INSTRUMENTS INC.

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This Annual Report on Form 10-K (Form 10-K) contains certain forward-looking information relating to Veeco Instruments Inc. (together with its consolidated subsidiaries, Veeco, the Company, Registrant, we, our, or us, unless the context indicates otherwise) that is based on the b of, and assumptions made by, our management as well as information currently available to management. When used in this Form 10-K, the words believes, anticipates, expects, estimates, targets, plans, intends, will, and similar expressions relating to the future are intende forward-looking information. Discussions containing such forward-looking statements may be found in Part I. Items 1, 3, 7 and 7A hereof, as well as within this Form 10-K generally. This forward-looking information reflects our current views with respect to future events and is subject to certain risks, uncertainties, and assumptions, including with respect to our pending acquisition of Ultratech, some of which are described under the caption Risk Factors in Part I, Item 1A, and elsewhere in this Form 10-K. Should one or more of these risks or uncertainties occur, or should our assumptions prove incorrect, actual results may vary materially from the forward-looking information described in this Form 10-K as believed, anticipated, expected, estimated, targeted, planned, or similarly identified. We do not undertake any obligation to update any forward-looking statements to reflect future events or circumstances after the date of such statements.

PART I

Item 1. Business

We create process equipment that enables technologies for a cleaner and more productive world. We design, develop, manufacture, market, and support thin film equipment to meet the demands of key global trends such as improving energy efficiency, enhancing mobility, and increasing connectivity. Our equipment is used to make electronic devices which enable these trends, including light emitting diodes (LEDs), micro-electromechanical systems (MEMS), wireless devices, power electronics, hard disk drives (HDDs), and semiconductor devices. Our products are sold to semiconductor and advanced packaging device manufacturers, and we may also license our technology to our customers or partners.

We develop highly differentiated, best-in-class equipment for critical performance steps in thin film processing. Our products provide leading technology at low cost-of-ownership. Core competencies in advanced thin film technologies and decades of specialized process know-how help us stay at the forefront of these rapidly advancing industries.

Headquartered in Plainview, New York, we were organized as a Delaware corporation in 1989. We have sales and service operations across the Asia-Pacific region, Europe, and North America to address our customers needs.

Recent Developments

On February 2, 2017, Veeco and Ultratech, Inc. (Ultratech), a leading supplier of lithography, laser-processing, and inspection systems used to manufacture semiconductor devices and LEDs, signed a definitive agreement for Veeco to acquire Ultratech. The Boards of Directors of both Veeco and Ultratech have unanimously approved the transaction.

Ultratech shareholders will receive (i) $21.75 per share in cash and (ii) 0.2675 of a share of Veeco common stock for each Ultratech common share outstanding. Based on Veeco s closing stock price on February 1, 2017, the transaction consideration is valued at approximately $28.64 per Ultratech share. The implied total transaction value is approximately $815 million and the implied enterprise value is approximately $550 million, net of Ultratech s net cash balance as of December 31, 2016. The transaction is expected to close in the second calendar quarter of 2017, subject to approval by Ultratech shareholders, regulatory approvals in the United States, and other customary closing conditions.

Business Overview

We are focused on:

- Providing differentiated process equipment to address customers current production requirements and next generation product development roadmaps;

- Investing to win through focused research and development in markets that we believe provide significant growth opportunities or are at an inflection point in process equipment requirements, including LED, power semiconductor devices, and advanced packaging technologies;

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- Leveraging our sales channel and local process applications support teams to build strong strategic relationships with technology leaders;

- Expanding our portfolio to improve the performance of our systems, including spare parts, upgrades, and consumables to drive growth, reduce our customers cost of ownership, and improve customer satisfaction;

- Cross-selling our product portfolio across our broad customer base and end markets to both maximize sales opportunities and diversify our business;

- Utilizing a combination of outsourced and internal manufacturing strategies to flex manufacturing capacity through industry investment cycles without compromising quality or performance; and

- Pursuing partnerships and acquisitions to expand our product portfolio into new and adjacent markets to drive sales growth.

Markets

Our systems are used in the creation of a broad range of microelectronic components, including LEDs, MEMS, radio frequency (RF) filters, power semiconductors, thin film magnetic heads (TFMHs), and other semiconductor devices. Our customers who manufacture these devices invest in our systems to develop next generation products and deliver more efficient, cost effective, and advanced technological solutions. We operate in a cyclical business environment, and our customers buying patterns are dependent upon industry trends. Our products are sold into multiple markets, and the following discussion focuses on the trends that most influence our business within each of those markets.

Lighting, Display & Power Electronics

LED technology has existed for more than 50 years; however, commercial adoption of LEDs was limited to niche applications until the most recent decade. In the early 1990 s, researchers developed a process utilizing Gallium Nitride (GaN) that created a low cost blue LED to produce white light. With that breakthrough, the LED industry started, and the number of applications for LEDs began to expand.

Since that time, the LED industry has experienced multiple growth cycles brought on by the adoption of LED technology for consumer and commercial applications. The first wave of LED growth was driven by mobile phones, which implemented the use of LED technology for display backlighting. The LED industry experienced its second period of rapid growth as LEDs were adopted for TV display backlighting. More recently, the adoption of LEDs for solid state lighting has given rise to a third wave of demand. LED technology offers energy and cost savings opportunities in lighting, which align with the global shift toward energy efficiency initiatives.

Our metal organic chemical vapor deposition (MOCVD) technology is at the core of the manufacturing process for GaN-based LEDs. We have benefited with each growth cycle, as LED producers invest in MOCVD process equipment to capture share in these markets. Demand for our equipment has historically been cyclical in nature, influenced by multiple factors, including: macroeconomic conditions; prices for LED chips; supply and demand dynamics; and our customers manufacturing plans. However, we expect the ongoing adoption of LED lighting to drive the need for additional MOCVD capacity over the next several years.

MOCVD technology is equally important in the manufacturing of red, orange, and yellow (ROY) LEDs, which are used increasingly for fine-pitch digital signage and automotive lighting applications. For these applications, our MOCVD technology is used to deposit highly uniform Arsenic Phosphide (AsP) films which create amber and red hues. AsP MOCVD technology is also used to produce multiple other devices including infrared LEDs and vertical-cavity surface-emitting lasers (VCSELS) used for optical data communication. While the market opportunity for AsP MOCVD technology is smaller than the GaN MOCVD market for blue LEDs, we expect to also benefit from growth driven by increased adoption of LED technology for automobiles, outdoor display, signage, and other applications.

Our MOCVD technologies are also crucial in the manufacturing of GaN-on-Silicon based power electronic devices. Global demand is increasing for advanced power electronics with greater energy efficiency, smaller footprints, higher operating temperatures, faster switching capabilities, and greater reliability. These devices support many needs, including

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more efficient IT servers, electrical motors, electric vehicles, wind turbines, and photovoltaic power inverters.

While silicon-based transistors are widely used in power electronic devices today, GaN-on-Silicon based power electronics developed on MOCVD tools can potentially deliver higher performance (e.g., smaller power supply form factors, higher efficiency, and faster switching speeds). In recent years, global industry leaders in power electronics have focused on research and development (R&D) programs to commercialize this new technology. Device manufacturers will likely begin to transition from development to production of these devices over the next couple of years; we can benefit from this transition as our customers invest in process equipment to support this production ramp-up.

In addition to depositing the critical GaN layer with our MOCVD products, our Precision Surface Processing (PSP) products address multiple etch and clean steps required to manufacture these advanced power electronics and LED devices.

Advanced Packaging, MEMS & RF

Advanced Packaging includes a portfolio of wafer-level assembly technologies that enable the miniaturization and performance improvement of electronic products, such as smartphones, smartwatches, and other mobile applications. As process steps such as wet etch and cleans in Advanced Packaging have become increasingly more challenging, our PSP products have been gaining traction in this growing market segment. Demand for higher performance, increased functionality, smaller form factors, and lower power consumption in mobile devices, consumer electronics, and high performance computing is driving the adoption of advanced packaging technology. Independent Device Manufacturers (IDMs) and Outsourced Semiconductor Assembly and Test (OSAT) companies are implementing multiple advanced packaging approaches including Fan-Out Wafer Level Packaging (FO-WLP), recently deployed in high-volume manufacturing and Through Silicon Via (TSV) to enable stacked memory, 2.5D, and 3D packaging devices.

MEMS devices are used for an increasing number of applications, including accelerometers for automobile airbags, pressure sensors for medical uses, and gyroscopes for a variety of consumer products, such as gaming consoles and mobile devices. One of the fastest growing MEMS applications has been RF filters for mobile devices, driven by increasingly complex wireless standards, the exponential growth of mobile data, and carrier aggregation. In order to address these growing demands, the number of discrete RF filters in an average smartphone is expected to double from 50 to 100 by 2020. These trends are positive for us, particularly for our PSP products, where our technology is enabling some of the most challenging process steps, as well as our ion beam etch and Molecular Beam Epitaxy (MBE) products, which are used to create Bulk Acoustic Wave (BAW) and Surface Acoustic Wave (SAW) RF filters.

Data Storage

The Data Storage market involves the storage of data in electromagnetic or other forms for use by a computer or other devices, including HDDs used in large capacity storage applications. While HDDs face significant competition from flash memory, we believe that HDDs will continue to provide significant value for mass storage and will remain at the forefront of large capacity storage applications. This is especially true for data center applications where large volumes of data storage are required to serve an increasingly mobile population. The HDD manufacturing industry continues to optimize its existing manufacturing capacity to address demand. As a result, we expect future sales to be focused on implementation of new technologies as opposed to capacity expansion. Future demand for our data storage systems is unclear and sales are expected to fluctuate from quarter to quarter. Our process knowledge and magnetic materials expertise from the Data Storage market positions us well for certain front-end semiconductor and MEMS opportunities, as thin film magnetic manufacturing methods become increasingly used in these markets.

Scientific & Industrial

The Scientific and Industrial markets include advanced materials research and a broad range of manufacturing applications including high-power fiber lasers, infrared detectors, optical coatings, and extreme ultraviolet (EUV) photomasks blanks.

Our MBE systems are used by scientific research organizations and universities to drive new discoveries in the areas of materials science. MBE enables precise epitaxial crystal growth for a wide variety of materials, which supports the

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development of new performance materials used for emerging technologies. MBE technology is also used in the manufacturing of products such as high-power lasers and infrared sensors. Our tools create highly uniform Gallium-Arsenide (GaAs) or Indium-Phosphide (InPh) film layers, which are critical to the performance of these devices. Our PSP products are also used to manufacture infrared sensors.

Our Ion Beam Deposition (IBD) tools are used to produce high quality optical films for multiple applications including laser mirrors, optical filters, and anti-reflective coatings. Our tools deposit thin layers of advanced materials on various substrates to alter how light is reflected and transmitted. Our ability to precisely deposit high quality films with extremely low particulate levels make our ion beam deposition technology ideal for manufacturing defect-free EUV photomask blanks. The front-end semiconductor industry is expected to adopt EUV lithography to meet future device requirements. Future growth will depend on overall adoption of EUV technology.

System products

Metal Organic Chemical Vapor Deposition Systems

We are the world s leading supplier of MOCVD systems. MOCVD production systems are used to make GaN-based devices (such as blue and green LEDs) and AsP-based devices (such as ROY LEDs), which are used in television and computer display backlighting, general illumination, large area signage, specialty illumination, power electronics, and many other applications. Our TurboDisc® EPIK®700 GaN MOCVD system combines the industry s highest productivity and best-in-class yields with low cost of ownership, further enabling lower manufacturing costs for LED applications. In 2016, we introduced the TurboDisc K475i AsP MOCVD system, which offers best-in-class productivity and yields for ROY LEDs, infra-red LEDs, and high-efficiency triple junction photovoltaic solar cell applications. Our Propel PowerGaN MOCVD System (Propel) enables the development of highly-efficient GaN-based power electronic devices that have the potential to accelerate the industry s transition from research and development to high volume production. The Propel system offers 200mm technology and incorporates single-wafer reactor technology for outstanding film uniformity, yield, and device performance.

Precision Surface Processing Systems

Our Precision Surface Processing systems offer single wafer wet etch, clean, and surface preparation solutions which target high growth segments in advanced packaging, MEMS, LEDs, and compound semiconductor markets. The WaferStorm® platform is based on PSP s unique ImmJET technology, which provides improved performance at a lower cost of ownership than conventional wet bench-only or spray-only approaches. This highly flexible platform targets solvent based cleaning applications that require a significant level of process control and flexibility. The WaferEtch® platform provides highly uniform, selective etching with onboard end point detection for improved process control and yield in bumping applications. In addition, PSP has developed a state-of-the-art solution with the WaferEtch platform to address the requirements of TSV reveal, in which the backside of a wafer is thinned to reveal the copper interconnects. PSP s TSV technology offers a significant cost of ownership reduction compared with dry etch processing by replacing up to four separate process steps.

Ion Beam Etch and Deposition Systems

Our NEXUS® IBD systems utilize ion beam technology to deposit precise layers of thin films. IBD systems deposit high purity thin film layers and provide excellent uniformity and repeatability. Our NEXUS Ion Beam Etch (IBE) systems utilize a charged particle beam consisting of ions to etch precise, complex features. The NEXUS systems may be included on our cluster system platform to allow either parallel or sequential deposition/etch processes. These systems are used primarily by data storage and telecommunications device manufacturers in the fabrication of discrete and integrated microelectronic devices.

We also provide a broad array of ion beam sources. These technologies are applicable in the HDD industry as well as for optical coatings and other end markets. Our SPECTOR® Ion Beam Sputtering system was developed for high precision coatings and offers manufacturers state of the art optical thickness monitoring, improved productivity, and target material utilization, for cutting-edge optical interference coating applications.

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Molecular Beam Epitaxy Systems

MBE is the process of precisely depositing epitaxially-aligned atomically-thin crystalline layers, or epilayers, of elemental materials onto a substrate in an ultra-high vacuum environment. We are the leading supplier of MBE systems worldwide. Our MBE systems, sources, and components are used to develop and manufacture critical epitaxial layers in a wide variety of applications such as solar cells, high-power fiber lasers, infrared detectors, mobile phones, radar systems, and displays. For many compound semiconductors, MBE is the critical step of the fabrication process, ultimately determining device functionality and performance. We provide MBE systems and components for the production of wireless devices (e.g., power amplifiers, high electron mobility transistors, or hetero-junction bipolar transistors) and a broad array of research applications for new compound semiconductor materials. Our GENxplor® R&D MBE System is the industry s first fully-integrated MBE system for the compound semiconductor research and development market. The GENxplor MBE system creates high quality epitaxial layers on substrates up to 3 in diameter and is ideal for cutting-edge research on a wide variety of materials including gallium arsenide, nitrides, and oxides. Our GEN2000® and GEN200® production MBE systems continue to set standards for volume production of MBE-based compound semiconductor devices.

Other Deposition and Industrial Products

We make a broad array of deposition systems including Physical Vapor Deposition, Diamond-Like Carbon Deposition, and Chemical Vapor Deposition Systems. In addition, our Optium® products generally are used in back-end applications in data storage fabrication facilities where TFMHs or sliders are fabricated. This equipment includes lapping tools, which enable precise material removal within three nanometers, which is necessary for advanced TFMHs. We also manufacture tools that slice and dice wafers into row bars and TFMHs.

Sales and Service

We sell our products and services worldwide primarily through various strategically located facilities in the United States, Europe, and the Asia-Pacific region. We believe that our customer service organization is a significant factor in our success. We provide service and support on a warranty, service contract, and an individual service-call basis. We believe that offering timely support creates stronger relationships with customers and provides us with a significant competitive advantage. Revenue from the sales of parts, upgrades, service, and support represented approximately 28%, 22%, and 25% of our net sales for the years ended December 31, 2016, 2015, and 2014, respectively. Parts and upgrade sales represented approximately 21%, 18%, and 21% of our net sales for those years, respectively, and service and support sales were 6%, 4%, and 4% respectively.

Customers

We sell our products to many of the world s LED, MEMS, OSAT, HDD and semiconductor manufacturers, as well as research centers and universities. We rely on certain principal customers for a significant portion of our sales. Sales to OSRAM Opto Semiconductors accounted for more than 10% of our total net sales for 2016; sales to San an Optoelectronics Co. and KAISTAR Lighting (Xiamen) Co. each accounted for more than 10% of our total net sales in 2015; sales to HC SemiTek Corp. and Seoul Viosys Co. each accounted for more than 10% of our total net sales in 2014. If any principal customer discontinues its relationship with us or suffers economic difficulties, our business prospects, financial condition, and operating results could be materially and adversely affected.

Research and Development

Our research and development functions are focused on the timely creation of new products and enhancements to existing products, both of which are necessary to maintain our competitive position. We collaborate with our customers to align our technology and product roadmaps to customer requirements. Our research and development activities take place at our facilities in St. Paul, Minnesota; Somerset, New Jersey; Plainview, New York; and Horsham, Pennsylvania.

Our research and development expenses were approximately $81.0 million, $78.5 million, and $81.2 million, or approximately 24%, 16%, and 21% of net sales for the years ended December 31, 2016, 2015, and 2014, respectively. These expenses consisted primarily of salaries, project materials, and other product development and enhancement costs.

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Suppliers

We outsource certain functions to third parties, including the manufacturing of our MOCVD systems. While we primarily rely on one supplier for the manufacturing of these systems, we maintain a minimum level of internal manufacturing capability for these systems. Refer to Item 1A, Risk Factors, for a description of risks associated with our reliance on suppliers and outsourcing partners.

Backlog

Our backlog consists of orders for which we received a firm purchase order, a customer-confirmed shipment date within twelve months, and a deposit when required. Our backlog increased to $209.2 million at December 31, 2016 from $186.0 million at December 31, 2015. During 2016, we recorded backlog adjustments of approximately $17.9 million primarily related to a partial cancellation of a prior period customer order.

Competition

In each of the markets that we serve, we face substantial competition from established competitors, some of which have greater financial, engineering, and marketing resources than we do, as well as from smaller competitors. In addition, many of our products face competition from alternative technologies, some of which are more established than those used in our products. Significant factors for customer selection of our tools include system performance, accuracy, repeatability, ease of use, reliability, cost of ownership, and technical service and support. None of our competitors compete with us across all of our product lines.

Our competitors include: Aixtron; Advanced Micro-Fabrication Equipment (AMEC); Applied Materials; Canon Anelva; DCA Instruments; Grand Plastics Technology Corporation; Lam Research; Leybold Optics; Mantis Deposition Systems; MBE Komponenten; Oerlikon; Methode Electronics; Orbotech; Oxford Instruments; Riber; Scientech; Taiyo Nippon Sanso; and Tang Optoelectronics Equipment Company (TOPEC).

Intellectual Property

Our success depends in part on our proprietary technology, and we have over 300 patents in the United States and other countries and have additional applications pending for new inventions.

We have patents and exclusive and non-exclusive licenses to patents owned by others covering certain of our products, which we believe provide us with a competitive advantage. We have a policy of seeking patents on inventions concerning new products and improvements as part of our ongoing research, development, and manufacturing activities. We believe that there is no single patent or exclusive or non-exclusive license to patents owned by others that is critical to our operations, as the success of our business depends primarily on the technical expertise, innovation, customer satisfaction, and experience of our employees.

Refer to Item 1A, Risk Factors, for a description of risks associated with intellectual property.

Employees

At December 31, 2016 we had 716 employees, of which there were 230 in manufacturing and testing, 75 in sales and marketing, 111 in service and product support, 169 in engineering and research and development, and 131 in information technology, general administration, and finance. The success of our future operations depends on our ability to recruit and retain engineers, technicians, and other highly skilled professionals who are in considerable demand. We feel that we have adequate programs in place to attract, motivate, and retain our employees. We monitor industry practices to make sure that our compensation and employee benefits remain competitive. We believe that our employee relations are good. Refer to Item 1A, Risk Factors, for a description of risks associated with employee retention and recruitment.

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Financial Information About Segments and Geographic Areas

We operate as a single reportable segment and report our financial results in four geographic regions: the United States; China; Europe, Middle East, and Africa (EMEA); and Rest of World (ROW). Refer to Note 18, Segment Reporting and Geographic Information, in the Notes to the Consolidated Financial Statements for financial data pertaining to our geographic operations. Refer to Item 1A, Risk Factors, for a description of risks relating to our geographic operations.

Available Information

Our corporate website address is www.veeco.com. All filings we make with the Securities and Exchange Commission (SEC), including our Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q, our Current Reports on Form 8-K, our proxy statements and any amendments thereto filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, are available for free in the Investor Relations section of our website as soon as reasonably practicable after they are filed with or furnished to the SEC. Our SEC filings are available to be read or copied at the SEC s Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Information about the operation of the Public Reference Room can be obtained by calling the SEC at 1-800-SEC-0330. Our filings can also be obtained for free on the SEC s website at www.sec.gov. The reference to our website address does not constitute inclusion or incorporation by reference of the information contained on our website in this Form 10-K or other filings with the SEC, and the information contained on our website is not part of this document.

Item 1A. Risk Factors

Key Risk Factors That May Impact Future Results

Stockholders should consider carefully the risk factors described below. Any of these factors, many of which are beyond our control, could materially adversely affect our business, financial condition, operating results, cash flow, and stock price.

Unfavorable market conditions may adversely affect our operating results.

Conditions of the markets in which we operate are volatile and have deteriorated significantly in many of the countries and regions in which we do business and may remain or become further depressed in the future. We have experienced and may continue to experience customer rescheduling and, to a lesser extent, cancellations of orders for our products. Adverse market conditions relative to our products could result in:

- reduced demand for our products;

- rescheduling and cancellations of orders for our products, resulting in negative backlog adjustments;
- increased price competition leading to lower margin for our products;
- increased competition from sellers of used equipment or lower-priced alternatives to our products;
- increased inventory obsolescence;
- increased uncollectable amounts due from our customers resulting in increased reserves for doubtful accounts and write-offs of accounts receivable;
- disruptions in our supply chain as we reduce our purchasing volumes and limit our contract manufacturing operations; and
- higher operating costs as a percentage of revenues.

If the markets in which we participate fail to experience a recovery or experience a further downturn, this could have a further negative impact on our sales and revenue generation, margins and operating expenses, and profitability.

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A reduction or elimination of foreign government subsidies and economic incentives may adversely affect the future order rate for our MOCVD equipment.

We generate a significant portion of our revenue in China. In recent years, the Chinese government has provided various incentives to encourage development of the LED industry, including subsidizing a significant portion of the purchase cost of MOCVD equipment. These subsidies have enabled and encouraged certain customers in this region to purchase more of our MOCVD equipment than these customers might have purchased without these subsidies. The availability of these subsidies has varied over time and may end at some point in the future. A reduction or elimination of these incentives may result in a reduction in future orders for our MOCVD equipment in this region, which could materially and adversely affect our business, financial condition, and results of operations. In addition, in an effort to promote Chinese competition, the Chinese government could impose restrictions on the receipt of these subsidies, including requirements that the purchased equipment be sourced locally.

A related risk is that many customers use or had planned to use Chinese government subsidies, in addition to other incentives from the Chinese government, to build new manufacturing facilities or to expand existing manufacturing facilities. Delays in the start-up of these facilities or the cancellation of construction plans altogether, together with other related issues pertaining to customer readiness, could adversely impact the timing of our revenue recognition, could result in order cancellations, a reduction in order backlog, and could have other negative effects on our business, financial condition, and results of operations.

The cyclicality of the industries we serve directly affects our business.

Our business depends in large part upon the capital expenditures of manufacturers in the LED, mobile communication, data storage, and other device markets. We are subject to the business cycles of these industries, the timing, length, and volatility of which are difficult to predict. These industries have historically been highly cyclical and have experienced significant economic downturns in the last decade. As a capital equipment provider, our revenue depends in large part on the spending patterns of these customers, who often delay expenditures or cancel or reschedule orders in reaction to variations in their businesses or general economic conditions. In downturns, we must be able to quickly and effectively align our costs with prevailing market conditions, as well as motivate and retain key employees. However, because a portion of our costs are fixed, our ability to reduce expenses quickly in response to revenue shortfalls may be limited. Downturns in one or more of these industries have had and will likely have a material adverse effect on our business, financial condition, and operating results. Alternatively, during periods of rapid growth, we must be able to acquire and/or develop sufficient manufacturing capacity to meet customer demand and attract, hire, assimilate, and retain a sufficient number of qualified people. We cannot give assurances that our net sales and operating results will not be adversely affected if our customers experience economic downturns or slowdowns in their businesses.

We operate in industries characterized by rapid technological change.

Each of the industries in which we operate is subject to rapid technological change. Our ability to remain competitive depends on our ability to enhance existing products and develop and manufacture new products in a timely and cost effective manner and to accurately predict technology transitions. Because new product development commitments must be made well in advance of sales, we must anticipate the future demand for products when selecting which development programs to fund and pursue. Our financial results depend to a great extent on the successful introduction of several new products, many of which require achieving increasingly stringent technical specifications. We cannot be certain that we will be successful in selecting, developing, manufacturing, and marketing new products or new technologies or in enhancing existing products. Our performance may be adversely affected if we are unable to accurately predict evolving market trends and related customer needs and to effectively allocate our resources among new and existing products and technologies.

We are also exposed to potential risks associated with unexpected product performance issues. Our product designs and manufacturing processes are complex and could contain unexpected product defects, especially when products are first introduced. Unexpected product performance issues could result in significant costs and damages, including increased service and warranty expenses, the need to provide product replacements or modifications, reimbursement for damages caused by our products, product recalls, related litigation, and product write-offs and disposal costs. These costs could be

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substantial and our reputation could be harmed, resulting in reduced demand for our products and could have a negative effect on our business, financial condition, and results of operations.

We have a concentrated customer base, located primarily in a limited number of regions, which operate in highly concentrated industries.

Our customer base continues to be highly concentrated. Orders from a relatively limited number of customers have accounted for, and likely will continue to account for, a substantial portion of our net sales, which may lead customers to demand pricing and other terms less favorable to us. Our five largest customers accounted for 39% of our total net sales in 2016. Customer consolidation activity involving some of our largest customers could result in an even greater concentration of our sales in the future. Management changes at key customer accounts could result in a loss of future sales due to vendor preferences or other reasons and may introduce new challenges in managing customer relationships.

If a principal customer discontinues its relationship with us or suffers economic setbacks, our business, financial condition, and operating results could be materially and adversely affected. Our ability to increase sales in the future will depend in part upon our ability to obtain orders from new customers. We cannot be certain that we will be able to do so. In addition, because a relatively small number of large manufacturers, many of whom are our customers, dominate the industries in which they operate, it may be especially difficult for us to replace these customers if we lose their business. A significant portion of orders in our backlog are orders from our principal customers.

In addition, a substantial investment is required by customers to install and integrate capital equipment into a production line. As a result, once a manufacturer has selected a particular vendor s capital equipment, we believe that the manufacturer generally relies upon that equipment for the specific production line application and frequently will attempt to consolidate its other capital equipment requirements with the same vendor. Accordingly, if a customer selects a competitor s product over ours, we could experience difficulty selling to that customer for a significant period of time.

Furthermore, we do not have long-term contracts with our customers. As a result, our agreements with our customers do not provide any assurance of future sales, and we are exposed to competitive price pressure on each new order we attempt to obtain. Our failure to obtain new sales orders from new or existing customers would have a negative impact on our results of operations.

Our customer base is also highly concentrated in terms of geography, and the majority of our sales are to customers located in a limited number of countries. In 2016, 26% of our total net sales were to customers located in China. Dependence upon sales emanating from a limited number of regions increases our risk of exposure to local difficulties and challenges, such as those associated with regional economic downturns, political instability, fluctuating currency exchange rates, natural disasters, social unrest, pandemics, terrorism, or acts of war. Our reliance upon customer demand arising primarily from a limited number of countries could materially adversely impact our future results of operations.

We face significant competition.

We face significant competition throughout the world, which may increase as certain markets in which we operate continue to evolve. Some of our competitors have greater financial, engineering, manufacturing, and marketing resources than us. Other competitors are located in regions with lower labor costs and other reduced costs of operation. In addition, our ability to compete in foreign countries against local manufacturers may be hampered by nationalism, social attitudes, laws, regulations, and policies within such countries that favor local companies over U.S. companies or that are otherwise designed to promote the development and growth of local competitors. Furthermore, we face competition from smaller emerging equipment companies whose strategy is to provide a portion of the products and services we offer, with a focused approach on innovative technology for specialized markets. New product introductions or enhancements by us or our competitors could cause a decline in sales or loss of market acceptance of our existing or prior generation products. Increased competitive pressure could also lead to intensified price competition resulting in lower margins. Our failure to compete successfully with these other companies would seriously harm our business.

To remain competitive, we may enter into strategic alliances with customers, suppliers, and other third parties to explore new market opportunities and possible technological advancements. These alliances may require significant investments of capital and other resources and often involve the exchange of sensitive confidential information. The success of these

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alliances may depend on factors over which we have limited control and will likely require ongoing cooperation and good faith efforts from our strategic partners. Strategic alliances are inherently subject to significant risks, and the inability to effectively manage these risks could materially and adversely affect our business and operating results.

The timing of our orders, shipments, and revenue recognition may cause our quarterly operating results to fluctuate significantly.

We derive a substantial portion of our net sales in any fiscal period from the sale of a relatively small number of high-priced systems. As a result, the timing of recognition of revenue for a single transaction could have a material effect on our sales and operating results for a particular fiscal period. As is typical in our industry, orders, shipments, and customer acceptances often occur during the last few weeks of a quarter. As a result, a delay of only a week or two can impact which period revenue is reported in and can cause volatility in our revenue for a given reporting period. Our quarterly results have fluctuated significantly in the past, and we expect this trend to continue. If our orders, shipments, net sales, or operating results in a particular quarter do not meet expectations, our stock price may be adversely affected.

Our sales cycle is long and unpredictable.

Historically, we have experienced long and unpredictable sales cycles (the period between our initial contact with a potential customer and the time when we recognize revenue from that customer). Our sales cycle can exceed twelve months. The timing of an order often depends on the capital expenditure budget cycle of our customers, which is completely out of our control. In addition, the time it takes us to build a product to customer specifications typically ranges from three to six months. When coupled with the fluctuating amount of time required for shipment, installation, and final acceptance, our sales cycles often vary widely, and variations in length of this period can cause further fluctuations in our operating results. As a result of our lengthy sales cycle, we may incur significant research, development, selling, general, and/or administrative expenses before we generate revenues for these products. We may never generate the anticipated revenues if a customer cancels or changes plans. Variations in the length of our sales cycle could also cause our sales and, therefore, our cash flow and results of operations to fluctuate widely from period to period.

Our backlog is subject to customer cancellation or modification which could result in decreased sales, increased inventory obsolescence, and/or liabilities to our suppliers for products no longer needed.

Customer purchase orders may be cancelled or rescheduled by the customer, sometimes with limited or no penalties, which may result in increased and/or unrecoverable costs for the Company. We adjust our backlog for such cancellations, contract modifications, and delivery delays that result in a delivery period in excess of one year, among other items. A downturn in one or more of our businesses could result in increases in order cancellations and/or postponements.

We write-off excess and obsolete inventory based on historical trends, future usage forecasts, and other factors including the consideration of the amount of backlog we have on hand. If our backlog is canceled or modified, our estimates of future product demand may prove to be inaccurate, in which case we may have understated the write-off required for excess and obsolete inventory. In the future, if we determine that our inventory is overvalued, we will be required to recognize such costs in our financial statements at the time of such determination. In addition, we place orders with our suppliers based on our customers orders. If our customers cancel their orders with us, we may not be able to cancel our orders with our suppliers or may be required to take a charge for these cancelled commitments to our suppliers. Any such charges could be material to our results of operations and financial condition.

Our failure to estimate customer demand accurately could result in inventory obsolescence, liabilities to our suppliers for products no longer needed, and/or manufacturing interruptions or delays which could affect our ability to meet customer demand.

Our business depends on our ability to accurately forecast and supply equipment, services, and related products that meet the rapidly changing technical and volume requirements of our customers, which depends in part on the timely delivery of parts, components, and subassemblies (collectively, parts) from suppliers. Uncertain worldwide economic conditions and market instabilities make it difficult for us (and our customers and our suppliers) to accurately forecast future product demand. If actual demand for our products is different than expected, we may purchase more/fewer parts than necessary or incur costs for canceling, postponing, or expediting delivery of parts. If we overestimate the demand for our products,

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excess inventory could result, which could be subject to heavy price discounting, which could become obsolete, and/or which could subject us to liabilities to our suppliers for products no longer needed. Similarly, we may be harmed in the event that our competitors overestimate the demand for their products and engage in heavy price discounting practices as a result. In addition, the volatility of demand for capital equipment increases capital, technical, and other risks for companies in our supply chain.

Furthermore, some key parts may be subject to long lead-times and/or obtainable only from a single supplier or limited group of suppliers, and some sourcing or subassembly is provided by suppliers located in countries other than the United States. We may experience significant interruptions of our manufacturing operations, delays in our ability to deliver products or services, increased costs, or customer order cancellations as a result of:

- the failure or inability of suppliers to timely deliver quality parts;
- volatility in the availability and cost of materials;
- difficulties or delays in obtaining required import or export approvals;
- information technology or infrastructure failures;
- natural disasters (such as earthquakes, tsunamis, floods, or storms); or
- other causes (such as regional economic downturns, pandemics, political instability, terrorism, or acts of war) that could result in delayed deliveries, manufacturing inefficiencies, increased costs, or order cancellations.

In addition, in the event of an unanticipated increase in demand for our products, our need to rapidly increase our business and manufacturing capacity may be limited by working capital constraints of our suppliers and may exacerbate any interruptions in our manufacturing operations and supply chain and the associated effect on our working capital. Any or all of these factors could materially and adversely affect our business, financial condition, and results of operations.

Our failure to successfully manage our outsourcing activities or failure of our outsourcing partners to perform as anticipated could adversely affect our results of operations and our ability to adapt to fluctuating order volumes.

To better align our costs with market conditions, increase the percentage of variable costs relative to total costs, and to increase productivity and operational efficiency, we have outsourced certain functions to third parties, including the manufacture of our MOCVD systems. We rely heavily on our outsourcing partners to perform their contracted functions to allow us the flexibility to adapt to changing market conditions, including periods of significantly diminished order volumes. If our outsourcing partners do not perform as required, or if our outsourcing model does not allow us to realize the intended cost savings and flexibility, our results of operations (and those of our third party providers) may be adversely affected. Disputes and possibly litigation involving third party providers could result, and we could suffer damage to our reputation. Dependence on contract manufacturing and outsourcing may also adversely affect our ability to bring new products to market. Although we attempt to select reputable providers, it is possible that one or more of these providers could fail to perform as we expect. In addition, the role of third party providers has required and will continue to require us to implement changes to our existing operations and adopt new procedures and processes for retaining and managing these providers in order to realize operational efficiencies, assure quality, and protect our intellectual property. If we do not effectively manage our outsourcing strategy or if third party providers do not perform as anticipated, we may not realize the benefits of productivity improvements, and we may experience operational difficulties, increased costs, manufacturing and/or installation interruptions or delays, inefficiencies in the structure and/or operation of our supply chain, loss of intellectual property rights, quality issues, increased product time-to-market and/or inefficient allocation of human resources, any or all of which could materially and adversely affect our business, financial condition, and results of operations.

We rely on a limited number of suppliers, some of whom are our sole source for particular components.

We currently outsource certain functions to third parties, including the manufacture of our MOCVD systems. We rely on a small number of suppliers for the manufacturing of these systems. While we maintain some level of internal manufacturing capability for these systems, the failure of our suppliers to meet their contractual obligations under our supply arrangements and our inability to make alternative arrangements or resume the manufacture of these systems

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ourselves could have a material adverse effect on our relationships with our customers and/or our business, financial condition, and results of operations.

In addition, certain of the components and sub-assemblies included in our products are obtained from a single source or a limited group of suppliers. Our inability to develop alternative sources, if necessary, could result in a prolonged interruption in supply or a significant increase in the price of one or more components, which could adversely affect our business, financial condition, and results of operations.

Our inability to attract, retain, and motivate employees could have a material adverse effect on our business.

Our success depends upon our ability to attract, retain, and motivate employees, including those in executive, managerial, engineering, and marketing positions, as well as highly skilled and qualified technical personnel and personnel to implement and monitor our financial and managerial controls and reporting systems. Attracting, retaining, and motivating such qualified personnel may be difficult due to challenging industry conditions, competition for such personnel by other technology companies, consolidations and relocations of operations, and workforce reductions, and there can be no assurance that we will be successful in recruiting or retaining key personnel. We have entered into employment agreements with certain key personnel but our inability to attract, retain, and motivate key personnel could have a material adverse effect on our business, financial condition, and results of operations.

Our acquisition strategy subjects us to risks associated with evaluating and pursuing these opportunities and integrating these businesses.

We have completed several significant acquisitions in the past, and we will consider acquisitions of, or investments in, other businesses in the future. Acquisitions involve numerous risks, many of which are unpredictable and beyond our control, including, but not limited to:

- difficulties and increased costs in integrating the personnel, operations, technologies, and products of acquired companies;

- diversion of management s attention while evaluating, pursuing, and integrating the business to be acquired;

- the inability to complete proposed transactions as anticipated, resulting in obligations to pay professional and other expenses, including any applicable termination fees;

- potential loss of key employees of acquired companies, especially if a relocation or change in responsibilities is involved;

- difficulties in managing geographically dispersed operations in a cost-effective manner;

- the unattainability of expected synergies;

- unknown, underestimated, and/or undisclosed commitments or liabilities;

- increased amortization expense relating to intangible assets; and

- other adverse effects on our business, including the potential impairment and write-down of amounts capitalized as intangible assets and goodwill as part of the acquisition, as a result of technological advancements or worse-than-expected performance by the acquired company.

Our inability to effectively manage these risks could materially and adversely affect our business, financial condition, and results of operations. In addition, if we issue equity securities to pay for an acquisition, the ownership percentage of our then-current shareholders would be reduced and the value of the shares held by these shareholders could be diluted, which could adversely affect the price of our stock. If we use cash to pay for an acquisition, the payment could significantly reduce the cash that would be available to fund our operations or other purposes.

Timing of market adoption of LED technology for general lighting is uncertain.

Our future business prospects depend largely on the market adoption of products that incorporate our technologies. Potential barriers to such adoption include higher initial costs and customer familiarity with, and substantial investment

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and know-how in, existing technologies. These barriers apply to the adoption of LED technology for general illumination applications, including residential, commercial, and street lighting markets. While the use of LED technology for general lighting has grown in recent years, challenges remain and widespread adoption (and the related demand for our products) may not occur at currently projected rates. Furthermore, the adoption of, or changes in, government policies that discourage the use of traditional lighting technologies may impact LED adoption.

Our sales to manufacturers are highly dependent on sales of consumer electronics applications, which can experience significant volatility due to seasonal and other factors and materially adversely impact our future results of operations.

The demand for LEDs, HDDs, and our other products is highly dependent on sales of consumer electronics, such as televisions and computer monitors, computers, tablets, digital video recorders, smartphones, cell phones, and other mobile devices. Manufacturers of LEDs are among our largest customers and account for a substantial portion of our revenue. Factors that could influence the levels of spending on consumer electronic products include consumer confidence, access to credit, volatility in fuel and other energy costs, conditions in the residential real estate and mortgage markets, labor and healthcare costs, and other macroeconomic factors affecting consumer spending behavior. These and other economic factors have had and could continue to have a material adverse effect on the demand for our customers products and, in turn, on our customers demand for our products and services impacting our financial condition and results of operations. Furthermore, manufacturers of LEDs have in the past overestimated their potential for market share growth. If this growth is overestimated, we may experience cancellations of orders in backlog, rescheduling of customer deliveries, obsolete inventory, and/or liabilities to our suppliers for products no longer needed.

In addition, the demand for some of our customers products can be even more volatile and unpredictable due to the possibility of competing technologies, such as flash memory as an alternative to HDDs. Unpredictable fluctuations in demand for our customers products or rapid shifts in demand from our customers products to alternative technologies could materially adversely impact our future results of operations.

Our operating results have been, and may continue to be, adversely affected by tightening credit markets.

As a global company with worldwide operations, we are subject to volatility and adverse consequences associated with economic downturns in different parts of the world. In the event of a downturn, many of our customers may delay or further reduce their purchases of our products and services. If negative conditions in the credit markets prevent our customers from obtaining credit or necessary financing, product orders in these channels may decrease, which could result in lower revenue. In addition, we may experience cancellations of orders in backlog, rescheduling of customer deliveries, and pricing pressures. If our suppliers face challenges in obtaining credit, in selling their products, or otherwise in operating their businesses, they may become unable to continue to offer the materials we use to manufacture our products, which could impair our operations.

In addition, we finance some of our sales through trade credit. In addition to ongoing credit evaluations of our customers financial condition, we seek to mitigate our credit risk by obtaining deposits and/or letters of credit on certain of our sales arrangements. We could suffer significant losses if a customer whose accounts receivable we have not secured fails or is otherwise unable to pay us, or if financial institutions providing letters of credit become insolvent. A significant loss in collections on our accounts receivable would have a negative impact on our financial condition and results of operations.

We are exposed to the risks of operating a global business, including the need to obtain export licenses for certain of our shipments and political risks in the countries we operate.

Most of our sales are to customers located outside of the United States. We expect sales from non-U.S. markets to continue to represent a significant portion of our sales in the future. Our non-U.S. sales and operations are subject to risks inherent in conducting business outside the United States, many of which are outside our control, including:

- difficulties in managing a global enterprise, including staffing, managing distributors and representatives, and repatriating cash in a tax efficient manner;

- regional economic downturns, varying foreign government support, and unstable political environments;

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- political and social attitudes, laws, rules, regulations, and policies within countries that favor local companies over U.S. companies, including government-supported efforts to promote the development and growth of local competitors;

- pressures from foreign customers and foreign governments for us to increase our operations and sourcing in the foreign country;

- longer sales cycles and difficulty in collecting accounts receivable;

- multiple, conflicting, and changing governmental laws and regulations, including varying labor laws, tax regulations, import/export controls, changes to trade treaties, possible trade wars and other trade barriers and uncertainties;

- reliance on various information systems and information technology to conduct our business, which may be vulnerable to cyberattacks by third parties or breached due to employee error, misuse or other causes that could result in business disruptions, loss of or damage to intellectual property, transaction errors, processing inefficiencies, or other adverse consequences should our security practices and procedures prove ineffective; and

- different customs and ways of doing business.

These challenges, many of which are associated with sales into the Asia-Pacific region, may continue and recur again in the future, which could have a material adverse effect on our business. In addition, political instability, terrorism, acts of war, tsunamis, or epidemics in regions where we operate may adversely affect or disrupt our business and results of operations.

Furthermore, products which are either manufactured in the United States or based on U.S. technology are subject to the U.S. Export Administration Regulations (EAR) when exported to and re-exported from international jurisdictions, in addition to the local jurisdiction s export regulations applicable to individual shipments. Currently, our MOCVD deposition systems and certain of our other products are controlled for export under the EAR. Licenses or proper license exceptions may be required for the shipment of our products to certain countries. Obtaining an export license requires cooperation from the customer and customer-facility readiness and can add time to the order fulfillment process. While we have generally been successful in obtaining export licenses in a timely manner, there can be no assurance that this will continue or that an export license can be obtained in each instance where it is required. If an export license is required but cannot be obtained, then we will not be permitted to export the product to the customer. The administrative processing, potential delay, and risk of ultimately not obtaining an export license pose a particular disadvantage to us relative to our non-U.S. competitors who are not required to comply with U.S. export controls. Non-compliance with the EAR or other applicable export regulations could result in a wide range of penalties including the denial of export privileges, fines, criminal penalties, and the seizure of commodities. In the event that any export regulatory body determines that any of our shipments violate applicable export regulations, we could be fined significant sums and/or our export capabilities could be restricted, which could have a material adverse impact on our business.

We may be exposed to liabilities under the Foreign Corrupt Practices Act and any determination that we violated these or similar laws could have a material adverse effect on our business.

We are subject to the Foreign Corrupt Practices Act (FCPA) and other laws that prohibit improper payments or offers of payments to foreign government officials, as defined by the statute, for the purpose of obtaining or retaining business. In addition, many of our customers have policies limiting or prohibiting us from providing certain types or amounts of entertainment, meals, or gifts to their employees. It is our policy to implement safeguards to discourage these practices by our employees and representatives. However, our safeguards may prove to be ineffective and our employees, consultants, sales agents, or distributors may engage in conduct for which we may be held responsible. In addition, we may acquire a company that has engaged in unlawful conduct in the past, and be held responsible for this conduct through successor liability principles. Violations of the FCPA or similar laws or similar customer policies may result in severe criminal or civil sanctions or the loss of supplier privileges to a customer, and we may be subject to other liabilities, which could negatively affect our business, financial condition, and results of operations.

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We are subject to internal control evaluations and attestation requirements of Section 404 of the Sarbanes-Oxley Act and any delays or difficulty in satisfying these requirements or negative reports concerning our internal controls could adversely affect our future results of operations and our stock price.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, we must include in our Annual Report on Form 10-K a report by management on the effectiveness of our internal control over financial reporting. Ongoing compliance with this requirement is complex, costly, time-consuming, and is subject to significant judgment. If our internal controls are ineffective or if our management does not timely assess the adequacy of such internal controls, our ability to file timely and accurate periodic reports may be impeded. Any delays in filing may cause us to face the following risks and concerns, among others:

- concern on the part of our customers, partners, investors, and employees about our financial condition and filing delay status, including the potential loss of business opportunities;
- significant time and expense required to complete delayed filings and the distraction of our senior management team and board of directors as we work to complete delayed filings;
- investigations by the SEC and other regulatory authorities of the Company and/or our management;
- limitations on our ability to raise capital;
- suspension or termination of our stock listing on The NASDAQ Stock Market and the removal of our stock as a component of certain stock market indices; and
- general reputational harm.

Any or all of the foregoing could result in the commencement of stockholder lawsuits against the Company. Any such litigation, as well as any proceedings that could arise as a result of a filing delay and the circumstances which gave rise to it, may be time consuming and expensive, may divert management attention from the conduct of our business, could have a material adverse effect on our business, financial condition, and results of operations, and may expose us to costly indemnification obligations to current or former officers, directors, or other personnel, regardless of the outcome of such matters, which may not be adequately covered by insurance.

Changes in accounting pronouncements or taxation rules or practices may adversely affect our financial results.

Changes in accounting pronouncements or taxation rules or practices can have a significant effect on our reported results. New accounting pronouncements or taxation rules and varying interpretations of accounting pronouncements or taxation practices have occurred and may occur in the future. New rules, changes to existing rules, or the questioning of our current or past practices, such as those associated with our transfer pricing, may adversely affect our reported financial results.

Our income taxes can change.

We are subject to income tax on a jurisdictional or legal entity basis and significant judgment is required in certain instances to allocate our taxable income to a jurisdiction and to determine the related income tax expense and benefits. Losses in one jurisdiction generally may not be used to offset profits in other jurisdictions. As a result, changes in the mix of our earnings (or losses) between jurisdictions, among other factors, could alter our overall effective income tax rate, possibly resulting in significant tax rate increases.

We are regularly audited by various tax authorities. Income tax audit assessments or changes in tax laws, regulations, or other interpretations may result in increased tax provisions which could materially affect our operating results in the period or periods in which such determinations are made or changes occur.

In addition, our effective tax rate could increase if we determine that it is no longer more likely than not that we are able to utilize our remaining net deferred tax assets, if we are unable to generate sufficient future taxable income in certain jurisdictions, or if we are otherwise required to increase our valuation allowances against our deferred tax assets.

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We may be required to take additional impairment charges on assets.

We are required to assess goodwill and indefinite-lived intangible assets annually for impairment, or on an interim basis, whenever certain events occur or circumstances change, such as an adverse change in business climate or a decline in the overall industry, that would more likely than not reduce the fair value below its carrying amount. We are also required to test our long-lived assets, including acquired intangible assets and property, plant, and equipment, for recoverability and impairment whenever there are indicators of impairment, such as an adverse change in business climate.

As part of our long-term strategy, we may pursue future acquisitions of other companies or assets which could potentially increase our assets. Adverse changes in business conditions could materially impact our estimates of future operations and result in impairment charges to these assets. In the future, a significant decline in the market price of our common stock could indicate a decline in the fair value of our reporting unit such that goodwill becomes impaired. If our assets were impaired, our financial condition and results of operations could be materially and adversely affected.

We have indebtedness in the form of convertible senior notes which could adversely affect our financial position, prevent us from implementing our strategy, and dilute the ownership interest of our existing shareholders.

In January of 2017, we issued $345 million of 2.70% Convertible Senior Notes due 2023 (Convertible Notes). The Convertible Notes are convertible into Company common stock at an initial conversion rate of 24.98 shares of Company common stock per $1,000 principal amount of the Convertible Notes. The Company is obligated to repurchase the Convertibles Notes upon the occurrence of certain events described in the indenture relating to the Convertible Notes. The degree to which we are leveraged could have negative consequences, including but not limited to the following:

- we may be more vulnerable to economic downturns, less able to withstand competitive pressures, and less flexible in responding to changing business and economic conditions;

- our ability to obtain additional financing in the future for working capital, capital expenditures, acquisitions, general corporate, or other purposes may be limited;

- a substantial portion of our cash flows from operations in the future may be required for the payment of the principal amount of our existing indebtedness when it becomes due; and

- we may elect to make cash payments upon any conversion of the Convertible Notes, which would reduce our cash on hand.

Our ability to meet our payment obligations under the Convertible Notes depends on our ability to generate significant cash flow in the future. This, to some extent, is subject to general economic, financial, competitive, legislative, and regulatory factors, as well as other factors, that are beyond our control. There can be no assurance that our business will generate cash flow from operations, or that additional capital will be available to us, in an amount sufficient to enable us to meet our debt payment obligations and to fund other liquidity needs. If we are unable to generate sufficient cash flow to service our debt obligations, we may need to refinance or restructure our debt, sell assets, reduce or delay capital investments, or seek to raise additional capital. If we were unable to implement one or more of these alternatives, we may be unable to meet our debt payment obligations, which could have a material adverse effect on our business, results of operations, or financial condition.

Furthermore, if the Convertible Notes are converted into shares of Company common stock, the issuance of additional shares of Company common stock would dilute the ownership interest of our existing shareholders and could have a dilutive effect on our net income per share to the extent that the price of our common stock exceeds the conversion price of the Convertible Notes. In addition, any sales in the public market of our common stock issuable upon conversion of the Convertible Notes could adversely affect prevailing market prices of our common stock.

The accounting method for convertible debt securities that may be settled in cash, such as the Convertible Notes, could have a material effect on our reported financial results.

Under Accounting Standards Codification 470-20, *Debt with Conversion and Other Options*, which we refer to as ASC

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470-20, an entity must separately account for the liability and equity components of certain convertible debt instruments (such as the Convertible Notes) that may be settled entirely or partially in cash upon conversion in a manner that reflects the issuer s economic interest cost. The effect of ASC 470-20 on the accounting for the Convertible Notes is that the equity component is required to be included in the additional paid-in capital section of stockholders equity on our consolidated balance sheet, and the value of the equity component would be treated as original issue discount for purposes of accounting for the debt component of the Convertible Notes. As a result, we will be required to record a greater amount of non-cash interest expense in current periods presented as a result of the amortization of the discounted carrying value of the Convertible Notes to their face amount over the term of the Convertible Notes. We will report lower net income in our financial results because ASC 470-20 will require interest to include both the current period s amortization of the debt discount and the instrument s coupon interest, which could adversely affect our financial results, the trading price of our common stock, and the trading price of the Convertible Notes.

In addition, under certain circumstances, convertible debt instruments (such as the Convertible Notes) that may be settled entirely or partly in cash can be accounted for utilizing the treasury stock method, the effect of which is that the shares issuable upon conversion of the Convertible Notes are not included in the calculation of diluted earnings per share except to the extent that the conversion value of the Convertible Notes exceeds their principal amount. Under the treasury stock method, for diluted earnings per share purposes, the transaction is accounted for as if the number of shares of common stock that would be necessary to settle such excess, if we elected to settle such excess in shares, are issued. We cannot be sure that the accounting standards in the future will continue to permit the use of the treasury stock method or that we will continue to expect to settle the principal balance in cash. If we are unable to use the treasury stock method in accounting for the shares issuable upon conversion of the Convertible Notes, our diluted earnings per share could be adversely affected.

The price of our common shares is volatile and could decline significantly.

The stock market in general and the market for technology stocks in particular has experienced volatility. If these industry-based market fluctuations continue, the trading price of our common shares could decline significantly independent of the overall market, and shareholders could lose all or a substantial part of their investment. The market price of our common shares could fluctuate significantly in response to several factors, including, among others:

- difficult macroeconomic conditions, unfavorable geopolitical events, and general stock market uncertainties, such as those occasioned by a global liquidity crisis and a failure of large financial institutions;

- receipt of large orders or cancellations of orders for our products;

- issues associated with the performance and reliability of our products;

- actual or anticipated variations in our results of operations;

- announcements of financial developments or technological innovations;

- our failure to meet the performance estimates of investment research analysts;
- changes in recommendations and/or financial estimates by investment research analysts;
- strategic transactions, such as acquisitions, divestitures, or spin-offs;
- the dilutive impact of our Convertible Notes; and
- the occurrence of major catastrophic events.

Significant price and value fluctuations have occurred with respect to our publicly traded securities and technology companies generally. The price of our common shares is likely to be volatile in the future. In the past, securities class action litigation often has been brought against a company following periods of volatility in the market price of its securities. If similar litigation were pursued against us, it could result in substantial costs and a diversion of management s attention and resources, which could materially and adversely affect our financial condition, results of operations, and liquidity.

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The enforcement and protection of our intellectual property rights may be expensive and/or divert our limited resources.

Our success depends in part upon the protection of our intellectual property rights. We rely primarily on patent, copyright, trademark, and trade secret laws, as well as nondisclosure and confidentiality agreements and other methods, to protect our proprietary information, technologies, and processes. We own various U.S. and international patents and have additional pending patent applications relating to certain 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. In addition, our intellectual property rights may be circumvented, invalidated, or rendered obsolete by the rapid pace of technological change, or through efforts by others to reverse engineer our products or design around patents that we own. Given these limitations, our success will depend in part upon our ability to innovate ahead of our competitors.

Furthermore, policing unauthorized use of our products and technologies is difficult and time consuming, and the laws of other countries may less effectively protect our proprietary rights than U.S. laws. Our outsourcing strategy requires that we share certain portions of our technology with our outsourcing partners, which poses additional risks of infringement and trade secret misappropriation. Infringement of our rights by a third party, possibly for purposes of developing and selling competing products, could result in uncompensated lost market and revenue opportunities. Similar exposure could result in the event that former employees seek to compete with us through their unauthorized use of our intellectual property and proprietary information. We cannot be certain that the steps we have taken will prevent the misappropriation or unauthorized use of our proprietary information and technologies, particularly in foreign countries where the laws may not protect our proprietary intellectual property rights as fully or as readily as U.S. laws. Further, we cannot be certain that the laws and policies of any country, including the United States, with respect to intellectual property enforcement or licensing will not be changed in a way detrimental to the sale or use of our products or technology.

We may need to litigate to enforce our intellectual property rights, protect our trade secrets, or determine the validity and scope of proprietary rights of others. As a result of any such litigation, we could lose our ability to enforce one or more patents, incur substantial unexpected costs, and jeopardize relationships with current or prospective customers or suppliers. Any action we take to enforce our intellectual property rights could be costly and could absorb significant management time and attention, which, in turn, could negatively impact our operating results. In addition, failure to protect our trademark rights could impair our brand identity.

We may be subject to claims of intellectual property infringement by others.

From time to time we have received communications from other parties asserting the existence of patent or other rights which they believe cover certain of our products. We also periodically receive notice from customers who believe that we are required to indemnify them for damages they may incur related to infringement claims made against these customers by third parties. Our customary practice is to evaluate such assertions and to consider the available alternatives, including whether to seek a license, if 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. If we are not able to resolve a claim, negotiate a settlement of the matter, obtain necessary licenses on commercially reasonable terms, and/or successfully prosecute or defend our position, our business, financial condition, and results of operations could be materially and adversely affected.

We are subject to foreign currency exchange risks.

We are exposed to foreign currency exchange rate risks that are inherent in our anticipated sales, sales commitments, and assets and liabilities that are denominated in currencies other than the U.S. dollar. Although we attempt to mitigate our exposure to fluctuations in currency exchange rates, hedging activities may not always be available or adequate to mitigate the impact of our exchange rate exposure. Failure to sufficiently hedge or otherwise manage foreign currency risks properly could materially and adversely affect our financial condition, results of operations, and liquidity.

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If we are subject to cyber-attacks we could incur substantial costs and, if such attacks are successful, we could incur significant liabilities, reputational harm, and disruption to our operations.

We manage, store, and transmit proprietary information and sensitive data relating to our operations. We may be subject to breaches of the information technology systems we use for these purposes. Experienced computer programmers and hackers may be able to penetrate our network security and misappropriate and/or compromise our confidential information (and/or third party confidential information), create system disruptions, or cause shutdowns. Computer programmers and hackers also may be able to develop and deploy viruses, worms, and other malicious software programs that attack our systems or our products, or that otherwise exploit any security vulnerabilities.

The costs to address the foregoing security problems and security vulnerabilities before or after a cyber-incident could be significant. Our remediation efforts may not be successful and could result in interruptions, delays, or cessation of service, and loss of existing or potential customers, impeding our sales, manufacturing, distribution, or other critical functions. In addition, breaches of our security measures and the unapproved dissemination of proprietary information or sensitive data about us, our customers or other third parties, could expose us, our customers, or other third parties to a risk of loss or misuse of this information, result in litigation and potential liability for us, damage our reputation, or otherwise harm our business.

We have adopted certain measures that may have anti-takeover effects which may make an acquisition of our Company by another company more difficult.

We have adopted, and may in the future adopt, certain measures that may have the effect of delaying, deferring, or preventing a takeover or other change in control of our Company, any of which a holder of our common stock might not consider to be in the holder s best interest. These measures include:

- blank check preferred stock;
- a classified board of directors; and
- certain other certificate of incorporation and bylaws provisions.

Our board of directors has the authority to issue up to 500,000 shares of preferred stock and to fix the rights (including voting rights), preferences, and privileges of these shares (blank check preferred). Such preferred stock may have rights, including economic rights, senior to our common stock. As a result, the issuance of the preferred stock could have a material adverse effect on the price of our common stock and could make it more difficult for a third party to acquire a majority of our outstanding common stock.

Our board of directors is divided into three classes with each class serving a staggered three-year term. The existence of a classified board makes it more difficult for our shareholders to change the composition (and therefore the policies) of our board of directors in a relatively short period of time.

We have adopted certain certificate of incorporation and bylaws provisions which have anti-takeover effects. These include: (a) requiring certain actions to be taken at a meeting of shareholders rather than by written consent, (b) requiring a super-majority of shareholders to approve certain amendments to our bylaws, (c) limiting the maximum number of directors, and (d) providing that directors may be removed only for cause. These measures and those described above may have the effect of delaying, deferring, or preventing a takeover or other change in control of our Company that a holder of our common stock might consider to be in the holder s best interest.

In addition, we are subject to the provisions of Section 203 of the General Corporation Law of the State of Delaware, which prohibits a Delaware corporation from engaging in any business combination, including mergers and asset sales, with an interested stockholder (generally, a 15% or greater stockholder) for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner. The operation of Section 203 may have anti-takeover effects, which could delay, defer, or prevent a takeover attempt that a holder of our common stock might consider to be in the holder s best interest.

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Despite the above measures, an activist shareholder could undertake action to implement governance, strategic, or other changes to the Company which a holder of our common stock might not consider to be in the holder s best interest. Such activities could interfere with our ability to execute our strategic plans, be costly and time consuming, disrupt our operations, and divert the attention of management and our employees.

We are subject to risks of non-compliance with environmental, health, and safety regulations.

We are subject to environmental, health, and safety regulations in connection with our business operations, including but not limited to regulations related to the development, manufacture and use of our products, recycling and disposal of related materials, and the operation and use of our facilities and real property. Failure or inability to comply with existing or future environmental and safety regulations, which vary from jurisdiction to jurisdiction, could result in significant remediation liabilities, the imposition of fines, and/or the suspension or termination of research, development, or use of certain of our products, each of which could have a material adverse effect on our business, financial condition, and results of operations. In addition, some of our operations involve the storage, handling, and use of hazardous materials that may pose a risk of fire, explosion, or environmental release. Such events could result from acts of terrorism, natural disasters, or operational failures and may result in injury or loss of life to our employees and others, local environmental contamination, and property damage. These events might cause a temporary shutdown of an affected facility, or portion thereof, and we could be subject to penalties or claims as a result. Each of these events could have a material adverse effect on our business, financial condition, and results of operations.

Regulations related to conflict minerals will force us to incur additional expenses, may make our supply chain more complex, and may result in damage to our relationships with customers.

Under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, or the Dodd-Frank Act, the SEC adopted requirements for companies that manufacture products that contain certain minerals and metals, known as conflict minerals. These rules require public companies to perform diligence and to report annually to the SEC whether such minerals originate from the Democratic Republic of Congo and adjoining countries. The implementation of these requirements could adversely affect the sourcing, availability, and pricing of minerals we use in the manufacture of our products. In addition, we have incurred and will continue to incur additional costs to comply with the disclosure requirements, including costs related to determining the source of any of the relevant minerals used in our products. Given the complexity of our supply chain, we may not be able to ascertain the origins of these minerals used in our products through the due diligence procedures that we implement, which may harm our reputation. We may also face difficulties in satisfying customers who may require that our products be certified as conflict mineral free, which could harm our relationships with these customers and lead to a loss of revenue. These requirements could limit the pool of suppliers that can provide conflict-free minerals, and we may be unable to obtain conflict-free minerals at competitive prices, which could increase our costs and adversely affect our manufacturing operations and our profitability.

We have significant operations in locations which could be materially and adversely impacted in the event of a natural disaster, an act of terrorism, or other significant disruption.

Our operations in the United States, the Asia-Pacific region, and in other areas could be subject to natural disasters or other significant disruptions, including earthquakes, tsunamis, fires, hurricanes, floods, water shortages, other extreme weather conditions, medical epidemics, power shortages and blackouts, telecommunications failures, and other natural and manmade disasters or disruptions. In the event of such a natural disaster or other disruption, we could experience disruptions or interruptions to our operations or the operations of our suppliers, distributors, resellers or customers, destruction of facilities, and/or loss of life, all of which could materially increase our costs and expenses and materially and adversely affect our business, financial condition, and results of operations. In addition, various regions of the world in which we do business are subject to the threat of terrorism and acts of war. Any act of terrorism or war that affects the economy or the industries in which we operate could result in significant harm to us, including the loss of life and property, manufacturing and transportation delays, disruptions in our supply chain, the need to comply with enhanced security measures, and other increased costs.

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If we are unable to complete our contemplated acquisition of Ultratech, Inc., our expected financial results and the market value of our common stock could be adversely affected.

On February 2, 2017, we entered into an Agreement and Plan of Merger (the Merger Agreement) with Ultratech, Inc. to acquire all of Ultratech s issued and outstanding stock through a merger of Ultratech with one of our subsidiaries, Ulysses Acquisition Subsidiary Corp. (the merger). Consummation of the merger is subject to customary conditions to closing, including the receipt of required regulatory approvals. If any condition to the merger is not satisfied or waived, the merger will not be completed. The parties also may terminate the Merger Agreement under certain circumstances. Any or all of the preceding could jeopardize our ability to consummate the merger on the negotiated terms. To the extent the merger is not completed for any reason, we would have devoted substantial resources and management attention to the transaction without realizing the accompanying benefits expected by our management, and our financial condition and results of operations and the market value of our stock may be adversely affected. Additional risks and uncertainties associated with the merger include:

- various conditions to the closing of the merger may not be satisfied or waived;

- the inability to obtain consents from third parties who have change of control or similar clauses in their agreements with Ultratech;

- the failure to consummate the merger may result in negative publicity and a negative impression of us in the investment community;

- litigation relating to the merger could be commenced, which may prevent the merger from becoming effective within the expected time frame, if at all;

- required regulatory approvals from governmental entities may delay the merger or result in the imposition of conditions that could cause the abandonment of the merger; and

- the attention of our employees and management may be diverted due to activities related to the merger, which may harm our relationships with our employees, customers, distributors, suppliers, and other business partners, may impair our ability to continuously innovate to meet the industry inflections, and may result in a loss of or a substantial decrease in purchases by our customers.

Even if the Ultratech merger is consummated, we may not be able to successfully integrate the business of Ultratech with our own or realize the anticipated benefits of the merger.

The merger involves the combination of two companies that currently operate as independent public companies. The combined company will be required to devote significant management attention and resources to integrating our business practices with those of Ultratech. Potential difficulties that the combined company may encounter as part of the integration process include the following:

- the inability to successfully combine our business with Ultratech in a manner that permits the combined company to achieve the full revenue and cost synergies and other benefits anticipated to result from the merger;

- the loss of customers and strategic partners who may not wish to continue their relationships with the combined company;

- required regulatory approvals from governmental entities may result in limitations, additional costs or placement of restrictions on the conduct of the combined company, imposition of additional material costs on or materially limiting the revenues of the combined company following the merger;

- complexities associated with managing the combined businesses, including difficulty addressing possible differences in corporate cultures and management philosophies and the challenge of integrating complex systems, technology, networks and other assets of each of the companies in a seamless manner that minimizes any adverse impact on customers, suppliers, employees and other business partners; and

- potential unknown liabilities and unforeseen increased expenses or delays associated with the merger.

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In addition, we have operated and, until the completion of the merger will continue to operate, independently. It is possible that the integration process could result in the diversion of the attention of our management and the disruption of, or the loss of momentum in, our ongoing business. These and other factors could adversely affect our ability to maintain relationships with customers, suppliers, employees and other partners, and our ability to achieve the anticipated benefits of the merger.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our corporate headquarters and principal research and development, manufacturing, and sales and service facilities are:

Owned Facilities Location	Approximate Size (sq. ft.)	Mortgaged	Use
Plainview, NY	80,000	No	Corporate Headquarters; R&D; Manufacturing; Sales & Service
Somerset, NJ	80,000	No	R&D; Manufacturing; Sales & Service; Administration
St. Paul, MN (1)	75,000	Yes	Building for sale
St. Paul, MN (1)	43,000	Yes	R&D; Manufacturing; Sales & Service; Administration
Somerset, NJ	38,000	No	R&D; Sales & Service; Administration

(1) We consolidated our business into one building, leaving the adjacent building for sale.

Leased Facilities Location	Approximate Size (sq. ft.)	Lease Expires	Use
Kingston, NY (2)	62,000	2018	Manufacturing
Somerset, NJ	57,000	2020	Warehouse
Horsham, PA	48,900	2024	R&D; Manufacturing; Sales & Service; Administration
Fremont, CA	25,000	2018	Sales & Service
Hillsborough, NJ (2)	14,000	2017	Warehouse
Hsinchu City, Taiwan	13,000	2020	Sales & Service; Administration
Shanghai, China	9,900	2017	Sales & Service; Administration

(2) Currently in the process of consolidating manufacturing sites and expect to vacate these locations during 2017.

In addition to the above, we lease a small office in Edina, Minnesota for sales and service and our foreign sales and service subsidiaries lease office space in Germany, Malaysia, Philippines, Singapore, South Korea, Thailand, and United Kingdom. We believe our facilities are adequate to meet our current needs.

Item 3. Legal Proceedings

Veeco and certain other parties were named as defendants in a lawsuit filed on April 25, 2013 in the Superior Court of California, County of Sonoma. The plaintiff in the lawsuit, Patrick Colbus, sought unspecified damages and asserted claims that he suffered burns and other injuries while cleaning a molecular beam epitaxy system alleged to have been manufactured by Veeco. The lawsuit alleged, among other things, that the molecular beam epitaxy system was defective and that Veeco failed to adequately warn of the potential risks of the system. In April 2016, the parties settled the lawsuit, without any admission of wrongdoing. The settlement amount was fully covered by Veeco s insurance.

We are involved in various other legal proceedings arising in the normal course of our business. We do not believe that the ultimate resolution of these matters will have a material adverse effect on our consolidated financial position, results of operations, or cash flows.

Item 4. Mine Safety Disclosures

Not Applicable.

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PART II

Item 5. Market for Registrant s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Our common stock is quoted on The NASDAQ Stock Market under the symbol VECO. The 2016 and 2015 high and low closing bid prices by quarter are as follows:

	2016		2015	
	High	Low	High	Low
First Quarter	$ 20.64	$ 16.89	$ 35.12	$ 29.12
Second Quarter	19.72	15.79	31.89	28.25
Third Quarter	20.98	15.91	28.88	20.41
Fourth Quarter	29.95	19.75	21.83	18.02

On February 14, 2017, the closing price for our common stock on The NASDAQ Stock Market was $26.35, and we had 83 shareholders of record.

We have not paid dividends on our common stock. The Board of Directors will determine future dividend policy based on our consolidated results of operations, financial condition, capital requirements, and other circumstances.

Issuer Purchases of Equity Securities

On October 28, 2015, our Board of Directors authorized a program to repurchase up to $100 million of our common stock to be completed through October 28, 2017. We did not repurchase any shares during the fourth quarter of 2016. At December 31, 2016, $22.3 million of the $100 million had been utilized. Repurchases are expected to be made from time to time on the open market or in privately negotiated transactions in accordance with applicable federal securities laws. The timing and amount of future repurchases, if any, will depend upon market conditions, SEC regulations, and other factors. The repurchases would be funded using available cash balances and cash generated from operations. The program does not obligate us to acquire any particular amount of common stock and may be modified or suspended at any time at our discretion.

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Stock Performance Graph

*$100 invested on 12/31/11 in stock or index, including reinvestment of dividends. Fiscal year ending December 31.

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ASSUMES $100 INVESTED ON DEC. 31, 2011

ASSUMES DIVIDENDS REINVESTED

FISCAL YEAR ENDING DEC. 31

	2011	2012	2013	2014	2015	2016
Veeco Instruments Inc.	100.00	141.78	158.22	167.69	98.85	140.14
S&P Smallcap 600	100.00	116.33	164.38	173.84	170.41	215.67

RDG MidCap Technology	100.00	102.28	160.01	149.09	138.27	138.23

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Item 6. Selected Financial Data

The information set forth below should be read in conjunction with the Results of Operations section included in Item 7, Management s Discussion and Analysis of Financial Condition and Results of Operations.

	Year ended December 31,				
	2016(1)	2015(1)	2014(1)	2013	2012(2)
	(in thousands, except per share data)				
Statement of Operations Data:					
Net sales	$ 332,451	$ 477,038	$ 392,873	$ 331,749	$ 516,020
Operating income (loss)	(120,402)	(23,232)	(79,209)	(71,812)	37,212
Income (loss) from continuing operations, net of tax	(122,210)	(31,978)	(66,940)	(42,263)	26,529
Basic income (loss) per common share from continuing operations	(3.11)	(0.80)	(1.70)	(1.09)	0.69
Diluted income (loss) per common share from continuing operations	(3.11)	(0.80)	(1.70)	(1.09)	0.68

(1) During the fourth quarter of 2014, the Company acquired PSP. The results of operations of PSP have been included in the consolidated financial statements since that date. Refer to Note 5, Business Combinations, for additional information.

(2) Information presented for 2012 excludes the results of our discontinued operations.

	December 31,				
	2016	2015	2014	2013	2012
	(in thousands)				
Balance Sheet Data:					
Cash and cash equivalents	$ 277,444	$ 269,232	$ 270,811	$ 210,799	$ 384,557
Short-term investments	66,787	116,050	120,572	281,538	192,234
Working capital	357,999	379,904	387,254	485,452	632,197
Total assets	758,532	890,789	929,455	947,969	937,304
Long-term debt (less current installments)	826	1,193	1,533	1,847	2,138
Total equity	594,595	714,615	738,932	780,230	811,212

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

Executive Summary

We design, manufacture, and market thin film process equipment aligned to meet the demands of key global trends such as energy conservation, mobility, and the internet of things. Our equipment is primarily used to make components for electronic devices including LEDs, displays, power electronics, wireless devices, smartphones, MEMS, and HDDs. We develop highly differentiated equipment for critical performance steps in thin film processing. Our products provide leading technology at low cost-of-ownership and high volume productivity. Core competencies in advanced thin film technologies, patent protection, and decades of specialized process know-how help us stay at the forefront of these rapidly advancing markets.

Our portfolio of technology solutions sell into four key market areas: Lighting, Display & Power Electronics; Advanced Packaging, MEMS & RF; Scientific & Industrial; and Data Storage.

A majority of our sales in Lighting, Display & Power Electronics were derived from customers who manufacture LEDs. Demand for LED manufacturing equipment fluctuates quarter-to-quarter depending on various factors, including but not limited to macroeconomic conditions, customer utilization rates, demand for TVs and smartphones, and the rate of LED adoption for general lighting. Starting in the second half of 2015, weak LED demand for TV backlighting adversely impacted sales of our MOCVD equipment. TV demand began to improve in 2016, particularly for larger sized panels, which require more LEDs to backlight compared with smaller panel sizes. At the same time, we have seen an increase in LED demand for fine-pitch digital signage. These trends have led to increased demand for our MOCVD equipment and build-up in our MOCVD backlog. While we have limited long-term visibility, we believe these trends are positive for MOCVD demand in the near term. Our broad portfolio of MOCVD technologies has been developed to support the most significant industry trends, including developing mid-power LEDs, utilizing larger wafer sizes, and optimizing cost-of-ownership. Our TurboDisc® EPIK 700 GaN MOCVD system continues to win new business for blue LEDs. Our TurboDisc K475i AsP MOCVD system targets red-orange-yellow LEDs, laser diodes, and high-efficiency triple junction photovoltaic solar cells and continues to gain market momentum.

Sales into the Advanced Packaging, MEMS & RF market improved by 10% in 2016, supported by our expansion efforts in the Advanced Packaging space with our PSP product family. We continue to build positive momentum in this growing market and received orders from multiple new customers including a leading Asian OSAT supplier and a leading North American IDM. We expect to benefit as these customers invest in production capacity over the near to mid-term. Our versatile PSP product architecture is well suited for a multitude of advanced packaging process schemes, including WLFO (wafer level fan out) and 3D TSV (thru silicon via) applications.

Sales from Scientific & Industrial and Data Storage markets are generated primarily from our legacy products, which include our ion beam etch, ion beam deposition, and MBE product families. While equipment demand from each individual market may fluctuate quarter to quarter, the diverse customer base has historically provided a relatively stable revenue stream for the company on a combined basis. In 2016, increased demand for Industrial applications such as high-power laser diodes and advanced optical coatings offset softer demand from the Data Storage market for HDD capacity.

Agreement to Acquire Ultratech

On February 2, 2017, Veeco and Ultratech, Inc. (Ultratech), a leading supplier of lithography, laser-processing, and inspection systems used to manufacture semiconductor devices and LEDs, signed a definitive agreement for Veeco to acquire Ultratech. The Boards of Directors of both Veeco and Ultratech have unanimously approved the transaction.

Ultratech shareholders will receive (i) $21.75 per share in cash and (ii) 0.2675 of a share of Veeco common stock for each Ultratech common share outstanding. Based on Veeco s closing stock price on February 1, 2017, the transaction consideration is valued at approximately $28.64 per Ultratech share. The implied total transaction value is approximately $815 million and the implied enterprise value is approximately $550 million, net of Ultratech s net cash balance as of December 31, 2016. The transaction is expected to close in the second calendar quarter of 2017, subject to approval by Ultratech shareholders, regulatory approvals in the United States, and other customary closing conditions.

Results of Operations

Years Ended December 31, 2016 and 2015

The following table presents revenue and expense line items reported in our Consolidated Statements of Operations for 2016 and 2015 and the period-over-period dollar and percentage changes for those line items. Our results of operations are reported as one business segment, represented by our single operating segment.

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	For the year ended December 31,				Change	
	2016		2015		Period to Period	
			(dollars in thousands)			
Net sales	$ 332,451	100.0%	$ 477,038	100.0%	$ (144,587)	(30)%
Cost of sales	199,593	60.0%	299,797	62.8%	(100,204)	(33)%
Gross profit	132,858	40.0%	177,241	37.2%	(44,383)	(25)%
Operating expenses, net:						
Research and development	81,016	24.4%	78,543	16.5%	2,473	3%
Selling, general, and administrative	77,642	23.4%	90,188	18.9%	(12,546)	(14)%
Amortization of intangible assets	19,219	5.8%	27,634	5.8%	(8,415)	(30)%
Restructuring	5,640	1.7%	4,679	1.0%	961	21%
Asset impairment	69,520	20.9%	126	0.0%	69,394	*
Other, net	223	0.1%	(697)	(0.1)%	920	*
Total operating expenses, net	253,260	76.2%	200,473	42.0%	52,787	26%
Operating income (loss)	(120,402)	(36.2)%	(23,232)	(4.9)%	(97,170)	*
Interest income (expense), net	958	0.3%	586	0.1%	372	63%
Income (loss) before income taxes	(119,444)	(35.9)%	(22,646)	(4.7)%	(96,798)	*
Income tax expense (benefit)	2,766	0.8%	9,332	2.0%	(6,566)	70%
Income (loss) from continuing operations	$ (122,210)	(36.8)%	$ (31,978)	(6.7)%	$ (90,232)	*

* Not Meaningful

Net Sales

The following is an analysis of sales by market and by region:

	For the year ended December 31,				Change	
	2016		2015		Period to Period	
			(dollars in thousands)			
Market Analysis						
Lighting, Display & Power Electronics	$ 136,247	41.0%	$ 291,133	61.0%	$ (154,886)	(53.2)%
Advanced Packaging, MEMS & RF	68,304	20.5%	61,935	13.0%	6,369	10.3%
Scientific & Industrial	74,913	22.5%	64,297	13.5%	10,616	16.5%
Data Storage	52,987	16.0%	59,673	12.5%	(6,686)	(11.2)%
Total Sales	$ 332,451	100.0%	$ 477,038	100.0%	$ (144,587)	(30.3)%
Regional Analysis						
United States	$ 85,637	25.8%	$ 86,627	18.2%	$ (990)	(1.1)%
China	85,834	25.8%	242,442	50.8%	(156,608)	(64.6)%
EMEA	83,410	25.1%	64,019	13.4%	19,391	30.3%
Rest of World	77,570	23.3%	83,950	17.6%	(6,380)	(7.6)%
Total Sales	$ 332,451	100.0%	$ 477,038	100.0%	$ (144,587)	(30.3)%

Total sales decreased in 2016 from 2015 primarily due to reduced sales in Lighting, Display & Power Electronics driven by an oversupply of LED units in the market. The decrease was partially offset by increased sales in the Scientific & Industrial and Advanced Packaging, MEMS & RF markets. Pricing was not a significant driver of the change in total sales. By geography, sales decreased in all regions, except EMEA. The largest sales decline was in China, which was attributable to the decline in Lighting, Display & Power Electronics. We expect there will continue to be year-to-year variations in our future sales distribution across markets and geographies.

Between 2016 and 2015, orders decreased $10.2 million, or 3%, to $374.2 million. The decrease in orders was primarily attributable to a 43% decrease in orders in Advanced Packaging, MEMS & RF as well as a 27% decrease in Data Storage. These decreases were offset by increases in Lighting, Display & Power Electronics and Scientific & Industrial. In the second half of 2016, we saw some improvements in LED industry conditions. While there may continue to be year-to-year variations, we also expect Data Storage demand to generally be weak as customers make limited technology purchases.

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One of the performance measures we use as a leading indicator of the business is the book-to-bill ratio. The ratio is defined as orders recorded in a given period divided by revenue recognized in the same period. A ratio greater than one indicates we are adding orders faster than we are recognizing revenue. In 2016, the ratio was 1.1, a rise compared to 2015, when it was 0.8. Our backlog at December 31, 2016 was $209.2 million, which was higher than the ending backlog at December 31, 2015 of $186.0 million. During the year ended December 31, 2016, we recorded backlog adjustments of approximately $17.9 million primarily relating to a partial cancellation of a prior period customer order. For certain sales arrangements, we require a deposit for a portion of the sales price prior to manufacturing a system for a customer. At December 31, 2016 and 2015, we had customer deposits of $22.2 million and $28.2 million, respectively.

Gross Profit

Gross profit decreased compared to 2015 due to sharp decline in sales volume partially offset by improved gross margins. Gross margins increased despite the decline in overall sales volume principally due to favorable product and region mix of sales in the period and from the benefits associated with ongoing cost reduction activities.

Research and development

The markets we serve are characterized by continuous technological development and product innovation, and we invest in various research and development initiatives to maintain our competitive advantage and achieve our growth objectives. R&D expenses increased in 2016 compared to 2015 as a result of a reduction in external funding used to offset the cost of R&D activities, as well as the additional use of third party contractors to accelerate the development of products for the Lighting, Display & Power Electronics market. We also incurred increased depreciation of research and development-related property, plant, and equipment. These increases were partially offset by decreased personnel-related incentive compensation. We expect our research and development expenses to decline in the future as a result of our decision to significantly reduce investments in our Atomic Layer Deposition (ALD) technology.

Selling, general, and administrative

Selling, general, and administrative expenses decreased primarily due to reductions in sales commissions, and incentive compensation as a result of the decline in our financial performance as well as a decrease in personnel-related expenses as a result of our initiative to streamline operations, enhance efficiency, and reduce costs in response to market conditions.

Amortization expense

The decrease in amortization expense is a result of the impairment of the ALD technology asset as well as certain other intangible assets becoming fully amortized during the year, including the backlog and trademark/tradename assets associated with the December 2014 PSP acquisition.

Restructuring expense

During 2016, additional accruals were recognized and payments made related to previous years restructuring initiatives. In addition, during 2016, we undertook additional restructuring activities as part of our initiative to streamline operations, enhance efficiency, and reduce costs. We also significantly reduced investments in our ALD technology development. As a result of these actions, we notified approximately 75 employees of their termination and recorded restructuring charges related to these actions of $5.6 million, consisting of $4.5 million of personnel severance and related costs and $1.1 million of facility closing costs. Over the next year, we expect to incur additional restructuring costs of $2 million to $5 million as we finalize these activities.

Asset impairment

During 2016 we recorded non-cash asset impairment charges of $57.6 million as a result of our decision to significantly reduce future investments in our ALD technology development, primarily all of which related to the impairment of the intangible ALD technology asset. In addition, we recorded net non-cash impairment charges of approximately $5.7 million related to assets held for sale. We also recorded a non-cash impairment charge of $6.2 million related to the

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disposition of lab equipment that was no longer required.

Income Taxes

The 2016 income tax expense is comprised of three components: (i) $1.9 million related primarily to U.S. tax amortization of our indefinite-lived intangible assets that is not available to offset existing deferred tax assets and related valuation allowance as well as state and local income taxes, (ii) a $0.4 million tax benefit associated with the termination of the pension plan, and (iii) $1.3 million in net tax expense related primarily to our profitable foreign operations. The 2015 income tax expense is comprised of two components: (i) $1.8 million related primarily to U.S. tax amortization of our indefinite-lived intangible assets that is not available to offset existing deferred tax assets and related valuation allowance and state and local income taxes and (ii) $7.5 million in tax expense relating to our profitable foreign operations. Our 2016 and 2015 effective tax rate is different than the statutory rate primarily due to our inability to recognize our U.S. deferred tax assets on a more-likely-than-not basis with respect to the pre-tax U.S. operating losses in those years.

Years Ended December 31, 2015 and 2014

The following table presents revenue and expense line items reported in our Consolidated Statements of Operations for 2015 and 2014 and the period-over-period dollar and percentage changes for those line items. Our results of operations are reported as one business segment, represented by our single operating segment.

	For the year ended December 31,				Change	
	2015		2014		Period to Period	
	(dollars in thousands)					
Net sales	$ 477,038	100.0%	$ 392,873	100.0%	$ 84,165	21.4%
Cost of sales	299,797	62.8%	257,991	65.7%	41,806	16.2%
Gross profit	177,241	37.2%	134,882	34.3%	42,359	31.4%
Operating expenses, net:						
Research and development	78,543	16.5%	81,171	20.7%	(2,628)	(3.2)%
Selling, general and administrative	90,188	18.9%	89,760	22.8%	428	0.5%
Amortization of intangible assets	27,634	5.8%	13,146	3.3%	14,488	110.2%
Restructuring	4,679	1.0%	4,394	1.1%	285	6.5%
Asset impairment	126	0.0%	58,170	14.8%	(58,044)	*
Changes in contingent consideration		0.0%	(29,368)	(7.5)%	29,368	*
Other, net	(697)	(0.1)%	(3,182)	(0.8)%	2,485	78.1%
Total operating expenses, net	200,473	42.0%	214,091	54.5%	(13,618)	(6.4)%
Operating income (loss)	(23,232)	(4.9)%	(79,209)	(20.2)%	55,977	70.7%
Interest income, net	586	0.1%	855	0.2%	(269)	(31.5)%
Income (loss) before income taxes	(22,646)	(4.7)%	(78,354)	(19.9)%	55,708	71.1%
Income tax expense (benefit)	9,332	2.0%	(11,414)	(2.9)%	20,746	*
Net income (loss)	$ (31,978)	(6.7)%	$ (66,940)	(17.0)%	$ 34,962	52.2%

* Not meaningful

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Net Sales

The following is an analysis of sales by market and by region:

	For the year ended December 31,						Change		
	2015			2014			Period to Period		
				(dollars in thousands)					
Market Analysis									
Lighting, Display & Power Electronics	$	291,133	61.0%	$	278,551	70.9%	$	12,582	4.5%
Advanced Packaging, MEMS & RF		61,935	13.0%		11,449	2.9%		50,486	441.0%
Scientific & Industrial		64,297	13.5%		44,429	11.3%		19,868	44.7%
Data Storage		59,673	12.5%		58,444	14.9%		1,229	2.1%
Total Sales	$	477,038	100.0%	$	392,873	100.0%	$	84,165	21.4%
Regional Analysis									
United States	$	86,627	18.2%	$	44,060	11.2%	$	42,567	96.6%
China		242,442	50.8%		159,063	40.5%		83,379	52.4%
EMEA		64,019	13.4%		35,644	9.1%		28,375	79.6%
Rest of World		83,950	17.6%		154,106	39.2%		(70,156)	(45.5)%
Total Sales	$	477,038	100.0%	$	392,873	100.0%	$	84,165	21.4%

Total sales increased in 2015 from 2014 primarily due to an increase in the Advanced Packaging, MEMS & RF market which was primarily attributed to the PSP business acquired in December 2014. Sales increases were also realized in the other three markets. Pricing was not a significant driver of the change in total sales. By region, sales increased in China, EMEA, and the United States, partially offset by declines in Rest of World, principally in South Korea.

Between 2015 and 2014, orders decreased $125.6 million, or 25%, to $384.4 million. The decrease is primarily attributable to a 57% decrease in orders in Lighting, Display & Power Electronics as well as a 31% decrease in Data Storage. The pronounced decline in orders and the corresponding drawdown on backlog was driven by weakness in the LED market, which was due to lower demand for LED TV display backlighting and an economic slowdown in China. As a result, LED manufacturers delayed their MOCVD equipment investments, which impacted our full year orders in the Lighting, Display & Power Electronics market.

In 2015, the book-to-bill ratio was 0.8, a reduction compared to 2014, when it was 1.3. Our backlog at December 31, 2015 was $186.0 million, which was lower than the ending backlog at December 31, 2014 of $286.7 million. During the year ended December 31, 2015, we recorded backlog adjustments of approximately $7.7 million relating to orders that no longer met our bookings criteria.

Gross Profit

Gross margins increased from the prior year primarily due to our acquisition of PSP in 2015, which contributed to an increase in sales volume and an improved product mix, as well as negatively impacting 2014 gross margin for an inventory fair value step-up that was recorded in connection with the purchase accounting. Products sold into our Scientific & Industrial markets improved margins as well. Finally, $4.6 million of customer deposits were forfeited and recognized into revenue and gross profit in 2015, favorably impacting gross margin.

Selling, general, and administrative

Selling, general, and administrative expenses remained relatively consistent in 2015 as compared to 2014. Increases related to a full year of expenses associated with our PSP business which was acquired in December of 2014 were offset by decreases in third party professional fees and personnel related expenses.

Research and development

We focus our research and development on areas we anticipate to be high-growth. Research and development expenses

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decreased due to reductions in personnel-related expenses largely related to the 2015 restructuring, which included closing the Hyeongok-ri, South Korea facility and reducing the workforce, including 23 employees whose positions were eliminated. We also continue to selectively fund product development activities, which has resulted in reductions in spending for project materials, and, in 2015, we received a small amount of research and development funding from a collaborative arrangement. These reductions were partially offset by an increase in spending as a result of a full year of expenses associated with our PSP business.

Amortization expense

The increase in amortization expense is related to the $79.8 million in amortizable intangible assets acquired as part of our acquisition of PSP in December 2014.

Restructuring expense

In 2015, we announced the closing of our Hyeongok-ri, South Korea facility and reduced the workforce, including 23 employees whose positions were eliminated, resulting in additional restructuring costs. And in an effort to better align our cost structure with the recently observed weakness in the LED market, we reduced spending primarily through the reduction of 16 employees and 12 temporary staff toward the end of 2015. During 2014, we announced the closing of our Ft. Collins, Colorado and Camarillo, California facilities. Business activities formerly conducted at these sites have been transferred to our Plainview, New York facility.

Asset impairment

Limited asset impairment charges were observed in 2015. During 2014, based on a combination of factors, including our determination that incumbent deposition technology for flexible OLED display encapsulation had progressed to satisfy current market requirements, we believed that there were sufficient indicators that required an interim asset impairment analysis on our Atomic Layer Deposition (ALD) business. As a result of our analysis, we recorded non-cash impairment charges of $28.0 million related to goodwill and $25.9 million related to other long-lived assets, including $17.4 million related to customer relationships, $4.8 million related to in-process research and development, and $3.6 million related to certain tangible assets. In addition, during 2014, we recognized $4.3 million of asset impairments on tangible assets held for sale, including certain lab tools and a vacant building and land.

Changes in Contingent Consideration

Included in our agreement to acquire ALD in the fourth quarter of 2013 were performance milestones that could trigger contingent payments to the original selling shareholders. During the year ended December 31, 2013, the first milestone was achieved, and we paid the former shareholders $5.0 million and increased the estimated fair value of the remaining contingent payments by $0.8 million. During 2014, we determined that all of the remaining performance milestones were not met, reversed the fair value of the liability, and recorded a non-cash gain of $29.4 million.

Other, net

During 2014, we completed our plan to liquidate our subsidiary in Japan, since we moved to a distributor model to serve our customers in that region. As a result of the liquidation, we reclassified a cumulative translation gain of $3.1 million from Other Comprehensive Income to Other, net on the Consolidated Statements of Operations.

Income Taxes

The 2015 income tax expense is comprised of two components: (i) $1.8 million related primarily to U.S. tax amortization of the our indefinite-lived intangible assets that is not available to offset existing deferred tax assets and related valuation allowance as well as state and local income taxes and (ii) $7.5 million in tax expense relating to our profitable non-U.S. operations. The 2014 income tax benefit included $13.4 million in tax benefits relating to our U.S. operations offset by $2.0 million in tax expense relating to our non-U.S. operations. Our 2015 effective tax rate is different than the statutory rate primarily due to our inability to recognize our U.S. deferred tax assets on a more-likely-than-not basis with respect to current year pre-tax U.S. operating losses. Our 2014 effective tax rate is lower than the statutory rate primarily related to a

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$4.9 million tax benefit associated with our successful negotiation of an incentive tax rate in one of our non-U.S. subsidiaries, a $2.3 million reversal of uncertain tax positions as a result of concluding the 2010 IRS examination, and the recognition of only a portion of our U.S. deferred tax assets on a more-likely-than-not basis with respect to current year pre-tax operating losses. We maintain a valuation allowance on our U.S. deferred tax assets.

Liquidity and Capital Resources

Our cash and cash equivalents, short-term investments, and restricted cash are as follows:

	December 31, 2016		December 31, 2015	
	(in thousands)			
Cash and cash equivalents	$	277,444	$	269,232
Short-term investments		66,787		116,050
Total	$	344,231	$	385,282

A portion of our cash and cash equivalents is held by our subsidiaries throughout the world, frequently in each subsidiary s respective functional currency, which is typically the U.S. dollar. At December 31, 2016 and 2015, cash and cash equivalents of $149.2 million and $135.3 million, respectively, were held outside the United States. In order to fund continued international growth, it is our current intention to permanently reinvest the cash and cash equivalent balances held in China, Taiwan, and Malaysia, and our current forecasts do not require repatriation of these funds back to the United States. At December 31, 2016, we had $80.2 million in cash held outside the United States on which we may have to pay significant U.S. income taxes to repatriate. Additionally, local government regulations may restrict our ability to move cash balances under certain circumstances. We currently do not expect such regulations and restrictions to impact our ability to make acquisitions, pay vendors, or conduct operations. We believe that our projected cash flow from operations, combined with our cash and short term investments, will be sufficient to meet our projected working capital requirements, contractual obligations, and other cash flow needs for the next twelve months, including scheduled interest payments on our Convertible Notes issued in January 2017.

A summary of the cash flow activity for the year ended December 31, 2016 and 2015 is as follows:

Cash Flows from Operating Activities

	For the year ended December 31, 2016		For the year ended December 31, 2015	
	(in thousands)			
Net income (loss)	$	(122,210)	$	(31,978)
Non-cash items:				
Depreciation and amortization		32,650		39,850
Deferred income taxes		940		2,648
Share-based compensation expense		15,741		17,986
Asset impairment		69,520		126
Other		(259)		(1,218)
Changes in operating assets and liabilities		(20,226)		(11,625)

Net cash provided by (used in) operating activities	$	(23,844)	$	15,789

Net cash used in operating activities was $23.8 million in 2016 and was due to the net loss of $122.2 million plus a decline in cash flow from operating activities due to changes in operating assets and liabilities of $20.2 million, partially offset by adjustments for non-cash items of $118.6 million. The changes in operating assets and liabilities was largely attributable to a decrease in accounts payable and accrued expenses, an increase in accounts receivable, and an increase in inventories and deferred cost of sales, partially offset by a decrease in prepaid expenses and other current assets and an increase in customer deposits and deferred revenue.

Net cash provided by operating activities was $15.8 million in 2015 and was due to the net loss of $32.0 million plus

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adjustments for non-cash items of $59.4 million, offset by a decline in cash flow from operating activities due to changes in operating assets and liabilities of $11.6 million. The changes in operating assets and liabilities was largely attributable to an increase in inventory and a decrease in customer deposits and deferred revenue, offset by a decrease in accounts receivable and an increase in accounts payable and accrued expenses.

Cash Flows from Investing Activities

	For the year ended December 31, 2016		2015	
	(in thousands)			
Acquisitions of businesses, net of cash acquired	$		$	(68)
Capital expenditures		(11,479)		(13,887)
Changes in investments, net		48,907		4,403
Proceeds from sale of property, plant, and equipment		9,512		
Proceeds from sale of lab tools				3,068
Other		(230)		(594)
Net cash provided by (used in) investing activities	$	46,710	$	(7,078)

The cash provided by investing activities in 2016 was primarily attributable to net changes in investments and sales of property, plant, and equipment, partially offset by capital expenditures. The cash used by investing activities in 2015 was primarily attributable to capital expenditures, partially offset by net sales of marketable securities and sales of lab tools. As part of our efforts to streamline operations, enhance efficiency, and reduce costs, we are making certain investments in our facilities to support the consolidation activities, and, in 2017, we expect to incur capital expenditures related to these activities of $9 million to $11 million above our annual average capital spending.

Cash Flows from Financing Activities

	For the year ended December 31, 2016		2015	
	(in thousands)			
Settlement of equity awards, net of withholding taxes	$	(945)	$	(982)
Purchases of common stock		(13,349)		(8,907)
Repayments of long-term debt		(340)		(314)
Net cash used in financing activities	$	(14,634)	$	(10,203)

The cash used in financing activities for both 2016 and 2015 was primarily related to the share repurchase program, which commenced in November 2015.

Contractual Obligations and Commitments

We have commitments under certain contractual arrangements to make future payments for goods and services. These contractual arrangements secure the rights to various assets and services to be used in the future in the normal course of business. We expect to fund these contractual arrangements with cash generated from operations in the normal course of business.

The following table summarizes our contractual arrangements at December 31, 2016 and the timing and effect that those commitments are expected to have on our liquidity and cash flow in future periods. The effect of unrecognized tax benefits, which total $5.4 million at December 31, 2016, have been excluded from the table since we are unable to reasonably estimate the period of potential cash settlement, if any, with the respective tax authorities.

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	Total	Less than 1 year	1 3 years	3 5 years	More than 5 years
			Payments due by period (in thousands)		
Long-term debt	$ 1,194	$ 368	$ 826	$	$
Interest on debt	151	81	70		
Operating leases	13,873	3,281	4,192	2,795	3,605
Bank guarantees	4,970	4,970			
Purchase commitments(1)	72,627	72,627			
Total	$ 92,815	$ 81,327	$ 5,088	$ 2,795	$ 3,605

(1) Purchase commitments are primarily for inventory used in manufacturing our products. We generally do not enter into purchase commitments extending beyond one year. We have $7.8 million of offsetting supplier deposits against these purchase commitments as of December 31, 2016.

New Convertible Notes

In January 2017, we issued $345.0 million in aggregate principal amount of 2.70% convertible senior unsecured notes due 2023 (the Convertible Notes) pursuant to an indenture dated as of January 18, 2017 between Veeco and U.S. Bank National Association, as the trustee (the Offering). We received net proceeds from the Offering, after deducting fees and expenses payable by us, of approximately $336.0 million. The Convertible Notes bear interest payable semiannually in arrears on January 15 and July 15 of each year, beginning on July 15, 2017. We believe that we have sufficient capital resources and cash flows from operations to support scheduled interest payments on this debt.

Agreement to Acquire Ultratech

As described above, on February 2, 2017, Veeco and Ultratech signed a definitive agreement for Veeco to acquire Ultratech. We believe that we have sufficient capital resources and cash flows from operations to support the purchase of Ultratech.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements that have, or are reasonably likely to have, a current or future material effect on our financial condition, changes in financial condition, expenses, results of operations, liquidity, capital expenditures or capital resources other than operating leases, bank guarantees, and purchase commitments disclosed in the preceding Contractual Obligations and Commitments table.

Application of Critical Accounting Policies

Our discussion and analysis of our financial condition and results of operations are based upon our Consolidated Financial Statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements require a high degree of judgment, either in the application and interpretation of existing accounting literature or in the development of estimates that affect the reported amounts of assets, liabilities, revenues, and expenses. On an ongoing basis, we evaluate our estimates and judgments based on historical experience as well as other factors that we believe to be reasonable under the circumstances. The results of our evaluation form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. These estimates may change in the future if underlying assumptions or factors change, and actual results may differ from these estimates.

We consider the following significant accounting policies to be critical because of their complexity and the high degree of judgment involved in implementing them.

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Revenue Recognition

We recognize revenue when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the selling price is fixed or determinable, collectability is reasonably assured, and, for system sales, we have received customer acceptance or we have otherwise objectively demonstrated that the delivered system meets all of the agreed-to customer specifications. Each sales arrangement may contain commercial terms that differ from other arrangements. In addition, we frequently enter into contracts that contain multiple deliverables. Judgment is required to properly identify the accounting units of the multiple deliverable transactions and to determine the manner in which revenue should be allocated among the accounting units. Moreover, judgment is used in interpreting the commercial terms and determining when all criteria have been met in order to recognize revenue in the appropriate accounting period. The maximum revenue we recognize on a delivered element is limited to the amount that is not contingent upon the delivery of additional items. While changes in the allocation of the estimated sales price between the units of accounting will not affect the amount of total revenue recognized for a particular sales arrangement, any material changes in these allocations could impact the timing of revenue recognition, which could have a material effect on our financial condition and results of operations. We generally recognize revenue related to sales of components and spare parts upon shipment. We generally recognize revenue related to maintenance and service contracts ratably over the applicable contract term. See Note 1, Significant Accounting Policies, in the Notes to the Consolidated Financial Statements for a description of our revenue recognition policy.

Inventory Valuation

Inventories are stated at the lower of cost or net realizable value using standard costs that approximate actual costs on a first-in, first-out basis. Each quarter we assess the valuation and recoverability of all inventories: materials (raw materials, spare parts, and service inventory); work-in-process; and finished goods. Obsolete inventory or inventory in excess of our estimated usage requirements is written down to its estimated net realizable value if less than cost. We evaluate usage requirements by analyzing historical and anticipated demand, and anticipated demand is estimated based upon current economic conditions, utilization requirements related to current backlog, current sales trends, and other qualitative factors. Unanticipated changes in demand for our products may require a write down of inventory that could materially affect our operating results.

Warranty Costs

Our warranties are typically valid for one year from the date of final acceptance. We estimate the costs that may be incurred under the warranty we provide and record a liability in the amount of such costs at the time the related revenue is recognized. Estimated warranty costs are determined by analyzing specific product and historical configuration statistics and regional warranty support costs. Our warranty obligation is affected by product failure rates, material usage, and labor costs incurred in correcting product failures during the warranty period. Unforeseen component failures or exceptional component performance can also result in changes to warranty costs. If actual warranty costs differ substantially from our estimates, revisions to the estimated warranty liability would be required.

Goodwill and Intangible Assets

Goodwill is tested for impairment at least annually in the fourth quarter of our fiscal year. We may first perform a qualitative assessment of whether it is more likely than not that the reporting unit s fair value is less than its carrying amount, and, if so, we then apply the two-step impairment test. The two-step impairment test first compares the fair value of our reporting unit to its carrying amount. If the fair value of the reporting unit exceeds its carrying amount, goodwill is not impaired and we are not required to perform further testing. If the carrying amount of the reporting unit exceeds its fair value, we determine the implied fair value of the goodwill and if the carrying amount of the goodwill exceeds its implied fair value, then we record an impairment loss equal to the difference.

We determine the fair value of our reporting unit based on a reconciliation of the aggregate fair value of our reporting unit to our adjusted market capitalization. The adjusted market capitalization is calculated by multiplying the average share price of our common stock for the last ten trading days prior to the measurement date by the number of outstanding common shares and adding a control premium.

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The carrying values of identifiable intangible assets are reviewed for recoverability on a quarterly basis. The facts and circumstances considered include the recoverability of the cost of other intangible assets from future undiscounted cash flows to be derived from the use of the asset or asset group. It is not possible for us to predict the likelihood of any possible future impairments or, if such an impairment were to occur, the magnitude of any impairment.

Intangible assets with finite useful lives, including purchased technology, customer-related intangible assets, patents, trademarks, covenants not-to-compete, and software licenses, are subject to amortization over the expected period of economic benefit to us. We evaluate whether events or circumstances have occurred that warrant a revision to the remaining useful lives of intangible assets. In cases where a revision is deemed appropriate, the remaining carrying amounts of the intangible assets are amortized over the revised remaining useful life.

Accounting for Business Combinations

The allocation of the purchase price for acquisitions requires extensive use of accounting estimates and judgments to allocate the purchase price to the identifiable tangible and intangible assets acquired, including in-process research and development and liabilities assumed based on their respective fair values. The estimates we make include expected cash flows, expected cost savings, and the appropriate weighted average cost of capital. We complete these assessments as soon as practical after the acquisition closing dates. Any excess of the purchase price over the estimated fair values of the identifiable net assets acquired is recorded as goodwill.

Fair Value of Financial Instruments

The measurement of fair value for our financial instruments is based on the authoritative guidance which establishes a fair value hierarchy that is based on three levels of inputs and requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. See Note 3, Fair Value Measurements, in the Notes to the Consolidated Financial Statements for additional information.

Income Taxes

We estimate our income taxes in each of the jurisdictions in which we operate. Deferred income taxes reflect the net tax effect of temporary differences between the asset and liability balances recognized for financial reporting purposes and the balances used for income tax purposes, as well as the tax effect of carry forwards. We record a valuation allowance to reduce our deferred tax assets to the amount that is more likely than not to be realized. Realization of our net deferred tax assets is dependent on future taxable income.

We recognize the effect of income tax positions for only those positions which are estimated to more likely than not be sustained if challenged. We reflect changes in recognition or measurement in the period in which our change in judgment occurs. We record interest and penalties related to uncertain tax positions in income tax expense.

Accounting for Share-Based Compensation

We account for share-based awards granted to employees for services based on the fair value of those awards. We use the Black-Scholes option-pricing model to compute the estimated fair value of option awards and purchase rights under the employee stock purchase plan. The Black-Scholes model includes assumptions regarding expected volatility, expected term, and risk-free interest rates. These assumptions reflect our best estimates, but these items involve uncertainties based on market and other conditions outside of our control. As a result, if other assumptions had been used, share-based compensation expense could have been materially affected. Furthermore, if different assumptions are used in future periods, share-based compensation expense could be materially affected in future years.

We have granted performance share awards to senior executives where the number and, in some instances, the timing of the vesting of restricted shares ultimately received by the senior executives depends on our performance, as measured against specified targets. We reevaluate the expected target achievement each reporting period until the conclusion of the performance period and recognize the impact of any change in estimate in the period of change.

In March 2016, the FASB issued Accounting Standards Update (ASU) 2016-09: *Stock Compensation: Improvements to*

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Employee Share-Based Payment Accounting, which simplifies several aspects of the accounting for share-based payments. We early adopted the ASU effective January 1, 2016. Beginning in 2016, excess tax benefits and deficiencies are recognized as income tax expense or benefit in the income statement in the reporting period incurred. We also made an accounting policy election to account for forfeitures when they occur. The ASU transition guidance requires that this election be applied on a modified retrospective basis through a cumulative-effect adjustment to retained earnings as of the beginning of the period in which the ASU is effective. Accordingly, we recorded a $1.3 million charge to the opening accumulated deficit balance with a corresponding adjustment to additional paid-in capital, resulting in no impact to the opening balance of total stockholders equity. In addition, we recorded additional deferred tax assets with an equally offsetting valuation allowance of $2.4 million.

Recent Accounting Pronouncements

The FASB issued ASU 2014-09, as amended: *Revenue from Contracts with Customers*, which has been codified as Accounting Standards Codification 606 (ASC 606). ASC 606 requires our revenue recognition to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which we expect to be entitled in exchange for those goods or services. ASC 606 outlines a five-step model to make the revenue recognition determination and requires new financial statement disclosures. Publicly-traded companies are required to adopt ASC 606 for reporting periods beginning after December 15, 2017, but can adopt early for annual periods beginning after December 15, 2016. We are still completing our evaluation of the impact of adopting this standard; however, we currently expect the most significant financial statement impacts of adopting ASC 606 will be the elimination of the constraint on revenue associated with the billing retention related to the receipt of customer final acceptance as well as the identification of installation services as a performance obligation. The elimination of the constraint on revenue related to customer final acceptance, which is usually about 10 percent of a system sale, will generally be recognized at the time we transfer control of the system to the customer, which is earlier than under our current revenue recognition model. The new performance obligation related to installation services under the new standard will generally be recognized as the installation services are performed, which is later than under our current revenue recognition model. Taken together, we currently believe there will be a net acceleration of a small percentage of our revenue under ASC 606 as compared to our current revenue recognition model. ASC 606 provides for different transition alternatives, and we are evaluating which method of adoption to select.

In January 2016, the FASB issued ASU 2016-01: *Financial Instruments Overall*, which requires certain equity investments to be measured at fair value, with changes in fair value recognized in net income. Publicly-traded companies are required to adopt the update for reporting periods beginning after December 15, 2017; early adoption is permitted. We don t expect this ASU will have a material impact on the consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02: *Leases*, which generally requires our operating lessee rights and obligations to be recognized as assets and liabilities on the balance sheet. In addition, interest on lease liabilities is to be recognized separately from the amortization of right-of-use assets in the Statement of Operations. Further, payments of the principal portion of lease liabilities are to be classified as financing activities while payments of interest on lease liabilities and variable lease payments are to be classified as operating activities in the Statement of Cash Flows. When the standard is adopted, we will be required to recognize and measure leases at the beginning of the earliest period presented using a modified retrospective approach. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018, with early application permitted. We are evaluating the anticipated impact of adopting the ASU on the consolidated financial statements.

In August 2016, the FASB issued ASU 2016-15, *Statement of Cash Flows: Classification of Certain Cash Receipts and Cash Payments*, which provides guidance on eight specific cash flow issues, including debt prepayments or debt extinguishment costs. Publicly-traded companies are required to adopt the update for reporting periods beginning after December 15, 2017. We do not expect this ASU will have a material impact on the consolidated financial statements.

In October 2016, the FASB issued ASU 2016-16, *Income Taxes: Intra-Entity Transfers of Assets Other Than Inventory*, which requires that entities recognize the income tax consequences of an intra-entity transfer of an asset, other than inventory, when the transfer occurs. Publicly-traded companies are required to adopt the update for reporting periods beginning after December 15, 2017. We are evaluating the anticipated effect the ASU will have on the consolidated financial statements.

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We are also evaluating other pronouncements recently issued but not yet adopted. The adoption of these pronouncements is not expected to have a material impact on our consolidated financial statements.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Interest Rate Risk

Our exposure to market rate risk for changes in interest rates primarily relates to our investment portfolio. We centrally manage our investment portfolios considering investment opportunities and risks, tax consequences, and overall financing strategies. Our investment portfolio includes fixed-income securities with a fair value of approximately $66.8 million at December 31, 2016. These securities are subject to interest rate risk and, based on our investment portfolio at December 31, 2016, a 100 basis point increase in interest rates would result in a decrease in the fair value of the portfolio of $0.2 million. While an increase in interest rates may reduce the fair value of the investment portfolio, we will not realize the losses in the Consolidated Statements of Operations unless the individual fixed-income securities are sold prior to recovery or the loss is determined to be other-than-temporary.

Currency Exchange Risk

We conduct business on a worldwide basis and, as such, a portion of our revenues, earnings, and net investments in foreign affiliates is exposed to changes in currency exchange rates. The economic impact of currency exchange rate movements is complex because such changes are often linked to variability in real growth, inflation, interest rates, governmental actions, and other factors. These changes, if material, could cause us to adjust our financing and operating strategies. Consequently, isolating the effect of changes in currency does not incorporate these other important economic factors.

We have managed our risks and exposures to currency exchange rates through the use of derivative financial instruments (e.g., forward contracts). We only use derivative financial instruments in the context of hedging and do not use them for speculative purposes. During fiscal 2016, we did not designate foreign exchange derivatives as hedges. We did not enter into any derivative transactions in 2015. Accordingly, all foreign exchange derivatives are recorded in our Consolidated Balance Sheet at fair value and changes in fair value from these contracts are recorded in Other, net in our Consolidated Statements of Operations.

Our net sales to customers located outside of the United States represented approximately 74%, 82%, and 89% of our total net sales in 2016, 2015, and 2014, respectively. We expect that net sales to customers outside the United States will continue to represent a large percentage of our total net sales. Our net sales denominated in currencies other than the U.S. dollar represented approximately 4%, 2%, and 8%, of total net sales in 2016, 2015, and 2014, respectively.

A 10% change in foreign exchange rates would have an immaterial impact on the consolidated results of operations since most of our sales outside the United States are denominated in U.S. dollars.

Item 8. Financial Statements and Supplementary Data

Our Consolidated Financial Statements are listed in the Index to Consolidated Financial Statements and Financial Statement Schedule filed as part of this Form 10-K.

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

None.

Item 9A. Controls and Procedures

Management s Report on Internal Control Over Financial Reporting

Our principal executive and financial officers have evaluated and concluded that our disclosure controls and procedures are effective as of December 31, 2016. The disclosure controls and procedures are designed to ensure that the information

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required to be disclosed in this report filed under the Securities Exchange Act of 1934 is recorded, processed, summarized, and reported within the time periods specified in the Securities and Exchange Commission s rules and forms and is accumulated and communicated to our principal executive and financial officers as appropriate to allow timely decisions regarding required disclosure.

Our principal executive and financial officers are responsible for establishing and maintaining adequate internal control over financial reporting, which is a process designed and put into effect to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Using the criteria established in the Internal Control Integrated Framework (2013) published by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), Management has evaluated, assessed, and concluded that internal control over financial reporting is effective as of December 31, 2016.

KPMG LLP, an independent registered public accounting firm, has audited the consolidated financial statements included in this Annual Report on Form 10-K and, as part of their audit, has issued their report, included herein, on the effectiveness of our internal control over financial reporting.

Changes in Internal Control Over Financial Reporting

During the quarter ended December 31, 2016, there were no changes in internal control that have materially affected or are reasonably likely to materially affect internal control over financial reporting.

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of

Veeco Instruments Inc.:

We have audited Veeco Instrument Inc. s internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Veeco Instrument Inc. s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management s Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company s internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company s assets that could have a material effect on the financial statements.

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

In our opinion, Veeco Instruments Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Veeco Instrument s Inc. and subsidiaries as of December 31, 2016 and 2015, and the related consolidated statements of operations, comprehensive income (loss), stockholders equity, and cash flows for each of the years in the two-year period ended December 31, 2016, and our report dated February 22, 2017 expressed an unqualified opinion on those consolidated financial statements.

/s/ KPMG LLP

Melville, New York
February 22, 2017

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Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Information required by this Item that will appear under the headings Governance, Executive Officers, and Section 16(a) Beneficial Ownership Reporting Compliance in the definitive proxy statement to be filed with the SEC relating to our 2017 Annual Meeting of Stockholders is incorporated herein by reference.

We have adopted a Code of Ethics for Senior Officers (the Code) which applies to our chief executive officer, principal financial officer, principal accounting officer, and persons performing similar functions. A copy of the Code can be found on our website (www.veeco.com). We intend to disclose on our website the nature of any future amendments to and waivers of the Code that apply to the chief executive officer, principal financial officer, principal accounting officer or persons performing similar functions. We have also adopted a Code of Business Conduct which applies to all of our employees, including those listed above, as well as to our directors. A copy of the Code of Business Conduct can be found on our website (www.veeco.com). The website address above is intended to be an inactive, textual reference only. None of the material on this website is part of this report.

Item 11. Executive Compensation

Information required by this Item that will appear under the heading Compensation in the definitive proxy statement to be filed with the SEC relating to our 2017 Annual Meeting of Stockholders is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Information required by this Item that will appear under the headings Security Ownership of Certain Beneficial Owners and Management and Equity Compensation Plan Information in the definitive proxy statement to be filed with the SEC relating to our 2017 Annual Meeting of Stockholders is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Information required by this Item that will appear under the headings Certain Relationships and Related Transactions and Independence of Board in the definitive proxy statement to be filed with the SEC relating to our 2017 Annual Meeting of Stockholders is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services

Information required by this Item that will appear under the heading Proposal 4 Ratification of Appointment of KPMG in the definitive proxy statement to be filed with the SEC relating to our 2017 Annual Meeting of Stockholders is incorporated herein by reference.

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PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) (1) The Registrant s financial statements together with a separate table of contents are annexed hereto

(2) Financial Statement Schedules are listed in the separate table of contents annexed hereto.

(3) Exhibits

Unless otherwise indicated, each of the following exhibits has been previously filed with the Securities and Exchange Commission by the Company under File No. 0-16244.

Exhibit Number	Exhibit Description	Form	Incorporated by Reference Exhibit	Filing Date	Filed or Furnished Herewith
2.1	Agreement and Plan of Merger dated as of February 2, 2017 among Ultratech, Inc., Veeco Instruments Inc. and Ulysses Acquisition Subsidiary Corp.	8-K	2.1	2/3/2017	
2.2	Securities Purchase Agreement, dated December 4, 2014, by and among Solid State Equipment Holdings LLC, certain securityholders thereof, Veeco Instruments Inc. and certain other parties thereto.	10-K	2.1	2/24/2015	
2.3	Agreement and Plan of Merger, dated September 18, 2013, by and among Veeco, Veeco Wyoming Inc., Synos Technology, Inc., certain stockholders of Synos Technology, Inc., and Shareholder Representative Services LLC.	10-K	2.1	2/28/2014	
3.1	Amended and Restated Certificate of Incorporation of Veeco dated December 1, 1994, as amended June 2, 1997 and July 25, 1997.	10-Q	3.1	8/14/1997	
3.2	Amendment to Certificate of Incorporation of Veeco dated May 29, 1998.	10-K	3.2	3/14/2001	
3.3	Amendment to Certificate of Incorporation of Veeco dated May 5, 2000.	10-Q	3.1	8/14/2000	
3.4	Amendment to Certificate of Incorporation of Veeco dated May 16, 2002.	10-Q	3.1	10/26/2009	
3.5	Amendment to Certificate of Incorporation of Veeco dated May 14, 2010.	10-K	3.8	2/24/2011	
3.6	Fifth Amended and Restated Bylaws of Veeco effective February 5, 2016.	8-K	3.1	5/9/2001	
3.7	Certificate of Designation, Preferences, and Rights of Series A Junior Participating Preferred Stock of Veeco.	8-K	3.1	5/26/2010	
4.1	Indenture, dated as of January 18, 2017, by and between Veeco Instruments Inc. and U.S. Bank National Association, as Trustee (relating to the 2.70% Convertible Notes due 2023).	8-K	4.1	1/18/2017	

4.2	First Supplemental Indenture, dated as of January 18, 2017, by and between Veeco Instruments Inc. and U.S. Bank National Association, as Trustee (relating to the 2.70% Convertible Notes due 2023).	8-K	4.2	1/18/2017
4.3	Form of 2.70% Convertible Senior Note due 2023.	8-K	4.3	1/18/2017
10.1	Loan Agreement dated as of December 15, 1999 between Applied Epi, Inc. and Jackson National Life Insurance Company.	10-Q	10.2	11/14/2001
10.2	Promissory Note dated as of December 15, 1999 issued by Applied Epi, Inc. to Jackson National Life Insurance Company.	10-Q	10.3	11/14/2001

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Exhibit Number	Exhibit Description	Incorporated by Reference Form	Exhibit	Filing Date	Filed or Furnished Herewith
10.3	Amendment to Loan Documents effective as of September 17, 2001 between Applied Epi, Inc. and Jackson National Life Insurance Company (executed in June 2002).	10-Q	10.2	8/14/2002	
10.4*	Veeco Amended and Restated 2000 Stock Incentive Plan, effective July 20, 2006.	10-Q	10.4	8/4/2006	
10.5*	Amendment No. 1 effective April 18, 2007 (ratified by the Board August 7, 2007) to Veeco Amended and Restated 2000 Stock Incentive Plan.	10-Q	10.1	8/7/2007	
10.6*	Amendment No. 2 dated January 22, 2009 to Veeco Amended and Restated 2000 Stock Incentive Plan.	10-K	10.41	3/2/2009	
10.7*	Veeco Amended and Restated 2010 Stock Incentive Plan, effective May 14, 2010.	Def 14A	Appendix A	11/4/2013	
10.8*	Veeco Amended and Restated 2010 Stock Incentive Plan, effective May 5, 2016.	S-8	10.1	6/2/2016	
10.9*	Form of Notice of Performance Share Award and related terms and conditions pursuant to the Veeco 2010 Stock Incentive Plan, effective June 2015.	10-Q	10.1	8/3/2015	
10.10*	Form of Notice of Performance Share Award and related terms and conditions pursuant to the Veeco 2010 Stock Incentive Plan, effective June 2016.	10-Q	10.1	11/1/2016	
10.11*	Form of Notice of Critical Priorities Performance Share Award and related terms and conditions pursuant to the Veeco 2010 Stock Incentive Plan, effective June 2016.	10-Q	10.2	11/1/2016	
10.12*	Veeco 2013 Inducement Stock Incentive Plan, effective September 26, 2013.	10-Q	10.1	11/4/2013	
10.13*	Form of 2013 Inducement Stock Incentive Plan Stock Option Agreement.	10-Q	10.2	11/4/2013	
10.14*	Form of 2013 Inducement Stock Incentive Plan Restricted Stock Unit Agreement.	10-Q	10.3	11/4/2013	
10.15*	Veeco Instruments Inc. 2016 Employee Stock Purchase Plan.	S-8	10.9	6/2/2016	
10.16*	Form of Support Agreement (issued in connection with the Agreement and Plan of Merger with Ultratech, Inc. dated February 2, 2017).	8-K	10.1	2/3/2017	
10.17*	Form of Indemnification Agreement entered into between Veeco and each of its directors and executive officers.	8-K	10.1	10/23/2006	
10.18*	Veeco Amended and Restated Senior Executive Change in Control Policy, effective as of January 1, 2014.	10-K	10.22	2/28/2014	
10.19*	Employment Agreement effective as of July 1, 2007 between Veeco and John R. Peeler.	10-Q	10.3	8/7/2007	
10.20*	Amendment effective December 31, 2008 to Employment Agreement between Veeco and John R. Peeler.	10-K	10.38	3/2/2009	
10.21*	Second Amendment effective June 11, 2010 to Employment Agreement between Veeco and John R. Peeler.	10-Q	10.1	7/29/2010	
10.22*	Third Amendment effective April 27, 2012 to Employment Agreement between Veeco and John R. Peeler.	10-Q	10.2	5/9/2012	
10.23*	Amendment dated June 12, 2014 to Employment Agreement between Veeco and John R. Peeler.	10-Q	10.3	7/31/2014	
10.24*	Letter Agreement dated April 8, 2014 between Veeco and Shubham Maheshwari.	10-Q	10.1	7/31/2014	
10.25*	Letter Agreement dated January 30, 2012 between Veeco and Dr. William J. Miller.	10-K	10.3	2/22/2012	

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Exhibit Number	Exhibit Description	Incorporated by Reference Form	Exhibit	Filing Date	Filed or Furnished Herewith
10.26*	Letter dated December 22, 2015 from Veeco to Dr. William J. Miller.	10-K	10.21	2/25/2016	
10.27*	Letter Agreement dated January 21, 2004 between Veeco and John P. Kiernan.	10-K	10.38	3/12/2004	
10.28*	Amendment effective June 9, 2006 to Letter Agreement between Veeco and John P. Kiernan.	10-Q	10.3	8/4/2006	
10.29*	Amendment effective December 31, 2008 to Letter Agreement between Veeco and John P. Kiernan.	10-K	10.40	3/2/2009	
10.30*	Letter Agreement effective as of June 19, 2009 between Veeco and John P. Kiernan.	10-Q	10.2	7/30/2009	
16.1	Letter to the Securities and Exchange Commission from Ernst & Young LLP, dated March 19, 2015.	8-K	16.1	3/19/2015	
21.1	Subsidiaries of the Registrant.				X
23.1	Consent of KPMG LLP.				X
23.2	Consent of Ernst & Young LLP.				X
31.1	Certification of Chief Executive Officer pursuant to Rule 13a 14(a) or Rule 15d 14(a) of the Securities and Exchange Act of 1934.				X
31.2	Certification of Chief Financial Officer pursuant to Rule 13a 14(a) or Rule 15d 14(a) of the Securities and Exchange Act of 1934.				X
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes - Oxley Act of 2002.				X
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes - Oxley Act of 2002.				X
101.INS	XBRL Instance.				**
101.XSD	XBRL Schema.				**
101.PRE	XBRL Presentation.				**
101.CAL	XBRL Calculation.				**
101.DEF	XBRL Definition.				**
101.LAB	XBRL Label.				**

* Indicates a management contract or compensatory plan or arrangement, as required by Item 15(a) (3) of Form 10-K.

** Filed herewith electronically

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on February 22, 2017.

Veeco Instruments Inc.

By: /S/ JOHN R. PEELER
John R. Peeler
Chairman and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this report has been signed below by the following persons on behalf of the Registrant and in the capacities indicated, on February 22, 2017.

Signature	**Title**
/s/ JOHN R. PEELER John R. Peeler	Chairman and Chief Executive Officer (principal executive officer)
/s/ SHUBHAM MAHESHWARI Shubham Maheshwari	Executive Vice President and Chief Financial Officer (principal financial officer)
/s/ JOHN P. KIERNAN John P. Kiernan	Senior Vice President, Finance, Chief Accounting Officer, Corporate Controller and Treasurer (principal accounting officer)
/s/ KATHLEEN A. BAYLESS Kathleen A. Bayless	Director
/s/ RICHARD A. D AMORE Richard A. D Amore	Director
/s/ GORDON HUNTER Gordon Hunter	Director
/s/ KEITH D. JACKSON Keith D. Jackson	Director
/s/ PETER J. SIMONE Peter J. Simone	Director
/s/ THOMAS ST. DENNIS Thomas St. Dennis	Director

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Veeco Instruments Inc. and Subsidiaries

Index to Consolidated Financial Statements and Financial Statement Schedule

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders of

Veeco Instruments Inc.:

We have audited the accompanying consolidated balance sheets of Veeco Instruments Inc. and subsidiaries as of December 31, 2016 and 2015, and the related consolidated statements of operations, comprehensive income (loss), stockholders equity, and cash flows for each of the years in the two-year period ended December 31, 2016. In connection with our audit of the consolidated financial statements, we also have audited Schedule II Valuation and Qualifying Accounts. These consolidated financial statements and financial statement schedule are the responsibility of the Company s management. Our responsibility is to express an opinion on these consolidated financial statements and financial statement schedule based on our audit.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Veeco Instruments Inc. and subsidiaries as of December 31, 2016 and 2015, and the results of their operations and their cash flows for each of the years in the two-year period ended December 31, 2016, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the related financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Veeco Instrument Inc. s internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) , and our report dated February 22, 2017 expressed an unqualified opinion on the effectiveness of the Company s internal control over financial reporting.

/s/ KPMG LLP

Melville, New York
February 22, 2017

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders of

Veeco Instruments Inc.

We have audited the accompanying consolidated statements of operations, comprehensive income (loss), stockholders equity, and cash flows of Veeco Instruments, Inc. (the Company) for the year ended December 31, 2014. Our audit also included the financial statement schedule listed in the Index at Item 15(a). These financial statements and schedule are the responsibility of the Company s management. Our responsibility is to express an opinion on these financial statements and schedule based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated results of its operations and its cash flows of Veeco Instruments, Inc. for the year ended December 31, 2014, in conformity with U.S. generally accepted accounting principles. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, present fairly in all material respects the information set forth therein.

/s/ ERNST & YOUNG LLP

Jericho, New York
February 24, 2015

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Veeco Instruments Inc. and Subsidiaries

Consolidated Balance Sheets

(in thousands, except share amounts)

	December 31, 2016	December 31, 2015
Assets		
Current assets:		
Cash and cash equivalents	$ 277,444	$ 269,232
Short-term investments	66,787	116,050
Accounts receivable, net	58,020	49,524
Inventories	77,063	77,469
Deferred cost of sales	6,160	2,100
Prepaid expenses and other current assets	16,034	22,760
Assets held for sale		5,000
Total current assets	501,508	542,135
Property, plant and equipment, net	60,646	79,590
Intangible assets, net	58,378	131,674
Goodwill	114,908	114,908
Deferred income taxes	2,045	1,384
Other assets	21,047	21,098
Total assets	$ 758,532	$ 890,789
Liabilities and stockholders equity		
Current liabilities:		
Accounts payable	$ 22,607	$ 30,074
Accrued expenses and other current liabilities	33,201	49,393
Customer deposits and deferred revenue	85,022	76,216
Income taxes payable	2,311	6,208
Current portion of long-term debt	368	340
Total current liabilities	143,509	162,231
Deferred income taxes	13,199	11,211
Long-term debt	826	1,193
Other liabilities	6,403	1,539
Total liabilities	163,937	176,174
Stockholders equity:		
Preferred stock, $0.01 par value; 500,000 shares authorized; no shares issued and outstanding		
Common stock, $0.01 par value; 120,000,000 shares authorized; 40,714,790 and 40,995,694 shares issued at December 31, 2016 and 2015, respectively; 40,588,194 and 40,526,902 shares outstanding at December 31, 2016 and 2015, respectively.	407	410
Additional paid-in capital	763,303	767,137
Accumulated deficit	(168,583)	(45,058)
Accumulated other comprehensive income	1,777	1,348
Treasury stock, at cost, 126,596 and 468,792 shares at December 31, 2016 and 2015, respectively.	(2,309)	(9,222)
Total stockholders equity	594,595	714,615
Total liabilities and stockholders equity	$ 758,532	$ 890,789

See accompanying Notes to the Consolidated Financial Statements.

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Veeco Instruments Inc. and Subsidiaries

Consolidated Statements of Operations

(in thousands, except per share amounts)

	For the year ended December 31, 2016	2015	2014
Net sales	$ 332,451	$ 477,038	$ 392,873
Cost of sales	199,593	299,797	257,991
Gross profit	132,858	177,241	134,882
Operating expenses, net:			
Research and development	81,016	78,543	81,171
Selling, general, and administrative	77,642	90,188	89,760
Amortization of intangible assets	19,219	27,634	13,146
Restructuring	5,640	4,679	4,394
Asset impairment	69,520	126	58,170
Changes in contingent consideration			(29,368)
Other, net	223	(697)	(3,182)
Total operating expenses, net	253,260	200,473	214,091
Operating income (loss)	(120,402)	(23,232)	(79,209)
Interest income	1,180	1,050	1,570
Interest expense	(222)	(464)	(715)
Income (loss) before income taxes	(119,444)	(22,646)	(78,354)
Income tax expense (benefit)	2,766	9,332	(11,414)
Net income (loss)	$ (122,210)	$ (31,978)	$ (66,940)
Income (loss) per common share:			
Basic	$ (3.11)	$ (0.80)	$ (1.70)
Diluted	$ (3.11)	$ (0.80)	$ (1.70)
Weighted average number of shares:			
Basic	39,340	39,742	39,350
Diluted	39,340	39,742	39,350

See accompanying Notes to the Consolidated Financial Statements.

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Veeco Instruments Inc. and Subsidiaries

Consolidated Statements of Comprehensive Income (Loss)

(in thousands)

	For the year ended December 31,		
	2016	**2015**	**2014**
Net income (loss)	$ (122,210)	$ (31,978)	$ (66,940)
Other comprehensive income (loss), net of tax:			
Available-for-sale securities:			
Change in net unrealized gains or losses	(6)	(49)	51
Reclassification adjustments for net (gains) losses included in net income	18		(65)
Net changes related to available-for-sale securities	12	(49)	(14)
Minimum pension liability:			
Change in minimum pension liability		15	(145)
Reclassification adjustments for net (gains) losses included in net income	866		
Net changes related to minimum pension liability	866	15	(145)
Currency translation adjustments:			
Change in currency translation adjustments	(19)	(87)	149
Reclassification adjustments for net (gains) losses included in net income	(430)		(3,142)
Net changes related to currency translation adjustments	(449)	(87)	(2,993)
Other comprehensive income (loss), net of tax	429	(121)	(3,152)
Total comprehensive income (loss)	$ (121,781)	$ (32,099)	$ (70,092)

See accompanying Notes to the Consolidated Financial Statements.

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Veeco Instruments Inc. and Subsidiaries

Consolidated Statements of Stockholders Equity

(in thousands)

	Common Stock		**Treasury Stock**			**Retained**	**Accumulated**	
					Additional	**Earnings**	**Other**	
					Paid-in	**(Accumulated**	**Comprehensive**	
	Shares	**Amount**	**Shares**	**Amount**	**Capital**	**Deficit)**	**Income**	**Total**
Balance at December 31, 2013	39,666	$ 397		$	$ 721,352	$ 53,860	$ 4,621	$ 780,230
Net loss						(66,940)		(66,940)
Other comprehensive loss, net of tax							(3,152)	(3,152)
Share-based compensation expense					18,813			18,813
Net issuance under employee stock plans	694	7			9,974			9,981
Balance at December 31, 2014	40,360	404			750,139	(13,080)	1,469	738,932
Net loss						(31,978)		(31,978)
Other comprehensive loss, net of tax							(121)	(121)
Share-based compensation expense					17,986			17,986
Net issuance under employee stock plans	636	6			(988)			(982)
Purchases of common stock			469	(9,222)				(9,222)
Balance at December 31, 2015	40,996	410	469	(9,222)	767,137	(45,058)	1,348	714,615
Cumulative effect of change in accounting principle - adoption of ASU 2016-09					1,315	(1,315)		
Net loss						(122,210)		(122,210)
Other comprehensive income, net of tax							429	429
Share-based compensation expense					15,741			15,741
Net issuance under employee stock plans	(281)	(3)	(1,072)	19,948	(20,890)			(945)
Purchases of common stock			730	(13,035)				(13,035)
Balance at December 31, 2016	40,715	$ 407	127	$ (2,309)	$ 763,303	$ (168,583)	$ 1,777	$ 594,595

See accompanying Notes to the Consolidated Financial Statements.

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Veeco Instruments Inc. and Subsidiaries

Consolidated Statements of Cash Flows

(in thousands)

	For the year ended December 31, 2016	2015	2014
Cash Flows from Operating Activities			
Net income (loss)	$ (122,210)	$ (31,978)	$ (66,940)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	32,650	39,850	24,573
Deferred income taxes	940	2,648	(11,330)
Share-based compensation expense	15,741	17,986	18,813
Asset impairment	69,520	126	58,170
Gain on sale of lab tools		(1,261)	(1,549)
Provision (recovery) for bad debts	171	43	(1,814)
Gain on cumulative translation adjustment	(430)		(3,142)
Change in contingent consideration			(29,368)
Changes in operating assets and liabilities:			
Accounts receivable	(8,667)	10,715	(25,390)
Inventories and deferred cost of sales	(5,389)	(12,312)	6,513
Prepaid expenses and other current assets	6,726	(39)	(2,245)
Accounts payable and accrued expenses	(24,202)	9,470	(5,534)
Customer deposits and deferred revenue	8,807	(20,738)	55,536
Income taxes receivable and payable, net	547	759	20,279
Other, net	1,952	520	5,497
Net cash provided by (used in) operating activities	(23,844)	15,789	42,069
Cash Flows from Investing Activities			
Acquisitions of businesses, net of cash acquired		(68)	(144,069)
Capital expenditures	(11,479)	(13,887)	(15,588)
Proceeds from the sale of investments	152,301	88,647	318,276
Payments for purchases of investments	(103,394)	(84,244)	(157,737)
Payments for purchases of cost method investment		(1,594)	(2,388)
Proceeds from sale of property, plant, and equipment	9,512		
Proceeds from sale of lab tools		3,068	9,259
Other	(230)	1,000	350
Net cash provided by (used in) investing activities	46,710	(7,078)	8,103
Cash Flows from Financing Activities			
Proceeds from stock option exercises and employee stock purchase plan	1,656	2,233	12,056
Restricted stock tax withholdings	(2,601)	(3,215)	(2,075)
Purchases of common stock	(13,349)	(8,907)	
Repayments of long-term debt	(340)	(314)	(290)
Net cash provided by (used) in financing activities	(14,634)	(10,203)	9,691
Effect of exchange rate changes on cash and cash equivalents	(20)	(87)	149
Net increase in cash and cash equivalents	8,212	(1,579)	60,012
Cash and cash equivalents - beginning of period	269,232	270,811	210,799
Cash and cash equivalents - end of period	$ 277,444	$ 269,232	$ 270,811

Supplemental Disclosure of Cash Flow Information			
Interest paid	$ 225	$ 485	$ 159
Income taxes paid	1,699	7,091	3,320
Non-cash operating and financing activities			
Net transfer of inventory to property, plant and equipment	1,827		

See accompanying Notes to the Consolidated Financial Statements.

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Veeco Instruments Inc. and Subsidiaries

Notes to Consolidated Financial Statements

Note 1 Significant Accounting Policies

(a) Description of Business

Veeco Instruments Inc. (together with its consolidated subsidiaries, Veeco, or the Company) operates in a single segment: the design, development, manufacture, and support of thin film process equipment primarily sold to make electronic devices including light emitting diodes (LEDs), power electronics, wireless devices, hard disk drives, and semiconductors.

(b) Basis of Presentation

The accompanying audited Consolidated Financial Statements of the Company have been prepared in accordance with United States generally accepted accounting principles (GAAP). The Company reports interim quarters on a 13-week basis ending on the last Sunday of each period, which is determined at the start of each year. The Company s fourth quarter always ends on the last day of the calendar year, December 31. During 2016 the interim quarters ended on April 3, July 3, and October 2, and during 2015 the interim quarters ended on March 29, June 28 and September 27. The Company reports these interim quarters as March 31, June 30, and September 30 in its interim consolidated financial statements.

(c) Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Although these estimates are based on management s knowledge of current events and actions it may undertake in the future, these estimates may ultimately differ from actual results. Significant items subject to such estimates and assumptions include: (i) the best estimate of selling price for the Company s products and services; (ii) allowances for doubtful accounts; (iii) inventory obsolescence; (iv) the useful lives and expected future cash flows of property, plant, and equipment and identifiable intangible assets; (v) the fair value of the Company s reporting unit and related goodwill; (vi) the fair value, less cost to sell, of assets held for sale; (vii) investment valuations and the valuation of derivatives, deferred tax assets, and assets acquired in business combinations; (viii) the recoverability of long-lived assets; (ix) liabilities for product warranty and legal contingencies; (x) share-based compensation; and (xi) income tax uncertainties. Actual results could differ from those estimates.

(d) Principles of Consolidation

The Consolidated Financial Statements include the accounts of the Company and its subsidiaries. Intercompany balances and transactions have been eliminated in consolidation. Companies acquired during each reporting period are reflected in the results of the Company effective from their respective dates of acquisition through the end of the reporting period.

(e) Foreign Currencies

Assets and liabilities of the Company s foreign subsidiaries that operate using local functional currencies are translated using the exchange rates in effect at the balance sheet date. Results of operations are translated using monthly average exchange rates. Adjustments arising from the translation of the foreign currency financial statements of the Company s subsidiaries into U.S. dollars, including intercompany transactions of a long-term nature, are reported as currency translation adjustments in Accumulated other comprehensive income in the Consolidated Balance Sheets. Foreign currency transaction gains or losses are included in Other, net in the Consolidated Statements of Operations.

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Veeco Instruments Inc. and Subsidiaries

Notes to Consolidated Financial Statements (Continued)

(f) Revenue Recognition

The Company recognizes revenue when all of the following criteria have been met: persuasive evidence of an arrangement exists with a customer; delivery of the specified products has occurred or services have been rendered; prices are contractually fixed or determinable; and collectability is reasonably assured. Revenue is recorded including shipping and handling costs and excluding applicable taxes related to sales.

Contracts with customers frequently contain multiple deliverables, such as systems, upgrades, components, spare parts, maintenance, and service plans. Judgment is required to properly identify the accounting units of the multiple-element arrangements and to determine how the revenue should be allocated among the accounting units. The Company also evaluates whether multiple transactions with the same customer or related parties should be considered part of a single, multiple-element arrangement based on an assessment of whether the contracts or agreements are negotiated or executed within a short time frame of each other or if there are indicators that the contracts are negotiated in contemplation of one another. Moreover, judgment is used in interpreting the commercial terms and determining when all criteria have been met in order to recognize revenue in the appropriate accounting period.

When there are separate units of accounting, the Company allocates revenue to each element based on the following selling price hierarchy: vendor-specific objective evidence (VSOE) if available; third party evidence (TPE) if VSOE is not available; or the best estimate of selling price (BESP) if neither VSOE nor TPE is available. The Company uses BESP for the elements in its arrangements. The maximum revenue recognized on a delivered element is limited to the amount that is not contingent upon the delivery of additional items.

The Company considers many facts when evaluating each of its sales arrangements to determine the timing of revenue recognition including its contractual obligations, the customer s creditworthiness, and the nature of the customer s post-delivery acceptance provisions. The Company s system sales arrangements, including certain upgrades, generally include field acceptance provisions that may include functional or mechanical test procedures. For the majority of the arrangements, a customer source inspection of the system is performed in the Company s facility or test data is sent to the customer documenting that the system is functioning to the agreed upon specifications prior to delivery. Historically, such source inspection or test data replicates the field acceptance provisions that are performed at the customer s site prior to final acceptance of the system. When the Company objectively demonstrates that the criteria specified in the contractual acceptance provisions are achieved prior to delivery, revenue is recognized upon system delivery since there is no substantive contingency remaining related to the acceptance provisions at that date, subject to the retention amount constraint described below. For new products, new applications of existing products, or for products with substantive customer acceptance provisions where the Company cannot objectively demonstrate that the criteria specified in the contractual acceptance provisions have been achieved prior to delivery, revenue and the associated costs are deferred and fully recognized upon the receipt of final customer acceptance, assuming all other revenue recognition criteria have been met.

The Company s system sales arrangements, including certain upgrades, generally do not contain provisions for right of return, forfeiture, refund, or other purchase price concession. In the rare instances where such provisions are included, all revenue is deferred until such rights expire. The sales arrangements generally include installation. The installation process is not deemed essential to the functionality of the equipment since it is not complex; it does not require significant changes to the features or capabilities of the equipment or involve constructing elaborate interfaces or connections subsequent to factory acceptance. The Company has a demonstrated history of consistently completing installations in a timely manner and can reliably estimate the costs of such activities. Most customers engage the Company to perform the installation services, although there are other third-party providers with sufficient knowledge who could complete these services. Based on these factors, installation is deemed to be inconsequential or perfunctory relative to the system sale as a whole, and as a result, installation service is not considered a separate element of the arrangement. As such, the Company accrues the cost of the installation at the time of revenue recognition for the system.

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Veeco Instruments Inc. and Subsidiaries

Notes to Consolidated Financial Statements (Continued)

In many cases the Company s products are sold with a billing retention, typically 10% of the sales price, which is payable by the customer when field acceptance provisions are completed. The amount of revenue recognized upon delivery of a system or upgrade, if any, is limited to the lower of i) the amount billed that is not contingent upon acceptance provisions or ii) the value of the arrangement consideration allocated to the delivered elements, if such sale is part of a multiple-element arrangement.

The Company s contractual terms with customers in Japan generally specify that title and risk and rewards of ownership transfer upon customer acceptance. As a result, for customers in Japan, revenue is recognized upon the receipt of written customer acceptance. A distributor is used for almost all sales to customers in Japan. Title passes to the distributor upon shipment; however, due to customary local business practices, the risks and rewards of ownership of the system transfer to the end-customers upon their acceptance. As such, the Company recognizes revenue upon receipt of written acceptance from the end customer.

The Company recognizes revenue related to maintenance and service contracts ratably over the applicable contract term. The Company recognizes revenue from the sales of components, spare parts, and specified service engagements at the time of delivery in accordance with the terms of the applicable sales arrangement.

Incremental direct costs incurred related to the acquisition of a customer contract, such as sales commissions, are expensed as incurred, even if the related revenue is deferred in accordance with the above policy.

(g) Warranty Costs

The Company typically provides standard warranty coverage on its systems for one year from the date of final acceptance by providing labor and parts necessary to repair the systems during the warranty period. The Company accounts for the estimated warranty cost when revenue is recognized on the related system. Warranty cost is included in Cost of sales in the Consolidated Statements of Operations. The estimated warranty cost is based on the Company s historical experience with its systems and regional labor costs. The Company calculates the average service hours by region and parts expense per system utilizing actual service records to determine the estimated warranty charge. The Company updates its warranty estimates on a semiannual basis when the actual product performance or field expense differs from original estimates.

(h) Shipping and Handling Costs

Shipping and handling costs are expenses incurred to move, package, and prepare the Company s products for shipment and to move the products to a customer s designated location. These costs are generally comprised of payments to third-party shippers. Shipping and handling costs are included in Cost of sales in the Consolidated Statements of Operations.

(i) Research and Development Costs

Research and development costs are expensed as incurred and include charges for the development of new technology and the transition of existing technology into new products or services.

(j) Advertising Expense

The cost of advertising is expensed as incurred and totaled \$0.8 million, \$0.9 million, and \$0.6 million for the years ended December 31, 2016, 2015, and 2014, respectively.

(k) Accounting for Share-Based Compensation

Share-based awards exchanged for employee services are accounted for under the fair value method. Accordingly, share-based compensation cost is measured at the grant date based on the fair value of the award. The expense for awards is recognized over the employee s requisite service period (generally the vesting period of the award).

Veeco Instruments Inc. and Subsidiaries

Notes to Consolidated Financial Statements (Continued)

The Company has elected to treat awards with only service conditions and with graded vesting as one award. Consequently, the total compensation expense is recognized straight-line over the entire vesting period, so long as the compensation cost recognized at any date at least equals the portion of the grant date fair value of the award that is vested at that date.

The Company uses the Black-Scholes option-pricing model to compute the estimated fair value of option awards, as well as purchase rights under the Employee Stock Purchase Plan. The Black-Scholes model includes assumptions regarding dividend yields, expected volatility, expected option term, and risk-free interest rates. See Note 15, Stock Plans, for additional information.

In addition to stock options, restricted share awards (RSAs) and restricted stock units (RSUs) with time-based vesting, the Company issues performance share units and awards (PSUs and PSAs). Compensation cost for PSUs and PSAs is recognized over the requisite service period based on the timing and expected level of achievement of the performance targets. A change in the assessment of the probability of a performance condition being met is recognized in the period of the change in estimate. At the conclusion of the performance period, the number of shares granted may vary based on the level of achievement of the performance targets.

See Note 1(u), *Recently Adopted Accounting Standards,* for additional information concerning the Company s early adoption of Accounting Standards Update (ASU) 2016-09: *Stock Compensation: Improvements to Employee Share-Based Payment Accounting*.

(l) Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities from a change in tax rate is recognized in income in the period that includes the enactment date.

See Note 1(u), *Recently Adopted Accounting Standards,* for additional information concerning the Company s early adoption of ASU 2015-17: *Balance Sheet Classification of Deferred Taxes*.

(m) Concentration of Credit Risk

Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash and cash equivalents, investments, derivative financial instruments used in hedging activities, and accounts receivable. The Company invests in a variety of financial instruments and, by policy, limits the amount of credit exposure with any one financial institution or commercial issuer. The Company has not experienced any material credit losses on its investments.

The Company maintains an allowance reserve for potentially uncollectible accounts for estimated losses resulting from the inability of its customers to make required payments. The Company evaluates its allowance for doubtful accounts based on a combination of factors. In circumstances where specific invoices are deemed to be uncollectible, the Company provides a specific allowance for bad debt against the amount due to reduce the net recognized receivable to the amount reasonably expected to be collected. The Company also provides allowances based on its write-off history. The allowance for doubtful accounts totaled $0.3 million and $0.2 million at December 31, 2016 and 2015, respectively.

To further mitigate the Company s exposure to uncollectable accounts, the Company may request certain customers provide a negotiable irrevocable letter of credit drawn on a reputable financial institution. These irrevocable letters of credit are typically issued to mature between zero and 90 days from the date the documentation requirements are met, typically when a system ships or upon receipt of final acceptance from the customer. The Company, at its discretion, may

Veeco Instruments Inc. and Subsidiaries

Notes to Consolidated Financial Statements (Continued)

monetize these letters of credit on a non-recourse basis after they become negotiable, but before maturity. The fees associated with the monetization are included in Selling, general, and administrative in the Consolidated Statements of Operations and were insignificant for the years ended December 31, 2016, 2015, and 2014.

(n) Fair Value of Financial Instruments

The carrying amounts of financial instruments, including cash and cash equivalents, accounts receivable, accounts payable, and accrued expenses reflected in the consolidated financial statements approximate fair value due to their short-term maturities. The fair value of debt for footnote disclosure purposes, including current maturities, is estimated using a discounted cash flow analysis based on the estimated current incremental borrowing rates for similar types of instruments.

(o) Cash, Cash Equivalents, and Short-Term Investments

All financial instruments purchased with an original maturity of three months or less at the time of purchase are considered cash equivalents. Such items may include liquid money market accounts, U.S. treasuries, government agency securities, and corporate debt. Investments that are classified as cash equivalents are carried at cost, which approximates fair value. The Company s cash and cash equivalents includes $1.5 million and $18.0 million of cash equivalents at December 31, 2016 and 2015 respectively.

A portion of the Company s cash and cash equivalents is held by its subsidiaries throughout the world, frequently in each subsidiary s respective functional currency, which is typically the U.S. dollar. Approximately 54% and 50% of cash and cash equivalents were maintained outside the United States at December 31, 2016 and 2015, respectively.

Marketable securities are generally classified as available-for-sale for use in current operations, if required, and are reported at fair value, with unrealized gains and losses, net of tax, presented as a separate component of stockholders equity under the caption Accumulated other comprehensive income. These securities can include U.S. treasuries, government agency securities, corporate debt, and commercial paper, all with maturities of greater than three months when purchased. All realized gains and losses and unrealized losses resulting from declines in fair value that are other than temporary are included in Other, net in the Consolidated Statements of Operations. The specific identification method is used to determine the realized gains and losses on investments.

(p) Inventories

Inventories are stated at the lower of cost or net realizable value, with cost determined on a first-in, first-out basis. The Company reviews and sets standard costs on a periodic basis at current manufacturing costs in order to approximate actual costs. The Company assesses the valuation of all inventories, including manufacturing raw materials, work-in-process, finished goods, and spare parts, each quarter. Obsolete inventory or inventory in excess of management s estimated usage requirement is written down to its estimated net realizable value if less than cost. Estimates of net realizable value include, but are not limited to, management s forecasts related to the Company s future manufacturing schedules, customer demand, technological and/or market obsolescence, general market conditions, possible alternative uses, and ultimate realization of excess inventory. If future customer demand or market conditions are less favorable than the Company s projections, additional inventory write-downs may be required and would be reflected in cost of sales in the period the revision is made. Inventory acquired as part of a business combination is recorded at fair value on the date of acquisition. See Note 5, Business Combinations, for additional information.

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Veeco Instruments Inc. and Subsidiaries

Notes to Consolidated Financial Statements (Continued)

(q) Business Combinations

The Company allocates the fair value of the purchase consideration of the Company s acquisitions to the tangible assets, intangible assets, including in-process research and development (IPR&D), if any, and liabilities assumed, based on estimated fair values. The excess of the fair value of purchase consideration over the fair values of these identifiable assets and liabilities is recorded as goodwill. IPR&D is initially capitalized at fair value as an intangible asset with an indefinite life and assessed for impairment thereafter. When a project underlying reported IPR&D is completed, the corresponding amount of IPR&D is amortized over the asset s estimated useful life. Acquisition-related expenses are recognized separately from the business combination and are expensed as incurred in Selling, General, and Administrative in the Consolidated Statements of Operations. See Note 5, Business Combinations, for additional information.

(r) Goodwill and Indefinite-Lived Intangibles

Goodwill is an asset representing the future economic benefits arising from assets acquired in a business combination that are not individually identified and separately recognized. Goodwill is measured as the excess of the consideration transferred over the net of the acquisition-date amounts of the identifiable assets acquired and liabilities assumed. Intangible assets with indefinite useful lives are measured at their respective fair values on the acquisition date. Intangible assets related to IPR&D projects are considered to be indefinite-lived until the completion or abandonment of the associated R&D efforts. If and when development is complete, the associated assets would be deemed long-lived and would then be amortized based on their respective estimated useful lives at that point in time. Goodwill and indefinite-lived intangibles are not amortized into results of operations but instead are evaluated for impairment. The Company performs the evaluation in the fourth quarter of each year or more frequently if impairment indicators arise.

The Company may first perform a qualitative assessment of whether it is more likely than not that the reporting unit s fair value is less than its carrying amount, and, if so, the Company then applies the two-step impairment test. The two-step impairment test first compares the fair value of the Company s reporting unit to its carrying amount. If the fair value exceeds the carrying amount, goodwill is not impaired, and the Company is not required to perform further testing. If the carrying amount exceeds fair value, the Company determines the implied fair value of the goodwill and, if the carrying amount of the goodwill exceeds its implied fair value, then the Company records an impairment loss equal to the difference.

The Company determines the fair value of its reporting unit based on a reconciliation of the fair value of the reporting unit to the Company s adjusted market capitalization. The adjusted market capitalization is calculated by multiplying the average share price of the Company s common stock for the last ten trading days prior to the measurement date by the number of outstanding common shares and adding a control premium.

(s) Long-Lived Assets and Cost Method Investment

Long-lived intangible assets consist of purchased technology, customer-related intangible assets, patents, trademarks, covenants not-to-compete, and software licenses and are initially recorded at fair value. Long-lived intangibles are amortized over their estimated useful lives in a method reflecting the pattern in which the economic benefits are consumed or straight-lined if such pattern cannot be reliably determined.

Property, plant, and equipment are recorded at cost. Depreciation expense is calculated based on the estimated useful lives of the assets by using the straight-line method. Amortization of leasehold improvements is recognized using the straight-line method over the shorter of the remaining lease term or the estimated useful lives of the improvements.

Long-lived assets and cost method investments are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If circumstances require a long-lived asset or asset group be tested for possible impairment, a recoverability test is performed utilizing undiscounted cash flows expected to

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Veeco Instruments Inc. and Subsidiaries

Notes to Consolidated Financial Statements (Continued)

be generated by that asset or asset group compared to its carrying amount. If the carrying amount of the long-lived asset or asset group is not recoverable on an undiscounted cash flow basis, impairment is recognized to the extent the carrying amount exceeds its fair value. Fair value is determined through various valuation techniques including discounted cash flow models or, when available, quoted market values, and third-party appraisals.

(t) Recent Accounting Pronouncements

The FASB issued ASU 2014-09, as amended: *Revenue from Contracts with Customers*, which has been codified as Accounting Standards Codification 606 (ASC 606). ASC 606 requires the Company s revenue recognition to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the Company expects to be entitled in exchange for those goods or services. ASC 606 outlines a five-step model to make the revenue recognition determination and requires new financial statement disclosures. Publicly-traded companies are required to adopt ASC 606 for reporting periods beginning after December 15, 2017, but can adopt early for annual periods beginning after December 15, 2016. The Company is still finalizing its assessment of the impact of adopting the ASU on its consolidated financial statements and is still evaluating which method of adoption it will select.

In January 2016, the FASB issued ASU 2016-01: *Financial Instruments Overall*, which requires certain equity investments to be measured at fair value, with changes in fair value recognized in net income. Publicly-traded companies are required to adopt the ASU for reporting periods beginning after December 15, 2017; early adoption is permitted. The Company does not expect this ASU will have a material impact on its consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02: *Leases*, which generally requires the Company s operating lessee rights and obligations to be recognized as assets and liabilities on the balance sheet. In addition, interest on lease liabilities is to be recognized separately from the amortization of right-of-use assets in the Statement of Operations. Further, payments of the principal portion of lease liabilities are to be classified as financing activities while payments of interest on lease liabilities and variable lease payments are to be classified as operating activities in the Statement of Cash Flows. The transition to the ASU will require leases at the beginning of the earliest period presented to be recognized and measured using a modified retrospective approach. The ASU is effective for fiscal years beginning after December 15, 2018, with early application permitted. The Company is evaluating the anticipated impact of adopting the ASU on its consolidated financial statements.

In August 2016, the FASB issued ASU 2016-15, *Statement of Cash Flows: Classification of Certain Cash Receipts and Cash Payments*, which provides guidance on eight specific cash flow issues, including debt prepayments or debt extinguishment costs. Publicly-traded companies are required to adopt the update for reporting periods beginning after December 15, 2017. The Company does not expect this ASU will have a material impact on its consolidated financial statements.

In October 2016, the FASB issued ASU 2016-16, *Income Taxes: Intra-Entity Transfers of Assets Other Than Inventory*, which requires that entities recognize the income tax consequences of an intra-entity transfer of an asset, other than inventory, when the transfer occurs. Publicly-traded companies are required to adopt the update for reporting periods beginning after December 15, 2017. The Company is evaluating the anticipated effect the ASU will have on its consolidated financial statements.

(u) Recently Adopted Accounting Standards

In March 2016, the FASB issued ASU 2016-09: *Stock Compensation: Improvements to Employee Share-Based Payment Accounting*, which simplifies several aspects of the accounting for share-based payments. The Company early adopted the ASU effective January 1, 2016. Beginning in 2016, excess tax benefits and deficiencies are recognized as income tax expense or benefit in the income statement in the reporting period incurred. The Company also made an accounting policy election to account for forfeitures when they occur. The ASU transition guidance requires that this election be applied on a modified retrospective basis through a cumulative-effect adjustment to retained earnings as of the beginning of the

Veeco Instruments Inc. and Subsidiaries

Notes to Consolidated Financial Statements (Continued)

period in which the ASU is effective. Accordingly, the Company recorded a $1.3 million charge to the opening accumulated deficit balance with a corresponding adjustment to additional paid-in capital, resulting in no impact to the opening balance of total stockholders equity. In addition, the Company recorded additional deferred tax assets with an equally offsetting valuation allowance of $2.4 million.

In November 2015, the FASB issued ASU 2015-17: *Balance Sheet Classification of Deferred Taxes*, which simplifies the presentation of deferred income taxes by requiring that deferred income tax liabilities and assets be classified as noncurrent in our consolidated balance sheet. Publicly-traded companies are required to adopt the update for reporting periods beginning after December 15, 2016, with early application permitted. The Company early adopted the ASU effective January 1, 2015. In accordance with the ASU s transition requirements, the Company chose to apply the amendments in the update prospectively. As such, periods prior to 2015 have not been retrospectively adjusted. The adoption of this ASU did not have a material impact on the consolidated financial statements.

Note 2 Income (Loss) Per Share

The Company considers unvested share-based awards that have non-forfeitable rights to dividends prior to vesting to be participating shares, which are treated as a separate class of security from the Company s common shares for calculating per share data. Therefore, the Company applies the two-class method when calculating income (loss) per share. The two-class method is an earnings allocation formula that determines earnings per share for each class of common stock and participating security according to dividends declared and participation rights in undistributed earnings. However, since the holders of the participating shares are not obligated to fund losses, participating shares are excluded from the calculation of loss per share.

Basic income (loss) per share is calculated by dividing net income (loss) by the weighted average number of shares outstanding during the period under the two-class method. Diluted income per share is calculated by dividing net income by the weighted average number of shares used to calculate basic income (loss) per share plus the weighted average number of common share equivalents outstanding during the period. The dilutive effect of outstanding options to purchase common stock and non-participating share-based awards is considered in diluted income per share by application of the treasury stock method. The dilutive effect of performance share units is included in diluted income per common share in the periods the performance targets have been achieved. The computations of basic and diluted income (loss) per share for the years ended December 31, 2016, 2015, and 2014 are as follows:

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Veeco Instruments Inc. and Subsidiaries

Notes to Consolidated Financial Statements (Continued)

	For the year ended December 31, 2016	2015	2014
	(in thousands, except per share amounts)		
Net income (loss)	$ (122,210)	$ (31,978)	$ (66,940)
Net income (loss) per common share:			
Basic	$ (3.11)	$ (0.80)	$ (1.70)
Diluted	$ (3.11)	$ (0.80)	$ (1.70)
Basic weighted average shares outstanding	39,340	39,742	39,350
Effect of potentially dilutive share-based awards			
Diluted weighted average shares outstanding	39,340	39,742	39,350
Unvested participating shares excluded from basic weighted average shares outstanding since the securityholders are not obligated to fund losses	312	1,017	1,141
Common share equivalents excluded from the diluted weighted average shares outstanding since Veeco incurred a net loss and their effect would be antidilutive	107	146	339
Potentially dilutive non-participating shares excluded from the diluted calculation as their effect would be antidilutive	1,896	2,111	1,123

Note 3 Fair Value Measurements

Fair value is the price that would be received for an asset or the amount paid to transfer a liability in an orderly transaction between market participants. The Company is required to classify certain assets and liabilities based on the following fair value hierarchy:

- Level 1: Quoted prices in active markets that are unadjusted and accessible at the measurement date for identical, unrestricted assets or liabilities;

- Level 2: Quoted prices for identical assets and liabilities in markets that are not active, quoted prices for similar assets and liabilities in active markets or financial instruments for which significant inputs are observable, either directly or indirectly; and

- Level 3: Prices or valuations that require inputs that are both significant to the fair value measurement and unobservable.

A financial instrument s level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. The Company has evaluated the estimated fair value of financial instruments using available market information and valuations as provided by third-party sources. The use of different market assumptions or estimation methodologies could have a significant effect on the estimated fair value amounts.

The following table presents the Company s assets that were measured at fair value on a recurring basis at December 31, 2016 and 2015:

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Notes to Consolidated Financial Statements (Continued)

	Level 1	Level 2	Level 3	Total
		(in thousands)		
December 31, 2016				
Cash equivalents				
Corporate debt	$	$ 1,501	$	$ 1,501
Total		1,501		1,501
Short-term investments				
U.S. treasuries	40,008			40,008
Government agency securities		10,012		10,012
Corporate debt		13,773		13,773
Commercial paper		2,994		2,994
Total	$ 40,008	$ 26,779	$	$ 66,787
December 31, 2015				
Cash equivalents				
U.S. treasuries	$ 9,999	$	$	$ 9,999
Government agency securities		4,998		4,998
Commercial paper		2,999		2,999
Total	9,999	7,997		17,996
Short-term investments				
U.S. treasuries	94,918			94,918
Government agency securities		12,988		12,988
Corporate debt		8,144		8,144
Total	$ 94,918	$ 21,132	$	$ 116,050

Cash equivalents are highly liquid investments with maturities of three months or less when purchased. These investments are carried at cost, which approximates fair value. All investments classified as available-for-sale are recorded at fair value within short-term investments in the Consolidated Balance Sheets. The Company s investments classified as Level 1 are based on quoted prices that are available in active markets. The Company s investments classified as Level 2 are valued using observable inputs to quoted market prices, benchmark yields, reported trades, broker/dealer quotes, or alternative pricing sources with reasonable levels of price transparency.

Note 4 Investments

At December 31, 2016 and 2015 the amortized cost and fair value of marketable securities were as follows:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
		(in thousands)		
December 31, 2016				
U.S. treasuries	$ 40,013	$	$ (5)	$ 40,008

Government agency securities		10,020				(8)		10,012
Corporate debt		13,780				(7)		13,773
Commercial paper		2,994						2,994
Total	$	66,807	$		$	(20)	$	66,787
December 31, 2015								
U.S. treasuries	$	94,935	$	6	$	(23)	$	94,918
Government agency securities		12,985		3				12,988
Corporate debt		8,144		1		(1)		8,144
Total	$	116,064	$	10	$	(24)	$	116,050

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Available-for-sale securities in a loss position at December 31, 2016 and 2015 were as follows:

	December 31, 2016		December 31, 2015	
	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses
		(in thousands)		
U.S. treasuries	$ 20,002	$ (5)	$ 64,922	$ (23)
Government agency securities	10,012	(8)		
Corporate debt	13,774	(7)	3,353	(1)
Total	$ 43,788	$ (20)	$ 68,275	$ (24)

At December 31, 2016 and 2015, there were no short-term investments that had been in a continuous loss position for more than 12 months.

The maturities of securities classified as available-for-sale at December 31, 2016 were all due in one year or less. Actual maturities may differ from contractual maturities because borrowers may have the right to call or prepay obligations with or without call or prepayment penalties. There were no realized gains or losses for the year ended December 31, 2016. There were no realized losses and minimal realized gains for 2015 and 2014, which were included in Other, net in the Consolidated Statements of Operations.

Cost Method Investment

The Company has an ownership interest of less than 20% in a non-marketable investment, Kateeva, Inc. (Kateeva). The Company does not exert significant influence over Kateeva and therefore the investment is carried at cost. The carrying value of the investment was $21.0 million at December 31, 2016 and 2015. The investment is included in Other assets on the Consolidated Balance Sheet. The investment is subject to a periodic impairment review; as there are no open-market valuations, the impairment analysis requires judgment. The analysis includes assessments of Kateeva s financial condition, the business outlook for its products and technology, its projected results and cash flow, business valuation indications from recent rounds of financing, the likelihood of obtaining subsequent rounds of financing, and the impact of equity preferences held by Veeco relative to other investors. Fair value of the investment is not estimated unless there are identified events or changes in circumstances that could have a significant adverse effect on the fair value of the investment. No such events or circumstances are present.

Note 5 Business Combinations

PSP

On December 4, 2014 the Company acquired 100% of Solid State Equipment, LLC (SSEC) and rebranded the business Veeco Precision Surface Processing (PSP). The results of PSP operations have been included in the consolidated financial statements since the date of acquisition. PSP designs and develops wafer wet processing capabilities. Target market applications include semiconductor advanced packaging (including 2.5D and 3D ICs), micro-electromechanical systems (MEMS), compound semiconductor (RF, power electronics, LED and others), data storage, photomask, and flat panel displays. PSP further extends the Company s penetration in the compound semiconductor and MEMS markets and represents the Company s entry into the advanced packaging market.

The acquisition date fair value of the consideration totaled $145.5 million, net of cash acquired, which consisted of the following:

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		Acquisition Date (December 4, 2014) (in thousands)
Amount paid, net of cash acquired	$	145,382
Working capital adjustment		88
Acquisition date fair value	$	145,470

The following table summarizes the estimated fair values of the assets acquired and liabilities assumed at the acquisition date. The Company utilized third-party valuations to estimate the fair value of certain of the acquired tangible and intangible assets:

		Acquisition Date (December 4, 2014) (in thousands)
Accounts receivable	$	9,383
Inventory		13,812
Other current assets		463
Property, plant, and equipment		6,912
Intangible assets		79,810
Total identifiable assets acquired		110,380
Accounts payable and accrued expenses		6,473
Customer deposits		6,039
Deferred tax liability, net		2,705
Other		1,089
Total liabilities assumed		16,306
Net identifiable assets acquired		94,074
Goodwill		51,396
Net assets acquired	$	145,470

The gross contractual value of the acquired accounts receivable was approximately $10.5 million. The fair value of the accounts receivables is the amount expected to be collected by the Company. Goodwill generated from the acquisition is primarily attributable to expected synergies from future growth and strategic advantages provided through the expansion of product offerings as well as assembled workforce. Approximately 80% of the value of the goodwill is deductible for income tax purposes.

During 2015, the Company finalized the purchase accounting, including taxes and the working capital adjustment under the purchase agreement. Based on the final adjustments, net working capital increased $0.7 million, goodwill decreased $0.1 million, deferred tax liabilities decreased $0.2 million, and a lease-related asset retirement obligation of $0.8 million was recognized.

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The classes of intangible assets acquired and the estimated useful life of each class is presented in the table below:

	Acquisition Date (December 4, 2014) Amount *(in thousands)*	Useful life
Technology	$ 39,950	10 years
Customer relationships	34,310	14 years
Backlog	3,340	6 months
Non-compete agreements	1,130	2 years
Trademark and tradenames	1,080	1 year
Intangible assets acquired	$ 79,810	

The Company determined the estimated fair value of the identifiable intangible assets based on various factors including: cost, discounted cash flow, income method, loss-of-revenue/income method, and relief-from-royalty method in determining the purchase price allocation.

During 2014, the Company recognized $3.2 million of acquisition related costs that are included in Selling, general, and administrative in the Consolidated Statements of Operations.

The amounts of revenue and income (loss) from continuing operations before income taxes of PSP included in the Company s consolidated statement of operations from the acquisition date (December 4, 2014) to the period ending December 31, 2014 are as follows:

	Total *(in thousands)*
Revenue	$ 7,906
Loss from operations before income taxes	$ (3,011)

The following represents the unaudited pro forma Consolidated Statements of Operations as if PSP had been included in the Company s consolidated results for the periods indicated. These amounts have been calculated after applying the Company s accounting policies to material amounts and also adjusting the results of PSP to reflect the additional amortization and depreciation that would have been expensed assuming the fair value adjustments to the acquired assets had been applied on January 1, 2013:

	December 31, 2014 *(in thousands)*
Revenue	$ 447,089

Loss from operations before income taxes	$	(68,715)

Note 6 Goodwill and Intangible Assets

Goodwill represents the future economic benefits arising from assets acquired in a business combination that are not individually identified and separately recognized. The following table presents the changes in goodwill balances during the years indicated:

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	Gross carrying amount	Accumulated impairment *(in thousands)*	Net amount
Balance at December 31, 2014	$ 238,158	$ 123,199	$ 114,959
Purchase price adjustments	(51)		(51)
Balance at December 31, 2015 and 2016	$ 238,107	$ 123,199	$ 114,908

The Company performed its annual goodwill impairment test during the year ended December 31, 2016. The fair value of the Company s reporting unit exceeded the carrying amount and therefore goodwill was not impaired. In the future, a significant decline in the market price of the Company s common stock could indicate a decline in the fair value of the Company s reporting unit such that goodwill becomes impaired.

During 2014, the Company successfully demonstrated its FAST-ALD technology for flexible OLED encapsulation. But, subsequent to the Company s annual goodwill impairment test in 2014, the incumbent deposition technology had progressed to satisfy current market requirements, which required an additional impairment test to be performed in the fourth quarter of 2014. After estimating the fair value of significant tangible and intangible long-lived assets related to the Atomic Layer Deposition (ALD) business, the Company recorded non-cash impairment charges of $28.0 million related to goodwill and $25.9 million related to other long-lived assets, including $17.4 million related to customer relationships, $4.8 million related to in-process research and development, and $3.6 million related to certain tangible assets.

During 2016, the Company decided to further significantly reduce future investments in its ALD technology development and, as a result, recorded non-cash impairment charges of its remaining ALD assets, including $54.3 million for the full impairment of the intangible purchased ALD technology. The impairment charges were based on projected cash flows that required the use of unobservable inputs.

The components of purchased intangible assets were as follows:

		December 31, 2016			December 31, 2015		
	Weighted Average Remaining Amortization Period *(in years)*	Gross Carrying Amount	Accumulated Amortization and Impairment	Net Amount *(in thousands)*	Gross Carrying Amount	Accumulated Amortization and Impairment	Net Amount
Technology	7.3	$ 149,198	$ 113,904	$ 35,294	$ 222,358	$ 120,496	$ 101,862
Customer relationships	11.9	47,885	28,659	19,226	47,885	22,470	25,415
Trademarks and tradenames	4.3	2,590	1,948	642	2,730	1,937	793
Indefinite-lived trademark		2,900		2,900	2,900		2,900
Other	2.9	2,026	1,710	316	6,241	5,537	704
Total	8.9	$ 204,599	$ 146,221	$ 58,378	$ 282,114	$ 150,440	$ 131,674

Other intangible assets primarily consist of patents, licenses, customer backlog, and non-compete agreements.

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Based on the intangible assets recorded at December 31, 2016, and assuming no subsequent additions to or impairment of the underlying assets, the remaining estimated annual amortization expense is expected to be as follows:

	Amortization *(in thousands)*
2017	$ 11,470
2018	9,893
2019	8,608
2020	7,530
2021	5,491
Thereafter	12,486
Total	$ 55,478

Note 7 Inventories

Inventories are stated at the lower of cost or net realizable value using standard costs that approximate actual costs on a first-in, first-out basis. Inventories consist of the following:

	December 31, 2016	December 31, 2015
	(in thousands)	
Materials	$ 46,457	$ 42,373
Work-in-process	25,250	30,327
Finished goods	5,356	4,769
Total	$ 77,063	$ 77,469

Note 8 Property, Plant, and Equipment and Assets Held for Sale

Property and equipment, net, consist of the following:

	December 31, 2016	December 31, 2015	Average Useful Life
	(in thousands)		
Land	$ 5,669	$ 9,592	N/A
Building and improvements	50,814	54,622	10-40 years

Machinery and equipment(1)		99,370		110,075	3-10 years
Leasehold improvements		3,652		5,554	3-7 years
Gross property, plant and equipment		159,505		179,843	
Less: accumulated depreciation and amortization		98,859		100,253	
Net property, plant and equipment	$	60,646	$	79,590	

(1) Machinery and equipment also includes software, furniture and fixtures

Depreciation expense was $13.4 million, $12.2 million, and $11.4 million for the years ended December 31, 2016, 2015, and 2014, respectively. During 2016, the Company decided to significantly reduce future investments in its ALD technology development and, as a result, recorded a charge for impairment of its ALD assets, including a $3.3 million impairment of property, plant, and equipment.

As part of the Company s efforts to reduce costs, enhance efficiency and streamline operations, the Company removed certain lab equipment that is no longer required and recorded a non-cash impairment charge of $6.2 million for the year ended December 31, 2016. Additionally, as part of that initiative, the Company listed its two facilities in South Korea for

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sale. When each facility was reclassified as held for sale, the Company determined that the carrying values of the buildings exceeded their fair market values, less cost to sell, and recorded net impairment charges of $4.5 million for the year ended December 31, 2016. Both facilities were sold before the end of 2016 at prices that approximated the revised carrying values.

The Company also has a property in St. Paul, Minnesota that was classified as held for sale in 2014. At that time, the Company determined that the carrying value of this property exceeded the fair value, less cost to sell, and recorded an impairment charge of approximately $1.9 million for the year ended December 31, 2014. The Company continued to classify the property as held for sale throughout 2015. In early 2016, the Company recorded an additional impairment charge of approximately $1.2 million to reflect changes in market conditions that impacted the fair value of the assets. The Company continues to actively market the property for sale. However, the Company can no longer make the assessment that the assets will be sold within the next twelve months. As such, the land and building no longer meet the criteria to be classified as assets held for sale on the balance sheet and were reclassified to Property, plant and equipment, net in the Consolidated Balance Sheets at its carrying value of $3.6 million, which approximates its fair market value.

During the year ended December 31, 2014, the Company classified certain property, plant, and equipment related to the Company s research and demonstration labs in Asia as held for sale, and recorded an impairment charge of approximately $1.6 million. During the year ended December 31, 2015, the Company sold these assets for $1.0 million, which approximated carrying value.

Finally, during the year ended December 31, 2014, the Company recognized additional asset impairment charges of $0.7 million relating to assets that were abandoned during the year.

Note 9 Accrued Expenses and Other Liabilities

The components of accrued expenses and other current liabilities were as follows:

	December 31, 2016	December 31, 2015
	(in thousands)	
Payroll and related benefits	$ 18,780	$ 30,917
Warranty	4,217	8,159
Professional fees	1,827	2,224
Installation	1,382	1,110
Sales, use, and other taxes	1,282	1,132
Restructuring liability	1,796	824
Other	3,917	5,027
Total	$ 33,201	$ 49,393

Customer deposits and deferred revenue

Customer deposits totaled $22.2 million and $28.2 million at December 31, 2016 and 2015, respectively, which are included in Customer deposits and deferred revenue in the Consolidated Balance Sheets.

Note 10 Restructuring Charges

During 2016, additional accruals were recognized and payments made related to previous years restructuring initiatives. In addition, in 2016, the Company undertook additional restructuring activities as part of its initiative to streamline operations, enhance efficiency, and reduce costs. As a result of these actions, the Company notified approximately 50 employees of their termination from the Company and recorded restructuring charges related to these actions of $4.4 million, consisting of $3.3 million of personnel severance and related costs and $1.1 million of facility closing costs. In

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Notes to Consolidated Financial Statements (Continued)

addition, the Company decided to significantly reduce future investments in its ALD technology development, which impacted approximately 25 additional employees. As a result, the Company recorded personnel severance and related restructuring charges of $1.2 million. Over the next year, the Company expects to incur additional restructuring costs of $2 million to $5 million as it finalizes all of these activities.

During 2015, charges of $2.7 million were recognized and payments made related to the 2014 closing of the Ft. Collins, Colorado and Camarillo, California facilities. In 2015, the Company announced the closing of its Hyeongok-ri, South Korea facility and reduced the workforce, including 23 employees whose positions were eliminated, resulting in restructuring costs of $1.1 million. And in an effort to better align the Company s cost structure with the then recently observed weakness in the LED market, the Company incurred $0.9 million to reduce spending primarily through the reduction of 16 employees and 12 temporary staff.

During 2014, the Company announced the closing of its Ft. Collins, Colorado and Camarillo, California facilities. Business activities formerly conducted at these sites were transferred to the Company s Plainview, New York facility, and the Company recorded $0.4 million of facility closing costs. The Company also took additional measures to improve profitability and notified 93 employees of their termination from the Company and recorded $4.0 million of personnel severance and related costs. These actions were substantially complete at the end of 2014.

The following table shows the amounts incurred and paid for restructuring activities during the years ended December 31, 2016, 2015, and 2014 and the remaining accrued balance of restructuring costs at December 31, 2016, which is included in Accrued expenses and other current liabilities in the Consolidated Balance Sheets:

	Personnel Severance and Related Costs	Facility Related Costs	Total
		(in thousands)	
Balance at December 31, 2013	$ 533	$	