VEECO INSTRUMENTS INC
Form 10-K
February 28, 2014
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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2013

OR

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

For the transition period from to .

Commission file number 0-16244

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**

Website: **www.veeco.com**

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

Common Stock, par value $.01 per share

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 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 (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files.) Yes x No o

Indicate by check mark if 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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of Registrant s knowledge, in definitive proxy or information statements incorporated by 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 x	Accelerated filer o (Do not check if a smaller reporting company)	Non-accelerated filer o	Smaller reporting company o

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

The aggregate market value of the voting stock held by non-affiliates of the Registrant, based on the closing price of the common stock on June 28, 2013 as reported on The Nasdaq National Market, was $1,376,219,104. Shares of common stock held by each officer and director and by each person who owns 10% or more of the outstanding common stock have been excluded from this computation in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

39,846,244 shares of common stock were outstanding as of the close of business on February 18, 2014.

DOCUMENTS INCORPORATED BY REFERENCE

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Safe Harbor Statement

This annual report on Form 10-K (the Report) contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Discussions containing such forward-looking statements may be found in Part I. Items 1, 3, 7 and 7A hereof, as well as within this Report generally. In addition, when used in this Report, the words believes, anticipates, expects, estimates, plans, intends , will and similar expressions are intended to identify forward-looking sta All forward-looking statements are subject to a number of risks and uncertainties that could cause actual results to differ materially from projected results. These risks and uncertainties include, without limitation, the following:

- Our operating results have been, and may continue to be, adversely affected by unfavorable market conditions;

- Timing of market adoption of light emitting diode (LED) technology for general lighting is uncertain;

- 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;

- The further reduction or elimination of foreign government subsidies and economic incentives may adversely affect the future order rate for our metal organic chemical vapor deposition (MOCVD) equipment;

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

- Our backlog is subject to customer cancellation or modification and such cancellation could result in decreased sales and increased provisions for excess and obsolete inventory and/or liabilities to our suppliers for products no longer needed;

- Our failure to estimate customer demand accurately could result in excess or obsolete inventory and/or liabilities to our suppliers for products no longer needed, while manufacturing interruptions or delays could affect our ability to meet customer demand;

- The cyclicality of the industries we serve directly affects our business;

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

- Our sales to LED and data storage manufacturers are highly dependent on these manufacturers sales for consumer electronics applications, which can experience significant volatility due to seasonal and other factors, which could materially adversely impact our future 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;

- 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;

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

- We operate in industries characterized by rapid technological change;

- We face significant competition;

- We depend on a limited number of customers, located primarily in a limited number of regions, which operate in highly concentrated industries;

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- Our sales cycle is long and unpredictable;

- 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;

- The price of our common shares may be volatile and could decline significantly;

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

- We are subject to foreign currency exchange risks;

- The enforcement and protection of our intellectual property rights may be expensive and could divert our limited resources;

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

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

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

- We may be required to take additional impairment charges for goodwill and indefinite-lived intangible assets or definite-lived intangible and long-lived assets;

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

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

- We have significant operations in locations which could be materially and adversely impacted in the event of a natural disaster or other significant disruption;

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

- New 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; and

- The matters set forth in this Report generally, including the risk factors set forth in Part I. Item 1A. Risk Factors.

Consequently, such forward-looking statements should be regarded solely as the current plans, estimates and beliefs of Veeco Instruments Inc. (together with its consolidated subsidiaries, Veeco , the Company , we , us , and our , unless the context indicates otherwise). The Company doe not undertake any obligation to update any forward-looking statements to reflect future events or circumstances after the date of such statements.

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VEECO INSTRUMENTS INC.

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PART I.

Item 1. Business

The Company

Veeco Instruments Inc. (together with its consolidated subsidiaries, Veeco , the Company , we , us , and our , unless the context indicates otherv creates process equipment that enables technologies for a cleaner and more productive world. We design, manufacture and market thin film equipment aligned with global megatrends such as energy efficiency and mobility. Our equipment is primarily sold to make electronic devices including light emitting diodes (LED s), flexible organic LED (OLED) displays, hard-disk drives, solar cells, power semiconductors and wireless components.

We develop highly differentiated, best-in-class process equipment for critical performance steps. Our products feature leading technology, low cost-of-ownership and high throughput. Core competencies in advanced thin film technologies, over 300 patents, and decades of specialized process know-how helps us to stay at the forefront of these demanding industries.

Our *LED & Solar segment* includes two related compound semiconductor technologies, metal organic chemical vapor deposition (MOCVD) and molecular beam epitaxy (MBE) as well as newly acquired atomic layer deposition (ALD) technology. Our MOCVD and MBE systems and components enable the manufacture of LEDs used in consumer electronics, displays and lighting, power semiconductors, wireless components and solar cells. Our ALD technology is used by the manufacturers of OLED displays and has further applications in the semiconductor and solar markets.

Our *Data Storage segment* designs and manufactures systems used to create thin film magnetic heads (TFMH s) that read and write data on hard disk drives. These include ion beam etch, ion beam deposition, diamond-like carbon, physical vapor deposition, chemical vapor deposition, and slicing, dicing and lapping systems. While our systems are primarily sold to hard drive customers, they also have applications in optical coatings, micro-electro-mechanical systems (MEMS) and magnetic sensors, and extreme ultraviolet (EUV) lithography.

As of December 31, 2013, we had approximately 800 employees to support our customers through product and process development, training, manufacturing, and sales and service sites in the U.S., South Korea, Taiwan, China, Singapore, Japan, Europe and other locations.

Veeco Instruments Inc. was organized as a Delaware corporation in 1989.

Our Growth Strategy

Our growth strategy consists of:

- Providing differentiated process equipment to address customers next generation product development roadmaps;

- Investing to win through focused research and development spending in markets that we believe provide significant growth opportunities or are at an inflection point in process equipment requirements. Examples include LED, OLED, and power semiconductor devices;

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

- Expanding our portfolio of service products that improve the performance of our systems, including spare parts, upgrades and consumables to drive growth and improve customer satisfaction;

- Combining outsourced and internal manufacturing strategies to flex manufacturing capacity through industry investment cycles; and

- Pursuing partnerships and acquisitions to expand our product portfolio and accelerate our growth.

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Business Overview and Industry Trends

Business Overview: Our deposition, etch and other systems are applicable to the creation of a broad range of microelectronic components, including LEDs, OLEDs, TFMHs and compound semiconductor devices. Our customers who manufacture these devices invest in equipment in order to advance their next generation products and deliver more efficient and cost effective technology solutions. Our businesses tend to be cyclical, and are highly influenced by customer buying patterns that are dependent upon industry trends. While our products are sold to multiple end markets, we are focused herein on the trends that most influence our business.

LED Industry Trends: Following the global recession in 2008-2009, we experienced a rapid improvement in business conditions in late 2009 through mid-2011, particularly in our MOCVD business. Demand for our MOCVD equipment increased dramatically, primarily from customers in South Korea, China, and Taiwan, as LEDs became the standard illumination for TV backlighting. We experienced a strong increase in demand for MOCVD from customers in China due to government funding of LED fabrication facility expansions throughout the region. Following this large investment, the LED industry entered an overcapacity situation, evidenced by low tool utilization rates being reported by many key global customers. As a result, our MOCVD business declined significantly from the middle of 2011 through the end of 2013. While utilization rates of our equipment in many customer facilities improved in 2013 from prior trough levels in 2012, weak business conditions in MOCVD persist and continue to be difficult at the start of 2014. In the short term, it is difficult for us to predict when the supply/demand of MOCVD equipment will return to equilibrium and when order rates for our MOCVD products will meaningfully recover.

While consumer electronics (e.g. cell phones, laptops, LED-TVs) have been the dominant end markets for LED technology over the past decade, and for which most of the new MOCVD capacity was installed, these applications are expected to reach saturation in the next few years. Conversely, the general lighting market is in its infancy, and we believe that thousands of additional MOCVD tools will be required as LEDs become widely adopted for this much larger market application.

As part of the shift toward more efficient energy use across the globe, we believe LED technology will play a key role in energy and cost savings in lighting. We see this opportunity as both vast and long-term given that LED lighting is just now beginning to penetrate the global lighting market. LED adoption is happening initially in outdoor, commercial and industrial lighting where high usage and lower efficiency make incumbent lighting costly. Further adoption across all forms of lighting is expected to occur in the coming years with rapidly declining LED costs, shortening payback periods versus conventional lighting technologies, and ban-the-bulb legislation now underway in more than 20 countries around the globe. In addition to the incandescent bulb phase-outs, many countries are implementing policies to accelerate adoption of LEDs. These include China s 10 cities 10,000 lights program, South Korea s 20-60 plan targeting 60% penetration of lighting on a national level by 2020, and Japan s Basic Energy Plan with specific goals for energy efficient lighting. In March 2013, LED industry forecaster Digitimes Research projected that LED lighting will represent about 38.6% of the total lighting market, and will be worth approximately $44.2 billion by 2015.

In order to capitalize on this opportunity, we introduced several new generations of MOCVD tools, including our TurboDisc® K-Series and MaxBright® MOCVD systems which provide customers with significant cost of ownership advantages when compared with alternative equipment. These activities enabled us to overtake our primary competitor in market share in 2012. To maintain our leadership position, we continue to invest heavily in MOCVD research and development to help drive down cost of LED manufacturing for our customers in order to accelerate lighting adoption.

Trends in other Markets Impacting our MOCVD Business: Power semiconductors are an emerging market opportunity for MOCVD equipment. While silicon-based transistors are the mainstream of power electronic devices today, gallium nitride (GaN)-on-Silicon based power electronics developed on MOCVD tools can potentially deliver higher performance (i.e. higher efficiency and switching speed). Global industry leaders in power electronics are currently working on research and development programs to explore this new technology. GaN-on-Silicon based power devices have potential for information technology and consumer devices (e.g. power supplies, inverters).

Another application for MOCVD is in the solar market. MOCVD equipment can also be used to manufacture high-efficiency triple junction photovoltaic cells. We currently sell a small number of MOCVD systems each year to make solar cells for Concentrator Photovoltaic (CPV) and Space Based applications.

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Trends Impacting our MBE Business: Our MBE systems, sources and components are used to manufacture critical epitaxial layers in applications such as solar cells, fiber-optics, mobile phones, radar systems and displays. Our business is primarily influenced by long-term market trends in cell phone manufacturing. Each one of these complex cell phone devices contains an increasing number of power amplifiers or other compound semiconductor radio frequency components. Due to industry consolidation and resulting overcapacity, our sales of MBE production tools have been declining for about a year. In 2013, we refocused our business and product portfolio to increase our market share in sales of MBE systems to scientific research organizations and universities.

Trends Impacting our ALD Business: On October 1, 2013, we completed the acquisition of Synos Technology, Inc.(Synos), which brought atomic layer deposition technology to us. We are working with the world leader in mobile OLED displays to develop ALD systems that effectively encapsulate the OLED materials and potentially enable flexible displays for mobile phones. According to industry forecasting firm IHS iSuppli, the flexible OLED display market is expected to grow from $21 million in 2013 to almost $12 billion by 2020. In addition, we also see numerous extended opportunities for ALD technology in OLED TV, lighting, semiconductor, solar and other adjacent markets.

Data Storage Business Overview and Trends: Worldwide storage demand continues to increase. While hard disk drives (HDDs) face significant competition from flash memory, we believe that HDDs will continue to provide the best value for mass storage and will remain at the forefront of large capacity storage applications. According to data storage research firm TrendFocus August 2013 report, shipments of TFMHs, the HDD component that our equipment makes, are forecasted to grow at a compound annual growth rate of 4.2% from 2013 to 2017.

While technological change continues in data storage, the industry has gone through a period of maturation, including vertical integration and consolidation. A recovery in capital spending by our key data storage customers in 2010, combined with the successful introduction of several new deposition tools to advance areal density, enabled us to report revenue growth in both 2010 and 2011. Natural disasters in Japan (tsunami) and Thailand (floods) caused major disruptions to the HDD supply chain in 2011. The floods in Thailand resulted in an unexpected increase in equipment orders for us in the fourth quarter of 2011 as customers rebuilt lost capacity. This led to record levels of Data Storage revenue in the first half of 2012. However, this significant equipment investment, combined with industry consolidation and a slowdown in hard drive unit demand in mid-2012 due to weak global economic conditions, caused our hard drive customers to freeze capacity additions. So, for the full year of 2012, our Data Storage revenue was flat and orders were well below recent historical averages. Industry overcapacity and weak order rates continued into 2013 and it is unclear when hard drive manufacturers will need to make significant investments in new equipment capacity.

Throughout industry cycles, we continue to invest in developing systems to support advanced technologies such as heat assisted magnetic recording (HAMR). HAMR is a technology that magnetically records data on high-stability media using laser thermal assistance to first heat the material. HAMR takes advantage of high-stability magnetic compounds that can store single bits in a much smaller area than in current hard drive technology.

Our Data Storage systems are also sold for applications in MEMS magnetic sensors, optical coatings and EUV photomasks. We have put in place new product development, marketing and sales strategies to grow the non-data storage applications for our technologies.

We have two segments, LED & Solar and Data Storage. Net sales for these segments are illustrated in the following table (dollars in thousands):

For the year ended December 31,

	2013	Percent of total	2012	Percent of total	2011	Percent of total
Segment Analysis						
LED & Solar	$ 249,742	75.3%	$ 363,181	70.4%	$ 827,797	84.5%
Data Storage	82,007	24.7%	152,839	29.6%	151,338	15.5%
Total	$ 331,749	100.0%	$ 516,020	100.0%	$ 979,135	100.0%

Please see our footnote *Foreign Operations, Geographic Area and Product Segment Information* in our Consolidated Financial Statements for additional information regarding our segments and sales by geographic location.

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LED & Solar

Metal Organic Chemical Vapor Deposition Systems (MOCVD): We are the world s leading supplier of MOCVD technology. MOCVD production systems are used to make GaN-based devices (blue and green LEDs) and AsP-based devices (red, orange and yellow LEDs), which are used today in television and laptop backlighting, general illumination, large area signage, specialty illumination and many other applications. Our AsP MOCVD systems also are used to make high-efficiency triple junction photo cells. In 2011, we introduced the industry s first production-proven multi-chamber MOCVD system, the MaxBright, for high-volume production of LEDs. We sell MOCVD systems in either single or multi-chamber configurations. In 2012, we introduced the TurboDisc MaxBright M & MHP and K465i HP GaN MOCVD systems, the industry s highest productivity, highest footprint efficiency platforms for LED manufacturing.

Molecular Beam Epitaxy Systems (MBE): MBE is the process of precisely depositing epitaxially aligned atomically thin crystal layers, or epilayers, of elemental materials onto a substrate in an ultra-high vacuum environment. For many compound semiconductors, MBE is the critical first 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 compound semiconductor materials research applications. In 2013, we introduced the GENxplor , the industry s first fully-integrated MBE system for the compound semiconductor R&D market. The GENxplor 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.

Fast Array Scanning Atomic Layer Deposition Systems (FAST-ALD): FAST-ALD represents a paradigm shift in a technology long known for excellent deposition uniformity and pin-hole free films. While traditional ALD is slow, costly and limited to chamber-sized reactors, FAST-ALD can deposit materials below 100º Celsius and 10 times faster, making it capable of deposition on substrates with virtually no size limitation. Our patented linear reactor allows the chemical reaction to occur at the substrate s surface. We are primarily focused on applying this technology for the encapsulation of organic light emitting diode (OLED) materials used to enable flexible mobile devices and we are also exploring additional applications in solar, semiconductor and other end markets.

Data Storage

Ion Beam Deposition (IBD) Systems: Our IBD systems and NEXUS® IBD systems utilize ion beam technology to deposit precise layers of thin films. The NEXUS systems may be included on our cluster system platform to allow either parallel or sequential etch/deposition processes. IBD systems deposit high purity thin film layers and provide maximum uniformity and repeatability. In addition to IBD systems, we provide a broad array of ion beam sources. These technologies are applicable in the hard drive industry as well as for optical coatings and other end markets.

Ion Beam Etch (IBE) Systems: Our NEXUS IBE systems etch precise, complex features for use primarily by data storage and telecommunications device manufacturers in the fabrication of discrete and integrated microelectronic devices.

Physical Vapor Deposition (PVD) Systems: Our NEXUS PVD systems offer manufacturers a highly flexible deposition platform for developing next-generation data storage applications.

Diamond-Like Carbon (DLC) Deposition Systems: Our DLC deposition systems deposit protective coatings on advanced TFMHs.

Chemical Vapor Deposition (CVD) Systems: Our NEXUS CVD systems deposit conformal films for advanced TFMH applications.

Precision Lapping, Slicing, and Dicing Systems: Our Optium® products generally are used in back-end applications in a data storage fabrication facility where TFMHs or sliders are fabricated. This equipment includes lapping tools, which enable precise material removal within three nanometers, which is necessary for next generation TFMHs. We also manufacture tools that slice and dice wafers into rowbars and TFMHs.

Optical Coatings: Our SPECTOR offers manufacturers improvements in target material utilization, optical endpoint control and process time for cutting-edge optical interference coating applications.

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Service and Sales

We sell our products and services worldwide primarily through various strategically located sales and service facilities in the U.S., Europe and Asia Pacific, and we believe that our customer service organization is a significant factor in our success. In 2010 and 2011, we significantly expanded our footprint in Asia to bring training, technology support and R&D closer to our customers through new sites in China, Taiwan and South Korea. We provide service and support on a warranty, service contract or an individual service-call basis. We believe that offering timely support creates stronger relationships with customers and provides us with a significant competitive advantage. Revenues from the sale of parts, service and support represented approximately 29%, 21% and 9% of our net sales for the years ended December 31, 2013, 2012 and 2011, respectively. Parts and consumables sales represented approximately 23%, 17% and 7% of our net sales for those years, respectively, and service and support sales were 6%, 4% and 2%, respectively.

Customers

We sell our products to many of the world s major LED, solar and hard drive manufacturers as well as to customers in other industries, research centers, and universities. We rely on certain principal customers for a significant portion of our sales. Sales to HC SemiTek in our LED & Solar segment accounted for more than 10% of our total net sales in 2013, Western Digital in our Data Storage segment accounted for more than 10% of our total net sales in 2012, and Elec-Tech International Co. Ltd. and Sanan Optoelectroni