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**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2020

OR

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

(State or Other Jurisdiction of Incorporation or Organization)

11-2989601

(I.R.S. Employer Identification No.)

Terminal Drive

Plainview, New York

(Address of Principal Executive Offices)

11803

(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	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value \$0.01 per share	VECO	The NASDAQ Global Select 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 No

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 No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted 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 such files). Yes No

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

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

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

The aggregate market value of the common stock held by non-affiliates of the registrant at June 26, 2020 (the last business day of the registrant's most recently completed second quarter) was \$614,033,790 based on the closing price of \$12.57 on the NASDAQ Global Select Market on that date.

As of February 11, 2021, there were 49,724,102 shares of the registrant's common stock, par value \$0.01 per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Certain portions of the definitive Proxy Statement to be used in connection with the Registrant's 2021 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 statements within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995, as amended, relating to Veeco Instruments Inc. (together with its consolidated subsidiaries, “Veeco,” the “Company,” “Registrant,” “we,” “our,” or “us,” unless the context indicates otherwise) that are based on management’s expectations, estimates, projections, and assumptions. When used in this Form 10-K, words such as “expects,” “anticipates,” “plans,” “believes,” “scheduled,” “estimates,” and variations of these words and similar expressions are intended to identify forward-looking statements. Discussions containing such forward-looking statements may be found in Part I, Items 1 and 3, Part II, Items 7 and 7A hereof, as well as within this Form 10-K generally. Forward-looking statements in this discussion include, but are not limited to, those regarding anticipated growth and trends in our businesses and markets, industry outlooks and demand drivers, our investment and growth strategies, our development of new products and technologies, our business outlook for the current and future periods, the impact of the COVID-19 pandemic, our ongoing transformation initiative and the effects thereof on our operations and financial results, and other statements that are not historical facts. These statements and their underlying assumptions are subject to risks and uncertainties and are not guarantees of future performance. Factors that could cause actual results to differ materially from those expressed or implied by such statements include, without limitation:

- the level of demand for our products;
- global economic and industry conditions;
- the effects of regional or global health epidemics, including the effects of the COVID-19 pandemic on the Company’s operations and on those of our customers and suppliers;
- global trade issues, including the ongoing trade disputes between the U.S. and China, and changes in trade and export license policies;
- our dependency on third-party suppliers and outsourcing partners;
- the timing of customer orders;
- our ability to develop, deliver and support new products and technologies;
- our ability to expand our current markets, increase market share and develop new markets;
- the concentrated nature of our customer base;
- our ability to obtain and protect intellectual property rights in key technologies;
- our ability to achieve the objectives of operational and strategic initiatives and attract, motivate and retain key employees;
- the variability of results among products and end-markets, and our ability to accurately forecast future results, market conditions, and customer requirements;
- the impact of our indebtedness, including our convertible senior notes and our capped call transactions; and
- other risks and uncertainties described in our SEC filings on Forms 10-K, 10-Q, and 8-K, including those included in Item 1A, "Risk Factors" of this Form 10-K, and from time-to-time in our other SEC reports.

All forward-looking statements speak only to management’s expectations, estimates, projections and assumptions as of the date of this filing or, in the case of any document referenced herein or incorporated by reference, the date of that document. The Company does not undertake any obligation to update or publicly revise any forward-looking statements to reflect events, circumstances or changes in expectations after the date of this filing.

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PART I

Item 1. Business

Business Description and Overview

Headquartered in Plainview, New York, we were organized as a Delaware corporation in 1989. We are a manufacturer of advanced semiconductor process equipment that solves an array of challenging materials engineering problems for our customers. Our comprehensive collection of ion beam, laser annealing, metal organic chemical vapor deposition (“MOCVD”), advanced packaging lithography, single wafer wet processing, molecular beam epitaxy (“MBE”), and atomic layer deposition (“ALD”) technologies play an integral role in the fabrication of key devices that are enabling the 4th industrial revolution of all things connected. Such devices include leading node application processors for mobile devices, thin film magnetic heads for hard disk drives in data storage, photonics devices for 3D sensing, advanced displays and high-speed data communications, radio frequency (“RF”) filters and power amplifiers for fifth generation (“5G”) networks and mobile electronics. In close partnership with our customers, we combine decades of applications and materials know-how with leading-edge systems engineering to deliver high-volume manufacturing solutions with competitive cost of ownership. Serving a global and highly interconnected customer base, we have comprehensive sales and service operations across the Asia-Pacific, Europe, and North America regions to ensure real-time close collaboration and responsiveness.

Our priorities are:

- Maintain the resilience of our business – Veeco’s management team took decisive action in early 2020 to keep our employees safe and healthy. We implemented innovative work-arounds, such as virtual customer demos and factory acceptances, where customers can review data and the performance of their system, in our factory, via live video. This and other steps have helped Veeco operate safely and successfully throughout the COVID-19 pandemic, resulting in the overall resiliency of our business. We have been able to serve our customers without pause and expect to continue to do so while executing on our strategic transformation, which includes a return to profitability and a focus on growth initiatives. We enter 2021 on strong footing. Operationally, we have secured a healthy backlog and scaled costs in relation to revenue in order to generate increased earnings. From a financial perspective, we have strengthened our balance sheet and solidified our capital structure. We believe that the proactive steps we have taken to manage the business through the pandemic have helped us maintain our financial strength and flexibility while enabling us to remain on track with our transformation;
- Focus on profitability and products – We seek to maintain the strength of our foundational businesses, including data storage, service offerings and sales to universities and research institutions to enable further investment in our growth initiatives; we are focused on delivering strong operating results; and in order to provide the greatest value, we continue to rationalize our product portfolio for opportunities to optimize and strengthen our competitive edge;
- Execute near-term to grow in 2021 - We are excited about our near-term growth opportunities, driven by our laser annealing, 5G RF, and data storage products. We believe that the foundry and logic markets will remain strong, which bodes well for our laser annealing product line. The adoption of 5G is off to a great start resulting in traction with our wet processing product line for the production of RF filters used in the most advanced smartphones. Furthermore, we continue to see strength in demand for hard disk drive (“HDD”) magnetic head capacity in the Data Storage market giving us good visibility through 2021; and
- Prepare for longer term growth in 2022 and beyond - We view the Semiconductor and Compound Semiconductor markets as long-term growth opportunities. By selectively investing in new research and development (“R&D”) and developing additional applications for our technology, we believe that Veeco will be well positioned to capitalize on emerging global megatrends in these areas. We’re investing now in targeted R&D, inventory for evaluation tools, and improving our service support capability for longer term growth in Semiconductor and Compound Semiconductor markets. We have begun placing evaluation tools with customers and plan to continue with additional placements in the coming quarters in exciting applications such

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as laser annealing in the memory market, laser annealing at advanced logic nodes, and early stage micro-LED. We are also exploring the application of other core Veeco technologies in semiconductor manufacturing. With these actions, we expect to generate growth opportunities in both the Semiconductor and Compound Semiconductor markets.

Markets

Our products are purchased by customers in the following four end-markets: 1) Semiconductor; 2) Compound Semiconductor; 3) Data Storage; and 4) Scientific & Other.

Our array of process equipment systems are used in the production of a broad range of microelectronic components, including logic, dynamic random-access memory (“DRAM”), photonics devices (including laser diodes and micro-LEDs), power electronics, RF filters and amplifiers, thin film magnetic heads, and other semiconductor devices. Many of our systems are used to directly deposit advanced materials critical to the operation of the device and some of our systems are used in cleaning and surface preparation as well as the precise removal of critical materials. We are also a leader in systems used in the advanced packaging process flow of microelectronic components such as flip chip, fan-out wafer level packaging (“FOWLP”), and other wafer level packaging approaches used in the modern integration of diverse semiconductor products, especially in consumer electronics. In general, our customers purchase our systems to both produce current-generation devices in volume and to develop next-generation products which deliver more efficient, cost-effective, and advanced technological solutions. We operate in several highly cyclical business environments, and our customers’ buying patterns are dependent upon industry trends and buying patterns for consumer electronics. As our products are sold into multiple markets, the following table describes these markets and the applicable Veeco technologies.

Markets	Description	Applicable Veeco Technologies
Semiconductor	The Semiconductor market refers to early process steps in logic and memory applications where silicon wafers are processed. There are many different process steps in forming patterned wafers, such as deposition, etching, masking, and doping, where the microchips are created but remain on the silicon wafer. As device architectures continue to shrink with advanced nodes, more precise process control is paramount to achieving high yields and competitive cost. This market includes mask blank production for extreme ultraviolet (“EUV”) lithography.	<ul style="list-style-type: none">● Laser Annealing● Ion Beam Deposition (“IBD”)● Ion Beam Etch (“IBE”)● Wet Processing
	This market also includes Advanced Packaging which refers to a portfolio of wafer-level assembly technologies that enable improved performance of electronic products, such as smartphones, high-end servers, and graphical processors. Demand for higher performance, smaller form factors, and lower power consumption in applications such as artificial intelligence, mobile devices, consumer electronics, and high-performance computing is driving the adoption of advanced packaging technologies.	<ul style="list-style-type: none">● Advanced Packaging Lithography

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Compound Semiconductor	<p>The Compound Semiconductor market includes Photonics, Power Electronics, RF Filters and Amplifiers, and Solar applications.</p> <p>Photonics refers to light source technologies and laser-based solutions for 3D sensing, datacom and telecom applications. This includes micro-LED, laser diodes, edge emitting lasers and vertical cavity surface emitting lasers (“VCSELs”).</p> <p>Micro-LEDs may be used for next generation advanced displays. A micro-LED display is a new approach which uses an array of red, blue, and green micro-LEDs to directly display an image without motion blur or image retention, and with improved brightness, darker blacks, and wider viewing angles.</p> <p>Power Electronics refers to semiconductor devices such as rectifiers, inverters and converters for the control and conversion of electric power in growing applications such as fast or wireless charging of consumer electronics and automotive applications.</p> <p>RF power amplifiers and filters (including surface acoustic wave (“SAW”) and bulk acoustic wave (“BAW”) filters) are used in 5G communications infrastructure, smartphones, tablets, and mobile devices. They make use of radio waves for wireless broadcasting and/or communications.</p> <p>Solar refers to power obtained by harnessing the energy of the sun through the use of compound semiconductor devices such as photovoltaics.</p>	<ul style="list-style-type: none"> ● Gallium Nitride (“GaN”) MOCVD ● Arsenides/ Phosphides (“As/P”) MOCVD ● Wet Processing ● MBE ● ALD ● IBE
Data Storage	<p>Data Storage refers to the HDD market which provides significant value for mass storage and is an important part of large capacity storage applications. Our systems enable customers to manufacture thin film magnetic heads for hard disk drives.</p>	<ul style="list-style-type: none"> ● IBD ● IBE ● Physical Vapor Deposition ● Mechanical (Lapping and Dicing) ● Diamond Like Carbon Deposition ● Wet processing

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Scientific & Other	Scientific & Other refers to advanced materials research and a range of manufacturing applications including optical coatings (laser mirrors, optical filters, and anti-reflective coatings).	<ul style="list-style-type: none">• Ion Beam Sputtering for optical coatings• MBE for specialized laser and sensor devices• Wet Processing for sensors• ALD for a variety of applications
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System Products

Laser Annealing Systems

Our laser annealing systems meet the industry demand for ultra-short time-scale annealing, heating the wafer up to temperatures just below the silicon melting point over a range of timeframes (microseconds to nanoseconds), enabling thermal annealing solutions at the most advanced processing nodes. This unique annealing technology provides the solution to the difficult challenge of fabricating ultra-shallow junctions and highly activated source/drain contacts at these advanced logic nodes. In addition, our proprietary hardware design enables outstanding temperature uniformity across the wafer and die, by minimizing the pattern-density effect, thus reducing absorption variations.

We have also developed a next generation melt anneal technology targeted for memory devices and annealing advanced logic devices at advanced nodes. As devices scale, achieving performance targets has become a challenge. To continue the roadmap, the industry is looking at new materials and the use of thermal processes that require nanosecond time-scale thermal annealing with temperatures exceeding the melting point. It is believed that nanosecond annealing will be required to meet the device targets at future nodes.

Ion Beam Deposition and Etch Systems

Our NEXUS® Ion Beam systems are used to deposit and etch thin film layers for multiple end applications in the Semiconductor, Data Storage, RF and other various emerging markets. These systems utilize Veeco's proven gridded ion source technology which delivers a charged ion beam directed at a substrate for the etch application and at a sputter target for the deposition application. Our NEXUS® IBD system has a leading position in multiple markets including EUV mask blank manufacturing in which it enables our customers to deposit multilayers with high precision and ultra-low defects which is essential for EUV lithography. Our ion sources and grid technology are incorporated into etch systems used to pattern magnetic materials for the 300mm Semiconductor STT-MRAM market. The IBD systems are also critical in the manufacture of thin film magnetic heads where they are used to deposit various magnetic and oxide layers and deliver best-in-class film properties. Our NEXUS® IBE systems are used to precisely etch complex features on materials which are challenging to pattern by traditional reactive ion etching techniques. These systems are widely used in the data storage industry for patterning of magnetic and oxide materials and are essential for forming the precise shape of the thin film magnetic head. The NEXUS® systems may be included on our cluster system platform to allow either parallel or sequential deposition/etch processes.

Our Lancer IBE system is used for etching of SAW and BAW devices in the RF filter market and various waveguide patterning steps for AR/VR markets where their best-in-class film uniformity is a key advantage.

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Our SPECTOR® Ion Beam Sputtering system was developed for high precision optical coatings and offers manufacturers state of the art optical thickness monitoring, improved productivity, and target material utilization, for cutting-edge optical interference coating applications. We also provide a broad array of ion beam sources.

Advanced Packaging Lithography

We have a leading position in the Advanced Packaging lithography equipment market for applications such as FOWLP, Flip Chip (including Copper Pillar), Fan In Wafer Lever Packaging, 3D stacking, interposers and embedded die. The Advanced Packaging market is driven by the need for improved performance, reduced power consumption, and the ability to image smaller geometries for mobile and automotive applications. These applications continue to demand increasingly complex packaging techniques and heterogeneous device integration from integrated device manufacturers (“IDMs”), Foundries, and outsourced semiconductor assembly and test (“OSAT”) companies. Our Advanced Packaging tools are designed to optimize productivity for leading-edge 200mm and 300mm Advanced Packaging applications by delivering proven reliability and low cost of ownership in high-volume manufacturing environments. Our products are known for best-in-class yield coupled with outstanding resolution and depth of focus.

Single Wafer Wet Processing

We offer single wafer wet processing, and surface preparation systems which target growth opportunities in RF filters and amplifiers in the Compound Semiconductor market, as well as advanced packaging applications in the Semiconductor market. The WaferStorm® platform is based on our 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, we have developed a state-of-the-art solution with the WaferEtch® platform to address the requirements of wafer thinning.

Metal Organic Chemical Vapor Deposition Systems

MOCVD production systems are used to make GaN and As/P-based devices for applications including power electronics, RF devices, specialty LED, display, and many other applications. Our proven TurboDisc® technology is at the heart of our MOCVD systems and is the key to enabling best-in-class deposition uniformity, yield performance and cost per wafer savings for our customers with a combined advantage of high operating uptime and low maintenance costs. Our Lumina™ platform is used for As/P deposition, and features long campaigns and low defectivity for exceptional yield and flexibility. Our Propel™ series (“Propel”) enables the development of highly-efficient GaN-based power electronic, RF devices and advanced GaN-on-silicon micro-LEDs. The Propel system offers 200mm and fully-automated 300mm technology and incorporates single-wafer reactor technology for outstanding film uniformity, yield, and device performance.

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 a leading supplier of MBE systems worldwide.

Our MBE systems, sources, and components are used to develop and manufacture compound semiconductor devices in a wide variety of applications such as high-power fiber lasers, infrared detectors, mobile phones, radar systems, high efficiency solar cells, and basic materials science research. The GENxplor® MBE system creates high quality epitaxial layers and is ideal for cutting-edge research on a wide variety of materials including GaAs, antimonides, nitrides, and oxides on 3” diameter substrates.



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Atomic Layer Deposition and Other Deposition Systems

ALD is a thin-film deposition method in which a film is deposited on a substrate uniformly with precise control down to the atomic scale. Veeco offers a full suite of ALD systems for non-semiconductor front-end production applications across a wide range of markets and applications such as energy, optical, electronics, micro-electro mechanical systems (“MEMS”), nanostructures, and biomedical. We have recently developed a fully automated tool, Firebird™, capable of managing fragile wafers in a continuous operational sequence.

Other deposition systems include Physical Vapor Deposition, Diamond-Like Carbon Deposition, and Chemical Vapor Deposition Systems.

Sales and Service

We sell our products and services worldwide 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. Revenue from the sales of parts, upgrades, service, and support represented approximately 30%, 26%, and 28% of our net sales for the years ended December 31, 2020, 2019, and 2018, respectively. Parts and upgrade sales represented approximately 23%, 19%, and 23% of our net sales for those years, respectively, and service and support sales were 7%, 7%, and 5% respectively.

Customers

We sell our products to many of the world’s semiconductor IDMs and Foundries, OSAT, HDD, and photonics manufacturers, as well as research centers and universities. We rely on certain principal customers for a significant portion of our sales. Sales to Seagate Technology accounted for more than 10% of our total net sales in 2020 and 2019; and sales to Focus Lighting Tech Co. accounted for more than 10% of our total net sales in 2018. 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 San Jose, California; Plainview, New York; Horsham, Pennsylvania; Somerset, New Jersey; St. Paul, Minnesota; and Waltham, Massachusetts.

Suppliers

We outsource certain functions to third parties, including the manufacture of several of our systems. While we rely on our outsourcing partners to perform their contracted functions, we maintain some 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 generally within twelve months, and a deposit, when required. Our backlog increased to \$366.0 million at December 31, 2020 from \$267.6 million at December 31, 2019.



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Competition

In each of the markets that we serve, we face 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 principal competitors include: Aixtron; Applied Materials; Canon; Grand Plastics Technology Corporation; Screen Semiconductor Solutions; and Shanghai Micro Electronics Equipment.

Intellectual Property

Our success depends, in part, on our proprietary technology, and we have over 500 patents in the United States and other countries.

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.

Human Capital

Veeco's global workforce spans 12 countries around the world. At the end of 2020, we had 993 employees with 221 located in the Asia-Pacific region, 37 in the EMEA region, and 735 in the United States. Approximately 23% of our employees are involved in research and development; 53% are involved in operations, manufacturing, service and quality assurance; and 24% are involved in sales, order administration, marketing, finance, information technology, general management and other administrative functions. Our success depends on our ability to attract, retain and motivate employees. We compete for talent with other companies and organizations. We consider our relations with our employees to be good. We are subject to various federal, state and local regulations, and regularly monitor all key employment activities, such as hiring, termination, pay and working practices to ensure compliance with such regulations. In addition, we supplement our employee base with contractors and other temporary workers.

Our recruitment programs are regionally focused, and hiring is done at a local level to ensure compliance with applicable regulations. To ensure diversity within our workforce we advertise job openings and source candidates broadly to attract a diverse candidate pool. As a leader in our industry, we are able to attract a strong candidate pool and have been successful in filling vacancies. In fiscal 2020, we hired 138 employees, 113 of whom were within the United States, 24 of whom were in the Asia-Pacific region and 1 of whom was within the EMEA region.

During fiscal 2019, we conducted a global employee survey designed to assess employee engagement, leadership, work environment and culture. We had a response rate of 91% of our total worldwide employee base, which is one indicator of a high-level of employee engagement. Participants provided over 2,000 responses to open-ended questions. The findings from this survey established an agenda for various initiatives designed to strengthen our Company. A follow-up survey is planned for fiscal 2021.

We track and report internally on key talent metrics including workforce demographics, talent pipeline and diversity. We believe in investing in professional development programs to ensure we provide opportunities for individuals to advance their careers either in a technical track or move to a leadership position. We offer many of our training and development programs on-line for the benefit of employees located around the world. Additional focus is placed on the development of our future leaders and we leverage a talent review process where high-potential and high-performing employees are

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assessed for future leadership roles as part of our succession management process for critical leadership positions. Since turnover is an important indicator of employee satisfaction, we closely monitor turnover globally and benchmark locally. Our 12-month rolling average for voluntary turnover at December 31, 2020 was approximately 6.8%, substantially less than benchmark data. Our employee average tenure is more than 9 years.

COVID-19 Update

As a result of the outbreak and continuing spread of COVID-19, governmental authorities have implemented and are continuing to implement numerous and constantly evolving measures to try to contain the virus, such as travel bans and restrictions, limits on gatherings, quarantines, shelter-in-place orders, and business shutdowns. We have important manufacturing operations in the United States and sales and support operations in China, Germany, Japan, Malaysia, Philippines, Singapore, South Korea, Thailand, Taiwan and the United Kingdom, all of which have been affected by the COVID-19 pandemic.

Measures providing for business shutdowns generally exclude certain essential services, and those essential services include critical infrastructure and the businesses that support that critical infrastructure. Our operations are considered part of the critical and essential infrastructure defined by applicable government authorities, and, although governmental measures to contain the pandemic may be modified or extended, our manufacturing facilities currently remain open. We believe our diverse product offerings and the critical nature of certain of our products for infrastructure insulate us, to some extent, from the adverse effects of the pandemic; however, a prolonged economic downturn will adversely affect our customers, which could have a material adverse effect on our revenues, particularly if customers from whom we derive a significant amount of revenue reduce or delay purchases to mitigate the impacts of the pandemic or fail to make payments to us on time or at all.

We serve a global and highly interconnected customer base across the Asia-Pacific region, Europe, and North America. Our net sales to customers located outside of the United States represented approximately 68%, 70%, and 77% of our total net sales in 2020, 2019, and 2018, respectively, and we expect that net sales to customers outside the United States will continue to represent a significant percentage of our total net sales. As a result, our business will be adversely impacted by further deterioration in global economic conditions, particularly in markets in Asia and Europe.

To date, we have not yet experienced any significant interruptions to our supply chain as a result of the COVID-19 pandemic. We continue to monitor our global supply chain and may experience disruptions in future periods, primarily as a result of financial challenges confronting companies in our supply chain and restrictions or disruptions of transportation, such as reduced availability of air transport, port closures and increased border controls or closures, any of which could cause a disruption in our ability to obtain raw materials or components required to manufacture our products.

Like many in our industry, we are managing through the effects of the COVID-19 pandemic. Although the full extent of the COVID-19 pandemic's impact on our business, results of operations, supply chains and growth can not be predicted or quantified, we proactively identified potential challenges to our business and have been executing business continuity activities to manage disruptions in our business and continue to provide critical infrastructure to our customers. In response to the pandemic, we have taken, or intend to take, the following steps, among others, to keep our employees safe and minimize the spread of the virus, while continuing to serve our customers:

- implemented rigorous health and safety protocols at our manufacturing facilities, including extensively and frequently disinfecting our facilities, limiting access to our facilities, checking temperatures of individuals entering our facilities, staggering shifts to minimize employee overlap in gowning areas, and providing protective equipment;
- mandated remote working arrangements for employees that do not need to be physically present on the manufacturing floor or at customer facilities;
- implemented virtual meetings, customer demos, and factory acceptances to enable customers to review data and performance of their system in our factory remotely via live video;

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- performing service and support activities remotely to resolve customer issues and enable our customers to maintain their operations;
- proactively identified gaps in our supply chain and re-sourced a number of components in order to maintain our customer shipment commitments and mitigate single points of failure;
- monitoring our IT systems and implementing contingency and disaster recovery plans to support our IT infrastructure to ensure that our systems remain continuously operative; and
- continuing to monitor and, if necessary, reduce our operating expenses and capital expenditures to maintain financial flexibility and profit margins.

While these steps have been effective so far, there could be additional challenges ahead that may impact either our operations or those of our customers, which could have a negative effect on our financial performance, including productivity and capacity impacts as a result of the ongoing pandemic. We expect to continue to implement these measures until we determine that the COVID-19 pandemic is adequately contained for purposes of our business, and we may take further actions as government authorities require or recommend or as we determine to be in the best interests of our employees, customers and suppliers. As a result, we may incur additional expenses in future periods in response to the pandemic, which could adversely affect our financial position, results of operations, or cash flows. In addition, we may revise our approach to these initiatives or take additional actions to meet the needs of our employees and customers, and mitigate the impact of the pandemic on our business.

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. 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.

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Item 1A. Risk Factors

Key Risk Factors That May Impact Future Results

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

Risks Related to Our Business, Finance and Operations

The effects of the COVID-19 pandemic have strained and have threatened to negatively impact our businesses and operations, and the duration and extent to which COVID-19 may impact our future results of operations and overall financial performance remains uncertain.

The outbreak and continuing spread of COVID-19 has resulted in a substantial curtailment of business activities worldwide and has caused and is likely to continue to cause weakened economic conditions, both in the United States and many countries abroad, including in markets in Asia and Europe from which we derive the majority of our revenue. Government restrictions (such as stay-at-home orders), quarantines and worker absenteeism as a result of COVID-19 have led to a significant number of business closures and other slowdowns. These slowdowns have adversely impacted and will likely continue to adversely impact Veeco directly, as well as our customers, suppliers and other partners.

We have determined that our operations are considered part of the critical and essential infrastructure defined by applicable government agencies. Consequently, as of the date of filing this report, we are currently permitted and are endeavoring to maintain manufacturing and supply chain operations. However, the conditions caused by COVID-19 could adversely affect our customers' ability or willingness to purchase our products or services, delay prospective customers' purchasing decisions, adversely impact our ability to source and deliver products and provide on-site services to our customers, delay the provisioning of our offerings, or lengthen payment terms, all of which could adversely affect our future sales, operating results and overall financial performance. In addition, adverse impacts on the creditworthiness of our customers and other counterparties and their ability to pay amounts owed to us and our ability to collect such amounts may be adversely affected, which could materially and adversely affect our results of operations, financial condition and cash flows.

The COVID-19 pandemic has resulted in significant disruption of global financial markets and could materially impact the value of our common stock, our access to capital, and our business and results of operations in the near and long-term.

Unfavorable market conditions have adversely affected, and may continue to adversely affect, our operating results.

Conditions of the markets in which we operate are volatile and have experienced, and may in the future continue to experience, significant deterioration. Changing market conditions require that we continuously monitor and reassess our strategic resource allocation decisions. If we fail to properly adapt to changing business environments, we may lack the infrastructure and resources necessary to scale up our businesses to successfully compete during periods of growth, or we may incur excess fixed costs during periods of decreasing demand. Adverse market conditions relative to our products have resulted in, and may continue to result in:

- reduced demand for our products;
- rescheduling and cancellations of orders for our products, which may result in negative backlog adjustments;
- asset impairments, including the impairment of goodwill and other intangible assets;
- unfavorable changes in customer mix and product mix;
- increased price competition leading to a lower profit margin for our products;
- increased competition from sellers of used equipment or lower-priced alternatives to our products;

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- increased inventory obsolescence;
- disruptions in our supply chain;
- higher operating costs as a percentage of revenues; and
- an increase in uncollectable amounts due from our customers resulting in increased reserves for doubtful accounts and write-offs of accounts receivable.

If the markets in which we participate continue to experience deteriorations or downturns, this could negatively impact our sales and revenue generation, margins, operating expenses, and profitability.

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 for the 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 and shipments 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 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.

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 that we recognize revenue from resulting sales to that customer). It is not uncommon for our sales cycle to exceed twelve months. The timing of an order often depends on our customer's capital expenditure budget, over which we have no control. In addition, the time it takes us to procure and build a product to customer specifications typically ranges from three to twelve months. When coupled with the fluctuating amount of time required for shipment, installation, and final acceptance, our sales cycles often vary widely, and these variations can cause fluctuations in our operating results. As a result of our lengthy sales cycles, we may incur significant research, development, selling, general, and administrative expenses before we generate revenue for these products. We may never generate the anticipated revenue if a customer cancels or otherwise changes its purchase plans, which could have an adverse effect on our business.

We are now confronting many of these risks as we gain traction in the Semiconductor market, which is often characterized by long customer qualification times, typically twelve to eighteen months. Once qualified, the ramp to volume production can take an additional extended period of time, often twelve to twenty-four months. During these periods, little to no revenue will be recognized by us, while we will continue to incur research and development costs. Despite our efforts, our products may never be qualified and may never achieve design-tool-of-record ("DTOR") or production-tool-of-record ("PTOR") status, and our business, financial condition, and results of operations may be materially and adversely affected.

Our backlog is subject to customer cancellation or modification which could result in decreased sales, increased inventory obsolescence, and 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 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 an increase in order cancellations and postponements.

We write-off excess and obsolete inventory based on historical trends, future usage forecasts, and other factors including 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 associated costs in our financial statements at the time of such determination. In addition, we place orders with our suppliers based

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on our customers' orders. If our customers cancel their orders with us, we may not be able to cancel our orders with our suppliers. Any resulting charges could be materially adverse to our results of operations and financial condition.

We may be required to take 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.

As part of our long term strategy, we may pursue future acquisitions of, or investments in, other companies or assets which could potentially increase our assets. We are required to test certain of our assets, including acquired intangible assets, property, plant, and equipment, and equity investments without readily observable market prices, for recoverability and impairment whenever there are indicators of impairment such as an adverse change in business climate. Adverse changes in business conditions or worse-than-expected performance by these acquired companies could negatively impact our estimates of future operations and result in impairment charges to these assets. For example, in the fourth quarter of 2019 we recorded non-cash impairment charges of \$25.0 million, primarily related to our equity investments without readily observable market prices. If our assets are further impaired, our financial condition and results of operations could be materially and adversely affected.

We are exposed to risks associated with business combinations, acquisitions, strategic investments and divestitures.

We have completed several significant acquisitions and investments in the past and we will consider new opportunities in the future. Acquisitions and investments involve numerous risks, many of which are unpredictable and beyond our control, including the following:

- difficulties and increased costs in integrating the personnel, operations, technologies, and products of acquired companies;
- diversion of management's attention and disruption of ongoing businesses;
- 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 failure to realize expected synergies;
- unknown, underestimated, and undisclosed commitments or liabilities;
- increased amortization expenses 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 such matters as technological advancements or worse-than-expected performance by the acquired company.

If we issue equity securities to pay for an acquisition or investment, 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 or investment, the payment could significantly reduce the cash that would be available to fund our operations, pay our indebtedness, or be used for other purposes, which could have a negative effect on our business.

In addition, we continually assess the strategic fit of our businesses and may from time to time seek to divest portions of our Company that no longer fit our strategic plan. Divestitures involve significant risks and uncertainties, including the ability to sell such businesses at satisfactory prices, on acceptable terms,

and in a timely manner. Divestitures may also disrupt other parts of our businesses, distract the attention of our management, result in a loss of key employees or

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customers, and require that we allocate internal resources that would otherwise be devoted to operating our existing businesses. Divestitures may expose us to unanticipated liabilities (including those arising from representations and warranties made to a buyer regarding the businesses) and to ongoing obligations to support the businesses following such divestitures, any and all of which could adversely affect our business, financial condition, and results of operations.

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, 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 provisions appearing in our certificate of incorporation and bylaws.

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 of our board of directors, and therefore the Company's policies, 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 may not 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 may not consider to be in the holder's best interest.

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 may 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 may not have the ability to raise the funds necessary to settle for cash conversions of our 2.70% Convertible Senior Notes due 2023 (the “2023 Notes”), our 3.50% Convertible Senior Notes due 2025 (the “2025 Notes”), or our 3.75% Convertible Senior Notes due 2027 (the “2027 Notes”) (the 2023 Notes, 2025 Notes, and 2027 Notes, together, the “Notes”) or to repurchase the Notes for cash upon a fundamental change, and any future debt may contain limitations on our ability to pay cash upon conversion or repurchase of the Notes.

As of December 31, 2020, we had \$131.7 million in principal amounts outstanding in 2023 Notes, \$132.5 million in principal amounts outstanding in 2025 Notes, and \$125.0 million in principal amounts

outstanding in 2027 Notes.

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Holders of the Notes will have the right to require us to repurchase all or any portion of their Notes upon the occurrence of a fundamental change before the maturity date at a fundamental change repurchase price equal to 100% of the principal amount of the Notes to be repurchased, plus accrued and unpaid interest, if any, to, but excluding, the fundamental change repurchase date, as described in the applicable Notes and indenture. In addition, upon conversion of the Notes, unless we elect to deliver solely shares of our common stock to settle such conversion (other than paying cash in lieu of delivering any fractional share), we will be required to make cash payments in respect of the notes being converted. However, we may not have enough available cash or be able to obtain financing at the time we are required to make repurchases of the Notes surrendered therefor or pay cash with respect to the Notes being converted.

In addition, our ability to repurchase or to pay cash upon conversion of the Notes may be limited by law, by regulatory authority or by agreements governing our indebtedness that exist at the time of repurchase or conversion. Our failure to repurchase the Notes at a time when the repurchase is required by the respective indenture or to pay any cash upon conversion of the Notes as required by the respective indenture would constitute a default under the indenture for that series of convertible notes and could also lead to a default under the indenture for the other series of convertible notes. A default under either indenture or the fundamental change itself could lead to a default under any of our future indebtedness. If the payment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the indebtedness and repurchase the Notes or to pay cash upon conversion of the Notes.

The conditional conversion features of the 2023 Notes, 2025 Notes, and 2027 Notes, if triggered, may materially and adversely affect our financial condition and operating results.

In the event the conditional conversion features of the 2023 Notes, 2025 Notes, and 2027 Notes are triggered, holders of notes will be entitled to convert the notes at any time during specified periods at their option. If one or more holders elect to convert the notes, unless we elect to satisfy our conversion obligation by delivering solely shares of our common stock (other than paying cash in lieu of delivering any fractional share), we would be required to settle a portion or all of our conversion obligation through the payment of cash, which could adversely affect our liquidity. In addition, even if holders do not elect to convert the notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the notes as a current rather than long-term liability, which could result in a material reduction of our net working capital.

The accounting method for convertible debt securities that may be settled in cash, such as the 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 470-20, an entity must separately account for the liability and equity components of certain convertible debt instruments (such as the 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 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 at the issuance date, and the value of the equity component is treated as debt discount for purposes of accounting for the debt component of the Notes. As a result, we are required to record a greater amount of non-cash interest expense as a result of the amortization of the discounted carrying value of the Notes to their face amount over the respective terms of the Notes. We report lower net income (or higher net loss) in our financial results because ASC 470-20 requires interest to include both the amortization of the debt discount and the instrument's coupon interest rate, which could adversely affect our financial results, the trading price of our common stock, and the trading price of the Notes.

In addition, under certain circumstances, including our ability and intent to settle the convertible debt instruments in cash, convertible debt instruments (such as the Notes) that may be settled entirely or partly in cash are currently accounted for utilizing the treasury stock method, the effect of which is that the shares issuable upon conversion of the Notes are not included in the calculation of diluted income per share except to the extent that the conversion value of the Notes exceeds their principal amount. Under the treasury stock method, for diluted income 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 we will meet the criteria to utilize the treasury stock method in the future. If we are unable to utilize the treasury stock method, we would be required to apply

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the if-converted method. Under this method, diluted income per share would generally be calculated assuming that all the Notes were converted into shares of our common stock at the beginning of the reporting period, unless the result would be anti-dilutive. If we are unable or otherwise elect not to use the treasury stock method in accounting for the shares issuable upon conversion of the Notes, then our diluted income per share could be adversely affected.

In August 2020, the FASB issued ASU 2020-06: *Debt – Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging – Contracts in Entity’s Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity’s Own Equity*. Under the standard, which will be effective for our fiscal year 2022, if not earlier adopted, an entity is no longer required to separately account for the liability and equity components of convertible debt instruments, such as those described above. As a result, entities will account for a convertible debt instrument wholly as debt, unless certain other conditions are met. The elimination of these separation models will reduce non-cash interest expense, and thereby increasing net income (or reducing net loss) for entities that have issued a convertible instrument that was within the scope of those models before the adoption of ASU 2020-06. Additionally, ASU 2020-06 requires the application of the if-converted method for calculating diluted earnings per share, and precludes the use of the treasury stock method for certain debt instruments, which could adversely affect our diluted net income (loss) per share. We cannot be sure whether other changes may be made to the current accounting standards related to the Notes, or otherwise, that could have an adverse impact on our financial statements.

Issuance of our common stock, if any, upon conversion of the Notes, as well as the capped call transactions and the hedging activities of the option counterparties, may impair or reduce our ability to utilize our net operating loss carryforwards or our research and development credits carryforwards in the future.

Pursuant to U.S. federal and state tax rules, a corporation is generally permitted to deduct from taxable income in any year net operating losses (“NOLs”) carried forward from prior years and to reduce from tax liabilities in any year R&D credits carried forward from prior years.

As of December 31, 2020, we had U.S. federal NOL carryforwards of approximately \$219.3 million, of which \$6.9 million has an indefinite carryforward period, with the remaining expiring in varying amounts between 2034 and 2037, if not utilized. We also had U.S. federal R&D credits carryforwards of approximately \$28.8 million expiring in varying amounts between 2021 and 2040. If we were to experience a “change in ownership” under Section 382 of the Internal Revenue Code (“Section 382”), the NOL carry forward limitations under Section 382 would impose an annual limit on the amount of the future taxable income that may be offset by our NOLs generated prior to the change in ownership. The R&D credits carry forward limitation under Section 383 of the Internal Revenue Code would impose an annual limit on the amount of tax liabilities that may be offset by R&D credits generated prior to the change in ownership. If an ownership change were to occur, we may be unable to use a significant portion of our NOLs to offset future taxable income and/or a significant portion of R&D credits to offset future tax liabilities.

The shares of common stock, if any, issued upon conversion of the Notes will, upon such issuance, be taken into account when determining the cumulative change in our ownership for Section 382 purposes. As a result, any conversion of the Notes that we elect to settle in shares may materially increase the risk that we could experience an ownership change in the future.

The capped call transactions may affect the value of the 2027 Notes and our common stock.

With respect to the 2027 Notes, we have entered into capped call transactions with certain option counterparties. The capped call transactions were expected generally to reduce the potential dilution upon conversion of the 2027 Notes and/or offset any cash payments we are required to make in excess of the principal amount of converted 2027 Notes, as the case may be, with such reduction and/or offset subject to a cap.

The option counterparties or their affiliates may enter into or modify hedge positions by entering into or unwinding various derivatives with respect to our common stock and/or purchasing or selling our common stock or other securities of ours in secondary market transactions prior to the maturity of the

2027 Notes (and are likely to do so during any observation period related to a conversion of the 2027 Notes). This activity could also cause or avoid an increase or a

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decrease in the market price of our common stock and the 2027 Notes, which could affect the ability of the noteholders to convert the 2027 Notes and, to the extent the activity occurs during any observation period related to a conversion of the 2027 Notes, it could affect the number of shares and value of the consideration that noteholders will receive upon conversion of the 2027 Notes.

Risks Associated with Operating a Global Business

We are exposed to risks of operating businesses outside the United States.

Most of our sales are to customers located outside of the United States, and 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 beyond our control including:

- 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;
- global trade issues and uncertainties with respect to trade policies, including tariffs, trade sanctions, and international trade disputes, and the ability to obtain required import and export licenses;
- differing legal systems and standards of trade which may not honor our intellectual property rights and which may place us at a competitive disadvantage;
- pressures from foreign customers and foreign governments for us to increase our operations and sourcing in the foreign country, which may necessitate the sharing of sensitive information and intellectual property rights;
- multiple conflicting and changing governmental laws and regulations, including varying labor laws and tax regulations;
- reliance on various information systems and information technology to conduct our business, making us vulnerable to additional cyberattacks by third parties or breaches due to employee error, misuse, or other causes, that could result in further business disruptions, loss of or damage to our intellectual property and confidential information (and that of our customers and other business partners), reputational harm, transaction errors, processing inefficiencies, or other adverse consequences;
- regional economic downturns, varying foreign government support, unstable political environments, and other changes in foreign economic conditions (such as the United Kingdom's departure from the European Union, commonly referred to as Brexit);
- the impact of public health epidemics, such as the COVID-19 pandemic, on employees, suppliers, customers and the global economy;
- difficulties in managing a global enterprise, including staffing, managing distributors and representatives, and repatriating cash;
- longer sales cycles and difficulties in collecting accounts receivable; and
- different customs and ways of doing business.

These challenges, many of which are associated with sales into the Asia-Pacific region, have had and may continue to have a material adverse effect on our business.

Changes in U.S. trade policy and export controls and ongoing trade disputes between the U.S. and China have adversely affected, and may continue to adversely affect, our business, results of operations, and financial condition.

The U.S. government has recently enacted several changes in trade policy which have adversely affected the Company's ability to sell and service its products to and for customers located in China and in certain other countries. These changes have included, without limitation, the elimination of license exception CIV, the addition of several companies to the U.S. Commerce Department's Entity List, and the implementation of new regulations governing the sale of equipment to

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defined “Military End Users” and for defined “Military End Uses”. The effect of these changes, among others, is that U.S. companies are now required to obtain export licenses before providing commodities, software, and technology (that are subject to the regulations) to customers for whom licensing requirements did not previously apply. The administrative processing, attendant delays and risk of ultimately not obtaining required export approvals pose a particular disadvantage to the Company relative to our non-U.S. competitors who are not required to comply with U.S. export controls. This difficulty and uncertainty has adversely affected our ability to compete for and win business from customers in China. Foreign customers affected by these and future U.S. government sanctions or threats of sanctions may respond by developing their own solutions to replace our products or by utilizing our foreign competitors’ products. This “trade war” with China, together with the prospect of additional governmental action related to international sanctions and tariffs, has adversely affected, and is likely to continue to adversely affect, demand for our products and the results of our operations and financial condition.

The changes in U.S. trade policy and export controls, as well as sanctions imposed by the U.S. against certain Chinese companies, have triggered retaliatory action by China and could trigger further retaliation. For example, China has instituted trade sanctions on certain U.S. goods, as well as other sanctions designed to deny U.S. companies access to critical raw materials. In addition, China has provided, and is expected to continue to provide, significant assistance, financial and otherwise, to its domestic industries, including some of our competitors. We face increasing competition as a result of significant investment in the semiconductor industry by the Chinese government and various state-owned or affiliated entities that is intended to advance China's stated national policy objectives. In addition, the Chinese government may restrict us from participating in the China market or may prevent us from competing effectively with Chinese companies.

Further, we hold inventory of products that may be affected by the recent U.S. government actions, including potential order cancellations. While we continue to take steps to mitigate our exposure to this developing situation, if the sale of these products is delayed or we are unable to return or dispose of our inventory on favorable economic terms, we may incur additional carrying costs for the inventory or otherwise record charges associated with this inventory.

We may be unable to obtain required export licenses for the sale of our products.

Whether with respect to sales to customers located in China or otherwise, products which (i) are manufactured in the United States, (ii) incorporate controlled U.S. origin parts, technology, or software, or (iii) are 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, MBE, laser annealing and certain other systems and products are controlled for export under the EAR. Licenses or proper license exceptions may be required for the shipment of our products to certain customers or countries. Obtaining an export license or determining whether an export license exception exists often requires considerable effort by us and cooperation from the customer, which can add time to the order fulfillment process. We may be unable to obtain required export licenses or qualify for export license exceptions and, as a result, we may be unable to export products to our customers and/or meet their servicing needs. 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 an export regulatory body determines that any of our shipments violate applicable export regulations, we could be fined significant sums and our export capabilities could be restricted, which could have a material adverse impact on our business.

We are exposed to various risks associated with global regulatory requirements.

As a public company with global operations, we are subject to the laws of the United States and multiple foreign jurisdictions, and the rules and regulations of various governing bodies, which may differ among jurisdictions. We are required to comply with legal and regulatory requirements pertaining to such matters as data privacy (including, for example, the European Union General Data Protection Regulation and similar laws), labor laws, immigration, customs, trade, taxes, corporate governance, conflict minerals and other social responsibility legislation, and antitrust regulations, among others. These laws and regulations, which are ever-evolving and at times complex and inconsistent, impose costs on our business and divert management time and attention from revenue-generating activities. Changes to or ambiguities

in these laws and regulations may create uncertainty regarding our compliance requirements. While we intend to invest

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the required resources to comply with these regulatory requirements, if we are found by a court or regulatory agency to have failed in these efforts, our business, financial condition, and results of operations could be adversely affected.

We may be exposed to liabilities under the Foreign Corrupt Practices Act and other similar laws.

We are subject to the Foreign Corrupt Practices Act of 1977 (“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. 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.

Our operating results may 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 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 attendant pricing pressures. If our suppliers face challenges in obtaining credit, in selling their products, or otherwise in operating their businesses, their ability to continue to supply materials to us may be negatively affected.

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 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 loss in collections on our accounts receivable would have a negative impact on our financial condition and results of operations.

We are subject to foreign currency exchange risks.

We are exposed to foreign currency exchange rate risks that are inherent in our anticipated sales, purchase 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.

Risks Related to Intellectual Property and Cybersecurity

Disruptions in our information technology systems or data security incidents could result in significant financial, legal, regulatory, business, and reputational harm to us.

We are increasingly dependent on information technology systems and infrastructure, including mobile technologies, to operate our business. In the ordinary course of our business, we collect, store, process and transmit significant amounts of sensitive information, including intellectual property, proprietary business information, personally-identifiable information of individuals, and other confidential information, including that of our customers and other business partners. It is critical that we do so in a secure manner to maintain the confidentiality, integrity, and availability of this sensitive information. We have also outsourced elements of our operations (including elements of our information technology infrastructure) to third parties, and as a result, we manage a number of third-party vendors who have access to our computer networks and our confidential information.

All information systems are subject to disruption, breach, or failure. Potential vulnerabilities can be exploited from inadvertent or intentional actions of our employees, third-party vendors, business partners, or by malicious third parties. Attacks of this nature are increasing in their frequency, levels of persistence, sophistication, and intensity, and are being conducted by sophisticated and organized groups and

individuals with a wide range of expertise and motives (including industrial espionage), including organized criminal groups, nation states, and others. In addition to the extraction of

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sensitive information, attacks could include the deployment of harmful malware, ransomware, or other means which could affect service reliability and threaten the confidentiality, integrity, and availability of information. Significant disruptions in our, or our third-party vendors', information technology systems or other data security incidents could adversely affect our business operations and result in the loss or misappropriation of, and unauthorized access to, sensitive information, which could result in financial, legal, regulatory, business, and reputational harm to us.

On November 1, 2018, we announced the discovery of an attack on our computer system by a highly-sophisticated actor. We notified law enforcement of the attack and retained forensic experts to assist with the investigation. We were not able to definitively determine the extent of the breach or the potential impact on our operations. We also were not able to definitively identify who was responsible for the attack. While we have engaged in remediation and implemented, and are continuing to implement, security measures intended to protect our information technology systems and infrastructure, there can be no assurance that such remediation and security measures will successfully prevent further security incidents. Additional information technology system disruptions, whether from attacks on our technology environment or from computer viruses, natural disasters, terrorism, war or other causes, could result in a material disruption in our business operations, force us to incur significant costs and engage in litigation, harm our reputation, and subject us to liability under laws, regulations, and contractual obligations.

We may be unable to effectively enforce and protect our intellectual property rights.

Our success as a company 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, processes, and brand identity. 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 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. Policing unauthorized use of our products and technologies is difficult and time consuming and the laws of other countries may not protect our proprietary rights as fully or as readily as U.S. laws. Given these limitations, our success will depend in part upon our ability to innovate ahead of our competitors.

In addition, our outsourcing efforts require 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 protective steps and measures we have taken will prevent the misappropriation or unauthorized use of our proprietary information and technologies, nor can we be certain that applicable intellectual property laws, regulations, and policies will not be changed in a manner detrimental to the sale or use of our products.

Litigation has been required in the past, is currently ongoing, and may be required in the future, to enforce our intellectual property rights, protect our trade secrets, and to 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 costs, and jeopardize relationships with current or prospective customers or suppliers. Any action we take to enforce or defend our intellectual property rights could absorb significant management time and attention, and could otherwise negatively impact our operating results.

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

We receive communications from time to time from other parties asserting the existence of patent or other rights which they believe cover certain of our products. We also periodically receive notices 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

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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, or successfully prosecute and defend our position, our business, financial condition, and results of operations could be materially and adversely affected.

Risks Associated with Our Industry

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 profit margins.

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. 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, product write-offs, and disposal costs. Product defects could also result in personal injury or property damage, claims for which may exceed our existing insurance coverages. These and other costs could be substantial and our reputation could be harmed, resulting in a reduced demand for our products and a negative effect on our business, financial condition, and results of operations.

Certain of our sales are dependent on the demand for consumer electronics, which can experience significant volatility due to seasonal and other factors.

The demand for semiconductors, LEDs, HDDs and other devices is highly dependent on sales of consumer electronics, such as televisions, computers, tablets, digital video recorders, smartphones, cell phones, and other mobile devices. 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. The emergence of new or competing technologies may also affect demand for consumer electronic products. These and other factors have had and could continue to have an adverse effect on the demand for our customers' products and, in turn, on our customers' demand for our products and services. Furthermore, in the past, some of our customers have 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 liabilities to our suppliers for products no longer needed.

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We have a concentrated customer base, located primarily in a limited number of regions, which operates 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 allow customers to demand pricing and other terms less favorable to us (including extended warranties, indemnification commitments, and the obligation to continue production of older products). 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 and we cannot be certain that we will be successful in these efforts. 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 to supply capital equipment, the manufacturer will often 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 assurance of future sales, and we are exposed to competitive price pressures on new orders we attempt to obtain.

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. 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, trade wars and other trade disruptions, fluctuating currency exchange rates, natural disasters, social unrest, pandemics, terrorism, and acts of war. Our reliance upon customer demand arising primarily from a limited number of countries could materially and adversely impact our future results of operations.

The cyclical nature of the industries we serve directly affects our business.

Our business depends in large part upon the capital expenditures of manufacturers in our four end-markets: Semiconductor; Compound Semiconductor; Data Storage; and Scientific & Other. 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 develop sufficient manufacturing capacity to meet customer demand and attract, hire, assimilate, and retain a sufficient number of qualified people. Our net sales and operating results may be negatively affected if our customers experience economic downturns or slowdowns in their businesses.



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

The success of our business depends in part on our ability to accurately forecast and supply equipment and services that meet the rapidly changing technical and volume requirements of our customers. To meet these demands, we depend on the timely delivery of parts, components, and subassemblies from our suppliers. Uncertain worldwide economic conditions and market instabilities make it difficult for us (and our customers) to accurately forecast future product demand. If actual demand for our products is different than expected, we may purchase more or fewer parts than necessary or incur costs for canceling, postponing, or expediting delivery of parts. If we overestimate the demand for our products, excess inventory could result which could be subject to heavy price discounting, which could become obsolete, and 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 poses risks for companies in our supply chain, including challenges associated with inventory management and fluctuating working capital requirements.

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

- the failure or inability of our 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, fires, floods, or storms; or
- other causes such as regional economic downturns, international trade disruptions, pandemics, political instability, terrorism, or acts of war, which 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 our working capital constraints and those of our suppliers, which may cause or exacerbate interruptions in our manufacturing and supply chain operations. 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.

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 several of our systems. While we maintain some level of internal manufacturing capability for these systems, we rely on our outsourcing partners to perform their contracted functions to allow us 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 efforts do 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, one or more of these providers could fail to perform as we expect. If we do not effectively manage our outsourcing efforts 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 installation interruptions or delays, inefficiencies in the structure and operation of our supply chain,

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loss of intellectual property rights, quality issues, increased product time-to-market, and an inefficient allocation of our 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.

Certain of the parts, 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, as necessary, could result in a prolonged interruption in our ability to supply related products, a failure on our part to meet the demands our customers, and a significant increase in the price of related products, which could adversely affect our business, financial condition, and results of operations.

General Risk Factors

The price of our common shares is volatile and could decrease.

The stock market in general and the market for technology stocks in particular has experienced significant volatility. The trading price of our common shares has fluctuated significantly and could decline 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 continue to fluctuate in response to several factors, including those mentioned elsewhere in this section and, among others:

- difficult macroeconomic conditions, international trade disputes, unfavorable geopolitical events, and general stock market uncertainties, such as those occasioned by a global liquidity crisis and a failure of large financial institutions;
- actual or anticipated variations in our results of operations;
- issues associated with the performance of our products, or the performance of our internal systems such as our customer relationship management (“CRM”) system or our enterprise resource planning (“ERP”) system;
- announcements of financial developments or technological innovations;
- our failure to meet the performance estimates of investment research analysts;
- changes in recommendations and financial estimates by investment research analysts, and decisions by investment research analysts to cease coverage of our company;
- our failure to successfully and timely implement cost reduction initiatives and restructuring activities, if and when required;
- delays or difficulties in satisfying internal control evaluations and attestation requirements of Section 404 of the Sarbanes Oxley Act of 2002;
- the commencement of, and rulings on, litigation and legal proceedings; and
- the occurrence of major catastrophic events.

Securities class action litigation is often brought against a company following periods of volatility in the market price of its securities. We have defended security class actions lawsuits in the past, and are currently defending such a lawsuit now. These lawsuits, if and when brought, can result in substantial costs and a diversion of management’s attention and resources, which can adversely affect our financial condition, results of operations, and liquidity.

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

From a corporate governance perspective, there is an increasing focus on reducing energy usage and improving the environmental impact and sustainability associated with manufacturing operations. In addition, we are subject to environmental, health, and safety regulations in connection with our business operations, including but not limited to



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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, safety and sustainability standards and regulations could result in significant remediation liabilities, the imposition of fines, the suspension or termination of research, development, or use of certain of our products, and other harm to the Company, which could have a material adverse effect on our business, financial condition, and results of operations. Aside from these potential adverse effects on our business operations, we are committed to ensuring safe working conditions, treating our employees with dignity and respect, and sourcing, manufacturing, and distributing our products in a responsible and environmentally friendly manner, and any failure on our part to do so may cause

reputational harm for the Company. Furthermore, 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 may 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.

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

Our success depends in part 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. 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.

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 and taxation rules can have a material impact on revenue recognition practices, effective tax rates, results of operations, and our financial condition. In addition, varying interpretations of accounting pronouncements or taxation practices, and 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 may 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 realize 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.

Item 1B. Unresolved Staff Comments

None.

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Item 2. Properties

Our corporate headquarters and principal research and development, manufacturing, and sales and service facilities as of December 31, 2020 are as follows:

<u>Owned Facilities Location</u>	<u>Approximate Size (sq. ft.)</u>	<u>Use</u>	
Plainview, NY	80,000	Corporate Headquarters; R&D; Sales & Service; Administration	
Somerset, NJ	80,000	R&D; Manufacturing; Sales & Service; Administration	
St. Paul, MN	43,000	R&D; Manufacturing; Sales & Service; Administration	
Somerset, NJ	38,000	R&D; Sales & Service; Administration	

<u>Leased Facilities Location</u>	<u>Approximate Size (sq. ft.)</u>	<u>Use</u>	<u>Lease Expiration</u>
San Jose, CA	100,000	R&D; Manufacturing; Sales & Service; Administration	2023
Somerset, NJ	57,000	Warehouse	2022
Horsham, PA	49,000	R&D; Manufacturing; Sales & Service; Administration	2024
Waltham, MA	19,000	R&D; Sales & Service; Administration	2023

In addition to the above, we lease a small office in Malta, New York for sales and service and our foreign sales and service subsidiaries lease office space in China, Germany, Japan, Malaysia, Philippines, Singapore, South Korea, Thailand, Taiwan and the United Kingdom. Finally, as discussed in Note 20 to the Consolidated Financial Statements, on February 18, 2021, we entered into a new lease agreement in San Jose, California, to expand our manufacturing capabilities for our laser annealing and lithography technologies. This new facility has approximately the same square footage as our existing San Jose, California facility, but expanded manufacturing capabilities, and we will transition to the new facility over the next two years. We believe our facilities are adequate to meet our current needs.

Item 3. Legal Proceedings

The discussion under the heading *Legal Proceedings* within Note 10, “Commitments and Contingencies” to the Consolidated Financial Statements is incorporated herein by reference.

Item 4. Mine Safety Disclosures

Not Applicable.

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 Global Select Market under the symbol “VECO.” As of February 11, 2021, there were approximately 132 stockholders of record of our common stock. Because many of our shares of common stock are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by these record holders. 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

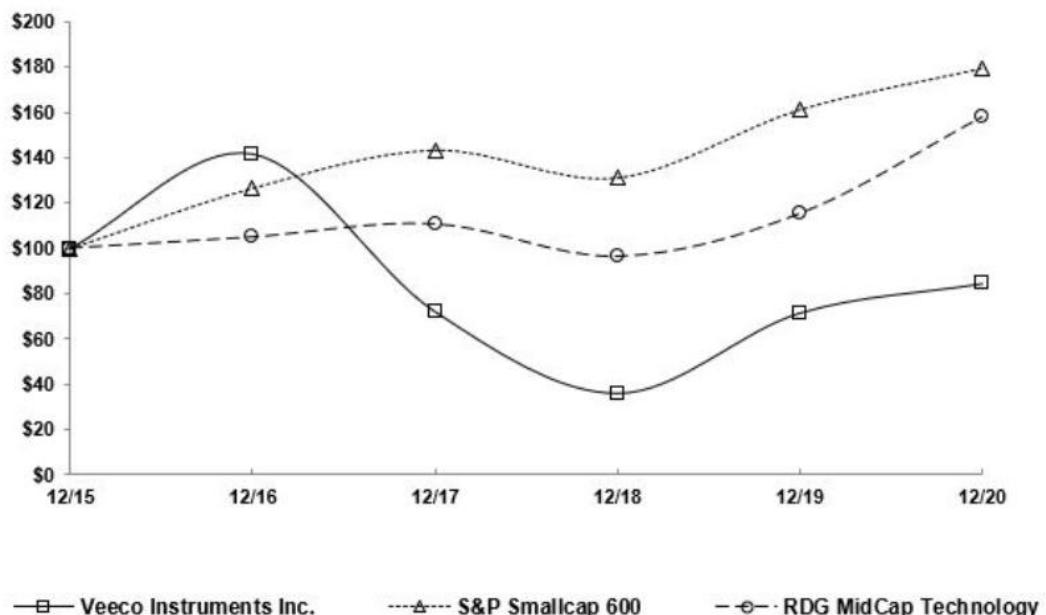
On December 11, 2017, our Board of Directors authorized a program to repurchase up to \$100 million of the Company’s outstanding common stock to be completed through December 11, 2019, after completion of the previous program on October 28, 2017. During fiscal year 2018, we repurchased 1.0 million shares of our common stock for \$11.3 million through our share repurchase programs. We did not purchase any shares during the fiscal years 2020 and 2019. At the end of the program, \$14.3 million of the \$100 million had been utilized.

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Stock Performance Graph

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*

Among Veeco Instruments Inc., the S&P Smallcap 600 Index
and the RDG MidCap Technology Index



*\$100 invested on 12/31/15 in stock or index, including reinvestment of dividends.
Fiscal year ending December 31.

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**ASSUMES \$100 INVESTED ON DEC. 31, 2015
ASSUMES DIVIDENDS REINVESTED
FISCAL YEAR ENDING DEC. 31**

	2015	2016	2017	2018	2019	2020
Veeco Instruments Inc.	100.00	141.78	72.23	36.04	71.43	84.44
S&P Smallcap 600	100.00	126.56	143.30	131.15	161.03	179.20
RDG MidCap Technology	100.00	104.93	110.75	96.33	115.29	158.24

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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, <i>(in thousands, except per share data)</i>				
	2020	2019	2018	2017 ⁽¹⁾⁽²⁾	2016 ⁽¹⁾
Statement of Operations Data:					
Net sales	\$454,163	\$419,349	\$ 542,082	\$475,686	\$ 331,702
Operating income (loss)	22,565	(39,578)	(415,502)	(71,868)	(120,162)
Net income (loss)	(8,391)	(78,733)	(407,088)	(51,396)	(122,027)
Basic income (loss) per common share	(0.17)	(1.66)	(8.63)	(1.16)	(3.10)
Diluted income (loss) per common share	(0.17)	(1.66)	(8.63)	(1.16)	(3.10)

- (1) Effective January 1, 2018, the Company adopted the new revenue accounting standard (“ASC 606”). The results of operations for 2017 and 2016 have been recast for the new standard.
(2) During the second quarter of 2017, the Company acquired Ultratech. The results of operations of Ultratech have been included in the consolidated financial statements since that date.

	December 31, <i>(in thousands)</i>				
	2020	2019 ⁽¹⁾	2018	2017 ⁽²⁾	2016 ⁽²⁾
Balance Sheet Data:					
Cash and cash equivalents	\$129,625	\$129,294	\$212,273	\$ 279,736	\$277,444
Short-term investments	189,771	115,252	48,189	47,780	66,787
Working capital	440,250	357,654	360,027	372,822	365,374
Total assets	898,064	818,088	900,816	1,387,475	763,988
Long-term debt (less current installments)	321,115	300,068	287,392	275,630	826
Total equity	408,374	374,512	437,775	840,093	601,704

- (1) Effective January 1, 2019, the Company adopted the new lease accounting standard (“ASC 842”). The balance sheet and results of operations for prior periods have not been recast for the new standard. Refer to Note 1, “Significant Accounting Policies” for additional information.
(2) Effective January 1, 2018, the Company adopted the new revenue accounting standard (“ASC 606”). The balance sheet data for 2017 and 2016 have been recast for the new standard.

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

Executive Summary

We are an innovative manufacturer of semiconductor process equipment. Our proven ion beam, laser annealing, lithography, MOCVD and single wafer wet processing technologies play an integral role in the fabrication and packaging of advanced semiconductor devices. With equipment designed to optimize performance, yield and cost of ownership, Veeco holds leading technology positions in the markets we serve. To learn more about Veeco's systems and service offerings, visit www.veeco.com.

We categorize our revenue by the end-markets into which we sell. Our four end-markets are: Semiconductor; Compound Semiconductor; Data Storage; and Scientific & Other.

Sales in the Semiconductor market were driven by our laser annealing systems, lithography systems for Advanced Packaging, as well as Low Defect Density IBD systems for EUV Mask Blank Production. We continue to build momentum for our laser annealing solutions with advanced node logic customers. We recently announced that Veeco won an additional application with a leading manufacturer. We have evaluation systems at a DRAM manufacturer and are working with new and existing customers on their next manufacturing nodes. Our lithography systems for Advanced Packaging are aligned with longer-term growth of FOWLP and other Advanced Packaging applications. Additionally, the ongoing adoption of EUV Lithography for advanced node, semiconductor manufacturing continues to drive requirements for our mask blank systems. Overall, our technology and market strategy is well aligned with trends such as artificial intelligence, mobile connectivity and high performance computing that drive the Semiconductor market.

We address the Compound Semiconductor market with a broad portfolio of technologies including Wet Processing, MOCVD, MBE, and Ion Beam, which have been developed to support emerging applications such as 5G driven RF device manufacturing, photonics applications including 3D sensing laser diodes and micro-LEDs, and GaN-based power electronics. Sales in the Compound Semiconductor market improved in 2020, and were driven by equipment shipments for RF Filters, RF Devices, and power electronics, as well as sales to the Photonics market. The Photonics market was driven by the monetization of slow moving MOCVD inventory, as well as shipments of MOCVD, Ion Beam, and MBE equipment for specialty LED and display applications.

Sales in the Data Storage market have been growing for several years, primarily driven by shipments of Ion Beam systems for data storage applications. Demand for our Ion Beam products for data storage is being driven by big data and cloud-based storage growth. In order to be successful, hard disk drive manufacturers are required to improve areal density of magnetic heads for hard disk drives and are manufacturing drives with an increasing number of thin film magnetic heads. These two factors taken together, along with new innovations by HDD manufacturers such as heat assisted magnetic recording and microwave assisted magnetic recording, are driving additional capacity requirements and equipment upgrades. Additionally, recent trends in the work from home environment and the importance of cloud computing are also providing tailwinds to this market. We have good visibility in this market, which we believe will remain healthy through 2021.

Sales in the Scientific & Other market are largely driven by sales to governments, universities, and research institutions. While sales were lower in 2020 compared to 2019, which we attribute to COVID-19 impacts to purchasing decisions, revenues did increase in the second half of 2020 which may be indicative of a recovery.

Overall, our laser annealing, 5G RF, and data storage products are all performing well for us today, and we expect them to provide growth in the near term, through 2021. Long term growth for 2022 and beyond is expected to come from the Semiconductor and Compound Semiconductor markets. As such, we have been making strategic investments in R&D and inventory, including evaluation systems, in these markets, as well as improving our service capabilities to support these anticipated growth opportunities.



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Results of Operations

Years Ended December 31, 2020 and 2019

The following table presents revenue and expense line items reported in our Consolidated Statements of Operations for 2020 and 2019 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	
	2020	2019	Period to Period	
	(dollars in thousands)			
Net sales	\$454,163	100 %	\$419,349	100 %
Cost of sales	259,863	57 %	261,155	62 %
Gross profit	194,300	43 %	158,194	38 %
Operating expenses, net:				
Research and development	78,994	17 %	90,557	22 %
Selling, general, and administrative	76,251	17 %	79,749	19 %
Amortization of intangible assets	15,333	3 %	17,085	4 %
Restructuring	1,097	—	6,403	2 %
Asset impairment	281	—	4,020	1 %
Other operating expense (income), net	(221)	—	(42)	—
Total operating expenses, net	171,735	38 %	197,772	47 %
Operating income (loss)	22,565	5 %	(39,578)	(9)%
Interest income (expense), net	(23,188)	(5)%	(17,405)	(4)%
Other income (expense), net	(7,841)	(2)%	(20,973)	(5)%
Income (loss) before income taxes	(8,464)	(2)%	(77,956)	(19)%
Income tax expense (benefit)	(73)	—	777	—
Net income (loss)	\$ (8,391)	(2)%	\$ (78,733)	(19)%

* Not meaningful

Net Sales

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

	Year ended December 31,		Change	
	2020	2019	Period to Period	
	(dollars in thousands)			
Sales by end-market				
Semiconductor	\$165,909	36 %	\$175,608	42 %
Compound Semiconductor	107,922	24 %	85,877	21 %
Data Storage	123,288	27 %	84,075	19 %
Scientific & Other	57,044	13 %	73,789	18 %
Total	\$	%	\$	%
			\$ 34,814	8 %

	<u>454,163</u>	<u>100</u>	<u>419,349</u>	<u>100</u>	
Sales by geographic region					
United States	\$145,353	32 %	\$126,160	30 %	\$ 19,193 15 %
EMEA	73,124	16 %	57,351	14 %	15,773 28 %
China	57,589	13 %	71,078	17 %	(13,489)(19)%
Rest of APAC	177,569	39 %	164,363	39 %	13,206 8 %
Rest of World	528	—	397	—	131 33 %
Total	\$454,163	100 %	\$419,349	100 %	\$ 34,814 8 %

Total sales increased for the year ended December 31, 2020 against the comparable prior year period in the Data Storage and Compound Semiconductor markets, partially offset by decreases in the Semiconductor and Scientific & Other

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markets. Pricing did not have a significant impact on the change in total sales. By geography, sales increased in the United States, EMEA, and Rest of APAC regions, partially offset by a decrease in the China region. Sales in the United States and EMEA regions were largely driven by increased sales in the Data Storage market, while sales in the Rest of APAC region were largely driven by increased sales in the Compound Semiconductor market. Included within the Rest of APAC region for the year ended December 31, 2020 were sales in Singapore and Taiwan of \$49.4 million and \$40.0 million, respectively, while sales in Japan and Taiwan were \$48.1 million and \$48.8 million for the year ended December 31, 2019. We expect there will continue to be year-to-year variations in our future sales distribution across markets and geographies. In light of the global nature of our business, we are impacted by conditions in the various countries in which we and our customers operate. Several markets continue to remain challenged in light of ongoing restrictions on business and travel, and decreased business and consumer spending generally, resulting from the COVID-19 pandemic.

Gross Profit

In 2020, gross profit increased compared to 2019 primarily due to an increase in sales volume, as well as increased gross margins. Gross margins increased principally due to higher production activity, as well as reductions in inventory reserves and warranty expenses. We expect our gross margins to fluctuate each period due to product mix and other factors.

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. Research and development expenses decreased in 2020 compared to 2019 primarily from reductions to personnel-related expenses, project materials, and professional fees as a result of our initiative to streamline operations, enhance efficiency, and reduce costs. In the second half of 2019, we executed an initiative to reorganize various functions along product lines and created a central research and development organization to better allocate our resources to our highest priority projects. Additionally, we had a decrease in travel-related expenses as a result of COVID-19 related restrictions.

Selling, General, and Administrative

Selling, general, and administrative expenses decreased in 2020 compared to 2019 primarily related to personnel-related expenses and professional fees as a result of our initiative to streamline operations, enhance efficiency, and reduce costs. Additionally, we had a decrease in travel-related expenses as a result of COVID-19 related restrictions. Given the uncertainty regarding the impacts on our business resulting from the COVID-19 pandemic, we are focused on the proactive management of expenses. In future periods, we may incur additional selling, general and administrative expenses to support our responses to the COVID-19 pandemic.

Amortization Expense

Amortization expense decreased in 2020 compared to 2019 primarily due to the sale of a non-core product line, including related intangible assets, as well as changes in amortization expense to reflect expected cash flows of certain intangible assets.

Restructuring Expense

We continued to record restructuring charges in 2019 as a result of our efforts to further streamline operations, enhance efficiencies, and reduce costs. In the second half of 2019, we executed an initiative to reorganize various functions along product lines and created a central research and development organization to better allocate our resources to our highest priority projects. In addition, we delayed the organization while preserving our ability to execute. Collectively, these actions impacted approximately 60 employees. During the year ended December 31, 2020, additional accruals were recognized and payments were made related to these restructuring initiatives, which are largely completed at December 31, 2020.

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Asset Impairment

During the fourth quarter of 2019, we determined that one of our non-core product lines met the criteria for held for sale accounting treatment and recorded a non-cash impairment charge of \$4.0 million to reduce these assets to their expected fair value upon sale. During the second quarter of 2020, we recorded additional impairment charges of \$0.3 million related to the finalization of the sale of this product line.

Interest Income (Expense)

For the year ended December 31, 2020, we recorded net interest expense of \$23.2 million, compared to \$17.4 million for the comparable prior period. The increase in interest expense was primarily related to the issuance of the 2027 Notes in May 2020 and the 2025 Notes in November 2020, partially offset by the partial repurchase and exchange of the 2023 Notes. Included in interest expense for the year ended December 31, 2020 were non-cash charges of \$13.8 million related to the amortization of debt discount and transaction costs of the 2023 Notes, 2025 Notes, and 2027 Notes, while the year ended December 31, 2019 included non-cash charges of \$12.7 million related to the amortization of debt discount and transaction costs of the 2023 Notes. Additionally, interest income decreased approximately \$3.1 million for the year ended December 31, 2020 as compared to the prior period, primarily as a result of lower interest rates, and we expect interest income to remain depressed as a result.

Other Income (Expense)

On May 18, 2020, in connection with the completion of a private offering of \$125 million aggregate principal amount of 3.75% convertible senior notes, we repurchased and retired approximately \$88.3 million in aggregate principal amount of our outstanding 2023 Notes, with a carrying amount of \$78.1 million, for approximately \$81.2 million of cash. Additionally, on November 11, 2020, we entered into a privately negotiated exchange agreement with a holder of our outstanding 2023 Notes, under which we agreed to retire \$125.0 million in aggregate original principal amount of the 2023 Notes, with a carrying amount of \$113.1 million, in exchange for the issuance of \$132.5 million in aggregate principal amount of new 3.50% convertible senior notes. We accounted for both transactions as an extinguishment of the 2023 Notes, and as such, recorded a loss on extinguishment of approximately \$7.8 million for the year ended December 31, 2020.

During the fourth quarter of 2019, we determined that our equity investment in Kateeva had indicators of impairment, and as such, we reviewed this investment for impairment. Based on this review, we recorded a non-cash impairment charge of \$21.0 million.

Income Taxes

The 2020 income tax benefit of \$0.1 million is comprised of: (i) a \$0.8 million income tax benefit related to the amortization and subsequent sale of certain intangible assets during the year, which was partially offset by (ii) a \$0.5 million income tax expense attributed to the profitable non-U.S. operations, as well as withholding tax to repatriate certain foreign earnings as a result of changes in tax laws under the 2017 Tax Act, and (iii) a \$0.2 million income tax expense related primarily to U.S. tax amortization of our indefinite-lived intangible assets that is not available to offset existing deferred tax assets, as well as state and local income taxes.

The 2019 income tax expense of \$0.8 million is comprised of: (i) a \$1.0 million income tax expense attributed to the profitable non-U.S. operations, as well as withholding tax as we now expect to repatriate certain foreign earnings as a result of changes in tax laws under the 2017 Tax Act, (ii) a \$0.3 million income tax expense related primarily to U.S. tax amortization of our indefinite-lived intangible assets that is not available to offset existing deferred tax assets, as well as state and local income taxes, which were partially offset by (iii) a \$0.5 million income tax benefit related to the amortization and subsequent impairment of certain non-U.S. intangible assets during the year.



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Years Ended December 31, 2019 and 2018

See Part II, Item 7 of our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, filed with the SEC on February 21, 2020, for Management's Discussions and Analysis of Financial Condition and Results of Operations for the fiscal year ended December 31, 2018. In addition, in order to align with our evolving strategy, we have changed the end-markets by which we categorize sales. Prior period sales have been reclassified to the new end-markets for comparative purposes. The following is an analysis of sales by end-market:

	<u>Year ended December 31,</u>				<u>Change</u>	
	<u>2019</u>	<u>2018</u>	<i>(dollars in thousands)</i>		<u>Period to Period</u>	
Sales by end-market						
Semiconductor	\$175,608	42 %	\$137,797	26 %	\$ 37,811	27 %
Compound Semiconductor	85,877	20 %	260,323	48 %	(174,446)(67)%	
Data Storage	84,075	20 %	69,141	12 %	14,934	22 %
Scientific & Other	73,789	18 %	74,821	14 %	(1,032) (1)%	
Total	\$419,349	100 %	\$542,082	100 %	\$(122,733)(23)%	

Total sales decreased for the year ended December 31, 2019 against the comparable prior year period principally in the Compound Semiconductor market, partially offset by increases in the Semiconductor and Data Storage markets. Pricing did not have a significant impact on the change in total sales. The decrease in sales in the Compound Semiconductor market was largely driven by our exit out of the low margin commoditized LED market. We expect there will continue to be year-to-year variations in our future sales distribution across markets.

Liquidity and Capital Resources

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

	<u>December 31,</u>	<u>December 31,</u>
	<u>2020</u>	<u>2019</u>
Cash and cash equivalents	\$ 129,625	\$ 129,294
Restricted cash	658	657
Short-term investments	189,771	115,252
Total	\$ 320,054	\$ 245,203

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, 2020 and 2019, cash and cash equivalents of \$40.2 million and \$73.0 million, respectively, were held outside the United States. As of December 31, 2020, we had \$12.6 million of accumulated undistributed earnings generated by our non-U.S. subsidiaries for which the U.S. repatriation tax has been provided and did not require the use of cash due to the use of net operating loss carryforwards. Approximately \$6.0 million of undistributed earnings would be subject to foreign withholding taxes if distributed back to the United States. 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 senior notes.

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A summary of the cash flow activity for the year ended December 31, 2020 and 2019 is as follows:

Cash Flows from Operating Activities

	<u>For the year ended December 31,</u>	
	<u>2020</u>	<u>2019</u>
	<u>(in thousands)</u>	
Net income (loss)	\$ (8,391)	\$ (78,733)
Non-cash items:		
Depreciation and amortization	30,697	34,399
Non-cash interest expense	13,792	12,676
Deferred income taxes	(299)	360
Share-based compensation expense	12,703	15,270
Loss on extinguishment of debt	7,841	—
Asset impairment	281	4,020
Impairment of equity investments	—	20,973
Provision for bad debts	140	392
Changes in operating assets and liabilities	<u>(13,743)</u>	<u>(16,773)</u>
Net cash provided by (used in) operating activities	\$ 43,021	\$ (7,416)

Net cash provided by operating activities was \$43.0 million for the year ended December 31, 2020 and was due to the net loss of \$8.4 million plus a decline in cash flow from operating activities due to changes in operating assets and liabilities of \$13.7 million, being more than offset by adjustments for non-cash items of \$65.2 million. The changes in operating assets and liabilities was largely attributable to increases in accounts receivable and inventories and decreases in deferred revenue, partially offset by increases in accounts payable and customer deposits.

Net cash used in operating activities was \$7.4 million for the year ended December 31, 2019 and was due to the net loss of \$78.7 million plus a decline in cash flow from operating activities due to changes in operating assets and liabilities of \$16.8 million, partially offset by adjustments for non-cash items of \$88.1 million. The changes in operating assets and liabilities was largely attributable to decreases in accounts payable and accrued expenses and customer deposits and deferred revenue, partially offset by decreases in inventories and deferred cost of sales, accounts receivable and contract assets, and prepaid expenses and other current assets.

Cash Flows from Investing Activities

	<u>For the year ended December 31,</u>	
	<u>2020</u>	<u>2019</u>
	<u>(in thousands)</u>	
Capital expenditures	\$ (6,802)	\$ (10,873)
Changes in investments, net	(74,493)	(65,639)
Proceeds from held for sale assets, net of costs to sell	9,503	645
Net cash provided by (used in) investing activities	\$ (71,792)	\$ (75,867)

The net cash used in investing activities during the year ended December 31, 2020 was attributable to capital expenditures and net change in investments, partially offset by the proceeds from the sale of a non-core product line. As discussed in Note 20 to the Consolidated Financial Statements, we have entered into a new lease agreement in San Jose, California, and as such, capital expenditures associated with the build-out of the new facility are expected to total between \$30 million and \$40 million over the next two years. In addition, we expect a period of duplicate operating expenses until the transition from our existing facility to our new facility is completed over the next two years. The net cash used in investing activities during the year ended December 31, 2019 was attributable to net change in investments as well as capital expenditures.



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Cash Flows from Financing Activities

	<u>For the year ended December 31,</u>	
	2020	2019
	(in thousands)	
Proceeds from issuance of 2025 Notes and 2027 Notes, net of issuance costs	\$ 120,095	\$ —
Purchase of capped calls	(10,313)	—
Repurchase of 2023 Notes	(81,240)	—
Settlement of equity awards, net of withholding taxes	556	126
Net cash provided by (used in) financing activities	\$ 29,098	\$ 126

The net cash provided by financing activities for the year ended December 31, 2020 was primarily related to the net cash proceeds received from the issuance of the 2025 Notes and 2027 Notes, net of issuance costs, partially offset by the cash used to repurchase the 2023 Notes as well as the purchase of capped calls.

Convertible Senior Notes

2023 Notes

On January 10, 2017, we issued \$345.0 million of 2.70% convertible senior notes. On May 18, 2020, in connection with the completion of a private offering of \$125 million aggregate principal amount of 3.75% convertible senior notes described below, we repurchased and retired approximately \$88.3 million in aggregate principal amount of our outstanding 2023 Notes. Additionally, on November 11, 2020, we entered into a privately negotiated exchange agreement with a holder of our outstanding 2023 Notes, under which we agreed to retire \$125.0 million in aggregate original principal amount of the 2023 Notes, in exchange for the issuance of \$132.5 million in aggregate principal amount of new 3.50% convertible senior notes described below. The remaining 2023 Notes bear interest at a rate of 2.70% per year, payable semiannually in arrears on January 15 and July 15 of each year. The 2023 Notes mature on January 15, 2023, unless earlier purchased by the Company, redeemed, or converted.

2025 Notes

On November 17, 2020, as part of the privately negotiated exchange agreement described above, we issued \$132.5 million of 3.50% convertible senior notes. The 2025 Notes bear interest at a rate of 3.50% per year, payable semiannually in arrears on January 15 and July 15 of each year, commencing on July 15, 2021. The 2025 Notes mature on January 15, 2025, unless earlier purchased by the Company, redeemed, or converted.

2027 Notes

On May 18, 2020, we completed a private offering of \$125.0 million of 3.75% convertible senior notes. We received net proceeds of approximately \$121.9 million, after deducting underwriting discounts and fees and expenses payable by the Company. Additionally, we used approximately \$10.3 million of cash to purchase the capped calls. The 2027 Notes bear interest at a rate of 3.75% per year, payable semiannually in arrears on June 1 and December 1 of each year, commencing on December 1, 2020. The 2027 Notes mature on June 1, 2027, unless earlier purchased by the Company, redeemed, or converted.

We believe that we have sufficient capital resources and cash flows from operations to support scheduled interest payments on these debts.

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, as well as existing cash and cash equivalents and short-term investments. In addition, we have bank guarantees and letters of credit issued by a financial institution on our behalf as needed. At December 31, 2020, outstanding bank

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guarantees and letters of credit totaled \$9.5 million and unused bank guarantees and letters of credit of \$23.2 million were available to be drawn upon.

The following table summarizes our contractual arrangements at December 31, 2020 and the timing and effect that those commitments are expected to have on our liquidity and cash flow in future periods.

	Payments due by period				
	Total	Less than 1 year	1 – 3 years <i>(in thousands)</i>	3 – 5 years	More than 5 years
Principal payments on long-term debt	\$389,195	\$ —	\$131,695	\$132,500	\$125,000
Cash interest on debt	57,450	10,104	23,984	16,331	7,031
Operating leases	11,364	4,671	6,627	66	—
Purchase commitments ⁽¹⁾	<u>126,415</u>	<u>126,415</u>	<u>—</u>	<u>—</u>	<u>—</u>
Total	<u>\$584,424</u>	<u>\$141,190</u>	<u>\$162,306</u>	<u>\$148,897</u>	<u>\$132,031</u>

(1) Purchase commitments are generally for inventory used in the manufacturing of our products. We generally do not enter into purchase commitments extending beyond one year. At December 31, 2020, we have \$7.2 million of offsetting supplier deposits that will be applied against these purchase commitments.

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 bank guarantees and purchase commitments reflected 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 requires 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. We continuously 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 maintaining them.

Revenue Recognition

Revenue is recognized upon the transfer of control of the promised product or service to the customer in an amount that reflects the consideration we expect to receive in exchange for such product or service. Our contracts with customers generally do not contain variable consideration. In the rare instances where variable consideration is included, we estimate the amount of variable consideration and determine what portion of that, if any, has a high probability of significant subsequent revenue reversal, and if so, that amount is excluded from the transaction price. Our contracts with customers frequently contain multiple deliverables, such as systems, upgrades, components, spare parts, installation, maintenance, and service plans. Judgment is required to properly identify the performance obligations within a contract and to determine how the revenue should be allocated among the performance obligations. We also evaluate whether multiple transactions with the same customer or related parties should be considered part of a single contract 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.

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When there are separate units of accounting, we allocate revenue to each performance obligation on a relative stand-alone selling price basis. The stand-alone selling prices are determined based on the prices at which we separately sell the systems, upgrades, components, spare parts, installation, maintenance, and service plans. For items that are not sold separately, we estimate stand-alone selling prices generally using an expected cost plus margin approach.

Most of our revenue is recognized at a point in time when the performance obligation is satisfied. We consider many facts when evaluating each of our sales arrangements to determine the timing of revenue recognition, including our contractual obligations and the nature of the customer's post-delivery acceptance provisions. Our system sales arrangements, including certain upgrades, generally include field acceptance provisions that may include functional or mechanical test procedures. For many of these arrangements, a customer source inspection of the system is performed in our facility, test data is sent to the customer documenting that the system is functioning to the agreed upon specifications prior to delivery, or other quality assurance testing is performed internally to ensure system functionality prior to shipment. 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 we objectively demonstrate that the criteria specified in the contractual acceptance provisions are achieved prior to delivery either through customer testing or our historical experience of our tools meeting specifications, transfer of control of the product to the customer is considered to have occurred and revenue is recognized upon system delivery since there is no substantive contingency remaining related to the acceptance provisions at that date. For new products, new applications of existing products, or for products with substantive customer acceptance provisions where we 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. We recognize such revenue and costs upon obtaining objective evidence that the acceptance provisions can be achieved, assuming all other revenue recognition criteria have been met.

In certain cases, our contracts with customers contain a billing retention which is billed by us and payable by the customer when field acceptance provisions are completed. Revenue recognized in advance of the amount that has been billed is recorded as a contract asset on the Consolidated Balance Sheets.

We recognize revenue related to maintenance and service contracts over time based upon the respective contract term. Installation revenue is recognized over time as the installation services are performed. We recognize revenue from the sales of components, spare parts, and specified service engagements at a point in time, which is typically consistent with the time of delivery in accordance with the terms of the applicable sales arrangement.

We may receive customer deposits on system transactions. The timing of the transfer of goods or services related to the deposits is either at the discretion of the customer or expected to be within one year from the deposit receipt. As such, we do not adjust transaction prices for the time value of money. Incremental direct costs incurred related to the acquisition of a customer contract, such as sales commissions, are expensed as incurred since the expected performance period is one year or less.

We have elected to treat shipping and handling costs as a fulfillment activity, and we include such costs in cost of services when we recognize revenue for the related goods. Taxes assessed by governmental authorities that are collected by us from a customer are excluded from revenue.

Inventory Valuation

Inventories are stated at the lower of cost or net realizable value, with cost determined 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 usage, anticipated demand, alternative uses of materials, 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.

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Goodwill and Intangible Assets

Goodwill is tested for impairment at least annually in the beginning of 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 quantitatively compare 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. If the carrying amount of the reporting unit exceeds its fair value, we then record an impairment loss equal to the difference, up to the carrying value of goodwill.

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. The control premium is estimated using historical transactions in similar industries.

The carrying values of long-lived assets, including identifiable intangible assets, 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 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. 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, backlog, 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.

Intangible assets related to in-process research and development (“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. Indefinite-lived intangible assets are tested for impairment at least annually in the beginning of the fourth quarter of our fiscal year. In testing indefinite-lived intangible assets for impairment, we may first perform a qualitative assessment of whether it is more likely than not that the fair value of the indefinite-lived intangible asset is less than its carrying amount, and, if so, we then quantitatively compare the fair value of the indefinite-lived intangible asset to its carrying amount. We determine the fair value of our indefinite-lived intangible assets using a discounted cash flow method.

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. Income taxes related to the global intangible low-taxed income (“GILTI”) rules are expensed as incurred.

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Recent Accounting Pronouncements

We adopted ASC 842 as of January 1, 2019 and ASU 2019-12 in the second quarter of 2020. Additionally, we are currently evaluating the impact of ASU 2020-06 on our consolidated financial statements, which will be effective for us starting January 1, 2022, with early adoption permitted. Refer to Note 1, “Significant Accounting Policies,” for additional information.

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 \$189.8 million at December 31, 2020. These securities are subject to interest rate risk and, based on our investment portfolio at December 31, 2020, a 100 basis point increase in interest rates would result in a decrease in the fair value of the portfolio of \$0.7 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.

Changes in currency exchange rates could affect our foreign currency denominated monetary assets and liabilities and forecasted cash flows. We may enter into monthly forward derivative contracts with the intent of mitigating a portion of this risk. We only use derivative financial instruments in the context of hedging and not for speculative purposes and have not designated our foreign exchange derivatives as hedges. Accordingly, changes in fair value from these contracts are included in “Other operating expense (income), net” in our Consolidated Statements of Operations. We execute derivative transactions with highly rated financial institutions to mitigate counterparty risk.

Our net sales to customers located outside of the United States represented approximately 68%, 70%, and 77% of our total net sales in 2020, 2019, and 2018, 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 5%, 4%, and 1% of total net sales in 2020, 2019, and 2018, 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.



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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, 2020. The disclosure controls and procedures are designed to ensure that the information 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, 2020.

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, 2020, 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

To the Stockholders and Board of Directors
Veeco Instruments Inc.:

Opinion on Internal Control Over Financial Reporting

We have audited Veeco Instruments Inc.'s and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2020 and 2019, the related consolidated statements of operations, comprehensive income (loss), stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes and financial statement schedule II – valuation and qualifying accounts (collectively, the consolidated financial statements), and our report dated February 22, 2021 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company'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 are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. 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 of internal control over financial reporting 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.

Definition and Limitations of Internal Control Over Financial Reporting

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.

/s/ KPMG LLP

Melville, New York
February 22, 2021



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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 “Delinquent Section 16(a) Reports” in the definitive proxy statement to be filed with the SEC relating to our 2021 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 2021 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 2021 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 2021 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 “Independent Auditor Fees and Other Matters” in the definitive proxy statement to be filed with the SEC relating to our 2021 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	Incorporated by Reference			Filed or Furnished Herewith
		Form	Exhibit	Filing Date	
3.1	<u>Amended and Restated Certificate of Incorporation of Veeco dated December 1, 1994, as amended June 2, 1997 and July 25, 1997.</u>	10-Q	3.1	8/14/1997	
3.2	<u>Amendment to Certificate of Incorporation of Veeco dated May 29, 1998.</u>	10-K	3.2	3/14/2001	
3.3	<u>Amendment to Certificate of Incorporation of Veeco dated May 5, 2000.</u>	10-Q	3.1	8/14/2000	
3.4	<u>Amendment to Certificate of Incorporation of Veeco dated May 16, 2002.</u>	10-Q	3.1	10/26/2009	
3.5	<u>Amendment to Certificate of Incorporation of Veeco dated May 18, 2010.</u>	10-K	3.8	2/24/2011	
3.6	<u>Sixth Amended and Restated Bylaws of Veeco effective January 22, 2021.</u>	8-K	3.1	1/22/2021	
3.7	<u>Certificate of Designation, Preferences, and Rights of Series A Junior Participating Preferred Stock of Veeco dated March 14, 2001.</u>	10-Q	3.1	5/9/2001	
4.1	<u>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).</u>	8-K	4.1	1/18/2017	
4.2	<u>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).</u>	8-K	4.2	1/18/2017	
4.3	<u>Indenture, dated as of May 18, 2020, between Veeco Instruments Inc. and U.S. Bank National Association, as trustee.</u>	8-K	4.1	5/18/2020	
4.4	<u>Form of 3.75% Convertible Senior Notes due 2027.</u>	8-K	4.2	5/18/2020	
4.5	<u>Indenture, dated as of November 17, 2020, between Veeco Instruments Inc. and U.S. Bank National Association, as trustee.</u>	8-K	4.1	11/17/2020	
4.6	<u>Form of 3.50% Convertible Senior Notes due 2025.</u>	8-K	4.2	11/17/2020	
4.7	<u>Description of the Registrant's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934.</u>	10-K	4.3	2/21/2020	
10.1*	<u>Veeco Severance Benefits Policy, effective May 1, 2009.</u>	10-K	10.1		X
10.2*	<u>Veeco Amended and Restated 2010 Stock Incentive Plan, effective May 14, 2010.</u>	Def 14A	Appendix A	11/4/2013	

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Exhibit Number	Exhibit Description	Incorporated by Reference	Filed or Furnished Herewith	
Form	Exhibit	Filing Date		
10.3*	Veeco Amended and Restated 2010 Stock Incentive Plan, effective May 5, 2016.	S-8	10.1	6/2/2016
10.4*	Veeco Amended and Restated 2010 Stock Incentive Plan, effective March 3, 2017.	10-Q	10.1	11/3/2017
10.5*	Veeco Instruments Inc. 2019 Stock Incentive Plan.	S-8	10.1	5/7/2019
10.6*	Ultratech, Inc. 1993 Stock Option/Stock Issuance Plan (as Amended and Restated as of May 31, 2011).	S-8	10.1	5/26/2017
10.7*	Form of Capped Call Confirmation.	8-K	10.1	5/18/2020
10.8*	Exchange Agreement.	8-K	10.1	11/17/2020
10.9*	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
10.10*	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
10.11*	Form of Notice of Performance Share Award and related terms and conditions pursuant to the Veeco 2010 Stock Incentive Plan, effective March 2018.	10-Q	10.1	5/7/2018
10.12*	Form of Notice of Restricted Stock Award and related terms and conditions pursuant to the Veeco 2010 Stock Incentive Plan, effective March 2018.	10-Q	10.2	5/7/2018
10.13*	Form of Notice of Performance Restricted Stock Unit Award and related terms and conditions pursuant to the Veeco 2010 Stock Incentive Plan, effective March 2019.	10-Q	10.1	5/7/2019
10.14*	Form of Notice of Restricted Stock Award and related terms and conditions pursuant to the Veeco 2010 Stock Incentive Plan, effective March 2019 (time-based version A).	10-Q	10.2	5/7/2019
10.15*	Form of Notice of Restricted Stock Award and related terms and conditions pursuant to the Veeco 2010 Stock Incentive Plan, effective March 2019 (time-based version B).	10-Q	10.3	5/7/2019
10.16*	Form of Notice of Performance Restricted Stock Unit Award and related terms and conditions pursuant to the Veeco 2019 Stock Incentive Plan, effective March 2020.	10-K	10.16	X
10.17*	Form of Notice of Restricted Stock Award and related terms and conditions pursuant to the Veeco 2019 Stock Incentive Plan, effective March 2020.	10-K	10.17	X
10.18*	Veeco 2013 Inducement Stock Incentive Plan, effective September 26, 2013.	10-Q	10.1	11/4/2013
10.19*	Veeco Instruments Inc. 2016 Employee Stock Purchase Plan.	S-8	10.9	6/2/2016
10.20*	First Amendment to Veeco Instruments Inc. 2016 Employee Stock Purchase Plan.	S-8	10.11	5/7/2019
10.21*	Form of Amended and Restated Indemnification Agreement entered into	10-Q	10.2	8/3/2017

[between Veeco and each of its directors and executive officers \(August 2017\).](#)

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Exhibit Number	Exhibit Description	Incorporated by Reference			Filed or Furnished Herewith
		Form	Exhibit	Filing Date	
10.22*	Veeco Amended and Restated Senior Executive Change in Control Policy, effective as of January 1, 2014.	10-K	10.22	2/28/2014	
10.23*	Letter Agreement dated January 30, 2012 between Veeco and Dr. William J. Miller.	10-K	10.30	2/22/2012	
10.24*	Letter Agreement dated August 29, 2018 between Veeco and Dr. William J. Miller.	8-K	10.2	9/4/2018	
10.25*	Amendment dated March 22, 2019 to the Letter Agreement between Veeco and William J. Miller, Ph.D.	10-Q	10.4	5/7/2019	
10.26*	Letter Agreement dated January 21, 2004 between Veeco and John P. Kiernan.	10-K	10.38	3/12/2004	
10.27*	Amendment effective June 9, 2006 to Letter Agreement between Veeco and John P. Kiernan.	10-Q	10.3	8/4/2006	
10.28*	Amendment effective December 31, 2008 to Letter Agreement between Veeco and John P. Kiernan.	10-K	10.40	3/2/2009	
10.29*	Letter dated January 1, 2020 from Veeco to John P. Kiernan.	8-K	99.2	1/2/2020	
10.30*	Letter Agreement dated March 20, 2019 between Veeco and Adrian Devasahayam.	10-K	10.30		X
10.31*	Letter Agreement dated August 4, 2017 between Veeco and Peter Porshnev.	10-K	10.31		X
10.32*	Letter Agreement dated March 9, 2020 between Veeco and Susan Wilkerson.	10-K	10.32		X
21.1	Subsidiaries of the Registrant.				X
23.1	Consent of KPMG 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 Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.				**
101.XSD	XBRL Schema.				**
101.PRE	XBRL Presentation.				**
101.CAL	XBRL Calculation.				**
101.DEF	XBRL Definition.				**
101.LAB	XBRL Label.				**
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).				**

- * 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, 2021.

Veeco Instruments Inc.

By: /S/ WILLIAM J. MILLER, Ph.D.
William J. Miller, Ph.D.
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, 2021.

Signature	Title
<u>/s/ WILLIAM J. MILLER, Ph.D.</u> William J. Miller, Ph.D.	Chief Executive Officer and Director (principal executive officer)
<u>/s/ JOHN P. KIERNAN</u> John P. Kiernan	Senior Vice President and Chief Financial Officer (principal financial & accounting officer)
<u>/s/ RICHARD A. D'AMORE</u> Richard A. D'Amore	Chairman
<u>/s/ KATHLEEN A. BAYLESS</u> Kathleen A. Bayless	Director
<u>/s/ GORDON HUNTER</u> Gordon Hunter	Director
<u>/s/ KEITH D. JACKSON</u> Keith D. Jackson	Director
<u>/s/ MARY JANE RAYMOND</u> Mary Jane Raymond	Director
<u>/s/ PETER J. SIMONE</u> Peter J. Simone	Director
<u>/s/ THOMAS ST. DENNIS</u> Thomas St. Dennis	Director

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Veeco Instruments Inc. and Subsidiaries

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<u>Consolidated Statements of Operations for the years ended December 31, 2020, 2019, and 2018</u>	F-5
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<u>Schedule II—Valuation and Qualifying Accounts</u>	S-1

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Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Veeco Instruments Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Veeco Instruments Inc. and subsidiaries (the Company) as of December 31, 2020 and 2019, the related consolidated statements of operations, comprehensive income (loss), stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes and financial statement schedule II – valuation and qualifying accounts (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2020, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 22, 2021 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgment. The communication of a critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Assessment of the value of excess and obsolete inventory

As discussed in Note 1 of the consolidated financial statements, the Company assesses the valuation of all inventories, including materials, work-in-process, and finished goods, each reporting period. Obsolete inventory or inventory in excess of the Company's estimated usage requirement is written down to its estimated net realizable value if less than

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cost. Estimates of usage include the Company's analysis of anticipated demand, possible alternative uses of its inventory, as well as other qualitative factors. As of December 31, 2020, the Company's inventories totaled \$145.9 million.

We identified the assessment of the value of excess and obsolete inventory as a critical audit matter. Subjective auditor judgment was required to evaluate the Company's estimates of anticipated demand, which can be affected by market and economic conditions outside the Company's control.

The primary procedures we performed to address this critical audit matter included the following. We evaluated the design and tested the operating effectiveness of certain internal controls related to the Company's inventory valuation process. This included controls related to the development of estimates of anticipated demand of inventory. We evaluated current year estimates of anticipated demand used to assess the value of excess and obsolete inventory by comparing them to historical sales volumes and inspecting documentation when they differed significantly. For certain inventory items, we compared the prior year estimate of anticipated demand to actual results to assess the Company's ability to accurately forecast.

/s/ KPMG LLP

We have served as the Company's auditor since 2015.

Melville, New York
February 22, 2021

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Veeco Instruments Inc. and Subsidiaries
Consolidated Balance Sheets
(in thousands, except share amounts)

	December 31, 2020	December 31, 2019
Assets		
Current assets:		
Cash and cash equivalents	\$ 129,625	\$ 129,294
Restricted cash	658	657
Short-term investments	189,771	115,252
Accounts receivable, net	79,991	45,666
Contract assets	21,246	25,351
Inventories	145,906	133,067
Deferred cost of sales	433	445
Prepaid expenses and other current assets	19,301	14,966
Assets held for sale	—	11,180
Total current assets	586,931	475,878
Property, plant, and equipment, net	65,271	75,711
Operating lease right-of-use assets	10,275	14,453
Intangible assets, net	46,185	61,518
Goodwill	181,943	181,943
Deferred income taxes	1,440	1,549
Other assets	6,019	7,036
Total assets	\$ 898,064	\$ 818,088
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	\$ 33,656	\$ 21,281
Accrued expenses and other current liabilities	44,876	41,243
Customer deposits and deferred revenue	67,235	54,870
Income taxes payable	914	830
Total current liabilities	146,681	118,224
Deferred income taxes	5,240	5,648
Long-term debt	321,115	300,068
Operating lease long-term liabilities	6,305	10,300
Other liabilities	10,349	9,336
Total liabilities	489,690	443,576
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; 49,723,751 shares issued and outstanding at December 31, 2020 and 48,994,346 shares issued and outstanding at December 31, 2019	497	490
Additional paid-in capital	1,113,352	1,071,058
Accumulated deficit	(707,321)	(698,930)
Accumulated other comprehensive income	1,846	1,894
Total stockholders' equity	408,374	374,512
Total liabilities and stockholders' equity	\$ 898,064	\$ 818,088

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,		
	2020	2019	2018
Net sales	\$ 454,163	\$ 419,349	\$ 542,082
Cost of sales	259,863	261,155	348,363
Gross profit	194,300	158,194	193,719
Operating expenses, net:			
Research and development	78,994	90,557	97,755
Selling, general, and administrative	76,251	79,749	92,060
Amortization of intangible assets	15,333	17,085	32,351
Restructuring	1,097	6,403	8,556
Acquisition costs	—	—	2,959
Asset impairment	281	4,020	375,172
Other operating expense (income), net	(221)	(42)	368
Total operating expenses, net	171,735	197,772	609,221
Operating income (loss)	22,565	(39,578)	(415,502)
Interest income	1,551	4,680	3,186
Interest expense	(24,739)	(22,085)	(21,518)
Other income (expense), net	(7,841)	(20,973)	—
Income (loss) before income taxes	(8,464)	(77,956)	(433,834)
Income tax expense (benefit)	(73)	777	(26,746)
Net income (loss)	<u>\$ (8,391)</u>	<u>\$ (78,733)</u>	<u>\$ (407,088)</u>
Income (loss) per common share:			
Basic	\$ (0.17)	\$ (1.66)	\$ (8.63)
Diluted	\$ (0.17)	\$ (1.66)	\$ (8.63)
Weighted average number of shares:			
Basic	48,362	47,482	47,151
Diluted	48,362	47,482	47,151

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,		
	2020	2019	2018
Net income (loss)	\$(8,391)	\$(78,733)	\$(407,088)
Other comprehensive income (loss), net of tax:			
Available-for-sale securities:			
Change in net unrealized gains or losses	(53)	49	11
Unrealized gain (loss) on available-for-sale securities	<u>(53)</u>	<u>49</u>	<u>11</u>
Currency translation adjustments:			
Change in currency translation adjustments	5	(19)	5
Reclassification adjustments for net (gains) losses included in net income	—	44	(8)
Net changes related to currency translation adjustments	<u>5</u>	<u>25</u>	<u>(3)</u>
Total other comprehensive income (loss), net of tax	<u>(48)</u>	<u>74</u>	<u>8</u>
Total comprehensive income (loss)	<u><u>\$(8,439)</u></u>	<u><u>\$(78,659)</u></u>	<u><u>\$(407,080)</u></u>

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		Additional Paid-in Capital	Accumulated Deficit	Other Comprehensive Income	Accumulated Other Comprehensive Income	Total
Balance at	Shares	Amount	Shares	Amount					
December 31, 2017	48,229	\$ 482	85	\$ (1,284)	\$ 1,051,953	\$ (212,870) (407,088)	\$ 1,812	\$ 840,093 (407,088)	
Net loss	—	—	—	—	—	—	—	—	8 8
Other comprehensive income, net of tax	—	—	—	—	—	—	—	—	—
Share-based compensation expense	—	—	—	—	16,074	—	—	—	16,074
Net issuance under employee stock plans	318	3	(512)	6,721	(6,702)	(25)	—	—	(3)
Purchases of common stock	—	—	950	(11,309)	—	—	—	—	(11,309)
Balance at	48,547	485	523	(5,872)	1,061,325	(619,983) (78,733)	1,820	437,775 (78,733)	
Net loss	—	—	—	—	—	—	74	74	74
Other comprehensive income, net of tax	—	—	—	—	—	—	—	—	—
Share-based compensation expense	—	—	—	—	15,270	—	—	—	15,270
Net issuance under employee stock plans	447	5	(523)	5,872	(5,537)	(214)	—	—	126
Balance at	48,994	490	—	—	1,071,058	(698,930) (8,391)	1,894	374,512 (8,391)	
Net loss	—	—	—	—	—	—	(48)	(48)	(48)
Other comprehensive income, net of tax	—	—	—	—	—	—	—	—	—
Share-based compensation expense	—	—	—	—	12,703	—	—	—	12,703
Net issuance under employee stock plans	730	7	—	—	549	—	—	—	556
Extinguishment of equity component of repurchased/exchanged 2023 Notes	—	—	—	—	(14,714)	—	—	—	(14,714)
Equity component of 2025 Notes	—	—	—	—	20,706	—	—	—	20,706
Equity component of 2027 Notes	—	—	—	—	33,363	—	—	—	33,363
Purchase of capped calls	—	—	—	—	(10,313)	—	—	—	(10,313)
Balance at	49,724	\$ 497	—	\$ —	\$ 1,113,352	\$ (707,321)	\$ 1,846	\$ 408,374	

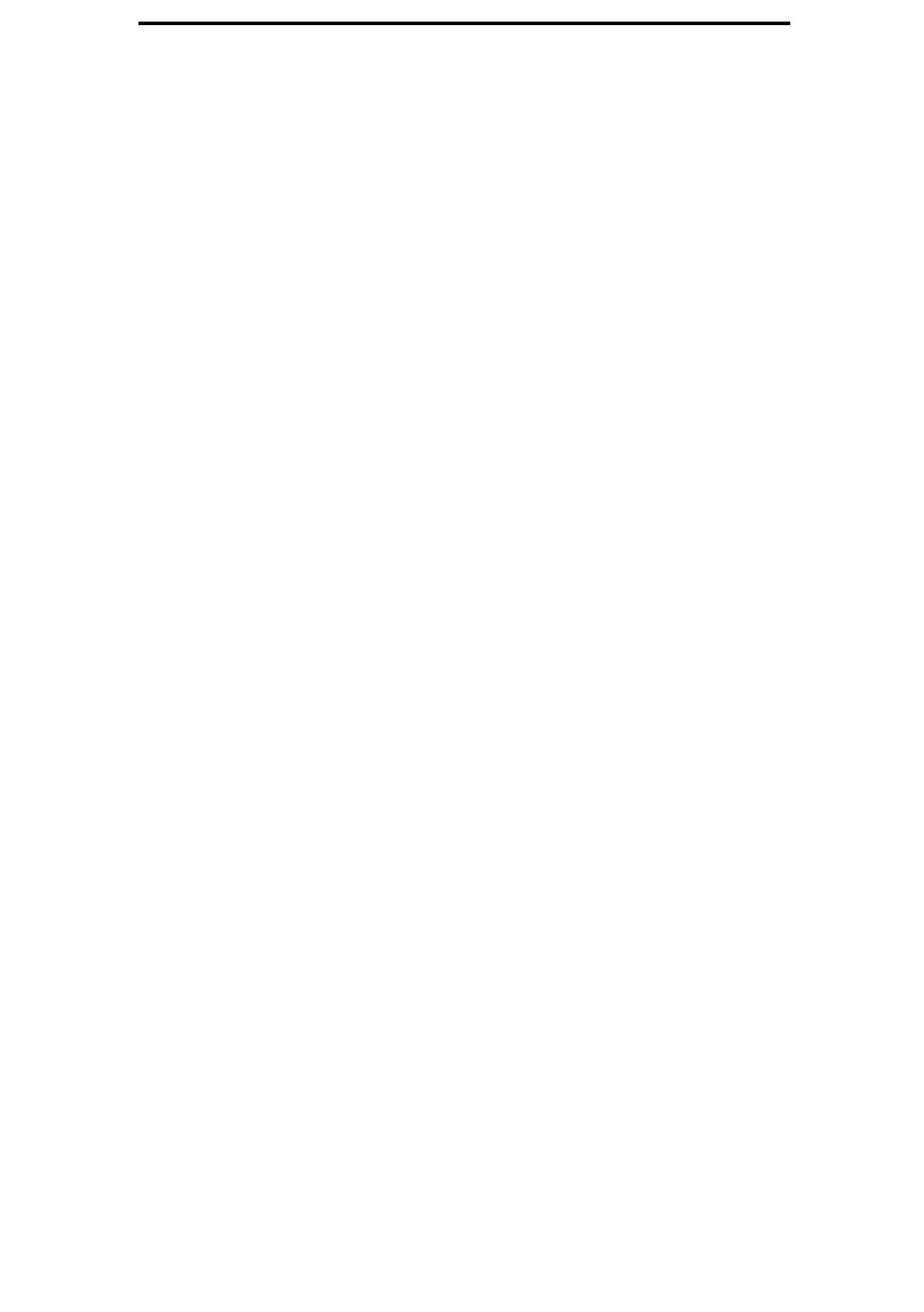
See accompanying Notes to the Consolidated Financial Statements.

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Veeco Instruments Inc. and Subsidiaries
Consolidated Statements of Cash Flows
(in thousands)

	For the year ended December 31,		
	2020	2019	2018
Cash Flows from Operating Activities			
Net income (loss)	\$ (8,391)	\$ (78,733)	\$ (407,088)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	30,697	34,399	49,998
Non-cash interest expense	13,792	12,676	11,762
Deferred income taxes	(299)	360	(27,620)
Share-based compensation expense	12,703	15,270	16,074
Loss on extinguishment of debt	7,841	—	—
Asset impairment	281	4,020	375,172
Impairment of equity investments	—	20,973	—
Provision for bad debts	140	392	—
Changes in operating assets and liabilities:			
Accounts receivable and contract assets	(30,361)	5,796	21,821
Inventories and deferred cost of sales	(11,528)	14,969	(24,678)
Prepaid expenses and other current assets	(2,610)	7,520	11,216
Accounts payable and accrued expenses	15,959	(26,945)	(19,672)
Customer deposits and deferred revenue	12,424	(17,866)	(39,296)
Income taxes receivable and payable, net	86	(655)	(4,800)
Other, net	2,287	408	(627)
Net cash provided by (used in) operating activities	<u>43,021</u>	<u>(7,416)</u>	<u>(37,738)</u>
Cash Flows from Investing Activities			
Capital expenditures	(6,802)	(10,873)	(12,654)
Proceeds from the sale of investments	173,530	127,349	90,065
Payments for purchases of investments	(248,023)	(192,988)	(93,046)
Proceeds from held for sale assets, net of costs to sell	9,503	645	—
Acquisitions of businesses, net of cash acquired	—	—	(2,662)
Net cash provided by (used in) investing activities	<u>(71,792)</u>	<u>(75,867)</u>	<u>(18,297)</u>
Cash Flows from Financing Activities			
Proceeds from issuance of 2025 Notes and 2027 Notes, net of issuance costs	120,095	—	—
Purchase of capped calls	(10,313)	—	—
Repurchase of 2023 Notes	(81,240)	—	—
Proceeds (net of tax withholdings) from option exercises and employee stock purchase plan	2,878	3,106	3,064
Restricted stock tax withholdings	(2,322)	(2,980)	(3,069)
Purchases of common stock	—	—	(11,457)
Net cash provided by (used in) financing activities	<u>29,098</u>	<u>126</u>	<u>(11,462)</u>
Effect of exchange rate changes on cash and cash equivalents	5	26	(4)
Net increase (decrease) in cash, cash equivalents, and restricted cash	332	(83,131)	(67,501)
Cash, cash equivalents, and restricted cash - beginning of period	129,951	213,082	280,583
Cash, cash equivalents, and restricted cash - end of period	<u>\$ 130,283</u>	<u>\$ 129,951</u>	<u>\$ 213,082</u>
Supplemental Disclosure of Cash Flow Information			
Interest paid	\$ 12,700	\$ 9,408	\$ 9,708
Income taxes paid	329	2,931	4,799
Non-cash operating and financing activities			
Net transfer of property, plant and equipment to inventory	1,624	(4,916)	(1,479)
Right-of-use assets obtained in exchange for lease obligations	1,741	5,576	—

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 development, manufacture, sales, and support of semiconductor and thin film process equipment primarily sold to make electronic devices.

(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 2020 the interim quarters ended on March 29, June 28, and September 27, and during 2019 the interim quarters ended on March 31, June 30, and September 29. 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) stand-alone selling prices 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) investment valuations and the valuation of derivatives, deferred tax assets, and assets acquired in business combinations; (vii) the recoverability of long-lived assets; (viii) liabilities for product warranty and legal contingencies; (ix) share-based compensation; (x) lease term and incremental borrowing rates used in determining operating lease assets and liabilities; and (xi) income tax uncertainties.

(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 functional currencies other than the U.S. dollar 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 operating expense (income), net” in the Consolidated Statements of Operations.

(f) Revenue Recognition

Revenue is recognized upon the transfer of control of the promised product or service to the customer in an amount that reflects the consideration the Company expects to receive in exchange for such product or service. The Company’s contracts with customers generally do not contain variable consideration. In the rare instances where variable



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**Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)**

consideration is included, the Company estimates the amount of variable consideration and determines what portion of that, if any, has a high probability of significant subsequent revenue reversal, and if so, that amount is excluded from the transaction price. The Company's contracts with customers frequently contain multiple deliverables, such as systems, upgrades, components, spare parts, installation, maintenance, and service plans. Judgment is required to properly identify the performance obligations within a contract and to determine how the revenue should be allocated among the performance obligations. The Company also evaluates whether multiple transactions with the same customer or related parties should be considered part of a single contract 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.

When there are separate units of accounting, the Company allocates revenue to each performance obligation on a relative stand-alone selling price basis. The stand-alone selling prices are determined based on the prices at which the Company separately sells the systems, upgrades, components, spare parts, installation, maintenance, and service plans. For items that are not sold separately, the Company estimates stand-alone selling prices generally using an expected cost plus margin approach.

Most of the Company's revenue is recognized at a point in time when the performance obligation is satisfied. The Company considers many facts when evaluating each of its sales arrangements to determine the timing of revenue recognition, including its contractual obligations 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 many of these arrangements, a customer source inspection of the system is performed in the Company's facility, test data is sent to the customer documenting that the system is functioning to the agreed upon specifications prior to delivery, or other quality assurance testing is performed internally to ensure system functionality prior to shipment. 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 either through customer testing or the Company's historical experience of its tools meeting specifications, transfer of control of the product to the customer is considered to have occurred and revenue is recognized upon system delivery since there is no substantive contingency remaining related to the acceptance provisions at that date. 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. The Company recognizes such revenue and costs upon obtaining objective evidence that the acceptance provisions can be achieved, assuming all other revenue recognition criteria have been met.

In certain cases, the Company's contracts with customers contain a billing retention, which is billed by the Company and payable by the customer when field acceptance provisions are completed. Revenue recognized in advance of the amount that has been billed is recorded as a contract asset on the Consolidated Balance Sheets.

The Company recognizes revenue related to maintenance and service contracts over time based upon the respective contract term. Installation revenue is recognized over time as the installation services are performed. The Company recognizes revenue from the sales of components, spare parts, and specified service engagements at a point in time, which is typically consistent with the time of delivery in accordance with the terms of the applicable sales arrangement.

The Company may receive customer deposits on system transactions. The timing of the transfer of goods or services related to the deposits is either at the discretion of the customer or expected to be within one year from the deposit receipt. As such, the Company does not adjust transaction prices for the time value of money. Incremental direct costs incurred related to the acquisition of a customer contract, such as sales commissions, are expensed as incurred since the expected performance period is one year or less.



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**Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)**

The Company has elected to treat shipping and handling costs as a fulfillment activity, and the Company includes such costs in “Cost of sales” in the Consolidated Statements of Operations when the Company recognizes revenue for the related goods. Taxes assessed by governmental authorities that are collected by the Company from a customer are excluded from revenue.

(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 records 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 quarterly 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 \$0.4 million, \$0.5 million, and \$0.9 million for the years ended December 31, 2020, 2019, and 2018, 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 estimated 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). 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.

In addition to stock options, restricted share awards (“RSAs”) and restricted stock units (“RSUs”) with time-based vesting, the Company grants performance share units and awards (“PSUs” and “PSAs”) that have either performance or market conditions. Compensation cost for PSUs and PSAs with performance conditions 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 performance attainment prior to the conclusion of the performance period is recognized in the period of the change in estimate. Compensation cost for PSUs and PSAs with market conditions is recognized over the requisite service period regardless of the expected level of achievement. For all PSUs and PSAs, the number of shares issued to the employee at the conclusion of the service period may vary from the original target based upon the level of attainment of the performance or market conditions.



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Veeco Instruments Inc. and Subsidiaries Notes to Consolidated Financial Statements (Continued)

The Company uses 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 Company uses a Monte Carlo simulation to compute the estimated fair value of awards with market conditions. The Black-Scholes model and Monte Carlo simulation include assumptions regarding dividend yields, expected volatility, expected option term, and risk-free interest rates. See Note 14, "Stock Plans," for additional information.

(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.

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the "2017 Tax Act"), which made broad and complex changes to the U.S. tax code. In response to the 2017 Tax Act, the SEC staff issued Staff Accounting Bulletin No. 118 ("SAB 118") which provided guidance on accounting for the tax effects of 2017 Tax Act, including addressing any uncertainty or diversity of view in applying ASC 740, *Income Taxes* ("ASC 740"), in the reporting period in which the 2017 Tax Act was enacted. In addition, SAB 118 provided a measurement period that should not extend beyond one year from the 2017 Tax Act enactment date for companies to complete the accounting under ASC 740. During the year ended December 31, 2018, the Company finalized the accounting for the tax effects of 2017 Tax Act.

In January 2018, the FASB released guidance on the accounting for taxes under the global intangible low-taxed income ("GILTI") provisions of the 2017 Tax Act. The GILTI provisions impose a tax on foreign income in excess of a deemed return on tangible assets of foreign operations. The Company has made a policy election to account for income taxes incurred under GILTI as a period cost.

(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. Historically, 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. Finally, the Company also considers its current expectations of future economic conditions, including the impact of COVID-19, when estimating its allowance for doubtful accounts. The allowance for doubtful accounts totaled \$0.7 million and \$0.6 million at December 31, 2020 and 2019, 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 monetize these letters of credit on a non-recourse basis after they become negotiable but before maturity. The fees



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**Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)**

associated with the monetization are included in “Selling, general, and administrative” in the Consolidated Statements of Operations and were immaterial for the years ended December 31, 2020, 2019, and 2018.

(n) Fair Value of Financial Instruments

The carrying amounts of financial instruments, including 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, if any, is estimated using recently quoted market prices of the instrument, or if not available, 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 funds, certificate of deposit and time deposit 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 \$86.2 million and \$78.5 million of cash equivalents at December 31, 2020 and 2019, 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 31% and 56% of cash and cash equivalents were maintained outside the United States at December 31, 2020 and 2019, respectively.

Short-term investments consist of marketable debt securities, and 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” on the Consolidated Balance Sheets. 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 operating expense (income), net” in the Consolidated Statements of Operations. The specific identification method is used to determine the realized gains and losses on investments.

Non-marketable equity securities are equity securities without readily observable market prices and are included in “Other assets” in the Consolidated Balance Sheets. Non-marketable securities are measured at cost, adjusted for changes in observable prices minus impairment. Changes in fair value are included in “Other operating expense (income), net” in the Consolidated Statements of Operations.

(p) Inventories

Inventories are stated at the lower of cost or net realizable value, with cost determined on a first-in, first-out basis. Each quarter the Company assesses 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 management’s estimated usage requirement is written down to its estimated net realizable value if less than cost. The Company evaluates usage requirements by analyzing historical usage, anticipated demand, alternative uses of materials, and other qualitative factors. Unanticipated changes in demand for the Company’s products may require a write down of inventory, which 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.



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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. Acquisition-related expenses are recognized separately from the business combination and are expensed as incurred.

(r) Goodwill and Indefinite-Lived Intangible Assets

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 fair value of 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 research and development ("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 beginning of the fourth quarter of each year or more frequently if impairment indicators arise.

In testing goodwill for impairment, 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 quantitatively compares the fair value of the reporting unit to its carrying amount. If the fair value exceeds the carrying amount, goodwill is not impaired. If the carrying amount exceeds fair value, the Company then records an impairment loss equal to the difference, up to the carrying value of goodwill.

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. The control premium is estimated using historical transactions in similar industries.

In testing indefinite-lived intangible assets for impairment, the Company may first perform a qualitative assessment of whether it is more likely than not that the fair value of the indefinite-lived intangible asset is less than its carrying amount, and, if so, the Company then quantitatively compares the fair value of the indefinite-lived intangible asset to its carrying amount. The Company determines the fair value of its indefinite-lived intangible assets using a discounted cash flow method.

(s) Long-lived Assets

Long-lived intangible assets consist of purchased technology, customer relationships, patents, trademarks and tradenames, and backlog and are initially recorded at fair value. Long-lived intangible assets 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.

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Veeco Instruments Inc. and Subsidiaries Notes to Consolidated Financial Statements (Continued)

Long-lived assets 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 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) Leases

Upon the adoption of ASC Topic 842, *Leases* (“ASC 842”) as of January 1, 2019, the Company determines at contract inception if an arrangement is a lease, or contains a lease, of an identified asset for which the Company has the right to obtain substantially all of the economic benefits from its use and the right to direct its use. Right-of-use (“ROU”) assets represent the Company’s right to use an underlying asset for the lease term, while lease liabilities represent the Company’s obligation to make lease payments arising from the lease. Operating lease ROU assets and liabilities are recognized at lease commencement date based on the present value of lease payments over the lease term. The implicit discount rate in the Company’s leases generally cannot readily be determined, and therefore the Company uses its incremental borrowing rate based on information available at lease commencement date in determining the present value of future payments. The Company has options to renew or terminate certain leases. These options are included in the determination of lease term when it is reasonably certain that the Company will exercise such options. The Company does not separate lease and non-lease components in determining ROU assets or lease liabilities for real estate leases. Additionally, the Company does not recognize ROU assets or lease liabilities for leases with original terms or renewals of one year or less.

(u) Recently Adopted Accounting Standards

The Company adopted ASC Topic 842, *Leases* (“ASC 842”), as of January 1, 2019. ASC 842 generally requires operating lessee rights and obligations to be recognized as assets and liabilities on the balance sheet. The new standard offers a transition option whereby companies can recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption rather than in the earliest period presented. The Company has adopted using this transition method, and therefore prior period balances have not been adjusted. In addition, ASC 842 provides for a number of optional exemptions in transition. The Company has elected certain exemptions whereby prior conclusions regarding lease identification, lease classification, and initial direct costs were not reassessed under the new standard. The adoption of the standard impacted the Company’s Consolidated Balance Sheets through the recognition of ROU assets and lease liabilities of approximately \$14.2 million each as of January 1, 2019 but did not have an impact on the Consolidated Statements of Operations, Statements of Comprehensive Income, or Statements of Cash Flows.

The Company adopted ASU 2019-12: *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* in the second quarter of 2020, effective as of the beginning of fiscal year 2020. This ASU simplifies the accounting for income taxes by eliminating certain exceptions to the general principles and simplifying several aspects of ASC 740, *Income Taxes*, including, but not limited to, requirements related to the following: a) exception to the incremental approach for intraperiod tax allocation; b) the tax basis step-up in goodwill obtained in a transaction that is not a business combination; c) ownership changes in investments - changes from a subsidiary to an equity method investment; d) separate financial statements of entities not subject to tax; e) interim-period accounting for enacted changes in tax law; and f) the year-to-date loss limitation in interim-period tax accounting. The adoption did not have a material impact on the Company’s consolidated financial statements as of the date of adoption.

(v) Recent Accounting Pronouncements Not Yet Adopted

In August 2020, the FASB issued ASU 2020-06: *Debt – Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging – Contracts in Entity’s Own Equity (Subtopic 815-40): Accounting for Convertible Instruments*

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**Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)**

and Contracts in an Entity's Own Equity. This standard simplifies the accounting for convertible debt instruments by removing the separation models for convertible debt with a cash conversion feature, as well as convertible instruments with a beneficial conversion feature. As a result, entities will account for a convertible debt instrument wholly as debt, unless certain other conditions are met. The elimination of these models will reduce non-cash interest expense for entities that have issued a convertible instrument that was within the scope of those models before the adoption of ASU 2020-06. Additionally, ASU 2020-06 requires the application of the if-converted method for calculating diluted earnings per share, and precludes the use of the treasury stock method for certain debt instruments. The provisions of ASU 2020-06 are applicable for fiscal years beginning after December 15, 2021, with early adoption permitted no earlier than fiscal years beginning after December 15, 2020. An entity should adopt the provisions at the beginning of its annual fiscal year. The Company is evaluating the impact of ASU 2020-06 on its consolidated financial statements.

The Company is 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.

Note 2 — Income (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. Diluted income per share is calculated by dividing net income by the weighted average number of shares used to calculate basic income 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, or would have been achieved if the reporting date was the end of the contingency period.

The computations of basic and diluted income (loss) per share for the years ended December 31, 2020, 2019, and 2018 are as follows:

	For the year ended December 31,		
	2020	2019	2018
(in thousands, except per share amounts)			
Net income (loss)	\$ (8,391)	\$ (78,733)	\$ (407,088)
Net income (loss) per common share:			
Basic	\$ (0.17)	\$ (1.66)	\$ (8.63)
Diluted	\$ (0.17)	\$ (1.66)	\$ (8.63)
Basic weighted average shares outstanding	48,362	47,482	47,151
Effect of potentially dilutive share-based awards	—	—	—
Diluted weighted average shares outstanding	48,362	47,482	47,151
Common share equivalents excluded from the diluted weighted average shares outstanding since the Company incurred a net loss and their effect would be antidilutive	947	531	28
Potentially dilutive shares excluded from the diluted calculation as their effect would be antidilutive	923	1,689	2,474
Maximum potential shares to be issued for settlement of the 2023, 2025, and 2027 Notes excluded from the diluted calculation as their effect would be antidilutive	17,753	8,618	8,618

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Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)

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, 2020 and 2019:

	Level 1	Level 2 (in thousands)	Level 3	Total
December 31, 2020				
Cash equivalents				
Certificate of deposits and time deposits	\$ 59,168	\$ —	\$ —	\$ 59,168
Commercial paper	—	2,000	—	2,000
U.S. treasuries	24,997	—	—	24,997
Total	\$ 84,165	\$ 2,000	\$ —	\$ 86,165
Short-term investments				
U.S. treasuries	\$ 149,219	\$ —	\$ —	\$ 149,219
Corporate debt	—	32,554	—	32,554
Commercial paper	—	7,998	—	7,998
Total	\$ 149,219	\$ 40,552	\$ —	\$ 189,771
December 31, 2019				
Cash equivalents				
Certificate of deposits and time deposits	\$ 67,009	\$ —	\$ —	\$ 67,009
Commercial paper	—	10,484	—	10,484
Corporate debt	—	1,000	—	1,000
Total	\$ 67,009	\$ 11,484	\$ —	\$ 78,493
Short-term investments				
U.S. treasuries	\$ 105,130	\$ —	\$ —	\$ 105,130
Government agency securities	—	1,139	—	1,139
Corporate debt	—	6,002	—	6,002
Commercial paper	—	2,981	—	2,981
Total	\$ 105,130	\$ 10,122	\$ —	\$ 115,252

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**Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)**

The Company's investments classified as Level 1 are based on quoted prices that are available in active markets, as well as certificates of deposits and time deposits that are classified as Level 1 due to their short-term nature. 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, 2020 and 2019 the amortized cost and fair value of marketable securities, which are included in "Short-term investments" on the Consolidated Balance Sheets, were as follows:

	Amortized Cost	Gross Unrealized Gains (in thousands)	Gross Unrealized Losses	Estimated Fair Value
December 31, 2020				
U.S. treasuries	\$149,206	\$ 14	\$ (1)	\$149,219
Corporate debt	32,588	—	(34)	32,554
Commercial paper	7,997	1	—	7,998
Total	\$189,791	\$ 15	\$ (35)	\$189,771
December 31, 2019				
U.S. treasuries	\$105,096	\$ 38	\$ (4)	\$105,130
Government agency securities	1,139	—	—	1,139
Corporate debt	6,003	—	(1)	6,002
Commercial paper	2,981	—	—	2,981
Total	\$115,219	\$ 38	\$ (5)	\$115,252

Available-for-sale securities in a loss position at December 31, 2020 and 2019 were as follows:

	December 31, 2020	December 31, 2019
	Gross Unrealized Losses (in thousands)	Gross Unrealized Losses
U.S. treasuries	\$19,991	\$ (1)
Corporate debt	32,554	(34)
Total	\$52,545	\$ (35)

At December 31, 2020 and 2019, 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, 2020 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. The realized gains or losses for the years ended December 31, 2020, 2019, and 2018 were immaterial.

Other Investments

Veeco has an ownership interest of less than 20% in a non-marketable investment, Kateeva, Inc. ("Kateeva"), over which Veeco does not exert significant influence. Additionally, the Company has a separate, non-marketable investment in another entity, with a carrying value of \$3.0 million at December 31, 2020. The Company does not exert significant influence over this investment and its ownership interest is also less than 20%. Neither equity investment has a readily

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**Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)**

observable market price, and therefore the Company has elected to measure these investments at cost, adjusted for changes in observable market prices minus impairment. The investments are included in “Other assets” on the Consolidated Balance Sheets. These investments are subject to periodic impairment reviews which require judgment. The analyses include assessments of the companies’ financial condition, the business outlooks for their products and technologies, their projected results and cash flows, 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. During the quarter ended December 31, 2019, the Company identified impairment indicators on the Company’s investment in Kateeva, and as a result of a valuation analysis, concluded that its investment in Kateeva is fully impaired, and recorded a non-cash impairment charge of \$21.0 million, included in “Other income (expense), net” in the Consolidated Statements of Operations. There were no impairment charges recorded for either investment for the years ended December 31, 2020 or 2018.

Note 5 — Inventories

Inventories are stated at the lower of cost or net realizable value, with cost determined on a first-in, first-out basis. Inventories consist of the following:

	<u>December 31,</u> <u>2020</u>	<u>December 31,</u> <u>2019</u>
	(in thousands)	
Materials	\$ 82,679	\$ 82,155
Work-in-process	53,979	42,575
Finished goods	9,248	8,337
Total	\$ 145,906	\$ 133,067

Note 6 — Property, Plant, and Equipment

Property, plant, and equipment, net, consist of the following:

	<u>December 31,</u> <u>2020</u>	<u>December 31,</u> <u>2019</u>	<u>Average Useful Life</u>
	(in thousands)		
Land	\$ 5,061	\$ 5,061	N/A
Building and improvements	62,865	61,884	10 – 40 years
Machinery and equipment ⁽¹⁾	140,493	137,692	3 – 10 years
Leasehold improvements	6,671	6,703	3 – 7 years
Gross property, plant, and equipment	215,090	211,340	
Less: accumulated depreciation and amortization	149,819	135,629	
Net property, plant, and equipment	\$ 65,271	\$ 75,711	

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

Depreciation expense was \$15.4 million, \$17.3 million, and \$17.6 million for the years ended December 31, 2020, 2019, and 2018, respectively. During the year ended December 31, 2019, the Company classified vacant land in St. Paul, Minnesota as held for sale, and subsequently sold the land for approximately \$0.6 million, which approximated its carrying value.

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Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)

Note 7 — 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:

	Gross carrying amount <i>(in thousands)</i>	Accumulated impairment <i>(in thousands)</i>	Net amount
Balance at December 31, 2018	\$ 430,331	\$ 246,029	\$ 184,302
Allocated to Assets held for sale	—	2,359	(2,359)
Balance at December 31, 2019 and 2020	<u>430,331</u>	<u>248,388</u>	<u>181,943</u>

The Company performs its annual goodwill impairment test at the beginning of the fourth quarter each year. As the Company maintains a single goodwill reporting unit, it determines the fair value of its reporting unit based upon the Company's adjusted market capitalization. The annual test performed at the beginning of the fourth quarter of fiscal 2018, 2019, and 2020 did not result in any potential impairment as the fair value of the reporting unit was determined to exceed the carrying amount of the reporting unit.

As a result of a significant decline in the Company's stock price during the fourth quarter of 2018, the Company concluded it was appropriate to perform an interim goodwill impairment test as of the end of fiscal 2018. The fair value of its reporting unit, as calculated using the adjusted market capitalization approach, was determined to be below the carrying value of the reporting unit, and the Company recorded an impairment charge equal to the excess of carrying value over fair value, or \$122.8 million, for the year ended December 31, 2018. The impairment charge is included in "Asset impairment" in the Consolidated Statements of Operations. The valuation of goodwill will continue to be subject to changes in the Company's market capitalization and observable market control premiums. This analysis is sensitive to changes in the Company's stock price and absent other qualitative factors, the Company may be required to record additional goodwill impairment charges in future periods if the stock price declines and remains depressed for an extended period of time.

The components of purchased intangible assets were as follows:

	Average Remaining Amortization Period <i>(in years)</i>	December 31, 2020			December 31, 2019		
		Gross Carrying Amount	Accumulated Amortization and Impairment	Net Amount <i>(in thousands)</i>	Gross Carrying Amount	Accumulated Amortization and Impairment	Net Amount
Technology	4.6	\$327,908	\$ 302,358	\$25,550	\$327,908	\$ 291,766	\$36,142
Customer relationships	8.2	146,465	130,131	16,334	146,465	126,764	19,701
Trademarks and tradenames	3.5	30,910	26,614	4,296	30,910	25,256	5,654
Other	0.8	3,686	3,681	5	3,686	3,665	21
Total	5.8	<u>\$508,969</u>	<u>\$ 462,784</u>	<u>\$46,185</u>	<u>\$508,969</u>	<u>\$ 447,451</u>	<u>\$61,518</u>

Other intangible assets primarily consist of patents, licenses, and backlog.

During the second quarter of 2018, the Company lowered its projected results for the Ultratech asset group. The reduced projections were based on lower than expected unit volume of certain smartphones, which incorporate advanced packaging methods such as fan-out wafer level packaging ("FOWLP"), and a delay in the adoption of FOWLP advanced packaging by other electronics manufacturers, both of which slowed orders and reduced revenue projections for the Company's advanced packaging lithography systems. In addition, there had been a delay in the build out of 28nm facilities by companies in China who were expected to purchase the Company's laser spike anneal systems. Taken



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Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)

together, the reduced projections identified during the second quarter of 2018 required the Company to assess the Ultratech asset group for impairment. As a result of the analysis, which included projected cash flows that required the use of unobservable inputs, the Company recorded non-cash impairment charges of \$216.4 million and \$35.9 million related to definite-lived intangible assets and in-process research and development assets, respectively, during the second quarter of 2018. The impairment charge is included in “Asset impairment” in the Consolidated Statement of Operations. Subsequently, certain in-process research and development projects were completed and moved to the “Technology” line in the above table.

Based on the intangible assets recorded at December 31, 2020, and assuming no subsequent additions to or impairment of the underlying assets, the remaining estimated annual amortization expense, is expected to be as follows:

	<u>Amortization</u> <i>(in thousands)</i>
2021	\$ 12,280
2022	10,018
2023	8,347
2024	6,708
2025	3,136
Thereafter	5,696
Total	\$ 46,185

Note 8 — Accrued Expenses and Other Liabilities

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

	<u>December 31,</u> 2020	<u>December 31,</u> 2019
	<i>(in thousands)</i>	
Payroll and related benefits	\$ 26,630	\$ 15,174
Warranty	5,058	7,067
Operating lease liabilities	4,148	4,196
Interest	2,574	4,321
Professional fees	1,112	2,443
Sales, use, and other taxes	2,658	811
Restructuring liability	279	2,841
Other	2,417	4,390
Total	\$ 44,876	\$ 41,243

Customer deposits and deferred revenue

Customer deposits totaled \$49.3 million and \$26.6 million at December 31, 2020 and 2019, respectively, which are included in “Customer deposits and deferred revenue” in the Consolidated Balance Sheets. Deferred revenue represents amounts billed, other than deposits, in excess of the revenue that can be recognized on a particular contract at the balance sheet date. Changes in deferred revenue were as follows:

	<i>(in thousands)</i>
Balance - December 31, 2019	\$ 28,249
Deferral of revenue	9,955
Recognition of previously deferred revenue	(20,219)
Balance - December 31, 2020	\$ 17,985

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**Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)**

As of December 31, 2020, the Company has approximately \$27.9 million of remaining performance obligations on contracts with an original estimated duration of one year or more, of which approximately 56% is expected to be recognized within one year, with the remaining amounts expected to be recognized between one to three years. The Company has elected to exclude disclosures regarding remaining performance obligations that have an original expected duration of one year or less.

Other liabilities

As part of a prior acquisition, the Company assumed an executive non-qualified deferred compensation plan that allowed qualifying executives to defer cash compensation. The plan was frozen at the time of acquisition and no further contributions have been made. At December 31, 2020 and 2019, plan assets approximated \$2.4 million and \$2.7 million, respectively, representing the cash surrender value of life insurance policies and is included within “Other assets” in the Consolidated Balance Sheets, while plan liabilities approximated \$2.5 million and \$3.1 million, respectively and is included within “Other liabilities” in the Consolidated Balance Sheets. At December 31, 2020 and 2019, other liabilities also included (i) asset retirement obligations of \$2.7 million and \$3.2 million, respectively; (ii) income tax payables of \$1.4 million and \$1.0 million, respectively; and (iii) medical and dental benefits for former executives of \$1.9 million and \$2.0 million, respectively. Additionally, as a result of the Coronavirus, Aid, Relief, and Economic Security Act, the Company has accrued for and deferred the deposit and payment of its share of social security taxes, resulting in a liability of \$3.6 million at December 31, 2020, of which \$1.8 million is included within “Accrued expenses and other current liabilities”, and \$1.8 million is included within “Other liabilities” in the Consolidated Balance Sheets.

Note 9 — Restructuring Charges

During the second quarter of 2018, the Company initiated plans to reduce excess capacity associated with the manufacture and support of the Company’s advanced packaging lithography and 3D wafer inspection systems by consolidating these operations into its San Jose, California facility. As a result of this and other cost saving initiatives, the Company announced headcount reductions of approximately 40 employees.

In the second half of 2019, the Company executed an initiative to reorganize various functions along product lines and created a central research and development organization to better allocate its resources to the Company’s highest priority projects. In addition, the Company delayered the organization. Collectively, these actions impacted approximately 60 employees. During the year ended December 31, 2020, additional accruals were recognized and payments were made related to these restructuring initiatives, which are largely completed at December 31, 2020.

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Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)

The following table shows the amounts incurred and paid for restructuring activities during the years ended December 31, 2020, 2019, and 2018 and the remaining accrued balance of restructuring costs at December 31, 2020, which is included in “Accrued expenses and other current liabilities” in the Consolidated Balance Sheets:

	Personnel Severance and Related Costs	Facility Related Costs and Other	Total
(in thousands)			
Balance - December 31, 2017	\$ 1,520	\$ —	\$ 1,520
Provision	4,681	2,714	7,395
Payments	(4,058)	(2,644)	(6,702)
Balance - December 31, 2018	2,143	70	2,213
Provision	5,803	203	6,006
Payments	(5,105)	(273)	(5,378)
Balance - December 31, 2019	2,841	—	2,841
Provision	1,097	—	1,097
Payments	(3,659)	—	(3,659)
Balance - December 31, 2020	<u>\$ 279</u>	<u>\$ —</u>	<u>\$ 279</u>

Restructuring expense for the years ended December 31, 2019 and 2018 included non-cash charges of \$0.4 million and \$1.2 million, respectively, which are excluded from the table above, related to accelerated share-based compensation for employee terminations.

Note 10 — Commitments and Contingencies

Warranty

Changes in the Company’s product warranty reserves were as follows:

	December 31,		
	2020	2019	2018
		(in thousands)	
Balance, beginning of the year	\$ 7,067	\$ 7,852	\$ 6,532
Warranties issued	4,626	5,865	6,737
Consumption of reserves	(6,691)	(6,242)	(6,573)
Changes in estimate	56	(408)	1,156
Balance, end of the year	<u>\$ 5,058</u>	<u>\$ 7,067</u>	<u>\$ 7,852</u>

Minimum Lease Commitments

The Company’s operating leases primarily include real estate leases for properties used for manufacturing, R&D activities, sales and service, and administration, as well as certain equipment leases. Some leases may include options to renew for a period of up to 5 years, while others may include options to terminate the lease. The weighted average remaining lease term of the Company’s operating leases as of December 31, 2020 was 3 years, and the weighted average discount rate used in determining the present value of future lease payments was 6.1%.

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**Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)**

The following table provides the maturities of lease liabilities at December 31, 2020:

	Operating Leases (in thousands)
Payments due by period:	
2021	\$ 4,671
2022	4,690
2023	1,306
2024	631
2025	66
Thereafter	—
Total future minimum lease payments	11,364
Less: Imputed interest	(911)
Total	\$ 10,453
Reported as of December 31, 2020	
Accrued expenses and other current liabilities	\$ 4,148
Operating lease long-term liabilities	6,305
Total	\$ 10,453

Operating lease cost for the years ended December 31, 2020 and 2019 was \$5.4 million and \$5.5 million, respectively. Variable lease cost for both years ended December 31, 2020 and 2019 was \$1.7 million. Additionally, the Company has an immaterial amount of short-term leases. Lease expense was \$7.1 million, \$7.2 million, and \$6.3 million for the years ended December 31, 2020, 2019, and 2018, respectively. In addition, the Company is obligated under such leases for certain other expenses, including real estate taxes and insurance. Operating cash outflows from operating leases for the year ended December 31, 2020, 2019, and 2018 were \$6.9 million, \$7.2 million, and \$6.3 million, respectively.

Legal Proceedings

On June 8, 2018, an Ultratech shareholder who received Veeco stock as part of the consideration for the Ultratech acquisition filed a purported class action complaint in the Superior Court of the State of California, County of Santa Clara, captioned Wolther v. Maheshwari et al., Case No. 18CV329690, on behalf of himself and others who purchased or acquired shares of Veeco pursuant to the registration statement and prospectus which Veeco filed with the SEC in connection with the Ultratech acquisition (the “Wolther Action”). On August 2 and August 8, 2018, two purported class action complaints substantially similar to the Wolther Action were filed on behalf of different plaintiffs in the same court as the Wolther Action. These cases have been consolidated with the Wolther Action, and a consolidated complaint was filed on December 11, 2018. The consolidated complaint seeks to recover damages and fees under Sections 11, 12, and 15 of the Securities Act of 1933 for, among other things, alleged false/misleading statements in the registration statement and prospectus relating to the Ultratech acquisition, relating primarily to the alleged failure to disclose delays in the advanced packaging business, increased MOCVD competition in China, and an intellectual property dispute. Veeco is defending this matter vigorously.

On December 21, 2018, a purported Veeco stockholder filed a derivative action in the Superior Court of the State of California, County of Santa Clara, captioned Vladimir Gusinsky Revocable Trust v. Peeler, et al., Case No. 18CV339925, on behalf of nominal defendant Veeco. The complaint seeks to assert claims for breach of fiduciary duty, waste of corporate assets, and unjust enrichment against current and former Veeco directors premised on purported misstatements and omissions in the registration statement relating to the Ultratech acquisition. Veeco is defending this matter vigorously.

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Veeco Instruments Inc. and Subsidiaries Notes to Consolidated Financial Statements (Continued)

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

Concentrations of Credit Risk

The Company depends on purchases from its ten largest customers, which accounted for 62% and 67% of net accounts receivable at December 31, 2020 and 2019, respectively.

Customers who accounted for more than 10% of net accounts receivable or net sales are as follows:

Customer	Accounts Receivable December 31,		Net Sales For the Year Ended December 31,		
	2020	2019	2020	2019	2018
Customer A	*	16 %	13 %	11 %	*
Customer B	*	21 %	*	*	*
Customer C	*	*	*	*	12 %

* Less than 10% of aggregate accounts receivable or net sales

The Company manufactures and sells its products to companies in different geographic locations. Refer to Note 18, "Segment Reporting and Geographic Information," for additional information. In certain instances, the Company requires deposits from its customers for a portion of the sales price in advance of shipment and performs periodic credit evaluations on its customers. Where appropriate, the Company requires letters of credit on certain non-U.S. sales arrangements. Receivables generally are due within 30 to 90 days from the date of invoice. In some geographies, receivables may be payable up to 150 days from the date of the invoice.

Receivable Purchase Agreement

In December 2020, the Company entered into a receivable purchase agreement with a financial institution to sell certain of its trade receivables from customers without recourse, up to \$15.0 million at any point in time. Pursuant to this agreement, the Company sold \$11.6 million of receivables during the year ended December 31, 2020, of which approximately \$5.9 million remained outstanding at December 31, 2020, and therefore \$9.1 million is available under the agreement for additional sales of receivables as of December 31, 2020. The net sale of accounts receivable under the agreement is reflected as a reduction of accounts receivable in the Company's Consolidated Balance Sheet at the time of sale and any fees for the sale of trade receivables were not material for the periods presented.

Suppliers

The Company outsources certain functions to third parties, including the manufacture of several of its systems. While the Company relies on its outsourcing partners to perform their contracted functions, the Company maintains some level of internal manufacturing capability for these systems. In addition, certain of the components and sub-assemblies included in the Company's products are obtained from a single source or a limited group of suppliers. The failure of the Company's present outsourcing partners and suppliers to meet their contractual obligations and the Company's inability to make alternative arrangements or resume the manufacture of these systems could have a material adverse effect on the Company's revenues, profitability, cash flows, and relationships with its customers.

The Company had deposits with its suppliers of \$7.2 million and \$5.9 million at December 31, 2020 and 2019, respectively, that were included in "Prepaid expenses and other current assets" on the Consolidated Balance Sheets.

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**Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)**

Purchase Commitments

The Company had purchase commitments of \$126.4 million at December 31, 2020, substantially all of which will come due within one year. Purchase commitments are primarily for inventory used in manufacturing products and are partially offset by existing deposits with suppliers.

Bank Guarantees

The Company has bank guarantees and letters of credit issued by a financial institution on its behalf as needed. At December 31, 2020, outstanding bank guarantees and letters of credit totaled \$9.5 million and unused bank guarantees and letters of credit of \$23.2 million were available to be drawn upon.

Note 11 — Debt

Convertible Senior Notes

2023 Notes

On January 10, 2017, the Company issued \$345.0 million of 2.70% convertible senior unsecured notes due 2023 (the “2023 Notes”). The Company received net proceeds, after deducting underwriting discounts and fees and expenses payable by the Company, of approximately \$335.8 million. The 2023 Notes bear interest at a rate of 2.70% per year, payable semiannually in arrears on January 15 and July 15 of each year, commencing on July 15, 2017. The 2023 Notes mature on January 15, 2023, unless earlier purchased by the Company, redeemed, or converted.

On May 18, 2020, in connection with the completion of a private offering of \$125.0 million aggregate principal amount of 3.75% convertible senior notes due 2027 described below, the Company repurchased and retired approximately \$88.3 million in aggregate principal amount of its outstanding 2023 Notes, with a carrying amount of \$78.1 million, for approximately \$81.2 million of cash. The Company accounted for the partial settlement of the 2023 Notes as an extinguishment, and as such, recorded a loss on extinguishment of approximately \$3.0 million for the year ended December 31, 2020, which is included in “Other income (expense), net” in the Consolidated Statements of Operations, as well as a reduction of additional paid-in capital of \$0.1 million for the repurchase of the conversion feature.

Additionally, on November 11, 2020, the Company entered into a privately negotiated exchange agreement with a holder of its outstanding 2023 Notes, under which the Company agreed to retire \$125.0 million in aggregate original principal amount of the 2023 Notes, with a carrying amount of \$113.1 million, in exchange for the issuance of \$132.5 million in aggregate principal amount of new 3.50% convertible senior notes due 2025 described below, which had a fair value that approximated the principal amount of notes issued. The Company accounted for the partial settlement of the 2023 Notes as an extinguishment, and as such, recorded a loss on extinguishment of approximately \$4.8 million for the year ended December 31, 2020, which is included in “Other income (expense), net” in the Consolidated Statements of Operations, as well as a reduction of additional paid-in capital of \$14.6 million for the exchange of the conversion feature.

2025 Notes

On November 17, 2020, as part of the privately negotiated exchange agreement described above, the Company issued \$132.5 million of 3.50% convertible senior notes due 2025 (the “2025 Notes”). The 2025 Notes bear interest at a rate of 3.50% per year, payable semiannually in arrears on January 15 and July 15 of each year, commencing on July 15, 2021. The 2025 Notes mature on January 15, 2025, unless earlier purchased by the Company, redeemed, or converted.

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Veeco Instruments Inc. and Subsidiaries Notes to Consolidated Financial Statements (Continued)

2027 Notes

On May 18, 2020, the Company completed a private offering of \$125.0 million of 3.75% convertible senior notes due 2027 (the “2027 Notes”). The Company received net proceeds of approximately \$121.9 million, after deducting underwriting discounts and fees and expenses payable by the Company. Additionally, the Company used approximately \$10.3 million of cash to purchase capped calls, discussed below. The 2027 Notes bear interest at a rate of 3.75% per year, payable semiannually in arrears on June 1 and December 1 of each year, commencing on December 1, 2020. The 2027 Notes mature on June 1, 2027, unless earlier purchased by the Company, redeemed, or converted.

The 2023 Notes, 2025 Notes, and 2027 Notes (collectively, the “Notes”) are unsecured obligations of Veeco and rank senior in right of payment to any of Veeco’s subordinated indebtedness; equal in right of payment to all of Veeco’s unsecured indebtedness that is not subordinated; effectively subordinated in right of payment to any of Veeco’s secured indebtedness to the extent of the value of the assets securing such indebtedness; and structurally subordinated to all indebtedness and other liabilities (including trade payables) of Veeco’s subsidiaries.

The Notes are convertible into cash, shares of the Company’s common stock, or a combination thereof, at the Company’s election, upon the satisfaction of specified conditions and during certain periods as described below. The initial conversion rates are 24.9800, 41.6667, and 71.5372 shares of the Company’s common stock per \$1,000 principal amount of the 2023 Notes, 2025 Notes, and 2027 Notes, respectively, representing initial effective conversion prices of \$40.03, \$24.00, and \$13.98 per share of common stock, respectively. The conversion rates may be subject to adjustment upon the occurrence of certain specified events.

Holders may convert all or any portion of their notes, in multiples of one thousand dollar principal amount, at their option at any time prior to the close of business on the business day immediately preceding October 15, 2022 with respect to the 2023 Notes, October 15, 2024 with respect to the 2025 Notes, and October 1, 2027 with respect to the 2027 Notes, only under the following circumstances:

- (i) During any calendar quarter (and only during such calendar quarter), if the last reported sale price of the common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;
- (ii) During the five consecutive business day period after any five consecutive trading day period (the “measurement period”) in which the trading price per one thousand dollar principal amount of Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of Veeco’s common stock and the conversion rate on each such trading day;
- (iii) If the Company calls any or all of applicable series of the Notes for redemption at any time prior to the close of business on the scheduled trading day immediately preceding the redemption date; or
- (iv) Upon the occurrence of specified corporate events.

Holders may convert their notes at any time, regardless of the foregoing circumstances, on or after October 15, 2022 with respect to the 2023 Notes, October 15, 2024 with respect to the 2025 Notes, and October 1, 2026 with respect to the 2027 Notes, until the close of business on the business day immediately preceding the respective maturity date.

Upon conversion by the holders, the Company may elect to settle such conversion in shares of its common stock, cash, or a combination thereof. As a result of its cash conversion options, the Company segregated the liability component of the instruments from the equity components. The liability components were measured by estimating the fair value of a non-convertible debt instrument that is similar in its terms to the Notes. The calculation of the fair value of the debt components required the use of Level 3 inputs, including utilization of convertible investors’ credit assumptions and

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**Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)**

high yield bond indices. Fair value was estimated through discounting future interest and principal payments, an income approach, due under the Notes at a discount rate equal to the estimated borrowing rate for similar non-convertible debt, or 7.0%, 8.0%, and 9.1% with respect to the 2023 Notes, 2025 Notes, and 2027 Notes, respectively. The excess of the aggregate face values of the Notes over the estimated fair values of the liability components of \$72.5 million, \$21.0 million, and \$34.2 million with respect to the 2023 Notes, 2025 Notes, and 2027 Notes, respectively, were recognized as debt discounts and recorded as an increase to additional paid-in capital and will be amortized over the expected lives of the Notes using the effective interest rate method. Amortization of the debt discounts are recognized as non-cash interest expense.

The transaction costs of \$9.2 million, \$1.9 million, and \$3.1 million incurred in connection with the issuance of the 2023 Notes, 2025 Notes, and 2027 Notes, respectively, were allocated to the liability and equity components based on their relative values. Transaction costs allocated to the liability component are being amortized using the effective interest rate method and recognized as non-cash interest expense over the expected terms of the Notes. Transaction costs allocated to the equity component of \$1.9 million, \$0.3 million, and \$0.8 million with respect to the 2023 Notes, 2025 Notes, and 2027 Notes, respectively, reduced the value of the equity components recognized in stockholders' equity.

In connection with the offering of the 2027 Notes, on May 13, 2020, the Company entered into privately negotiated capped call transactions (the "Capped Call Transactions"), pursuant to capped call confirmations, covering the total principal amount of the 2027 Notes for an aggregate premium of \$10.3 million. The Capped Call Transactions are expected generally to reduce the potential dilution to the Company's common stock upon any conversion of the 2027 Notes and/or offset any cash payments the Company is required to make in excess of the aggregate principal amount of converted 2027 Notes, as the case may be, with such reduction and/or offset subject to a cap based on the capped price of the Capped Call Transactions. The Capped Call Transactions exercise price is equal to the initial conversion price of the 2027 Notes, and the capped price of the Capped Call Transactions is approximately \$18.46 per share and is subject to certain adjustments under the terms of the capped call confirmations.

The Capped Call Transactions are separate transactions entered into by the Company with the capped call counterparties, are not part of the terms of the 2027 Notes and do not change the holders' rights under the 2027 Notes. Holders of the 2027 Notes do not have any rights with respect to the Capped Call Transactions. The cost of the Capped Call Transactions is not expected to be tax-deductible as the Company did not elect to integrate the Capped Call Transactions into the 2027 Notes for tax purposes. The Company used a portion of the net proceeds from the offering of the 2027 Notes to pay for the Capped Call Transactions, and the cost of the Capped Call Transactions was recorded as a reduction of the Company's additional paid-in capital in the accompanying consolidated financial statements.

The carrying values of the Notes are as follows:

	December 31, 2020				December 31, 2019
	2023 Notes	2025 Notes	2027 Notes	Total (in thousands)	2023 Notes
Principal amount	\$131,695	\$132,500	\$125,000	\$389,195	\$ 345,000
Unamortized debt discount/transaction costs	(11,925)	(22,097)	(34,058)	(68,080)	(44,932)
Net carrying value	\$119,770	\$110,403	\$ 90,942	\$321,115	\$ 300,068

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Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)

Total interest expense related to the Notes is as follows:

	For the year ended December 31,		
	2020	2019	2018
	(in thousands)		
Cash Interest Expense			
Coupon interest expense - 2023 Notes	\$ 7,390	\$ 9,315	\$ 9,315
Coupon interest expense - 2025 Notes	554	—	—
Coupon interest expense - 2027 Notes	2,904	—	—
Non-cash Interest Expense			
Amortization of debt discount/transaction costs- 2023 Notes	10,887	12,676	11,762
Amortization of debt discount/transaction costs- 2025 Notes	546	—	—
Amortization of debt discount/transaction costs- 2027 Notes	2,359	—	—
Total Interest Expense	\$ 24,640	\$ 21,991	\$ 21,077

The Company determined the Notes are Level 2 liabilities in the fair value hierarchy and estimated their fair values as \$125.4 million, \$140.2 million, and \$180.9 million at December 31, 2020 for the 2023 Notes, 2025 Notes, and 2027 Notes, respectively.

Note 12 — Derivative Financial Instruments

The Company is exposed to financial market risks arising from changes in currency exchange rates. Changes in currency exchange rates could affect the Company's foreign currency denominated monetary assets and liabilities and forecasted cash flows. The Company sometimes enters into monthly forward derivative contracts with the intent of mitigating a portion of this risk. The Company only used derivative financial instruments in the context of hedging and not for speculative purposes and had not designated its foreign exchange derivatives as hedges. Accordingly, changes in fair value from these contracts were recorded as "Other operating expense (income), net" in the Company's Consolidated Statements of Operations. The Company executed derivative transactions with highly rated financial institutions to mitigate counterparty risk.

The Company did not have any outstanding derivative contracts at December 31, 2020 and 2019. The following table shows the gains and (losses) from currency exchange derivatives during the year ended December 31, 2018, which is included in "Other operating expense (income), net" in the Consolidated Statement of Operations as well as the weighted average notional amount of derivatives outstanding:

	Year ended December 31, 2018	
	Gains (losses) (in thousands)	Weighted average notional amount
Foreign currency exchange forwards	\$ 327	\$ 2,869

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**Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)**

Note 13 — Stockholders' Equity

Accumulated Other Comprehensive Income ("AOCI")

The following table presents the changes in the balances of each component of AOCI, net of tax:

	Foreign Currency Translation	Unrealized Gains (Losses) on Available for Sale Securities <i>(in thousands)</i>	Total
Balance - December 31, 2017	\$ 1,839	\$ (27)	\$ 1,812
Other comprehensive income (loss)	(3)	11	8
Balance - December 31, 2018	1,836	(16)	1,820
Other comprehensive income (loss)	25	49	74
Balance - December 31, 2019	1,861	33	1,894
Other comprehensive income (loss)	5	(53)	(48)
Balance - December 31, 2020	<u>\$ 1,866</u>	<u>\$ (20)</u>	<u>\$ 1,846</u>

The Company did not allocate additional tax expense (benefit) to other comprehensive income (loss) for all years presented as the Company is in a full valuation allowance position such that a deferred tax asset related to amounts recognized in other comprehensive income is not regarded as realizable on a more-likely-than-not basis.

Preferred Stock

The Board of Directors has authority under the Company's Certificate of Incorporation to issue shares of preferred stock, par value \$0.01, with voting and economic rights to be determined by the Board of Directors. As of December 31, 2020, no preferred shares have been issued.

Treasury Stock

On December 11, 2017, the Company's Board of Directors authorized a program to repurchase up to \$100 million of the Company's common stock to be completed through December 11, 2019. At the end of the program, \$14.3 million of the \$100 million had been utilized.

The Company records treasury stock purchases under the cost method using the first-in, first-out ("FIFO") method. Upon reissuance of treasury stock, amounts in excess of the acquisition cost are credited to additional paid-in capital. If the Company reissues treasury stock at an amount below its acquisition cost and if additional paid-in capital associated with prior treasury stock transactions is insufficient to cover the difference between the acquisition cost and the reissue price, this difference is charged to accumulated deficit.

Note 14 — Stock Plans

Share-based incentive awards are provided to employees under the terms of the Company's equity incentive compensation plans (the "Plans"), which are administered by the Compensation Committee of the Board of Directors. The 2019 Plan originated as the 2010 Stock Incentive Plan and was originally approved by the Company's shareholders in May 2010. This Plan was subsequently amended, as approved by shareholders, in 2013, 2016, and 2019 (at which time the Plan was renamed the 2019 Stock Incentive Plan (as amended to date, the "2019 Plan"). The Company's employees, non-employee directors, and consultants are eligible to receive awards under the 2019 Plan, which can include non-qualified stock options, incentive stock options, RSAs, RSUs, PSAs, PSUs, share appreciation rights,

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**Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)**

dividend equivalent rights, or any combination thereof. The Company settles awards under the Plans with newly issued shares or with shares held in treasury.

In 2013, the Board of Directors granted equity awards to certain employees under the Company's 2013 Inducement Stock Incentive Plan (the "Inducement Plan"). The Company issued 124,500 stock option shares and 87,000 RSUs under this plan. Stock options under this plan vest over a three year period and have a 10-year term, and RSUs under this plan vest over a two or four year period. At December 31, 2013, the Inducement Plan was merged into the 2019 Plan and is considered an inactive plan with no further shares available for grant. At December 31, 2020, there are 2,000 option shares and no RSUs outstanding under the Inducement Plan.

The Company is authorized to issue up to 13.3 million shares under the 2019 Plan. Option awards are granted with an exercise price equal to the closing price of the Company's common stock on the trading day prior to the date of grant; option awards generally vest over a three year period and have a seven or ten year term. RSAs and RSUs generally vest over one to five years. Certain option and share awards provide for accelerated vesting if there is a change in control, as defined in the 2019 Plan. At December 31, 2020, there are 0.7 million option shares and 0.8 million RSUs and PSUs outstanding under the 2019 Plan.

The Company is authorized to issue up to 1.5 million shares under the approved 2016 employee stock purchase plan ("ESPP"), including additional shares authorized under a plan amendment approved by shareholders in 2019. Under the ESPP, substantially all employees in the U.S. may purchase the Company's common stock through payroll deductions at a price equal to 85 percent of the lower of the fair market value of the Company's common stock at the beginning or end of each six-month offer period, as defined in the ESPP, and subject to certain limits. The ESPP was approved by the Company's shareholders.

During 2017, in connection with an acquisition, the Company assumed certain restricted stock units (the "Assumed RSUs") available and outstanding under the assumed plan (the "Assumed Plan"). The Assumed RSUs remain subject to the terms set forth in the award agreement governing the award and the Assumed Plan, except that the Assumed RSUs relate to shares of Company common stock and the number of restricted stock units was adjusted pursuant to the terms of the acquisition to reflect the difference in the value of a share of Company common stock and a share of the acquired company's common stock prior to closing the acquisition. The Assumed RSUs were converted into 338,144 restricted stock units of the Company and generally vest over 50 months. After the acquisition and notwithstanding any other provisions of the Assumed Plan, no further grants will be made under the Assumed Plan, and the Company is solely maintaining the Assumed Plan with respect to the Assumed RSUs. At December 31, 2020, there are 4,030 RSUs outstanding under the Assumed Plan.

Shares Reserved for Future Issuance

At December 31, 2020, the Company has 5.1 million shares reserved to cover exercises of outstanding stock options, vesting of RSUs, and additional grants under the 2019 Plan. At December 31, 2020, the Company has 0.3 million shares reserved to cover future issuances under the ESPP Plan.

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Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)

Share-Based Compensation

The Company recognized share-based compensation in the following line items in the Consolidated Statements of Operations for the periods indicated:

	For the year ended December 31,		
	2020	2019	2018
Cost of sales	\$ 1,870	\$ 1,903	\$ 1,885
Research and development	2,900	3,340	3,611
Selling, general, and administrative	7,933	9,630	9,417
Restructuring	—	397	1,161
Total	\$12,703	\$15,270	\$16,074

The Company did not realize any tax benefits associated with share-based compensation for the years ended December 31, 2020, 2019, and 2018 due to the full valuation allowance on its U.S. deferred tax assets. See Note 17, "Income Taxes" for additional information. The Company capitalized an immaterial amount of share-based compensation into inventory for the years ended December 31, 2020, 2019, and 2018.

Unrecognized share-based compensation costs at December 31, 2020 are summarized below:

	Unrecognized Share-Based Compensation Costs (in thousands)	Weighted Average Period Expected to be Recognized (in years)
Restricted stock units	\$ 1,325	2.0
Restricted stock awards	10,709	2.0
Performance share units	3,269	1.6
Total unrecognized share-based compensation cost	\$ 15,303	1.9

Stock Option Awards

Stock options are awards issued to employees that entitle the holder to purchase shares of the Company's stock at a fixed price. The following table summarizes the equity activity related to stock options:

	Number of Shares (in thousands)	Weighted Average Exercise Price
Balance - December 31, 2017	1,394	\$ 34.97
Expired or forfeited	(172)	36.21
Balance - December 31, 2018	1,222	34.80
Expired or forfeited	(103)	33.97
Balance - December 31, 2019	1,119	34.88
Expired or forfeited	(389)	34.15
Balance - December 31, 2020	730	35.26

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Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)

The following table summarizes stock option information at December 31, 2020:

Range of Exercise Prices	Options Outstanding and Exercisable			
	Shares (in thousands)	Aggregate Intrinsic Value (in thousands)	Weighted Average Remaining Contractual Life (in years)	Weighted Average Exercise Price
\$20.00 - \$30.00	16	\$ —	2.1	\$ 28.68
\$30.01 - \$40.00	600	\$ —	1.5	\$ 32.34
\$40.01 - \$50.00	5	\$ —	0.3	\$ 47.95
\$50.01 - \$60.00	109	\$ —	0.4	\$ 51.69
	730	\$ —	1.4	\$ 35.26

There were no unvested options outstanding as of December 31, 2020. Additionally, there were no options exercised for the years ended December 31, 2020, 2019, or 2018.

RSAs, RSUs, PSAs, PSUs

RSAs are stock awards issued to employees and directors that are subject to specified restrictions and a risk of forfeiture. RSUs are stock awards issued to employees that entitle the holder to receive shares of common stock as the awards vest. PSAs and PSUs are awards that result in an issuance of shares of common stock to employees if certain performance or market conditions are achieved. All of these awards typically vest over one to four years and vesting is subject to the employee's continued service with the Company and, in the case of performance awards, meeting certain performance or market conditions. The fair value of the awards is determined and fixed based on the closing price of the Company's common stock on the trading day prior to the date of grant, or, in the case of performance awards with market conditions, fair value is determined using a Monte Carlo simulation.

The following table summarizes the equity activity of non-vested restricted shares and performance shares:

	Number of Shares (in thousands)	Weighted Average Grant Date Fair Value
Balance - December 31, 2017	1,880	\$ 25.41
Granted	1,257	17.37
Performance award adjustments	(5)	32.67
Vested	(523)	26.39
Forfeited	(391)	24.66
Balance - December 31, 2018	2,218	20.74
Granted	1,107	11.53
Performance award adjustments	(25)	28.91
Vested	(768)	21.77
Forfeited	(275)	18.48
Balance - December 31, 2019	2,257	16.20
Granted	1,054	9.53
Performance award adjustments	(51)	30.94
Vested	(798)	16.01
Forfeited	(422)	14.87
Balance - December 31, 2020	2,040	12.73

The total fair value of shares that vested during the years ended December 31, 2020, 2019, and 2018 was \$9.0 million, \$8.8 million, and \$9.1 million, respectively. For performance awards, the final number of shares earned will vary.

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Veeco Instruments Inc. and Subsidiaries Notes to Consolidated Financial Statements (Continued)

depending on the achievement of the actual results relative to the performance or market conditions. Each performance award is included in the table above at the grant date target share amount until the end of the performance period if not previously forfeited.

The fair value of performance awards with market conditions is estimated on the date of grant using a Monte Carlo simulation. Estimates of fair value are not intended to predict actual future events or the value ultimately realized by employees who receive these awards. The weighted average fair value and the assumptions used in calculating such values during fiscal years 2020, 2019, and 2018 for performance awards with market conditions were based on estimates at the date of grant as follows:

	Year ended December 31,		
	2020	2019	2018
Weighted average fair value	\$ 10.59	\$ 16.45	\$ 15.58
Dividend yield	0 %	0 %	0 %
Expected volatility factor ⁽¹⁾	60.27 %	53 %	49 %
Risk-free interest rate ⁽²⁾	0.54 %	2.37 %	2.88 %
Expected life (in years) ⁽³⁾	3.0	2.8	3.0

- (1) Expected volatility is measured using historical daily price changes of the Company's stock over the respective expected term.
- (2) The risk-free rate for periods within the contractual term is based on the U.S. Treasury yield curve in effect at the time of grant.
- (3) The expected life is the number of years the Company estimates that the awards will be outstanding prior to exercise.

Employee Stock Purchase Plan

For the years ended December 31, 2020, 2019, and 2018 the Company received cash proceeds of \$2.9 million, \$3.1 million, and \$3.1 million, and issued shares of 254,703, 395,941, and 332,096, respectively, under the ESPP Plan. The weighted average estimated values of employee purchase rights as well as the weighted average assumptions that were used in calculating such values during fiscal years 2020, 2019, and 2018 were based on estimates at the date of grant as follows:

	Year ended December 31,		
	2020	2019	2018
Weighted average fair value	\$ 4.81	\$ 2.96	\$ 4.94
Dividend yield	0 %	0 %	0 %
Expected volatility factor ⁽¹⁾	70 %	60 %	62 %
Risk-free interest rate ⁽²⁾	0.95 %	2.41 %	1.81 %
Expected life (in years) ⁽³⁾	0.5	0.5	0.5

- (1) Expected volatility is measured using historical daily price changes of the Company's stock over the respective expected term.
- (2) The risk-free rate for periods within the contractual term is based on the U.S. Treasury yield curve in effect at the time of grant.
- (3) The expected life is the number of years the Company estimates that the purchase rights will be outstanding prior to exercise.

Note 15 — Retirement Plans

The Company maintains a defined contribution plan for the benefit of its U.S. employees. The plan is intended to be tax qualified and contains a qualified cash or deferred arrangement as described under Section 401(k) of the Internal Revenue Code. Eligible participants may elect to contribute a percentage of their base compensation, and the Company may make matching contributions, generally equal to fifty cents for every dollar employees contribute, up to the lesser of three percent of the employee's eligible compensation or three percent of the maximum the employee is permitted to contribute under the current Internal Revenue Code limitations. Generally, the plan calls for vesting in the Company contributions over the initial five years of a participant's employment. The Company provided employer contributions

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Veeco Instruments Inc. and Subsidiaries Notes to Consolidated Financial Statements (Continued)

associated with this plan of approximately \$2.4 million, \$2.4 million, and \$2.0 million for the years ended December 31, 2020, 2019, and 2018, respectively.

Note 16 — Dispositions

In the fourth quarter of 2019, the Company determined that one of its non-core product lines (the “disposal group”) met the held for sale criteria, and as such, the related assets are presented as “Assets held for sale” on the Consolidated Balance Sheet as of December 31, 2019. During the second quarter of 2020, the Company completed the sale of this product line for approximately \$11.4 million, with approximately 85% of the transaction price received upon closing, and 15% held in escrow for a period of 18 months and included within “Prepaid expenses and other current assets” in the Consolidated Balance Sheet as of December 31, 2020. Long-lived assets and definite-lived intangible assets were not depreciated or amortized while classified as held for sale. The sale of this disposal group did not represent a strategic shift that will have a material effect on the Company’s operations and financial results, nor is it considered a component of the Company, and as such it did not meet the criteria to be reported as discontinued operations.

For the year ended December 31, 2019, the Company recorded a non-cash impairment charge on these assets held for sale of \$4.0 million, included in “Asset impairment” in the Consolidated Statements of Operations, in order to measure the disposal group at the lower of its carrying value or fair value less costs to sell, which resulted in a corresponding held for sale valuation allowance on its assets held for sale in the Consolidated Balance Sheet. During the second quarter of 2020, the Company recorded additional impairment charges of \$0.3 million related to the finalization of the sale of this disposal group.

The major classes of assets that were sold are as follows:

Net assets sold:	<i>(in thousands)</i>
Inventories	\$ 6,311
Property, plant, and equipment, net	372
Intangible assets, net	6,546
Goodwill	2,359
Deferred revenue	(59)
Total net assets sold	\$ 15,529
Net proceeds after costs to sell	(11,228)
Total impairment on sale of disposal group	\$ 4,301

Note 17 — Income Taxes

The amounts of income (loss) before income taxes attributable to domestic and foreign operations were as follows:

	Year ended December 31,		
	2020	2019	2018
	<i>(in thousands)</i>		
Domestic	\$(10,292)	\$(78,486)	\$(286,561)
Foreign	1,828	530	(147,273)
Total	\$ (8,464)	\$ (77,956)	\$ (433,834)

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Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)

Significant components of the expense (benefit) for income taxes consisted of the following:

	Year ended December 31,		
	2020	2019	2018
	(in thousands)		
Current:			
Federal	\$ —	\$ —	\$ (1,682)
Foreign	22	304	2,518
State and local	204	113	38
Total current expense (benefit) for income taxes	226	417	874
Deferred:			
Federal	136	162	205
Foreign	(320)	116	(27,932)
State and local	(115)	82	107
Total deferred expense (benefit) for income taxes	(299)	360	(27,620)
Total expense (benefit) for income taxes	\$ (73)	\$ 777	\$ (26,746)

The income tax expense was reconciled to the tax expense computed at the U.S. federal statutory tax rate as follows:

	Year ended December 31,		
	2020	2019	2018
	(in thousands)		
Income tax expense (benefit) at U.S. statutory rates	\$ (1,777)	\$ (16,396)	\$ (91,105)
State taxes, net of U.S. federal impact	(121)	(835)	(2,848)
Effect of international operations	(131)	785	11,847
Research and development tax credit	726	(1,692)	(2,230)
Net change in valuation allowance	388	15,098	7,747
Change in accrual for unrecognized tax benefits	(6)	1,232	2,868
Share-based compensation	2,248	1,947	1,848
Effect of 2017 Tax Act	—	—	(1,690)
Asset impairment	728	495	46,872
Partial extinguishment of 2023 Notes	(2,292)	—	—
Other	164	143	(55)
Total expense (benefit) for income taxes	\$ (73)	\$ 777	\$ (26,746)

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Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)

Deferred income taxes reflect the effect of temporary differences between the carrying amounts of assets and liabilities recognized for financial reporting purposes and the amounts recognized for tax purposes. The tax effects of the temporary differences were as follows:

	December 31,	
	2020	2019
	(in thousands)	
Deferred tax assets:		
Inventory valuation	\$ 10,949	\$ 11,170
Net operating losses	51,260	63,342
Credit carry forwards	54,160	55,103
Warranty and installation accruals	1,045	1,391
Share-based compensation	4,587	6,296
Customer deposits and deferred revenue	10,982	5,986
Operating leases	2,281	3,181
Other	4,741	3,501
Total deferred tax assets	140,005	149,970
Valuation allowance	(118,443)	(130,053)
Net deferred tax assets	21,562	19,917
Deferred tax liabilities:		
Purchased intangible assets	7,227	9,345
Convertible Senior Notes	13,674	8,831
Operating leases	2,241	3,172
Depreciation	2,220	2,668
Total deferred tax liabilities	25,362	24,016
Net deferred taxes	\$ (3,800)	\$ (4,099)

The Company is no longer permanently reinvesting future earnings from certain foreign jurisdictions and has accrued for foreign tax withholdings of \$0.7 million on its unremitted earnings as of December 31, 2020.

At December 31, 2020, the Company had U.S. federal NOL carryforwards of approximately \$219.3 million, of which \$6.9 million has an indefinite carryforward period, with the remaining expiring in varying amounts between 2034 and 2037, if not utilized. At December 31, 2020, the Company had U.S. federal research and development credits of \$28.8 million that will expire between 2021 and 2040. The Company also has \$9.4 million of foreign tax credits that expire in 2027. Additionally, the Company has state and local NOL carryforwards of approximately \$122.7 million (a net deferred tax asset of \$7.7 million, net of federal tax benefits and before the valuation allowance) that will expire between 2021 and 2040. Finally, the Company has state credits of \$28.4 million, some of which are indefinite and others that will expire between 2024 and 2035.

The Company makes assessments to estimate if sufficient taxable income will be generated in the future to use existing deferred tax assets. As of December 31, 2020, the Company continued to have a cumulative three year loss with respect to its U.S. operations. As such, the Company maintains a valuation allowance against its U.S. deferred tax assets. During 2020, the Company's valuation allowance decreased by approximately \$11.6 million.

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**Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)**

A roll-forward of the Company's uncertain tax positions for all U.S. federal, state, and foreign tax jurisdictions was as follows:

	December 31,		
	2020	2019 (in thousands)	2018
Balance at beginning of year	\$12,369	\$11,137	\$ 8,269
Additions for tax positions related to current year	1,217	3,075	2,154
Additions for tax positions related to prior years	47	21	1,721
Reductions for tax positions related to prior years	(1,166)	(1,814)	(934)
Reductions due to the lapse of the statute of limitations	—	—	(26)
Settlements	(104)	(50)	(47)
Balance at end of year	<u>\$12,363</u>	<u>\$12,369</u>	<u>\$11,137</u>

If the amount of unrecognized tax benefits at December 31, 2020 were recognized, the Company's income tax provision would decrease by \$1.4 million. The gross amount of interest and penalties accrued in income tax payable in the Consolidated Balance Sheets was approximately \$0.4 million at both December 31, 2020 and 2019.

The Company, or one of its subsidiaries, files income tax returns in the United States federal jurisdiction, and various state, local, and foreign jurisdictions. All material consolidated federal income tax matters have been concluded for years through 2017 subject to subsequent utilization of NOLs generated in such years. All material state and local income tax matters have been reviewed through 2012. The majority of the Company's foreign jurisdictions have been reviewed through 2015. The Company's major foreign jurisdictions' statutes of limitation remain open with respect to the tax years 2015 through 2019 for China, Germany, and Singapore, and 2019 for Taiwan. The Company does not anticipate that its uncertain tax position will change significantly within the next twelve months subject to the completion of the ongoing tax audits and any resultant settlement.

Note 18 — Segment Reporting and Geographic Information

The Company operates and measures its results in one operating segment and therefore has one reportable segment: the development, manufacture, sales, and support of semiconductor and thin film process equipment primarily sold to make electronic devices. The Company's Chief Operating Decision Maker, the Chief Executive Officer, evaluates performance of the Company and makes decisions regarding the allocation of resources based on total Company results.

In order to align with the Company's evolving strategy, the Company now categorizes its sales into the following four end-markets: 1) Semiconductor; 2) Compound Semiconductor; 3) Data Storage; and 4) Scientific & Other.

Prior period sales have been reclassified to the new end-markets for comparative purposes. Sales by end-market is as follows:

	For the year ended December 31,		
	2020	2019 (in thousands)	2018
Sales by end-market			
Semiconductor	\$165,909	\$175,608	\$137,797
Compound Semiconductor	107,922	85,877	260,323
Data Storage	123,288	84,075	69,141
Scientific & Other	57,044	73,789	74,821
Total	<u>\$454,163</u>	<u>\$419,349</u>	<u>\$542,082</u>

The Company's significant operations outside the United States include sales and service offices in China, Europe, and Rest of APAC. For geographic reporting, sales are attributed to the location in which the customer facility is located.

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Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)

Sales and long-lived tangible assets by geographic region are as follows:

	Net Sales to Unaffiliated Customers			Long-lived Tangible Assets		
	2020	2019	2018 (in thousands)	2020	2019	2018
United States	\$145,353	\$126,160	\$125,659	\$64,967	\$75,187	\$78,503
EMEA ⁽¹⁾	73,124	57,351	89,102	120	143	205
China	57,589	71,078	194,032	84	130	81
Rest of APAC	177,569	164,363	131,519	100	251	1,495
Rest of World	528	397	1,770	—	—	—
Total	<u>\$454,163</u>	<u>\$419,349</u>	<u>\$542,082</u>	<u>\$65,271</u>	<u>\$75,711</u>	<u>\$80,284</u>

(1) EMEA consists of Europe, the Middle East, and Africa

Note 19 — Selected Quarterly Financial Information (unaudited)

The following table presents selected unaudited financial data for each fiscal quarter of 2020 and 2019. Although unaudited, this information has been prepared on a basis consistent with the Company's audited Consolidated Financial Statements and, in the opinion of management, reflects all adjustments (consisting only of normal recurring adjustments) that are considered necessary for a fair presentation of this information in accordance with GAAP. Such quarterly results are not necessarily indicative of future results of operations.

	Fiscal 2020				Fiscal 2019			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Net sales	\$104,502	\$98,637	\$112,078	\$138,946	\$ 99,371	\$ 97,822	\$108,954	\$113,202
Gross profit	46,419	41,894	49,142	56,845	34,716	36,285	42,223	44,970
Net income (loss)	(567)	(8,302)	580	(102)	(18,530)	(15,565)	(11,767)	(32,871)
Basic income (loss) per common share	(0.01)	(0.17)	0.01	(0.00)	(0.40)	(0.33)	(0.25)	(0.69)
Diluted income (loss) per common share	(0.01)	(0.17)	0.01	(0.00)	(0.40)	(0.33)	(0.25)	(0.69)

As discussed in Note 11, "Debt", the Company accounted for the partial settlements of the 2023 Notes in the second quarter and fourth quarter of 2020 as extinguishments, and as such, recorded losses on extinguishment of approximately \$3.0 million and \$4.8 million for the second and fourth quarter, respectively, which were included in "Other income (expense), net" in the Consolidated Statements of Operations. Refer to Note 11, "Debt" for additional information.

During the fourth quarter of 2019, the Company recorded a non-cash impairment charge of \$21.0 million related to its equity investment in Kateeva which is included in "Other income (expense), net" in the Consolidated Statements of Operations, as well as a non-cash impairment charge of \$4.0 million related to the classification of a disposal group as held for sale which is included in "Asset impairment" in the Consolidated Statements of Operations. Refer to Note 4, "Investments," and Note 16, "Dispositions," for additional information.

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**Veeco Instruments Inc. and Subsidiaries
Notes to Consolidated Financial Statements (Continued)**

Note 20 — Subsequent Event

On February 18, 2021, the Company entered into a lease agreement through 2037 for a new manufacturing facility in San Jose, California in order to expand its manufacturing capabilities to meet growing demand for its advanced laser annealing technology that serves the world's leading semiconductor technology companies. With the transition to the new facility, the Company will remain in the Silicon Valley area in close proximity to leading U.S. semiconductor companies. The lease agreement contains two renewal options for a period of three years each, and has various escalation and abatement clauses, with annual base rent payable of between \$2.0 million and \$3.7 million through the initial lease period as well as certain other expenses, including maintenance, real estate taxes, and insurance. In addition, the lease agreement includes a tenant improvement allowance of \$6.8 million to be used for the initial build-out.

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Schedule II — Valuation and Qualifying Accounts

<u>Deducted from asset accounts:</u>	Balance at Beginning of Period	<u>Additions</u>			Balance at End of Period
		Charged (Credited) to Costs and Expenses	Charged to Other Accounts (in thousands)	<u>Deductions</u>	
Year ended December 31, 2020					
Allowance for doubtful accounts	\$ 602	\$ 140	\$ —	\$ (6)	\$ 736
Valuation allowance in net deferred tax assets	130,053	513	—	(12,123)	118,443
	<u>\$130,655</u>	<u>\$ 653</u>	<u>\$ —</u>	<u>\$(12,129)</u>	<u>\$119,179</u>
Year ended December 31, 2019					
Allowance for doubtful accounts	\$ 270	\$ 392	\$ —	\$ (60)	\$ 602
Valuation allowance in net deferred tax assets	114,955	15,098	—	—	130,053
	<u>\$115,225</u>	<u>\$ 15,490</u>	<u>\$ —</u>	<u>\$ (60)</u>	<u>\$130,655</u>
Year ended December 31, 2018					
Allowance for doubtful accounts	\$ 270	\$ —	\$ —	\$ —	\$ 270
Valuation allowance in net deferred tax assets	100,456	14,499	—	—	114,955
	<u>\$100,726</u>	<u>\$ 14,499</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$115,225</u>