

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 30, 2023

OR

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

For the transition period from to

Commission File No. 001-39110

ONTO INNOVATION INC.

(Exact name of registrant as specified in its charter)

Delaware

94-2276314

(State or other jurisdiction of
incorporation or organization)

(I.R.S. Employer
Identification Number)

16 Jonspin Road, Wilmington, MA 01887
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (978) 253-6200

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

Title of Each Class

Trading Symbol

Name of Exchange on Which Registered

New York Stock
Exchange (

Common Stock, \$0.001 par value per share

ONTO

NYSE
)

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 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, a 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 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. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

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

The aggregate market value of the registrant's voting Common Stock held by non-affiliates of the registrant was approximately \$

5,659,828,744

based on the closing price of the Common Stock on the New York Stock Exchange on June 30, 2023.

The number of shares of the registrant's Common Stock outstanding as of February 5, 2024 was

49,130,018

DOCUMENTS INCORPORATED BY REFERENCE

Items 10, 11, 12, 13 and 14 of Part III of this Annual Report on Form 10-K incorporate by reference information from the definitive proxy statement for the registrant's annual meeting of stockholders scheduled to be held on May 22, 2024.

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FORWARD-LOOKING STATEMENTS

Certain statements in this Annual Report on Form 10-K (this “Form 10-K”), or incorporated by reference in this Form 10-K, of Onto Innovation Inc. (referred to in this Form 10-K, together with its consolidated subsidiaries, unless otherwise specified or suggested by the context, as the “Company,” “Onto Innovation,” “we,” “our” or “us”) may be considered “forward-looking statements” or may be based on “forward-looking statements,” including, but not limited to, those concerning:

- our business momentum and future growth;
- technology development, product introduction and acceptance of our products and services;
- our manufacturing practices and ability to deliver both products and services consistent with our customers' demands and expectations and to strengthen our market position, including our ability to source components, materials, and equipment due to supply chain delays or shortages;
- our expectations of the semiconductor market outlook;
- future revenue, gross profits, research and development and engineering expenses, selling, general and administrative expenses, and cash requirements;
- the effects of political, economic, legal, and regulatory changes or conflicts on our global operations;
- the effects of natural disasters or public health emergencies on the global economy and on our customers, suppliers, employees, and business;
- our dependence on certain significant customers and anticipated trends and developments in and management plans for our business and the markets in which we operate; and
- our ability to be successful in managing our cost structure and cash expenditures and results of litigation.

Statements contained or incorporated by reference in this Form 10-K that are not purely historical are forward-looking statements and are subject to safe harbors created under Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and the Private Securities Litigation Reform Act of 1995. Forward-looking statements may be identified by words such as, but not limited to, “anticipate,” “believe,” “continue,” “estimate,” “expect,” “intend,” “plan,” “should,” “may,” “could,” “will,” “would,” “forecast,” “project” and words or phrases of similar meaning, as they relate to our management or us.

Forward-looking statements contained herein reflect our current expectations, assumptions and projections with respect to future events and are subject to certain risks, uncertainties and assumptions, such as those identified in Part I, Item 1A. “Risk Factors” and elsewhere in this Form 10-K. Actual results may differ materially and adversely from those included in such forward-looking statements. Forward-looking statements reflect our position as of the date of this report and we undertake no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

PART I

Item 1. Business.

General

Onto Innovation is a worldwide leader in the design, development, manufacture and support of metrology and inspection tools for the semiconductor industry, including process control tools that perform optical metrology on patterned and unpatterned wafers, wafer macro-defect inspection, including macro-inspection of both 2D and 3D wafer features, wafer substrate and panel substrate lithography systems, and process control analytical software. Our products are primarily used by silicon wafer manufacturers, semiconductor integrated circuit ("IC") fabricators, and advanced packaging manufacturers operating in the semiconductor market. Our products are also used for process control in a number of other specialty device manufacturing markets, including light emitting diodes ("LED"), vertical-cavity surface-emitting lasers ("VCSEL"), micro-electromechanical systems ("MEMS"), CMOS image sensors ("CIS"), silicon and compound semiconductor (SiC and GaN) power devices, analog devices, RF filters, data storage, and certain industrial and scientific applications.

We provide process and yield management solutions used in bare silicon wafer production and wafer processing facilities, often referred to as "front-end" manufacturing, and advanced packaging of chips and test facilities, or "back-end" manufacturing, through a portfolio of standalone systems for optical metrology, macro-defect inspection, packaging lithography, as well as transparent and opaque thin film measurements. Our automated and integrated metrology systems measure critical dimensions, device structures, topography, shape, and various thin film compositions, including three-dimensional features and film thickness, as well as optical and material properties. Our primary areas of focus include products that provide critical yield-enhancing and actionable information, which is used by microelectronic device manufacturers to improve yield and time to market of their next-generation devices. Our systems feature sophisticated software and production-worthy automation. In addition, our advanced process control software portfolio includes powerful solutions for standalone tools, groups of tools, and factory-wide and enterprise-wide suites to enhance productivity and achieve significant cost savings. Our systems are backed by worldwide customer service and applications support.

Industry Background

We participate in the sale, design, manufacture, marketing and support of process control systems for optical critical dimension ("OCD") metrology, thin film metrology, silicon wafer inspection, 2D and 3D macro inspection and lithography tools for advanced packaging and advanced analytical software for semiconductor manufacturing as well as inspection systems for certain industrial applications and scientific research. Our principal market is semiconductor capital equipment. Semiconductors packaged as ICs, or "chips", are used in consumer electronics, server and enterprise systems, mobile computing (including smart phones and tablets), data storage devices, and embedded automotive and control systems. Our core focus is the measurement and control of the structure, composition, and geometry of semiconductor devices as they are fabricated on silicon wafers to improve device performance and manufacturing yields. Our end customers manufacture many types of ICs for a multitude of applications, each having unique manufacturing challenges. This includes ICs to enable information processing and management (logic ICs), memory storage (NAND, 3D-NAND, and DRAM), analog devices (e.g., Wi-Fi and 5G radio ICs, power devices), MEMS sensor devices (accelerometers, pressure sensors, microphones), CMOS image sensors, and other specialty end markets including components for hard disk drives, LEDs, and power management devices.

Current Trends

Markets

Advanced Nodes. "Advanced Nodes" refers to leading-edge ICs where the sizes of transistors and other features continue to shrink. Advanced nodes are associated with transistor dimensions less than 16 nanometers (nm). Our metrology systems used to measure and characterize these small features are generally purchased when a customer is beginning to manufacture at a new, smaller node, in order to set up and test new manufacturing equipment being installed for the new node. Our process control/metrology equipment is generally installed prior to the installation of the actual process equipment for that reason. Additional process control equipment is normally purchased when the initial process yields have been stabilized and more manufacturing capacity is required to meet production demands. Therefore, our sales to customers for advanced nodes is generally higher when manufacturing lines for new nodes are being established and may not represent continuous sales revenue until our initial systems reach high levels of utilization driven by the need for greater capacity.

Demand for our products continues to be driven by our customers' desire for higher overall chip performance enabled by a greater number of transistors per square millimeter, while improving power efficiency, logic processing capability, data storage volume and manufacturing yield. To achieve these goals, our customers have increased their use of more complex

materials and processing methods in their manufacturing flow. The primary path for performance gains is geometric scaling, known as node shrinks, or scaling of transistor dimensions. In some cases, our customers are implementing new materials and methods in high volume manufacturing, including materials and device architectures to reduce power consumption. To scale NAND memory, for example, a 3D layered architecture has been implemented for several customers with more than 150 storage cell layers for devices in production. Additional innovation continues in Data Storage, Power Devices, MEMS, and Image Sensors. We believe the use of these new materials and manufacturing methods has increased demand for our products such as the Atlas® product line, which is capable of measuring advanced nodes as certain features shrink beyond 7nm, to 5nm, 3nm and in the most advanced of cases, 2 nm or less.

To shrink features, new methods, including multiple patterning lithography and extreme ultra-violet ("EUV") lithography, have been developed. The EUV process is driving significantly higher requirements for the silicon wafers that are entering the EUV chamber. Small particles on the backside of the wafer measuring a few micrometers (microns) can distort the images being projected onto the top side. Our NovusEdge® inspection tool has been installed at major silicon wafer manufacturers to detect backside contamination and edge cracking as a final quality control mechanism before wafers are shipped to the semiconductor fabrication processes. The top side of wafers used for the EUV process is covered with an epitaxial layer, which must also be scanned for any impurities. This compositional analysis may be measured using our Element® system using Fourier Transform Infrared ("FTIR") algorithms.

Advanced Packaging. "Advanced Packaging" refers to a variety of technologies that enable the miniaturization of electronic products, such as smartphones, watches, and tablets. Historically, IC packaging refers to the final stage of semiconductor device fabrication, in which a single circuit made from semiconducting material (a die or chip) is encased in a molded package using small wires to provide connections to a carrier that can be soldered to a printed circuit board and also prevents physical damage and corrosion to the chip. Advanced Packaging refers loosely to the multi-layer conductors and chip structures (other than wires) that often interconnect multiple die, feed them with electric power and create signal paths to and from the Printed Circuit ("PC") board, dissipate their heat, and protect them from damage. Today, the drive to pack more functions into a small space and reduce their power requirements demands that chip packages do much more than ever before to combine multiple chips and functions into a single molded package.

One example of the technology used in Advanced Packaging is the 3D integration of semiconductors. This technology involves stacking individual chips in one integrated package. Through-silicon vias ("TSVs") are vertical copper interconnects that are embedded from the bottom surface of a die to the top surface and use small copper/solder "bumps" to connect one chip to another. TSVs allow power and communication to be shared among the individually stacked components. This offers the advantages of shorter signal paths and, in turn, reduced power consumption, enhanced bandwidths, integration of heterogeneous components such as memory and logic chips, and smaller surface area. The processes required for 3D integration vary from one manufacturer to another and many continue to be optimized for yield and to ensure the functioning of individual stacked chips.

Heterogeneous integrated ("HI") packaging is another advanced packaging technology using copper pillars/bumps to vertically connect a wide variety of stacked die for 2.5D, and 3D integration techniques as well as horizontally connected chips and is considered the next disruptive technology for several reasons. First, HI packages using 3D stacking can significantly reduce the space needed inside an electronic device, such as a smartphone, by combining multiple chips/functions into a "system in a package" ("SIP"). Next, HI packages also improve a system's performance by reducing power and signal conductor lengths, which previously were routed from package to package through a PC board using thin redistribution layers ("RDLs") to connect chips that are side-by-side. Lastly, the technology is currently considered the preferred vehicle for next generation uses, such as SIP, and package on package formats. As a result of the small overall form factor, HI packages provide the functionality needed in high-end mobile and wearable products.

Our inspection systems and software are used for process control and detection of potential reliability failures in nearly all of these packages. Inspection rates for advanced packages are high throughout the assembly process to avoid a single defective chip from being assembled into a relatively expensive package. Thus, unlike the cyclical nature of our metrology equipment associated with node shrinks, our sales revenue for advanced packaging is generally driven by assembly volumes.

Panel Substrate Manufacturing. One current process to manufacture advanced packaging involves attaching known good die to a 300mm wafer. SIP packages can often contain side-by-side die, meaning the package can be large and limit the number of packages being placed on a wafer. In order to meet the growing demand at reduced average selling prices, manufacturers are looking to scalable technology. Advanced packaging facilities looking to improve Cost of Ownership and increase productivity are transitioning from 300mm wafers to large rectangular panels, which can be as large as 650mm x 650mm. This larger size enables companies manufacturing large area packages to increase the number of devices being processed at each step as they are no longer limited to operating within the constraints of a round wafer. By responding to market opportunities and addressing the stringent demands of customers' technical roadmaps, we believe that Onto Innovation is optimally positioned to capitalize on the emerging market of high-volume manufacturing of advanced IC substrates. For

example, the JetStep® X500 lithography system, having emerged from the flat panel display market, is readily capable of processing RDLs on very thin advanced organic laminate panels in the semiconductor advanced packaging market. The Firefly® series of panel level macro inspection tools, designed for high resolution inspection, can provide defect detection and location information to the JetStep X500 tool for each die, which greatly improves lithography throughput using our exclusive StepFAST™ process. It also delivers a combination of defect classification and process throughput in a single software platform. It reduces capital investment requirements and provides a reliable pathway to transition from wafer to panel-based processes.

Technology

We believe that our expertise in our core technologies of optics and software and our combined investment in research and development will enable us to rapidly develop new technologies and products in order to quickly respond to emerging industry trends and competitive challenges. The breadth of our technology enables us to offer a diverse combination of metrology, inspection, and process control solutions. Unique features have been designed into our lithography systems to meet our customers' changing process requirements. Our metrology and inspection technologies provide process control for the majority of advanced node wafers processed today in a semiconductor wafer fab. In front-end processes, OCD metrology, thin film metrology, wafer stress metrology and macro defect detection and classification technologies allow yield enhancement for critical processes such as photolithography, diffusion, etch, chemical mechanical planarization ("CMP") and outgoing quality control. Within the back-end manufacturing processes, our 2D/3D advanced macro defect inspection provides our customers with critical quality assurance and process information. Defects may be created during probing, bumping, dicing, assembly processes (RDLs, TSVs, copper pillars, etc.) or general handling and can have a major impact on device and process quality. Lastly, we turn the gathered data into useful knowledge for our customers to make yield-enhancing decisions, which lower their scrap cost and environmental impact and improve their margins.

Onto Innovation's Products

Automated Metrology Systems. The Atlas family of products represents our line of high-performance automated metrology systems providing OCD and thin film metrology and wafer stress metrology for transistor and interconnect metrology applications. The thin film and OCD technology is supported by our suite of solutions including our latest introductions of AI Diffract™ software, SpectraProbe™ software and NanoGen™ scalable computing engine, which enables visualization, modeling, and analysis of complex structures.

AI Diffract is a modeling, visualization and analysis software that takes signals from the metrology systems, providing critical dimension, thickness, and optical properties from in-line measurements. The software has an intuitive three-dimensional modeling interface to provide visualization of today's advanced and complex semiconductor devices. There are proprietary fitting algorithms in AI Diffract that enable very accurate and very fast calculations for signal processing for high fidelity model-based measurements. SpectraProbe is a model-less fitting engine that enables fast time to solution for in-line excursion detection and control. SpectraProbe complements the high-fidelity modeling of AI Diffract with a simple machine learning interface for rapid recipe deployment. The software is supported by NanoGen, an enterprise scale computing hardware system that is deployed to run the computing intensive analysis software. NanoGen leverages commercial server chips and networking architecture and is optimized to support the workload of AI Diffract and SpectraProbe analysis.

Integrated Metrology Systems. Our integrated metrology ("IM") systems are installed directly onto wafer processing equipment to provide near real-time measurements for improved process control and maximum throughput. Our IM systems are sold directly to end user customers. The IMPULSE® family of products includes the latest technology for OCD, and thin film metrology, and has been successfully qualified on multiple independent wafer fabrication equipment suppliers' platforms.

Silicon Wafer All-surface Inspection/Characterization. "All-surface" refers to inspection of the wafer frontside, edge, and backside as well as wafer's locator notch. The edge inspection process focuses on the area near the wafer edge, an area that poses difficulty for traditional wafer frontside inspection technology due to its varied topography and process variation. Edge bevel inspection looks for defects on the side edge of a wafer. Edge bead removal and edge exclusion metrology involve a topside surface measurement required exclusively in the lithography process, primarily to determine if wafers have been properly aligned for the edge exclusion region. The primary reason for wafer backside inspection is to determine if contamination has been created that may spread throughout the wafer fab. For instance, it is critical that the wafer backside be free of defects prior to the EUV lithography process to prevent focus and exposure problems on the wafer frontside.

Our materials characterization products include systems that are used to monitor the physical, optical, and material characteristics of discrete electronic industry, opto-electronic, HB-LED (high brightness LEDs), solar PV (solar photovoltaics), compound semiconductor, strained silicon and silicon-on-insulator ("SOI") devices, including composition, crystal structure, layer thickness, dopant concentration, contamination and electron mobility.

We have a broad portfolio of products for materials characterization including photoluminescence mapping and Fourier Transform Infrared ("FTIR") spectroscopy in automated and manual systems for substrate quality and epitaxial thickness metrology. The NanoSpec® line supports thin film measurement across all applications in both low volume production and research applications.

Macro Defect Inspection. Chip manufacturers deploy advanced macro defect inspection throughout the production line to monitor key process steps, gather process-enhancing information and ultimately, lower manufacturing costs. Field-established tools such as the F30™, NSX®, Firefly®, and the latest Dragonfly® G3 inspection systems are found in the wafer fab (front-end) and packaging (back-end) facilities around the world. These high-speed tools incorporate features such as wafer-less recipe creation, tool-to-tool correlation and multiple inspection resolutions. Using Discover® yield management software, the vast amounts of data gathered through automated inspection can be analyzed and classified to determine trends and locate root causes that directly affect yield.

Automated Defect Classification and Pattern Analysis. Automating the defect detection and classification process is best done by a system that can mimic, or even extend, the response of the human eye, but at a much higher speed, with higher resolution and more consistency. To do this, our systems capture full-color whole wafer images using simultaneous dark and bright field illumination. The resulting bright and dark field images are compared to those from an "ideal" wafer having no defects using our Automated Defect Classification ("ADC") software. When a difference is detected, its image is broken down into mathematical vectors that allow rapid and accurate comparison with a library of known classified defects stored in the tool's database. Patented and proprietary enhancements of this approach enable very fast and highly repeatable image classification. The system is pre-programmed with an extensive library of local, global, and color defects and can also store a virtually unlimited amount of new defect classes. This allows customers to define defects based on their existing defect classification system, provides more reliable automated rework decisions and enables more accurate statistical process control data. Reviewing defects using ADC enables automated inspection systems to maintain their utilization for high throughput inspection. Using defect image files captured by automated inspection systems, operators are able to view high-resolution defect images to determine defects that cause catastrophic failure of a device, known as killer defects. Combining the review process with classifying defects enables faster analysis by grouping defects found together as one larger defect, a scratch for example, and defects of similar types across a wafer lot to be grouped based on size, repeating defects, and other user-defined specifications.

Yield Analysis. Using wafer maps, charts and graphs, the massive amounts of data gathered through automated inspection can be analyzed to determine trends across bumps, die, wafers and lots. This analysis may determine where a process variation or deviation has occurred, allowing process engineers to make corrections or enhancements to increase yields. Defect data analysis is performed to identify, analyze and locate the source of defects and other manufacturing process excursions. Using either a single wafer map or a composite map created from multiple wafer maps, this analysis enables identification of defect patterns and distribution. When combined with inspection data from inspection points placed strategically, this analysis may pinpoint the source of the defects so corrective action can be taken.

Opaque Film Metrology. The MetaPULSE® and Echo™ systems allow customers to simultaneously measure the thickness and other properties of up to six metal or non-metallic opaque film layers without physically contacting product wafers. PULSE™ technology uses an ultra-fast laser to generate acoustic waves that pass down through a stack of opaque films such as those used in copper or aluminum interconnect processes, as well as the hard mask layer in 3D NAND chips, sending back to the surface a reflected signal (echo) that indicates film thickness, density, and other process critical parameters. We believe we are a leader in providing systems that can measure opaque thin-film stacks non-destructively with the speed and accuracy semiconductor device manufacturers demand in order to achieve high yields with the latest fabrication processes. The technology is ideal for characterizing copper interconnect structures. The MetaPULSE and Echo systems, used for fast and accurate measurements of metal interconnect in front-end wafer fabs, have now been chosen by back-end manufacturers to perform system measurements in new process applications such as RF filters and modules, driven by the need for on-product metrology as feature sizes decrease and pattern densities increase.

Industrial, Scientific, and Research Markets — 4D Technology®. The 4D business offers a line of interferometry systems for the measurement and inspection of high precision surfaces. End markets include high precision optics surfaces and components, aerospace and defense components, and unique research and scientific instrumentation that requires the unique high-speed results of the 4D systems.

Advanced Packaging Lithography. Our lithography steppers use projection optics to expose circuit patterns from a mask or reticle onto a substrate to expose images with optimal fidelity. These systems employ a bright light that is transmitted through a mask or reticle containing display circuit patterns. Substrates are aligned on the system and the mask is imaged through a projection lens onto photoresist material coated on the substrate. The substrate is then moved, or "stepped," to a second position to expose an adjacent area. The system repeats the step and exposure process until the entire substrate is patterned. Once the exposure process has been completed, the substrate is developed with an alkali solution to reveal the underlying material. The

imaged photoresist serves as a stencil barrier that allows for the processing of the underlying metal or insulating layers. The substrates then continue through the etching, stripping and deposition processes until multi-layer circuits are completed.

In order to deal with increased input/output ("I/O") resulting from devices with enhanced functionality, increased power distribution efficiency, and higher frequency, IDMs and outsourced semiconductor assembly and test ("OSATs") facilities must incorporate lithography capabilities to create RDLs for their advanced packaging technologies. However, the associated substrates and processes are significantly different than those used in front-end wafer processing. For advanced packaging, the lithography system must perform in a completely different application, with significantly different operating parameters. For example, most packaging is an additive process, while wafer processing is subtractive, and thick films, rather than thin films, are used to enable the creation of features. In order for equipment to effectively function in this environment, it must overcome these challenges. Our JetStep® systems have been specifically designed to meet these challenges head on. The new JetStep X500 System is designed for rectangular substrates (panels), which when combined with user-selectable wavelength options, maximizes throughput while not limiting resolution when needed. High-fidelity optics are able to image the fine features required while at the same time achieving superior depth of field to minimize non-flatness that is typical for advanced packaging applications. On-the-fly auto focus and an innovative reticle management system improve yield and utilization. These features result in a revolutionary lithography system specifically designed to meet advanced packaging challenges.

Process Control Software. We provide a wide range of advanced process control solutions, which are designed to improve factory profitability, including run-to-run control, fault detection, classification and tool automation. We are a leading provider of process control software in the semiconductor industry. Advanced process control ("APC") employs software to automatically detect or predict tool failure (fault detection) as well as calculate recipe settings for a process that will drive the yielded output to meet and exceed the target, despite variations in the incoming material and minor instabilities within the process equipment. Process control software enables the factory to increase capacity and yield while decreasing rework and scrap. It enables reduced production costs by lowering consumables, process engineering time and manufacturing cycle time.

Yield Management Software. Semiconductor manufacturers use yield management software ("YMS") to obtain valuable process yield and equipment productivity information. The data necessary to generate productivity information comes from many different sources throughout the wafer fab: inspection and metrology systems, tool sensors, tool recipes, electrical tests and the fab environment. As the complexity and cost of manufacturing processes increase, the value of faster, better analysis to support critical manufacturing decisions grows. As a result, customers are demanding robust yield management systems that can analyze large, complex data sets quickly and effectively. Our fully integrated YMS is designed to analyze data from disparate sources and multiple sites to maximize productivity across the entire value chain.

Customers

Over 220 customers purchased Onto Innovation tools or software in 2023. We support a diverse customer base in terms of both geographic location and type of device manufactured. Our customers are located in over 28 countries. The following chart identifies our customers that represented 10% or more of total revenue for each of the last three fiscal years:

	2023	2022	2021
Samsung Semiconductor	*	*	*
Taiwan Semiconductor Manufacturing Co. Ltd.	*	*	*
SK Hynix Inc.	^	*	^

* The customer accounted for 10% or more of total revenue during the period.

^ The customer accounted for less than 10% of total revenue during the period.

Sales, Customer Service and Application Support

We believe that the capability for direct sales and support is beneficial for developing and maintaining close customer relationships and for rapidly responding to changing customer requirements. We provide local direct sales, service and application support through our worldwide offices located in the United States, South Korea, Japan, Taiwan, China, Vietnam Singapore and Europe, and work with selected dealers and sales representatives on a more limited basis in various countries. Our applications team is composed of technically experienced sales engineers who are knowledgeable in the use of metrology systems generally and the unique features and advantages of our specific products. Supported by our technical applications team, our sales and support teams work closely with our customers to offer cost-effective solutions to complex measurement and process problems.

We believe that customer service and technical support for our systems are crucial factors that distinguish us from our competitors and are essential to building and maintaining close, long-term relationships with our customers. We generally provide a warranty for our products that ranges from twelve to fourteen months to cover defects in material and workmanship. We provide system support to our customers through factory technical support and globally deployed field service personnel.

The factory technical support operations provide customers with telephonic technical support access, direct training programs, operating manuals and other technical support information to enable effective use of our metrology and measurement instruments and systems. We have field service operations based in various locations throughout the United States, South Korea, Taiwan, China, Japan, Vietnam, Malaysia, Singapore, Israel, and Europe.

Competition

The global semiconductor equipment industry is intensely competitive and we have multiple established and potential competitors in the markets in which we participate. Our industry is driven by rapid technological adoption cycles, with new entrants from overseas and domestic sources competing for our customers' business. Our ability to compete effectively depends upon our ability to continuously improve our existing products, applications and services, and our ability to develop new products, applications and services that meet constantly evolving customer requirements. In order to continuously improve and develop new products and maintain customer service and support centers worldwide, we believe that we will require significant resources; however, some of our competitors may have greater financial, research, engineering, manufacturing and marketing resources than we have.

In automated systems for the semiconductor industry, our principal competitors are KLA Corporation ("KLA") and Nova Ltd. (formerly Nova Measuring Instruments Ltd.) ("Nova") for thin film and critical dimension OCD metrology. Our principal competitors for advanced packaging inspection are KLA and Camtek Ltd. ("Camtek"). While the advanced packaging lithography market is served by various competitors, our primary competitors are Ushio, Inc. ("Ushio") and Canon, Inc. ("Canon"). Our primary competitor for inspection in the panel market is GigaVis Co. Ltd. The primary competitor for our software products is PDF Solutions, Inc. ("PDF Solutions") and our primary competitor for integrated metrology systems for the semiconductor industry is Nova. The opto-electronics, discrete device and industrial and scientific markets are addressed primarily by our material characterization and 4D systems, served by numerous competitors, of which no single competitor or group of competitors has established a majority position.

We believe that our competitive position in each of our markets is based on the ability of our products and services to address customer requirements related to numerous competitive factors. Competitive selections are based on many factors involving technological innovation, productivity, total cost of ownership of the system, including impact on end of line yield, price, product performance and throughput capability, quality, reliability and customer support.

Manufacturing

Our manufacturing operations are in Milpitas, California; Tucson, Arizona; Wilmington, Massachusetts; Bloomington, Minnesota; and at various contract manufacturers around the world. It is our strategy to outsource the assemblies that do not contain elements that we believe lead to a direct competitive advantage. Most of our automated and integrated products are currently manufactured at our Milpitas and Bloomington facilities. We currently do not expect our manufacturing operations to require additional major investments in capital equipment.

We manufacture key modular assemblies and integrated tools and make reasonable efforts to ensure that externally purchased parts or raw materials are available from multiple suppliers, if possible. Certain components, subassemblies and services necessary for the manufacture of our systems are obtained either from a sole supplier or limited group of suppliers. We also have long-term supply agreements with strategic suppliers for the supply of key assemblies for use in our products. For more information, please see "Part I, Item 1A - Risk Factors - If we do not manage our supply chain effectively, our operating results may be adversely affected, and any increases in material, labor, supplier, logistics and other operating costs, or supply chain delays and shortages, could lower our margins or result in lost sales".

Research and Development

We continue to invest in research and development to provide our customers with products that add value to their manufacturing processes and that provide a better and differentiated solution than our competitors so that our products stay in the forefront of current and future market demands. Whether it is for an advancement of current technology, yield and manufacturing improvement, enabling new end device technology, or the development of a new application in our core or emerging markets, we are committed to product excellence and longevity.

The markets for equipment and systems for manufacturing semiconductor devices and for performing OCD metrology, macro-defect inspection, advanced packaging lithography and thin film transparent and opaque process control metrology are characterized by continuous technological development and product innovations. We believe that the rapid and ongoing development of new products and enhancements to existing products are critical to our success. Accordingly, we devote a significant portion of our technical, management and financial resources to research and development programs.

Intellectual Property

We believe that our success will depend to a great degree upon innovation, technological expertise and our ability to adapt our products to new technology. As a result, we have a policy of seeking patents on inventions governing new products or technologies as part of our ongoing research, development, and manufacturing activities. As of December 30, 2023, we have been granted, or hold exclusive licenses to, 398 U.S. and foreign patents. The patents we own, jointly own or exclusively license have expiration dates ranging from 2024 to 2042. We also have 175 pending patent applications in the United States and other countries. Our patents and patent applications principally cover various aspects of metrology, macro-defect detection and classification, altered material characterization, lithography techniques, automation, artificial intelligence, and machine learning.

To protect our intellectual property, we rely on a combination of patents, copyrights, trademarks, trade secret laws, contractual provisions and licenses and non-disclosure agreements. There can be no assurance that our intellectual property will provide us competitive advantage or that we will be able to fully protect our intellectual property. For more information, please see "Part I, Item 1A - We may fail to adequately protect our intellectual property and, therefore, lose our competitive advantage." Additionally, others may obtain patents or trademarks and assert them against us. We may find it necessary to engage in litigation regarding intellectual property rights or contractual rights, which will be costly and time consuming without guarantee that it will yield the result we seek. For more information, please see "Part I, Item 1A - Protection of our intellectual property rights, or the efforts of third parties to enforce their own intellectual property rights against us, may result in costly and time-consuming litigation, substantial damages, lost product sales and/or the loss of important intellectual property rights."

Human Capital and Talent

As of December 30, 2023, we had approximately 1,497 staff globally, 377 in research and development, 280 in operations, 181 in administration and 659 in sales, applications and service support. A large percentage of our employees have technical backgrounds and undergraduate and/or advanced degrees. Many of our employees have specialized skills and experience that are of value to our business, products and services. Our future success will depend, in large part, upon our ability to attract, motivate and retain our highly skilled, technical, operational and managerial team members, who are in great demand in our industry and business communities.

Approximately 59% of our employees are located in the United States, 37% in Asia Pacific and 4% in Europe. None of our employees are represented by a union and we have never experienced a work stoppage because of union actions. We consider our employee relations to be favorable.

Purpose and Culture. All of our employees are expected to uphold the following core values which are foundational to our culture:

- Passion – ownership, pride and caring in our work
- Integrity – honesty, dependable, predictable and accountable
- Collaboration – working together toward a common goal
- Results – meeting and exceeding goals, focused toward innovation and growth

These core values define the way we do business in our everyday actions and choices. We strive to create a respectful work environment characterized by mutual trust and the absence of intimidation, oppression, discrimination and exploitation.

Talent Development and Acquisition. Successful execution of our strategy is dependent on attracting, developing and retaining key employees and members of our management and leadership teams. The skills, experience and industry knowledge of our employees significantly benefit our operations and performance. We continuously evaluate, modify, and enhance our internal processes, tools and technologies to increase employee engagement, productivity, quality and efficiency. We offer employees access to internal and external training and development courses to support individual development. We review succession plans and focus on promoting internal talent to help grow our employees, both professionally and personally.

We strive to promote and cultivate an inclusive and diverse culture that welcomes and celebrates everyone without bias. In addition, we look to actively engage within our communities to foster and attain social equity.

Compensation Philosophy. Our compensation philosophy creates the framework and building blocks for our rewards and recognition programs. We have a pay-for-performance culture that ties compensation to the performance of the individual and the Company. We provide balanced compensation programs that focus on the following five key elements:

- Pay-for-performance - Reward those who achieve or exceed set goals and objectives, while also recognizing those making significant, impactful contributions;

- External market based - Pay levels that are competitive with respect to the labor market in which we compete for talent;
- Internal equity - Providing fair compensation programs within the Company;
- Fiscal responsibility - Providing programs which can be responsibly supported by our operations; and
- Legal compliance - Ensure compliance with the applicable laws of the states and countries in which we operate in all material respects.

Safety, Health and Wellness. We strive to provide an environment which is safe and where our employees can be productive. We have rigorous health and safety programs focused on awareness, recognition, risk assessment and management, as well as teamwork.

Our benefit plans are competitive and comprehensive. We provide each of our employees educational programs and initiatives focused on holistic wellness supporting nutritional, physical, emotional, mental and financial wellbeing.

Corporate Social Responsibility

Our stakeholders are essential to our business – shareholders, customers, suppliers, employees, communities as well as the environment and society. We are working to make our workforce more inclusive, our business more sustainable, and our communities more engaged by maintaining strong environmental, social and governance (“ESG”) practices. Actions we have taken in pursuit of these commitments include the following environmental and social programs:

- Demanded excellence in our environmental performance, as illustrated in our annual ESG reports.
- Demanded excellence in our quality performance, as demonstrated through our product and process qualification commitments, including ISO 9001 Quality Management;
- Set goals to reduce our environmental impact, including an increase in our use of renewable energy, a decrease in hazardous waste landfill, an increase in recycling materials and beneficial reuse, and a reduction in our freshwater usage;
- Committed to RBA Code of Conduct and humane treatment of all at Onto Innovation both upstream and downstream. We established policies and practices to ensure that: working conditions are safe; workers are treated with respect and dignity; and manufacturing processes are environmentally responsible.
- Produced systems responsibly by offering tool trade-in, refurbishment and technology upgrade programs;
- Provided corporate matching for employee donations to qualified nonprofit organizations; and
- Engaged in community service projects in our communities globally.

We encourage you to review our 2022 ESG Report (located on our website at <https://ontoinnovation.com/company/environmental-social-governance>) for more detailed information regarding our ESG initiatives. Nothing on our website, including our ESG Report or sections thereof, is deemed incorporated by reference into this Form 10-K.

Compliance with Governmental Regulations

We are subject to international, federal, state and local regulations that are customary to businesses in the semiconductor capital equipment manufacturing industry. Such regulations include, but are not limited to:

- The Restriction of Hazardous Substances Directive (“RoHS”), which restricts the use of certain hazardous substances in electrical and electronic equipment;
- General Data Protection Regulation (“GDPR”), which provides guidelines for the collection and processing of personal information from individuals who live in the European Union, and similar laws and regulations in other jurisdictions in which we operate;
- The U.S. Foreign Corrupt Practices Act (“FCPA”), which prohibits companies and their individual officers from influencing foreign officials with any personal payments or rewards;
- Conflict minerals reporting, which imposes disclosure requirements regarding the use of “conflict” minerals mined from the Democratic Republic of Congo and adjoining countries in products; and

- Export regulations.

Our compliance with export regulations has negatively impacted our ability to compete for the business of domestic customers in China, which has adversely affected our results of operations. For additional discussion of the impact of trade policies and export regulations on our competitive position, see "Part I, Item 1A - Risk Factors - Tariffs, export regulations, and other market barriers have impacted and may continue to impact our ability to compete for the business of domestic customers in China and other jurisdictions, and our results of operations."

Available Information

Our Internet website address is <http://www.ontoinnovation.com>. The information on our website is not incorporated into this Form 10-K. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K (and any amendments to those reports) are made available free of charge, on or through our Internet website, as soon as reasonably practicable after such material is electronically filed with or furnished to the United States Securities and Exchange Commission (the "SEC"). All filings we make with the SEC are also available free of charge via EDGAR through the SEC's website at <http://www.sec.gov>. In addition, the historic reports and materials that were filed by Nanometrics and Rudolph with the SEC are available at our investor relations website at <https://investors.ontoinnovation.com>. These filings may also be obtained through the SEC's website. Documents that are not available through the SEC's website may also be obtained by submitting an online request to the SEC at <http://www.sec.gov>.

We also make available, free of charge, through our investor relations website, our corporate governance guidelines, Code of Business Conduct and Ethics, charters of the committees of our Board of Directors, and other information and materials, including information about how to contact our Board of Directors.

Investors and others should also note that we announce material financial information to our investors using our investor relations website, SEC filings, press releases, public conference calls and webcasts. We use these channels as well as social media to communicate with the public about the Company, our products and services and other matters. It is possible that the information we post on social media could be deemed to be material information. Therefore, we encourage investors, the media, and others interested in the Company to review the information we post on the social media channels listed on our investor relations website.

Item 1A. Risk Factors.

Below is a summary of the principal factors and uncertainties that make investing in our company risky. You should read this summary together with the more detailed description of each risk factor contained further below.

Risks Related to Our Operations

- If we do not manage our supply chain effectively, our operating results may be adversely affected, and any increases in material, labor, supplier, logistics and other operating costs, or supply chain delays and shortages, could lower our margins or result in lost sales.
- Variations in the amount of time it takes for us to sell our systems may cause fluctuations in our operating results, which could cause our stock price to decline.
- We are subject to order and shipment uncertainties. Our profitability will decline if we fail to accurately forecast customer demand when managing inventory.
- If we deliver systems with defects, our credibility will be harmed, and the sales and market acceptance of our systems will decrease.
- Our integrated metrology systems are integrated with systems sold independently by wafer fabrication equipment suppliers, and a decrease in sales by these suppliers, or the development of competing systems by these suppliers, could harm our business.
- We must attract and retain experienced senior executives and other key personnel with knowledge of semiconductor device manufacturing and inspection, metrology or lithography equipment and related software to help support our future growth, and competition for such personnel in our industry is high.
- Any prolonged disruption in the operations of our manufacturing facilities could have a material adverse effect on our revenue.
- We outsource select manufacturing activities to third-party service providers, which decreases our control over the performance of these functions, may result in lower quality and functionality of our products, and exposes us to additional supply chain risks.
- Our ability to fulfill our backlog may have an effect on our long-term ability to procure contracts and fulfill current contracts.

Risks Related to Our Customers

- Our largest customers account for a substantial portion of our revenue, and our revenue and cash flows could decline considerably if one or more of these customers were to purchase significantly fewer of our systems or delay or cancel a large order.

Risks Related to Product Development

- If we are not successful in developing new and enhanced products for the semiconductor device manufacturing industry, we will lose sales and market share to our competitors.
- If new products developed by us do not gain general market acceptance, we will be unable to generate revenue and recover our investments, which may result in a write down of inventory.
- Even if we are able to develop new products that gain market acceptance, sales of these new products could impair our ability to sell existing products.
- If our relationships with our large customers deteriorate, our product development activities could be adversely affected.

Risks Related to Intellectual Property and Data Security

- We may fail to adequately protect our intellectual property and, therefore, lose our competitive advantage.
- Protection of our intellectual property rights, or the efforts of third parties to enforce their own intellectual property rights against us, may result in costly and time-consuming litigation, substantial damages, lost product sales and/or the loss of important intellectual property rights.

- If our network security measures are breached and unauthorized access is obtained to a customer's data, to our data, or to our information technology systems, we may incur significant legal and financial exposure and liabilities and may experience disruptions in our operations.
- Compliance with data protection laws may be costly and may impede development of new products, and any failure to comply with, or inquiries under, these laws could have a material adverse effect on our business, results of operations and financial condition.

Risks Related to Competition

- Some of our current and potential competitors have significantly greater resources than we do, and increased competition could impair sales of our products or cause us to reduce our prices.
- Because of the high cost of switching equipment vendors in our markets, it is sometimes difficult for us to win new customers from our competitors even if our systems are superior to theirs.

Risks Related to Our International Operations

- Tariffs, export regulations, and other market barriers have impacted and may continue to impact our ability to compete for the business of domestic customers in China and other jurisdictions, which has adversely affected and may continue to adversely affect our, business, financial condition and results of operations.
- We are subject to compliance with domestic and foreign laws and regulations, and the burden of complying with such laws and regulations, or any failure to comply, has adversely affected and may continue to adversely affect our business, financial condition and results of operations.
- Political and economic instability may result in reduced demand for our products.
- Natural disasters, changes in climate, public health crises, and geo-political conflicts could materially adversely affect our worldwide operations (or those of our business partners).
- We may face difficulties in staffing and managing foreign branch operations due to political tensions or cultural differences.
- Currency fluctuations may impact our international sales or expose us to exchange rate risk.
- Our internal controls with respect to anti-corruption laws may not be effective, and any failure to comply with such laws may result in severe sanctions and liabilities, which may negatively affect our business, operating results and financial condition.

Risks Related to Laws, Legal Proceedings, Financial Markets and the Environment

- Changes in tax rates or tax liabilities could affect results.
- Turmoil or fluctuations in the credit markets and the financial services industry may negatively impact our business, results of operations, financial condition or liquidity, and our factoring arrangements may expose us to additional risks.
- We are subject to various environmental laws and regulations that could impose substantial costs upon us, and failure to comply with such laws and regulations may harm our business, operating results and financial condition.
- Legal proceedings, claims and investigations may expose us to increased costs and may negatively affect our business and results of operations.

Risks Related to Growth and Acquisitions

- We may choose to acquire new and complementary businesses, products or technologies instead of developing them ourselves, and we may be unable to complete these acquisitions or may not be able to successfully integrate an acquired business in a cost-effective and non-disruptive manner.
- If we cannot effectively manage growth, our business may suffer.

Risks Related to the Global Economy and the Semiconductor Industry

- Cyclicalities in the semiconductor device industry has led to substantial decreases in demand for our systems in the past and may, from time to time, continue to do so.

- Our future rate of growth is highly dependent on the development and growth of the market for microelectronic device inspection, lithography and metrology equipment.

General Risk Factors

- Provisions of our charter documents and of Delaware law could discourage potential acquisition proposals and/or delay, deter or prevent a change in control of our company.
- Our stock price is volatile.

Risks Related to Our Operations

If we do not manage our supply chain effectively, our operating results may be adversely affected, and any increases in material, labor, supplier, logistics and other operating costs, or supply chain delays and shortages, could lower our margins or result in lost sales.

We need to continually evaluate our global supply chains and assess opportunities to reduce costs. We must also enhance quality, speed and flexibility to meet changing demand for our products and product mix and uncertain market conditions. Our success also depends in part on refining our cost structure and supply chains so that we have flexibility and can maintain and improve profitability. Deterioration in the tariff environment, political instability or changes in suppliers may cause our costs to increase and, if we are not able to offset the increased costs by charging higher sales prices, will cause a decline in our margins. To improve margins on our products, we would need to negotiate price reductions with our vendors. But we cannot be certain that we will be able to do so in a timely manner, or at all. Failure to achieve the desired level of cost reductions could adversely affect our financial results. Despite our efforts to control costs and increase efficiency in our facilities, changes in demand could still cause us to realize lower operating margins and profitability.

Further, our gross margins and financial performance may be adversely affected by increases in our operating costs, such as material, labor, supplier costs, logistics and energy costs, all of which have been and may continue to be subject to inflationary pressures. Operating costs have increased and may continue to increase further as a result of supply chain disruptions in connection with the sourcing of components, materials, equipment, engineering support, and services, labor shortages, high inflation rates, and cost increases attributable to the COVID-19 pandemic and the effects of the Russia-Ukraine conflict. In addition, we source components for certain of our tools from a supplier in Israel. If the conflict in Israel and the surrounding area escalates, it could disrupt our supply chain, resulting in a material adverse impact on our business.

These risks may be heightened because we obtain some of the components and subassemblies included in our systems from a limited group of suppliers and do not have long-term contracts with many of our suppliers. Our dependence on limited-source suppliers of components and our lack of long-term contracts with certain of our suppliers expose us to several risks, including a potential inability to obtain an adequate supply of components, price increases, late deliveries and poor component quality. A significant number of our suppliers are the sole source or single source for certain components or subassemblies. If such a supplier is unable or unwilling to manufacture and deliver components to us on the time schedule and of the quality or quantity that we require, we may be forced to seek to engage an additional or replacement supplier or redesign our product to use alternative components, which could result in additional expenses and delays in product development or shipment of product to our customers. Disruption or termination of the supply of components has delayed and could in the future delay shipments of some of our systems. Such delays may damage our customer relationships and reduce our sales. The lead time required for shipments of some of our components can be greater than six months. In addition, the lead time required to qualify new suppliers for lasers and certain optics could be as long as a year, and the lead time required to qualify new suppliers of other components could be as long as nine months. In some cases, we may need to purchase components in advance of receiving customer orders for product. If we are unable to accurately predict our component needs, or if our component supply is disrupted, we may miss market opportunities by not being able to meet the demand for our systems. Further, a significant increase in the price of one or more of these components or subassemblies could seriously harm our results of operations and cash flows.

Our efforts to mitigate any cost increases, labor impacts and supply chain delays and shortages may not be successful, and we cannot predict the duration of these current trends or other future increases in operating costs. We may not be able to pass cost increases through to our customers fully (or at all), and if supply chain delays and shortages delay delivery of our products, our customers may seek to purchase from our competitors. Any such occurrence may have a material adverse impact on our gross margins and business, financial position, results of operations and cash flows.

Variations in the amount of time it takes for us to sell our systems may cause fluctuations in our operating results, which could cause our stock price to decline.

Variations in the length of our sales cycles could cause our revenue and cash flows, and consequently, our business, financial condition, operating results and cash flows to fluctuate widely from period to period. This variation could cause our stock price to decline. Our customers generally take a long time to evaluate our inspection and/or film metrology systems and many people are involved in the evaluation process. We expend significant resources educating and providing information to our prospective customers regarding the uses and benefits of our systems in the semiconductor fabrication process. The length of time it takes for us to make a sale depends upon many factors, including, but not limited to:

- the efforts of our sales force;
- the complexity of the customer's fabrication processes;
- the internal technical capabilities and sophistication of the customer;
- the customer's budgetary constraints; and
- the quality and sophistication of the customer's current metrology, inspection or lithography equipment.

Because of the number of factors influencing the sales process, the period between our initial contact with a customer and the time when we recognize revenue from that customer and receive payment, if ever, varies widely in length. Our sales cycles, including the time it takes for us to build a product to customer specifications after receiving an order to the time we recognize revenue, typically range from three to twenty-four months. Sometimes our sales cycles can be much longer, particularly with customers in Asia. During these cycles, we commit substantial resources to our sales efforts in advance of receiving any revenue, and we may never receive any revenue from a customer despite our sales efforts. If we do make a sale, our customers often purchase only one of our systems, the performance of which they then evaluate for a lengthy period before purchasing any more of our systems. The number of additional products a customer purchases, if any, depends on many factors, including the customer's capacity requirements. The period between a customer's initial purchase and any subsequent purchases can vary from three months to a year or longer, and variations in the length of this period could cause further fluctuations in our operating results and, possibly, in our stock price.

We are subject to order and shipment uncertainties. Our profitability will decline if we fail to accurately forecast customer demand when managing inventory.

We typically plan production and inventory levels based on internal forecasts of customer demand, which can be highly unpredictable and can fluctuate substantially, which could lead to excess inventory write-downs and result in negative impacts on gross margin and net income. We have limited visibility into our customers' inventories, future customer demand and the product mix that our customers will require, which could adversely affect our production forecasts and operating margins. Certain of our customers have publicly stated their intent to decrease their memory product inventory levels as lead time for components begins to decrease. This has and could continue to result in a temporary decrease in demand for our products as customers delay capacity expansions until inventory levels are sufficiently reduced. In addition, innovation in our industry could render significant portions of our inventory obsolete. If we overestimate our customers' requirements, we may have excess inventory, which could lead to obsolete inventory and unexpected costs. Conversely, if we underestimate our customers' requirements, or if we experience sustained disruptions to our supply chain or shipping delays, we may have inadequate inventory, which could lead to foregone revenue opportunities, loss of potential market share and damage to customer relationships as product deliveries may not be made on a timely basis, disrupting our customers' production schedules. In response to anticipated long lead times to obtain inventory and materials from outside suppliers and foundries, we periodically order materials in advance of customer demand. This advance ordering has in the past and may in the future result in excess inventory levels or unanticipated inventory write-downs if expected orders fail to materialize, or other factors make our products less saleable. In addition, any significant future cancellation or deferral of product orders could adversely affect our revenue and margins, increase inventory write-downs due to obsolete inventory, and adversely affect our operating results and stock price.

Our earnings could be negatively affected, and our inventory levels could materially increase, if we are unable to predict our inventory needs in an accurate and timely manner and adjust our orders for parts and subcomponents in the event that our needs increase or decrease materially due to unexpected increases or decreases in demand for our products. Any material increase in our inventories could result in an adverse effect on our financial position, while any material decrease in our ability to procure needed inventories could result in an inability to supply customer demand for our products, thus adversely affecting our revenue.

If we deliver systems with defects, our credibility will be harmed, and the sales and market acceptance of our systems will decrease.

Our systems are complex and have occasionally contained errors, defects and bugs when introduced. Defects may be created during probing, bumping, dicing or general handling, and can have a major impact on device and process quality. When this occurs, our credibility and the market acceptance and sales of our systems could be harmed. Further, if our systems contain errors, defects or bugs, computer viruses or malicious code as a result of cyber-attacks to our computer networks, we may be required to expend significant capital and resources to alleviate these problems. Defects could also lead to product liability as a result of product liability lawsuits against us or against our customers. We have agreed to indemnify our customers under certain circumstances against liability arising from defects in our systems provided that we also include a cap on our liability in the related sales agreements. Our product liability insurance policy currently provides both aggregate coverage as well as an overall umbrella coverage. In the event of a successful product liability claim, we could be obligated to pay damages significantly in excess of our product liability insurance limits.

Our integrated metrology systems are integrated with systems sold independently by wafer fabrication equipment suppliers, and a decrease in sales by these suppliers, or the development of competing systems by these suppliers, could harm our business.

We believe that sales of integrated metrology systems will continue to be an important source of our net revenues. Sales of our integrated metrology systems depend upon the ability of a small number of wafer fabrication equipment suppliers to sell semiconductor manufacturing equipment products that are compatible with our metrology systems as components. If these suppliers are unable to sell such products, if they choose to focus their attention on products that do not integrate with our systems, or if they choose to develop competing systems, our business could suffer.

We must attract and retain experienced senior executives and other key personnel with knowledge of semiconductor device manufacturing and inspection, metrology or lithography equipment and related software to help support our future growth, and competition for such personnel in our industry is high.

Our success depends, to a significant degree, upon the continued contributions of our key executive management, engineering, sales and marketing, customer support, finance and manufacturing personnel. The loss of any of these key personnel, each of whom would be extremely difficult to replace, through resignations, retirement or other circumstances, could harm our business and operating results. Despite our employment and noncompetition agreements with key members of our senior management team, these individuals or other key employees may still leave us, which could have a material adverse effect on our business. We do not have key person life insurance on any of our executives. In addition, to support our future growth, we will need to attract and retain additional qualified employees. Competition for such personnel in our industry is intense, and we may not be successful in attracting and retaining qualified employees.

The expansion of high technology companies worldwide and growth in the demand for semiconductors have increased demand and competition for qualified personnel. Competition for engineering and other technical personnel in some of the markets in which we operate is especially intense due to continued increases in the number of technology companies worldwide. In order to attract and retain executives and other key employees, we must provide a competitive compensation package, including cash and stock-based compensation. If the anticipated value of our stock-based incentive awards does not materialize so that they cease to be viewed as valuable, if our profits decrease, or if our total compensation package is not viewed as competitive, our ability to attract, retain and motivate executives and key employees could be weakened.

Any prolonged disruption in the operations of our manufacturing facilities could have a material adverse effect on our revenue.

We produce the majority of our systems in our manufacturing facilities located in Wilmington, Massachusetts, Milpitas, California and Bloomington, Minnesota. We also use contract manufacturers in China, Japan and the United States. Our manufacturing processes are highly complex and require sophisticated and costly equipment and a specially designed facility. As a result, any prolonged disruption in the operations of our manufacturing facilities could seriously harm our ability to satisfy our customer order deadlines. Restrictions on our access to or operation of manufacturing facilities or on our support operations or workforce, or similar limitations for our vendors and suppliers, may impact our ability to meet customer demand and could have a material adverse effect on our financial condition and results of operations. If we cannot timely deliver our systems, our results from operations and cash flows could be materially and adversely affected.

We outsource select manufacturing activities to third-party service providers, which decreases our control over the performance of these functions, may result in lower quality and functionality of our products, and exposes us to additional supply chain risks.

We outsource select product manufacturing to third-party service providers. Outsourcing reduces our control over the performance of the outsourced functions. Dependence on outsourcing may also adversely affect our ability to bring new products to market. If we do not effectively manage our outsourcing strategy or if third-party service providers do not perform as anticipated, we may experience operational difficulties, increased costs, manufacturing interruptions or inefficiencies in the operation of our supply chain, any or all of which could delay our delivery of products to our customers, and materially and adversely affect our business, financial condition, and results of operations.

Our third-party service providers could also be, and certain of our service providers have been, subject to cybersecurity incidents or other events that negatively impact their operations and their ability to perform services for us in a timely manner or at all. Such disruptions could impact our ability to manufacture products in a timely manner or force us to work with another service provider at a higher cost. Any such event could materially and adversely affect our business, financial condition, and results of operations. In addition, some of our third-party service providers also have product designs, know-how, data files and other important confidential information regarding our products. If a third-party service provider experiences a cybersecurity event in which such confidential information is publicly exposed or shared with bad actors, it could materially and adversely impact our competitive position in the market.

Our ability to fulfill our backlog may have an effect on our long-term ability to procure contracts and fulfill current contracts.

Our ability to fulfill our backlog may be limited by our ability to devote sufficient financial and human capital resources and may be limited by available material supplies and our suppliers' own supply chain issues. If we do not fulfill our backlog in a timely manner, we may experience delays in product delivery, which would postpone receipt of revenue from those delayed deliveries. Delayed fulfillment also increases the risk that a customer may change or cancel an order due to evolution of the customer's technological, production or market needs, which would result in a loss of revenue. Additionally, if we are consistently unable to fulfill our backlog, this may be a disincentive to customers to award large contracts to us in the future until they are comfortable that we can effectively manage our backlog.

Risks Related to Our Customers

Our largest customers account for a substantial portion of our revenue, and our revenue and cash flows could decline considerably if one or more of these customers were to purchase significantly fewer of our systems or delay or cancel a large order.

Sales to end user customers that individually represent at least ten percent of our revenue typically account for, in the aggregate, a considerable amount of our revenue. We operate in the highly concentrated, capital-intensive semiconductor device manufacturing industry. Historically, a substantial portion of our revenue in each quarter and year has been derived from sales to relatively few customers, and this trend is expected to continue. If any of our key customers were to purchase significantly fewer of our systems in the future, or if they delay or cancel a large order, our revenue and cash flows could meaningfully decline. We expect that we will continue to depend on a small number of large customers for a sizable portion of our revenue. In addition, as large semiconductor device manufacturers seek to establish closer relationships with their suppliers, we expect that our customer base will become even more concentrated.

Risks Related to Product Development

If we are not successful in developing new and enhanced products for the semiconductor device manufacturing industry, we will lose sales and market share to our competitors.

We operate in an industry that is highly competitive and subject to evolving industry standards, rapid technological changes, rapid changes in consumer demands and the rapid introduction of new, higher performance systems with shorter product life cycles. To be competitive in our demanding market, we must continually design, develop and introduce in a timely manner new lithography, inspection and metrology process control systems that meet the performance and price demands of semiconductor device manufacturers. We must also continue to refine our current systems so that they remain competitive. We expect to continue to make significant investments in our research and development activities and at times may make inventory investments prior to commercialization. We may experience difficulties or delays in our development efforts with respect to new systems, and we may not ultimately be successful in our product enhancement efforts to improve and advance products or in responding effectively to technological change, as not all research and development activities result in viable commercial

products. In addition, we cannot provide assurance that we will be able to develop new products for the most opportunistic new markets and applications. Any significant delay in releasing new systems could cause our products to become obsolete, adversely affect our reputation, give a competitor a first-to-market advantage or cause a competitor to achieve greater market share. Our competitors may also develop products, including through the use of artificial intelligence, that may have performance advantages over systems we currently offer or may offer in the future, which could similarly weaken our competitive position.

Further, customers that may otherwise desire to purchase our products from us and purchase other products from our competitors may nevertheless purchase competing products from our competitors rather than purchase our products due to a variety of reasons, including to gain favorable or volume pricing from our competitors.

If new products developed by us do not gain general market acceptance, we will be unable to generate revenue and recover our investments, which may result in a write down of inventory.

Inspection, lithography and metrology product development is inherently risky because it is difficult to foresee developments in semiconductor device manufacturing technology, coordinate technical personnel, and identify and eliminate system design flaws. Further, our products are leading edge and complex, and often the applications to our customers' businesses are unique. Any new systems we introduce may not achieve or sustain a significant degree of market acceptance and sales.

We expect to spend a significant amount of time and resources developing new systems and refining our existing systems. In light of the long product development cycles inherent in our industry, these expenditures will be made well in advance of the prospect of deriving revenue from the sale of those systems. The long lead times for some components may also require us to place orders for components and accumulate inventory in advance of market acceptance of our products.

Our ability to commercially introduce and successfully market new systems is subject to a wide variety of challenges during the development cycle, including start-up bugs, design defects, and other matters that could delay introduction of these systems. Since our customers are not obligated by long-term contracts to purchase our systems, our anticipated product orders may not materialize, or orders that are placed may be canceled.

If we do not achieve market acceptance of new products, we may be unable to generate sufficient revenue and cash flow to recover our research and development costs and may experience a write down of our investments in inventory. As a result, our market share, revenue, operating results or stock price could be negatively impacted.

Even if we are able to develop new products that gain market acceptance, sales of these new products could impair our ability to sell existing products.

Competition from our new systems could have a negative effect on sales of our existing systems and the prices that we could charge for these systems. We may also divert sales and marketing resources from our current systems in order to successfully launch and promote our new or next generation systems. This diversion of resources could have a further negative effect on sales of our current systems and the value of inventory.

If our relationships with our large customers deteriorate, our product development activities could be adversely affected.

The success of our product development efforts depends on our ability to anticipate market trends and the price, performance and functionality requirements of semiconductor device manufacturers. In order to anticipate these trends and ensure that critical development projects proceed in a coordinated manner, we must continue to collaborate closely with our largest customers. Our relationships with these and other customers provide us with access to valuable information regarding trends in the semiconductor device industry, which enables us to better plan our product development activities. If our current relationships with our large customers are impaired, or if we are unable to develop similar collaborative relationships with important customers in the future, our product development activities could be adversely affected.

Risks Related to Intellectual Property and Data Security

We may fail to adequately protect our intellectual property and, therefore, lose our competitive advantage.

Our future success and competitive position depend in part upon our ability to obtain and maintain proprietary technology for our principal product families. If we fail to adequately protect our intellectual property, it will give our competitors a significant advantage. We own or have licensed a number of patents relating to our metrology, lithography, wafer and defect inspection systems, as well as artificial intelligence and machine learning systems, and software, including both embedded and application software, and have filed applications for additional patents. Any of our pending patent applications

may be rejected, however, and we may be unable to develop additional proprietary technology that is patentable in the future. In addition, the patents that we do own or that have been issued or licensed to us may not provide us with competitive advantages and/or may be invalidated, enforceable and/or challenged by third parties. Third parties may also design around our patents or copy our patented inventions without our knowledge.

In addition to patent protection, we rely upon copyrights for protection of our proprietary software and documentation, trademarks for protection of our brand and source of goods, and trade secret law and confidentiality and non-compete agreements for protection of our confidential and proprietary information and technology. These measures do not guarantee protection of our intellectual property, however. We can give no assurance that our copyrights will be upheld or will successfully deter infringement by third parties. There can be no assurances that our confidentiality agreements with employees and other third parties will be sufficient to protect our trade secrets and proprietary information or that such information will not be disclosed, that others will not independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets, or that we can fully protect our trade secrets and proprietary information. Violations by others of our confidentiality agreements and the loss of employees who have specialized knowledge and expertise could harm our competitive position and cause our sales and operating results to decline as a result of increased competition. It is also possible that third parties will misappropriate our trade secrets or other confidential information. We may be subject to cybersecurity breaches in which a third party obtains our confidential information. Third parties may also reverse engineer our products to copy our technology. Failure to protect our trademarks can lead to other companies selling products using confusing similar names, thereby damaging our brand. In some countries, it can be difficult to register trademarks because of the strict examination process or blocking trademarks for other goods. Costly and time-consuming litigation might be necessary to enforce and determine the scope of our intellectual property rights, and failure to obtain or maintain trade secret protection might adversely affect our ability to continue our research or bring products to market. Any of these circumstances could result in harm to our competitive position in the market.

Monitoring and preventing unauthorized use are also difficult and the measures we take to protect our intellectual property rights may not be adequate. There is a risk that we may be unable to adequately protect our intellectual property rights in certain foreign countries. For example, our competitors may independently develop similar technology or duplicate our products. If this occurs, it could be easier for our competitors to develop and sell competing products in these countries. Accordingly, infringement of our intellectual property rights poses a serious risk to our ability to conduct business.

Protection of our intellectual property rights, or the efforts of third parties to enforce their own intellectual property rights against us, may result in costly and time-consuming litigation, substantial damages, lost product sales and/or the loss of important intellectual property rights.

From time to time, we may be required to initiate litigation in order to enforce our intellectual property rights or to determine the noninfringement, scope or validity of a third party's intellectual property rights. Any litigation, regardless of outcome, could be expensive and time consuming and could subject us to significant liabilities or require us to re-engineer our products or obtain expensive licenses from third parties. There can be no assurance that any patents, copyrights or other intellectual property rights issued to or licensed by us will not be challenged, invalidated or circumvented, or that the rights granted thereunder will provide us with a competitive advantage. Furthermore, there is no assurance that any litigation we are involved in will yield the result that we seek as (i) the lawsuit may be dismissed or there could be an adverse finding, (ii) we may not be able to pursue the lawsuit due to the laws of the applicable country or (iii) there may be a subsequent unfavorable change in law that limits our ability to pursue the lawsuit. For example, litigation discovery practice in China, Japan, South Korea, continental Europe and Taiwan is not as robust as in the United States, so it can be more difficult to determine if a company is infringing on our patents and more challenging to bring a lawsuit.

In addition, our commercial success depends in part on our ability to avoid infringing or misappropriating patents or other intellectual property rights owned by third parties. From time to time, we receive communications from third parties asserting that our products or systems infringe, or may infringe, on the intellectual property rights of these third parties. These claims of infringement may lead to protracted and costly litigation, which could require us to pay substantial damages or have the sale of our products or systems stopped by an injunction. Infringement claims could also cause product or system delays or require us to redesign our products or systems, and these delays could result in the loss of substantial revenue. We may also be required to obtain a license from the third party or cease activities utilizing the third party's intellectual property rights. We may not be able to enter into such a license or such a license may not be available on commercially reasonable terms. Accordingly, the loss of an intellectual property dispute could hinder our ability to sell our products or systems or make the sale of our products or systems more expensive, which could lead to reduced revenue or lower margins, respectively.

If our network security measures are breached and unauthorized access is obtained to a customer's data, to our data, or to our information technology systems, we may incur significant legal and financial exposure and liabilities and may experience disruptions in our operations.

As part of our business, we store our data and certain data about our customers, vendors and employees in our information technology system. We also rely on our information technology system for business operations. If there is a breach as a result of third-party action, including through the use of artificial intelligence, employee error, malfeasance, break-ins or otherwise, of our security measures designed to protect this information and prevent data loss and other security breaches, and someone obtains unauthorized access to our customers', vendors' or employees' data or disrupts our access to our own data and systems, we could face loss of business, regulatory investigations or court orders or damage to our reputation, and we could be required to expend significant capital and other resources to alleviate the problem, as well as incur significant costs and liabilities, including due to litigation, indemnity obligations, damages for contract breach, penalties for violation of applicable laws or regulations, and costs for remediation and other incentives offered to customers.

Cyber-attacks and other malicious internet-based activities continue to increase. The Russia–Ukraine conflict and related sanctions imposed by the U.S. government may expose government entities and public and private U.S. companies to attempted or actual cybersecurity attacks launched in retaliation, and these attacks could materially disrupt our supply chain or our systems and operations or those of our customers and suppliers.

As the techniques used to obtain unauthorized access or sabotage systems change frequently and generally are not identified until they are launched against a target, our ability to anticipate these techniques or to implement adequate preventative measures is reduced. In addition, third parties have made attempts to fraudulently induce employees or users to disclose information to gain access to our data or our customers' data. As a result of any of these events, our or our customers' and vendors' information could be accessed or disclosed improperly. In addition, cybersecurity incidents affecting our customers could result in substantial delays in our ability to ship to those customers or install our products, which could result in delays in revenue recognition or the cancellation of orders. As discussed herein under the heading "We outsource select manufacturing activities to third-party service providers, which decreases our control over the performance of these functions and may result in lower quality and functionality of our products," cybersecurity incidents affecting our service providers could negatively impact our ability to timely and cost-effectively produce products and/or negatively impact our competitive position in the market. Likewise, cybersecurity events impacting our suppliers could result in substantial delays in our ability to obtain necessary components for our products from those suppliers, which could hamper our ability to ship our products to our customers, harming our results of operations and our customer relationships. Any or all of the above issues could negatively affect our ability to attract new customers, cause existing customers to choose to purchase from our competitors, result in reputational damage or subject us to third-party lawsuits, regulatory fines or other action or liability, which could adversely affect our operating results.

Compliance with data protection laws may be costly and may impede development of new products, and any failure to comply with, or inquiries under, these laws may could have a material adverse effect on our business, results of operations, and financial condition.

The General Data Protection Regulation ("GDPR") is a regulation in European Union ("EU") law on data protection and privacy for the individuals within the EU and the European Economic Area ("EEA"). It also addresses the export of personal data outside the EU and EEA areas. The United Kingdom has adopted legislation that substantially implements the GDPR and provides for a similar penalty structure. We are also subject to the California Consumer Privacy Act of 2018 ("CCPA") and the California Privacy Rights Act ("CPRA"), an amendment and expansion of the CCPA. We may also be subject to other data privacy laws in the United States and the other countries in which we operate. In many cases, these laws apply not only to third-party transactions, but also to transfers of information between us and our subsidiaries, and among the subsidiaries and other parties with which we have commercial relations. The introduction of new products or expansion of our activities in certain jurisdictions may subject us to additional laws and regulations. These U.S. federal and state and foreign laws and regulations, including GDPR which can be enforced by private parties or government entities, are constantly evolving and can be subject to significant change. In addition, the application and interpretation of these laws and regulations, including GDPR, are often uncertain, particularly in our evolving industry, and may be interpreted and applied differently from country to country. Appropriate technical and organizational measures are necessary to implement these data protection principles. These laws and regulations can be costly to comply with and may delay or impede the development of new products, result in negative publicity, increase our operating costs, require significant management time and attention, or subject us to inquiries or investigations, claims or other remedies, including fines, which may be significant, or demands that we modify or cease existing business practices. A failure by us, our suppliers, or other parties with whom we do business to comply with posted privacy policies or with other federal, state, or international privacy-related or data protection laws and regulations, including GDPR, CCPA, CPRA and other new or changing privacy laws and regulations, could result in proceedings against

us by governmental entities or others, which could have a material adverse effect on our business, results of operations, and financial condition.

Risks Related to Competition

Some of our current and potential competitors have significantly greater resources than we do, and increased competition could impair sales of our products or cause us to reduce our prices.

The market for semiconductor capital equipment is highly competitive. We face substantial competition from established companies in each of the markets we serve. We principally compete with KLA, Nova, Camtek, Ushio, Canon, and PDF Solutions. Each of our products also competes with products that use different metrology, inspection or lithography techniques. Some of our competitors have greater financial, engineering, manufacturing and marketing resources, broader product offerings and service capabilities and larger installed customer bases than we do. As a result, these competitors may be able to respond more quickly to new or emerging technologies or market developments by devoting greater resources to the development, promotion and sale of products, which, in turn, could impair sales of our products. Further, there may be significant merger and acquisition activity among our competitors and potential competitors, which, in turn, may provide them with a competitive advantage over us by enabling them to rapidly expand their product offerings and service capabilities to meet a broader range of customer needs.

Many of our existing and potential customers in the semiconductor device manufacturing industry are large companies that require global support and service for their semiconductor capital equipment. Some of our competitors have more extensive support and service infrastructures than we do, which could place us at a disadvantage when competing for the business of global semiconductor device manufacturers. Many of our competitors are investing heavily in the development of new systems that will compete directly with our systems. We have, from time to time, selectively reduced prices on our systems in order to protect our market share, and competitive pressures may necessitate further price reductions. We expect our competitors in each product area to continue to improve the design and performance of their products and to introduce new products with competitive prices and performance characteristics. These product introductions would likely require us to decrease the prices of our systems and increase the level of discounts that we grant our customers. Price reductions or lost sales as a result of these competitive pressures would reduce our total revenue and could adversely impact our financial results.

Because of the high cost of switching equipment vendors in our markets, it is sometimes difficult for us to win new customers from our competitors even if our systems are superior to theirs.

We believe that once a semiconductor device manufacturer has selected one vendor's capital equipment for a production-line application, the manufacturer generally relies upon that capital equipment and, to the extent possible, subsequent generations of the same vendor's equipment for the life of the application. Once a vendor's equipment has been installed in a production line application, a semiconductor device manufacturer must often make substantial technical modifications and may experience production-line downtime in order to switch to another vendor's equipment. Accordingly, unless our systems offer performance or cost advantages that outweigh a customer's expense of switching to our systems, it will be difficult for us to achieve significant sales to that manufacturer once it has selected another vendor's capital equipment for an application.

Risks Related to Our International Operations

Tariffs, export regulations, and other market barriers have impacted and may continue to impact our ability to compete for the business of domestic customers in China and other jurisdictions, which has adversely affected and may continue to adversely affect our, business, financial condition and results of operations.

The semiconductor device industry is a high-visibility industry in many of the European and Asian countries in which we sell our products. Because the governments of these countries have provided extensive financial support to our semiconductor device manufacturing customers in these countries, we believe that our customers could be disproportionately affected by any trade embargoes, excise taxes, tariffs, or other restrictions imposed by their governments on trade with U.S. companies such as ourselves, particularly with respect to the ongoing tensions between the United States and China.

Over the last several years, the U.S. government has significantly expanded export controls on certain technologies and commodities to certain markets, particularly with respect to semiconductor and other high technology exports to China. For example, the U.S. Department of Commerce ("DoC") has imposed export controls on the transfer of certain U.S. products and technologies to "military end users" in China, as well as restrictions on the transfer of U.S. products to certain companies, including Huawei Technologies Co., Ltd., and its affiliates. Most recently, in 2022, the DoC imposed new export controls related to the Chinese semiconductor manufacturing, advanced computing, and supercomputer industries. In 2022, the DoC also added a number of companies in China to the Unverified List and Entity List of the Export Administration Regulations ("EAR"), including Yangtze Memory Technologies Co., Ltd (YMTC). In October 2023, the DoC revised and expanded the 2022 export controls.

The effect of these changes, among others, is that Onto Innovation is required to conduct additional end-use diligence and in some instances obtain export licenses before providing products to certain customers. There can be no assurance that export licenses applied for by us or our customers will be granted in a timely manner or at all. We have experienced and may continue to experience a temporary loss of revenues while we are obtaining licenses with certain customers affected by export controls. Failure to obtain any required license could result in a reduction of anticipated revenues until we are able to replace unlicensed orders with other customer orders for which a license has been obtained or is not required, and there can be no assurance that replacement orders will be obtained on favorable terms, in a timely manner, or at all. In addition, any licenses that are granted to us or to our customers may have a short duration or require us to satisfy various conditions. Any of these occurrences could have a material adverse effect on our revenues, business, financial condition and results of operations. Further, we hold inventory of products that may be affected by these recent U.S. government actions, including potential order cancellations. 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.

The administrative processing, attendant delays and risk of ultimately not obtaining required export approvals also put us at a disadvantage relative to our non-U.S. competitors who may not be required to comply with U.S. export controls. This difficulty and uncertainty has adversely affected our ability to compete for and win business from domestic customers in China.

It is possible that the U.S. government will impose additional export controls on our products or systems, which could lead to further revenue losses. Such changes could result in additional restrictions on our ability to sell products to customers in China and other jurisdictions. Foreign customers affected by current or future U.S. government sanctions, controls or threats of sanctions or controls may respond by developing their own solutions to replace our products or by utilizing our foreign competitors' products (who are not subject to the same export controls and can fulfill the orders). In addition, these export controls may also reduce overall global demand for our customers' products or for other products produced or manufactured in the U.S. or based on U.S. technology, in turn reducing demand for our products, which could have a material adverse effect on our business, financial condition and results of operations. Increased restrictions on China exports may also lead to regulatory retaliation by the Chinese government, which may adversely impact our business. International trade disputes could result in increases in tariffs and other trade restrictions and protectionist measures that could adversely impact our operations and reduce the competitiveness of our products relative to local and global competitors.

We are subject to compliance with domestic and foreign laws and regulations, and the burden of complying with such laws and regulations, or any failure to comply, has adversely affected and may continue to adversely affect our business, financial condition and results of operations.

Our business is subject to risks inherent in doing business internationally, including compliance with, inconsistencies among, and unexpected changes in, a wide variety of foreign laws and regulatory environments, including, among other issues, with respect to employees, protection of our intellectual property, and a wide variety of operational regulations and trade and export controls under domestic, foreign, and international law.

We are faced with various risks that may be associated with our compliance with existing, new, different, inconsistent or conflicting laws, regulations and rules enacted by governments and/or their regulatory agencies in the countries in which we operate as well as rules and policies implemented at our customer sites. These laws, regulations, rules and policies could relate to any of an array of issues including, but not limited to, environmental, tax, intellectual property, trade secrets, product liability, contracts, antitrust, employment, securities, import/export and unfair competition. The cost of maintaining compliance under multiple and changing regulatory regimes may adversely affect our business, financial condition and results of operations, and, in the case of export controls, has adversely affected and may continue to adversely affect our results of operations. As discussed herein under the heading “Tariffs, export regulations, and other market barriers have impacted and may continue to impact both our ability to compete for the business of domestic customers in China and our results of operations,” the U.S. government issued new export control rules in 2022 and 2023 aimed at restricting China’s access to semiconductor equipment and advanced computing technology, among other things. To comply with the new rules, Onto Innovation has had to expend time and resources that might otherwise have been used for revenue generating activities. Further regulatory changes could require additional diversion of resources to compliance efforts. In addition, in the event that we fail to comply with or violate U.S. or foreign laws or regulations or customer policies, we could be subject to civil or criminal claims or proceedings that may result in monetary fines, penalties or other costs against us or our employees, which may adversely affect our operating results, financial condition, customer relations and ability to conduct our business.

Political and economic instability may result in reduced demand for our products.

We are subject to various global risks related to political and economic instabilities in countries in which we derive sales. If terrorist activities, armed conflict, civil or military unrest or political instability occurs outside of the United States, these events may result in reduced demand for our products or adversely affect our supply chain. For example, the Ukraine–Russia geographic region is a major source of critical raw materials used for semiconductor manufacturing (such as neon and palladium), and any supply chain disruptions or shortages of such materials due to the ongoing conflict in that region could impact our customers in a manner that reduces demand for our products. Similarly, if the conflict in Israel and the surrounding area escalates further, it could result in disruptions to our supply chain and/or the operations of our customers in a manner that reduces demand for our products.

In addition, due to the complex relationships among China, Hong Kong, Taiwan, and the United States, there is risk that political, diplomatic, and national security influences might lead to trade, technology, or capital disputes, or disruptions affecting the semiconductor industry. In particular, the escalation of geopolitical tensions between China and Taiwan may cause disruptions in the markets in which we operate and lead to a decreased demand for our products, which could adversely affect our business in Asia or have a negative impact on the regional or global economy.

Furthermore, an outbreak of hostilities or other political upheaval in China, Taiwan, Japan, or South Korea, or an economic downturn in Asia or globally, would likely harm the operations of our customers in these countries. The effect of these types of events on our revenue and cash flows could be material because we derive substantial revenue from sales to semiconductor device foundries in Taiwan such as Taiwan Semiconductor Manufacturing Company Ltd., from memory chip manufacturers in South Korea such as Samsung Electronics Co., Ltd., and from semiconductor device manufacturers in Japan such as Toshiba Corporation.

Natural disasters, changes in climate, public health crises, and geo-political conflicts could materially adversely affect our worldwide operations (or those of our business partners).

The occurrence of one or more natural disasters, such as hurricanes, tropical storms, fires, cyclones, earthquakes, tsunamis, flooding, typhoons, volcanic eruptions and weather conditions such as major or extended winter storms, droughts and tornadoes, whether as a result of climate change or otherwise, may disrupt manufacturing or other operations. For example, our Milpitas operations are located near major earthquake fault lines in California. We cannot provide any assurance that alternate means of conducting our operations (whether through alternate production capacity or service providers or otherwise) would be available if a major disruption were to occur or that, if such alternate means were available, they could be obtained on favorable terms.

Our business may also be affected by public health issues (for example, an outbreak of a contagious disease such as COVID-19, avian influenza, measles or Ebola). The effects of the public health crisis caused by the COVID-19 pandemic and the resulting economic impact have affected, and may continue to affect, our operations and those of our suppliers, third-party service providers, and customers. The extent to which the economic effects of the COVID-19 pandemic could continue to impact our business, results of operations, and financial conditions is difficult to predict and depends on numerous evolving factors including any future resurgences of the pandemic and the intensity and duration of any resulting adverse macroeconomic conditions. The COVID-19 pandemic exposed our business, results of operations, and financial condition to the following adverse impacts: disruptions to our supply chain in connection with the sourcing of materials, support, and services; disruption

of operations due to unavailability of employees as a result of illness, travel restrictions and other factors; and a decrease in demand for our products; Additional sustained or prolonged outbreaks of COVID-19, or any ongoing, worsening or recurring supply chain disruptions or macroeconomic effects of the pandemic could have a material adverse effect on our business, results of operations, legal exposure, or financial condition and may also heighten many of the other risks described in this "Risk Factors" section.

There may also be conflict or uncertainty in the countries in which we operate, including safety issues, , disruptions of service from utilities, nuclear power plant accidents or general economic or political unrest, including war, civil unrest or terrorist attacks. We have no material operations in Russia, Belarus, Ukraine, or Israel. Consequently, to date, our operations have not been materially adversely affected by Russia's invasion of Ukraine, or the Israel-Hamas conflict. However, if the Russia-Ukraine or Israel-Hamas conflicts escalate further and/or the U.S. or other jurisdictions impose additional sanctions on the governments or entities involved, this could result in disruptions to the global economy and/or supply chains that could adversely affect our business.

We may face difficulties in staffing and managing foreign branch operations due to political tensions or cultural differences.

During periods of tension between the governments of the United States and certain other countries, it is often difficult for U.S. companies such as ours to staff and manage operations in such countries. Language and other cultural differences may also inhibit our sales and marketing efforts and create internal communication problems among our U.S. and foreign research and development teams, increasing the difficulty of managing multiple remote locations performing various development, quality assurance, and yield ramp analysis projects.

Currency fluctuations may impact our international sales or expose us to exchange rate risk.

A substantial portion of our international sales are denominated in U.S. dollars. As a result, if the dollar rises in value in relation to foreign currencies, our systems will become more expensive to customers outside the United States and may be less competitive with systems produced by competitors outside the United States. These conditions could negatively impact our international sales. Foreign sales also expose us to collection risk in the event it becomes more expensive for our foreign customers to convert their local currencies into U.S. dollars. Additionally, in the event a larger portion of our revenue becomes denominated in foreign currencies, we would be subject to a potentially significant exchange rate risk, and any failure to sufficiently hedge or otherwise manage these risks could materially and adversely affect our financial condition, results of operations, and liquidity.

Our internal controls with respect to anti-corruption laws may not be effective, and any failure to comply with such laws may result in severe sanctions and liabilities, which may negatively affect our business, operating results and financial condition.

We are subject to the Foreign Corrupt Practices Act of 1977, as amended (the "FCPA"), and other laws that prohibit improper payments or offers of payments to foreign governments and their officials and political parties by U.S. persons and issuers as defined by the statute, for the purpose of obtaining or retaining business. Also, similar worldwide anti-bribery laws, such as the U.K. Bribery Act and Chinese anti-corruption laws, generally prohibit companies and their intermediaries from making improper payments to non-U.S. officials for the purpose of obtaining or retaining business. Some of our distribution partners are located in parts of the world that have experienced governmental corruption to some degree and, in certain circumstances, strict compliance with anti-bribery laws may conflict with local customs and practices. The policies and procedures we have implemented to discourage these practices by our employees, our existing safeguards and any future improvements may prove to be ineffective, and our employees, consultants, sales agents or distributors may engage in conduct for which we might be held responsible. Violations of the FCPA or international anti-corruption laws may result in severe criminal or civil sanctions, and we may be subject to other liabilities, which could negatively affect our business, operating results and financial condition. In addition, the U.S. government may seek to hold us liable for successor liability FCPA violations committed by companies in which we invest or that we acquire. We cannot assure you that our internal control policies and procedures will protect us from reckless or negligent acts committed by our employees, distributors, partners, consultants or agents.

Risks Related to Laws, Legal Proceedings, Financial Markets and the Environment

Changes in tax rates or tax liabilities could affect results.

As a global company, we are subject to taxation in the United States and various other countries. Significant judgment is required to determine and estimate worldwide tax liabilities. Our future annual and quarterly tax rates could be affected by

numerous factors, including changes in the (1) applicable tax laws; (2) composition of earnings in countries with differing tax rates; or (3) recoverability of our deferred tax assets and liabilities. Beginning in 2022, the U.S. Tax Cuts and Jobs Act of 2017 ("TCJA") eliminated the existing option to deduct research and development expenditures and requires taxpayers to amortize them over five years pursuant to IRC Section 174. Although Congress is considering legislation that would defer the amortization requirement to later years, we have no assurance that the provision will be repealed or otherwise modified. The requirement reduced our cash flows for 2022 and 2023, and may continue to reduce our cash flows unless repealed. In addition, recent proposals to increase the U.S. corporate income tax rate, increase U.S. taxation of international business operations and impose a global minimum tax could have a negative impact on our tax position depending upon the terms of the final enacted legislation. Based on the nature of the uncertainties around specific legislation to be enacted, we have not quantified the impact of this risk. Many countries and organizations such as the Organization for Economic Cooperation and Development are also actively considering changes to existing tax laws or have proposed or enacted new laws that could increase our tax obligations in countries where we do business or cause us to change the way we operate our business. Any of these developments or changes in federal, state, or international tax laws or tax rulings could adversely affect our effective tax rate and our results of operations.

In addition, we are subject to regular examination of our income tax returns by the Internal Revenue Service and other tax authorities. We regularly assess the likelihood of favorable or unfavorable outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. Although we believe our tax estimates are reasonable, there can be no assurance that any final determination will not be materially different from the treatment reflected in our historical income tax provisions and accruals, which could materially and adversely affect our results of operations.

In December 2021, the Organization for Economic Co-operation and Development ("OECD"), released guidance covering various topics, including country-by-country reporting, definitional changes to permanent establishment and Base Erosion and Profit Shifting ("BEPS"), an initiative that aims to standardize and modernize global tax policy. The proposed guidance also established a global minimum tax of 15%. Depending on the final form of guidance adopted by OECD members and legislation ultimately enacted, if any, there may be significant consequences for us due to our international business activities, including, but not limited to, an increase in our tax uncertainty and adverse effects on our provision for income taxes.

Turmoil or fluctuations in the credit markets and the financial services industry may negatively impact our business, results of operations, financial condition or liquidity, and our factoring arrangements may expose us to additional risks.

In the past, global credit markets and the financial services industry have experienced periods of turmoil and upheaval characterized by the tightening of the credit markets, the weakening of the global economy and an unprecedented level of intervention from the United States and other governments. Adverse economic conditions, such as sustained periods of economic uncertainty or a crisis in the financial markets may have a material adverse effect on our liquidity and financial condition if our ability to obtain credit from the capital financial markets, or from trade creditors was impaired. If banks and financial institutions with whom we have banking relationships enter receivership or become insolvent in the future, we may be unable to access, and we may lose, some or all of our existing cash, cash equivalents and investments to the extent those funds are not insured or otherwise protected by the FDIC. In addition, a worsening economy or an economic crisis could also adversely impact our customers' ability to finance the purchase of systems from us or our suppliers' ability to provide us with product, either of which may negatively impact our business and results of operations.

We are subject to various environmental laws and regulations that could impose substantial costs upon us, and failure to comply with such laws and regulations may harm our business, operating results and financial condition.

Some of our operations use substances regulated under various federal, state, local, and international laws governing the environment, including those relating to the storage, use, discharge, disposal, labeling, and human exposure to hazardous and toxic materials. We could incur costs, fines and civil or criminal sanctions, third-party property damage or personal injury claims, or could be required to incur substantial investigation or remediation costs, if we were to violate or become liable under environmental laws. Liability under environmental laws can be joint and several and without regard to comparative fault. Compliance with current or future environmental laws and regulations could restrict our ability to expand our facilities or require us to acquire additional expensive equipment, modify our manufacturing processes, or incur other significant expenses. For example, we are or expect to become subject to various new or proposed climate-related and other sustainability laws and regulations, including, for example, the state of California's new climate change disclosure requirements, the EU's new Corporate Sustainability Reporting Directive and proposed climate-change disclosure requirements from the SEC. Compliance with such laws and regulations, as well as the overall increased focus and scrutiny from the SEC and other regulators, investors, customers, vendors, employees, and other stakeholders concerning environmental, social and governance ("ESG") and climate matters, could impose additional costs on us. We may unintentionally violate environmental laws or regulations in the future as a result of human error, equipment failure or other causes. In addition to the potential adverse effects on our business operations of such an event, we are committed to maintaining safe working conditions for our employees 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.

Legal proceedings, claims and investigations may expose us to increased costs and may negatively affect our business and results of operations.

We have been from time to time, and in the future may be, involved in legal proceedings or claims regarding any number of matters, including intellectual property infringement, contract disputes, trade compliance, antitrust, environmental regulations, privacy and data protection, securities, product performance, product liability, employment and workplace safety, and other matters. In addition, we may receive, and have received, inquiries, warrants, subpoenas, and other requests for information in connection with government investigations of potential or suspected violations of law by our company and/or other companies that we work with. We have also received, and may receive in the future, claims from customers who believe we owe them product warranty protection, indemnification or other obligations.

Legal proceedings, claims, and government investigations, whether with or without merit, may be time-consuming and expensive to respond to and defend. They may also divert management's attention and our other resources from day-to-day operational matters; constrain our ability to sell products and services; result in adverse judgments for damages, injunctive relief, penalties and fines; and negatively affect our business and results of operations. We cannot predict the outcome of current or future legal proceedings, claims or investigations.

Risks Related to Growth and Acquisitions

We may choose to acquire new and complementary businesses, products or technologies instead of developing them ourselves, and we may be unable to complete these acquisitions or may not be able to successfully integrate an acquired business in a cost-effective and non-disruptive manner.

Our success depends on our ability to continually enhance and broaden our product offerings in response to customer-anticipated process changes, strategic opportunities for growth, and industry technology trends. To this end, we have, from time to time, engaged in the process of identifying, analyzing and negotiating possible acquisition transactions, and, from time to time, acquiring one or more businesses, and we expect to continue to do so in the future. We may choose to acquire new and complementary businesses, products, technologies and/or services instead of developing them ourselves. We may, however, face competition for acquisition targets from larger and more established companies with greater financial resources, making it more difficult for us to complete acquisitions. We cannot provide any assurance that we will be successful in consummating future acquisitions on favorable terms or that we will realize the benefits that we anticipate from one or more acquisitions that we consummate. Integrating any business, product, technology or service into our current operations could be expensive and time-consuming and/or disrupt our ongoing business. Further, there are numerous risks associated with acquisitions and potential acquisitions, including, but not limited to:

- diversion of management's attention from day-to-day operational matters and current products and customers;
- lack of synergy or the inability to successfully integrate the new business or to realize expected synergies;

- integration of acquired businesses and their operations, including enterprise resource planning systems, may be costly and time-consuming and divert resources away from other projects;
- failure to commercialize the new technology or business;
- failure to meet the expected performance of the new technology or business;
- failure to retain key employees and customer or supplier relationships;
- lower-than-expected market opportunities or market acceptance of any new products; and
- unexpected reduction of sales of existing products as a result of the introduction of new products.

Our inability to consummate one or more acquisitions on favorable terms, or our failure to realize the intended benefits from one or more acquisitions, could have a material adverse effect on our business, liquidity, financial position and/or results of operations, including as a result of our incurrence of indebtedness and related interest expense and our assumption of unforeseen contingent liabilities. We might need to raise additional funds through public or private equity or debt financings to finance any acquisition. In that event, we could be forced to obtain financing on terms that are not favorable to us and, in the case of equity financing, that result in dilution to our stockholders. In addition, any impairment of goodwill or other intangible assets, amortization of intangible assets, write-down of other assets or charges resulting from the costs of acquisitions and purchase accounting could harm our business and operating results.

If we cannot effectively manage growth, our business may suffer.

Over the long-term, we intend to grow our business by increasing our sales efforts and completing strategic acquisitions. To effectively manage growth, we must, among other things:

- engage, train and manage a larger sales force and additional service personnel;
- expand the geographic coverage of our sales force;
- expand our information systems;
- identify and successfully integrate acquired businesses into our operations; and
- administer appropriate financial and administrative control procedures.

Growth of our business will likely challenge our management, financial, operational, technical, sales, administrative, and other resources. Any failure to effectively manage our growth may cause our business to suffer and our stock price to decline.

Risks Related to the Global Economy and the Semiconductor Industry

Cyclical nature of the semiconductor device industry has led to substantial decreases in demand for our systems in the past and may, from time to time, continue to do so.

Our operating results are subject to significant variation due to global economic conditions and the cyclical nature of the semiconductor device industry. Our business depends upon the capital expenditures of semiconductor device manufacturers, which, in turn, depend upon the current and anticipated market demand for semiconductors and products using semiconductors. The timing, length and severity of the up-and-down cycles in the semiconductor equipment industry are difficult to predict. In recent history, the industry has experienced significant downturns, generally in connection with declines in economic conditions. This cyclical nature of the industry in which we operate affects our ability to accurately predict future revenue and, thus, future expense levels. When cyclical fluctuations result in lower-than-expected revenue levels, operating results may be adversely affected, and cost reduction measures may be necessary in order for us to remain competitive and financially sound. During a down cycle, we must be in a position to adjust our cost and expense structure to prevailing market conditions and to continue to motivate and retain our key employees. In addition, during periods of rapid growth, we must be able to increase manufacturing capacity and personnel to meet customer demand. We can provide no assurance that these objectives can be met in a timely manner in response to industry cycles, and we cannot predict when and to what extent sales may normalize, or when and to what extent gross margins may improve, following any such occurrence. If we fail to respond to industry cycles, our business could be seriously harmed.

We may also experience supplier or customer issues as a result of adverse macroeconomic conditions. If our customers have difficulties in obtaining capital or financing, this could result in lower sales. Customers with liquidity issues could also

result in an increase in bad debt expense. These conditions could also affect our key suppliers, which could affect their ability to supply parts and result in delays of our customer shipments.

Our future rate of growth is highly dependent on the development and growth of the market for microelectronic device inspection, lithography and metrology equipment.

We target our products to address the needs of microelectronic device manufacturers for defect inspection, metrology and lithography. If for any reason the market for microelectronic device inspection, lithography or metrology equipment fails to grow in the long term, we may be unable to maintain current revenue levels in the short term and maintain our historical growth in the long term. Growth in the inspection market is dependent to a large extent upon microelectronic manufacturers replacing manual inspection with automated inspection technology. Growth in the metrology market is dependent to a large extent upon new chip designs and capacity expansion of microelectronic manufacturers. Growth in the lithography market is dependent on the development of cost-effective packaging with high fine pitch RDLs, ultimately migrating to multi-die, large, form-factor packages. There can be no assurance that manufacturers will undertake these actions at the rate we expect.

General Risk Factors

Provisions of our charter documents and of Delaware law could discourage potential acquisition proposals and/or delay, deter or prevent a change in control of our company.

Provisions of our certificate of incorporation and by-laws may inhibit changes in control of our company not approved by our Board of Directors. These provisions also limit the circumstances in which a premium can be paid for our common stock and in which a proxy contest for control of our board may be initiated. These provisions provide for:

- a prohibition on stockholder actions through written consent;
- a requirement that special meetings of stockholders be called only by the chairperson of our Board of Directors or majority of our directors;
- advance notice requirements for stockholder proposals and director nominations by stockholders;
- the authority of our Board of Directors to issue, without stockholder approval, preferred stock with such terms as the Board may determine; and
- the authority of our board, without stockholder approval, to adopt a stockholder rights plan.

We are also entitled to avail ourselves of the protections of Section 203 of the Delaware General Corporation Law, which could inhibit changes in control of the Company.

Our stock price is volatile.

The market price of our common stock has fluctuated widely. Consequently, the current market price of our common stock may not be indicative of future market prices, and we may be unable to sustain or increase the value of an investment in our common stock. Factors affecting our stock price may include:

- variations in operating results from quarter to quarter;
- changes in earnings estimates by analysts or our failure to meet analysts' expectations;
- changes in the market price per share of our public company customers;
- market conditions in the semiconductor and other industries into which we sell products;
- general economic conditions;
- political changes, hostilities or natural disasters such as hurricanes and floods;
- the impact of infectious disease pandemics, on the global economy and on our customers, suppliers, employees, and business;
- low trading volume of our common stock; and
- the number of firms making a market in our common stock.

In addition, the stock market has experienced periods of significant price and volume fluctuations. These fluctuations have particularly affected the market prices of the securities of high technology companies like ours. Any such market fluctuations in the future could adversely affect the market price of our common stock.

Item 1B. Unresolved Staff Comments.

None.

Item 1C. Cybersecurity

Cybersecurity Risk Management and Strategy

We rely heavily on information technology (IT) systems in all aspects of our operations, and data security plays an important role in the protection of our proprietary information and that of our customers and suppliers. For these reasons, we take a number of steps to protect Onto Innovation's IT systems from internal and external cybersecurity threats.

Identifying and assessing cybersecurity risk is integrated into our overall risk management systems and processes. Cybersecurity risks related to our business, technical operations, and privacy and compliance issues are identified and addressed through a multi-faceted approach including third-party assessments, IT security, governance, risk and compliance reviews. To defend, detect and respond to cybersecurity incidents, we, among other things: conduct proactive cybersecurity reviews of systems and applications, perform penetration testing using external third-party tools and techniques to test security controls, conduct employee training, monitor emerging laws and regulations related to data protection and information security and implement appropriate changes.

We have implemented incident response processes which have four overarching and interconnected stages: 1) preparation for a cybersecurity incident, 2) detection and review of an incident, 3) containment and remediation, and 4) post-incident review and analysis. Cybersecurity incident responses are managed by our Corporate Incident Response Team and overseen by our Vice President of IT.

Security events and data incidents are evaluated, ranked by severity and prioritized for response and remediation. Incidents are evaluated to determine materiality as well as operational and business impact, and reviewed for privacy impact.

We also conduct tabletop exercises to simulate responses to cybersecurity incidents. Our team of cybersecurity professionals then collaborate with technical and business stakeholders across our business units to further analyze the risk to the company, and form detection, mitigation and remediation strategies.

As part of the above processes, we regularly engage external auditors and subject matter experts to assess our internal cybersecurity programs and compliance with applicable practices and standards. Since 2021, our Information Security Management System has been certified to conform to the requirements of ISO/IEC 27001:2013.

Our cybersecurity program also includes third-party assessments to identify and mitigate risks from third parties such as vendors, suppliers, and other business partners associated with our use of third-party service providers. Cybersecurity risks are evaluated when determining the selection and oversight of applicable third-party service providers and potential risks when handling and/or processing our employee, business or customer data. In addition to new vendor onboarding, we perform risk assessments during third-party cybersecurity compromise incidents to identify and mitigate risks to us from third-party incidents.

Our individual employees also play an important role in our information security systems. All employees are required to familiarize themselves with the Company's information security policies and, at least annually, employees are required to participate in an information security training program, which is designed to help employees identify potentially threats and train them on how to respond. Throughout the year, the IT department conducts phishing campaigns and other simulated hacking attacks with employees as a way of reminding them of their security obligations and ensuring that our SETA (security education and training awareness) has been effective.

As of the date of this Form 10-K, no risks from cybersecurity threats, including as a result of any previous cybersecurity incidents, have materially affected or are reasonably likely to materially affect us, including our business strategy, results of operations, or financial condition.

For more information on the cybersecurity risks we face that could adversely impact us, please see "Part I, Item 1A - Risk Factors - If our network security measures are breached and unauthorized access is obtained to a customer's data, to our data,

or to our information technology systems, we may incur significant legal and financial exposure and liabilities and may experience disruptions in our operations".

Cybersecurity Governance

The Company's Board of Directors has oversight of information security matters at the Company, including reviewing the Company's cybersecurity practices. At least annually, the Vice President of IT presents the Company's information security policies and programs to the Board. Our Audit Committee is tasked with overseeing the risks from cybersecurity threats. Members of the Audit Committee receive updates on cybersecurity matters on a quarterly basis from one or more representatives from the Company's Cyber Security Council ("CSC"), which is composed of our business unit general managers, other members of senior management, our Vice President of IT and our IT Security Manager. These updates include a discussion of existing and new cybersecurity risks (if any), updates on how management is addressing and/or mitigating those risks, and the status of information security initiatives. Other Board members also engage in conversations with management on cybersecurity-related news events and discuss any updates to our cybersecurity risk management and strategy programs outside of the scheduled meetings.

The CSC is also responsible for the executive level supervision of the Company's cybersecurity risk, information security, and technology risk, as well as the IT department's actions to identify, assess, mitigate, and remediate cyber related issues. The CSC receives regular quarterly reports from the Vice President of IT on the Company's cybersecurity risk profile and enterprise cybersecurity program.

We have also established a process whereby potentially material cybersecurity incidents are escalated to a Cybersecurity Disclosure Committee ("CDC") consisting of our CEO, CFO, Vice President and General Counsel, Vice President of IT and Corporate Controller. The Cybersecurity Disclosure Committee is tasked with evaluating whether such incidents have material impact on the Company, and thus require disclosure, as well as any other actions that may be appropriate in response to the incident. The CDC promptly notifies the Audit Committee if it determines that an incident is likely to have a material impact on the Company and updates the Audit Committee on a quarterly basis of any incidents that it determined were not material.

The Vice President of IT acts as our head of information security in leading our information security organization. Our VP of IT has over 20 years of industry experience, including serving in similar roles leading and overseeing cybersecurity programs at other public companies. Team members who support our information security program have relevant educational and industry experience, including holding similar positions at large technology companies.

Item 2. Properties.

Our principal executive office building is located at 16 Jonspin Road in Wilmington, Massachusetts. We own our Milpitas facility and lease facilities for corporate, engineering, manufacturing, sales and service-related purposes in the United States and seven other countries - China, Japan, South Korea, Singapore, Taiwan, Malaysia and Vietnam. The following table indicates the location, the general purpose and the square footage of our material facilities. Our leases expire at various times through July 1, 2029.

Location	Facility Purpose	Approximate Square Footage
Wilmington, Massachusetts	Corporate Headquarters, Engineering, Manufacturing and Service	77,500
Milpitas, California	Engineering, Manufacturing, Service and Administration	134,600
Budd Lake, New Jersey	Engineering, Service and Administration	49,000
Bloomington, Minnesota	Engineering, Manufacturing, Service and Administration	98,700
Bend, Oregon	Engineering and Service	12,700
Hillsboro, Oregon	Engineering and Service	10,000
Snoqualmie, Washington	Engineering and Service	20,300
Tucson, Arizona	Engineering, Manufacturing and Service	18,900
Taiwan	Sales and Service	37,600
China	Sales, Service and Engineering	26,200
South Korea	Sales and Service	29,200
Japan	Sales and Service	14,000
Singapore	Sales and Service	9,800

We also lease office space for other smaller sales and service offices in several locations throughout the world.

We believe that our existing facilities and capital equipment are adequate to meet our current requirements and that suitable additional or substitute space is available on commercially reasonable terms if needed.

Item 3. Legal Proceedings.

The information set forth under the heading "Legal Matters" in Note 8, "Commitments and Contingencies" to the Consolidated Financial Statements is incorporated herein by reference.

Item 4. Mine Safety Disclosures.

None.

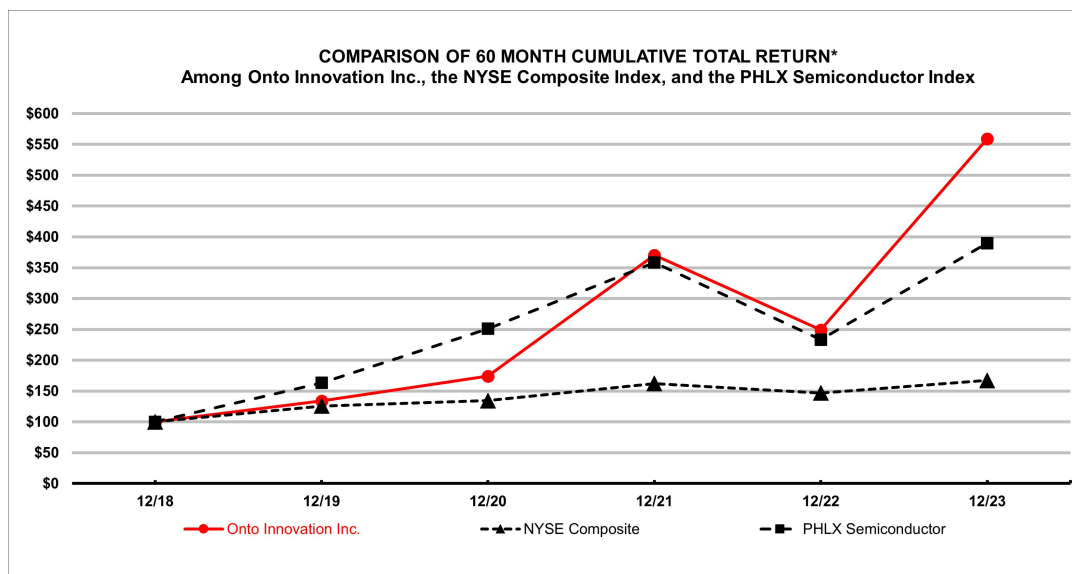
PART II

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

Our common stock, \$0.01 par value per share, is quoted on the New York Stock Exchange ("NYSE") under the symbol "ONTO." As of February 5, 2024, there were approximately 106 stockholders of record. On October 25, 2019, we became Onto Innovation Inc. upon the effectiveness of the merger (the "2019 Merger") between Nanometrics Incorporated ("Nanometrics") and Rudolph Technologies, Inc. ("Rudolph"). Prior to the 2019 Merger, Nanometrics' common stock was quoted on the Nasdaq Global Select Market under the symbol "NANO" and Rudolph's common stock was quoted on the NYSE under the symbol "RTEC." Set forth below is a line graph comparing the annual percentage change in the cumulative return to the stockholders of the Company's common stock with the cumulative return of the NYSE Composite Index and an industry specific index, the PHLX Semiconductor Index, for the period commencing on December 31, 2018 and ending on December 31, 2023. Historical data for Onto Innovation in the line graph for the period commencing on December 31, 2018 and ending on October 25, 2019 reflects the cumulative return to the stockholders of Nanometrics.

The information contained in the performance graph shall not be deemed to be "soliciting material" or to be "filed" with the SEC, nor shall such information be incorporated by reference into any future filing under the Securities Act or the Exchange Act, except to the extent that the Company specifically incorporates it by reference into such filing.

The graph assumes that \$100 was invested on December 31, 2018 in the Company's common stock and in each index. Stockholder returns over the indicated period should not be considered indicative of future stockholder returns.



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	12/18	12/19	12/20	12/21	12/22	12/23
Onto Innovation Inc.	100.0	133.7	173.9	370.3	249.0	559.1
NYSE Composite	100.0	125.5	134.3	162.0	146.9	167.1
PHLX Semiconductor	100.0	163.3	250.9	358.4	233.4	389.7

We have never declared or paid a cash dividend on our common stock and we currently do not intend to do so. The declaration of any future dividends by us is within the discretion of our Board of Directors and will be dependent on our earnings, financial condition and capital requirements as well as any other factors deemed relevant by our Board of Directors.

In November 2020, the Onto Innovation Board of Directors approved a share repurchase authorization, which allows us to repurchase up to \$100 million worth of shares of our common stock. Repurchases may be made through both public market

and private transactions from time to time with shares purchased being subsequently retired. During the twelve months ended December 30, 2023, we repurchased 46 thousand shares of our common stock. The amount paid to repurchase the shares in excess of par value, including transaction costs, is recorded directly as a decrease to additional paid-in capital and accumulated earnings. At December 30, 2023, there was \$31.6 million available for future share repurchases under the share repurchase authorization.

For further information, see Note 16 in the accompanying Notes to the Consolidated Financial Statements included in this Form 10-K.

In addition to our share repurchase program, we withhold common stock shares associated with net share settlements to cover tax withholding obligations upon the vesting of restricted stock unit awards under the Company's equity incentive program. During the three and twelve months ended December 30, 2023, we withheld 3 thousand and 125 thousand shares through net share settlements, respectively. For the three and twelve month periods ended December 30, 2023, net share settlements cost \$0.4 million and \$10.8 million, respectively. Please refer to Note 10 of the Notes to the Consolidated Financial Statements included in this Form 10-K for further discussion regarding our equity incentive plan.

The following table provides details of common stock purchased during the three-month period ended December 30, 2023 (in thousands, except per share data):

Period	Total Number of Shares Purchased (1)	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Program	Maximum Approximate Dollar Value of Shares that May Yet Be Purchased Under the Program
October 1, 2023 - October 30, 2023	2	\$ 121.77	—	\$ 31,577
October 31, 2023 - November 30, 2023	1	\$ 133.33	—	\$ 31,577
December 1, 2023 - December 30, 2023	—	\$ —	—	\$ 31,577
Three Months Ended December 30, 2023	<u>3</u>		<u>—</u>	

¹ Includes shares withheld through net share settlements.

Item 6. [Reserved]

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

Executive Summary

We are a worldwide leader in the design, development, manufacture and support of process control tools that perform macro-defect inspection and metrology, lithography systems, and process control analytical software used by semiconductor and advanced packaging device manufacturers. We deliver comprehensive solutions throughout the semiconductor fabrication process with our families of proprietary products that provide critical yield-enhancing information, enabling microelectronic device manufacturers to drive down costs and time to market of their devices. We provide process and yield management solutions used in both wafer processing facilities, often referred to as "front-end" manufacturing, and in device packaging and test facilities, commonly referred to as "back-end" manufacturing. Our advanced process control software portfolio includes powerful solutions for standalone tools, groups of tools, or factory-wide suites to enhance productivity and achieve significant cost savings.

Our principal market is semiconductor capital equipment. Semiconductors packaged as integrated circuits ("ICs"), or "chips", are used in consumer electronics, server and enterprise systems, mobile computing (including smart phones and tablets), data storage devices, and embedded automotive and control systems. Our core focus is the measurement and control of the structure, composition, and geometry of semiconductor devices as they are fabricated on silicon wafers to improve device performance and manufacturing yields.

Our products and services are used by our customers who manufacture many types of ICs for a multitude of applications, each having unique manufacturing challenges. This includes ICs to enable information processing and management (logic ICs), memory storage (NAND, 3D-NAND, NOR, and DRAM), analog devices (e.g., Wi-Fi and 5G radio ICs, power devices), MEMS sensor devices (accelerometers, pressure sensors, microphones), image sensors, and other end markets including components for artificial intelligence, hard disk drives, LEDs, and power management.

The semiconductor and electronics industries have also been characterized by constant technological innovation. We believe that, over the long term, our customers will continue to invest in advanced technologies and new materials to enable smaller design rules and higher density applications that fuel demand for process control equipment.

The following table summarizes certain key financial information for the periods indicated below (in thousands, except per share and percent data):

		Year Ended	
	December 30, 2023		December 31, 2022
Revenue	\$	815,868	\$ 1,005,183
Gross profit	\$	420,254	\$ 539,221
Gross profit as a percent of revenue		52%	54%
Total operating expenses	\$	304,176	\$ 302,507
Net income	\$	121,159	\$ 223,334
Diluted earnings per share	\$	2.46	\$ 4.49

- In fiscal 2023, revenue decreased 19% compared to fiscal 2022, primarily due to a decrease in sales to memory and foundry customers in advanced nodes. The decreases were partially offset by increases in sales to wafer substrate, memory and discrete & specialty customers in specialty device and advanced packaging applications.
- Gross profit as a percentage of revenue decreased to 52% for fiscal 2023 from 54% for fiscal 2022. This was primarily driven by decreased revenue volume, unfavorable product mix, and increased manufacturing costs due to inflationary pressures.
- The increase in operating expenses in fiscal 2023 compared to fiscal 2022 was primarily due to higher general and administrative expenses related to litigation and restructuring charges which included reductions in workforce.

Our cash, cash equivalents and marketable securities balance increased to \$697.8 million at the end of fiscal 2023 compared to \$547.8 million at the end of fiscal 2022. This increase was primarily the result of \$172.0 million of cash generated from operating activities, partially offset by cash used for capital expenditures of \$22.6 million and \$10.8 million of cash used for tax payments related to net share settlement of employee stock-based compensation plans.

In 2022 and 2023, the United States government implemented additional export regulations for U.S. semiconductor technology sold in China. We have applied for export licenses to continue doing business with our customers that are affected by the new export rules. However, the new export controls have resulted in lower net sales in China for fiscal 2023 compared to the prior fiscal year.

For a discussion of the risks related to our business and operations, see Part I, Item 1A – Risk Factors of this Annual Report on Form 10-K.

Results of Operations

The following table sets forth, for the periods indicated, our results of operations as percentages of our revenue. Our results of operations are reported as one business segment.

	December 30, 2023	Year Ended December 31, 2022	January 1, 2022
Revenue	100.0 %	100.0 %	100.0 %
Cost of revenue	48.5 %	46.4 %	45.6 %
Gross profit	51.5 %	53.6 %	54.4 %
Operating expenses:			
Research and development	12.7 %	11.2 %	12.2 %
Sales and marketing	7.6 %	6.5 %	7.3 %
General and administrative	10.2 %	6.9 %	8.6 %
Amortization	6.7 %	5.5 %	6.5 %
Total operating expenses	37.2 %	30.1 %	34.6 %
Operating income	14.3 %	23.5 %	19.8 %
Interest income, net	2.5 %	0.5 %	0.1 %
Other expense, net	(0.5) %	— %	(0.2) %
Income before provision for income taxes	16.3 %	24.0 %	19.7 %
Provision for income taxes	1.4 %	1.8 %	1.7 %
Net income	14.9 %	22.2 %	18.0 %

Results of Operations for 2023, 2022 and 2021

Revenue. Our revenue is derived from the sale of our systems and software, spare parts, and services. Our revenue was \$815.9 million, \$1,005.2 million and \$788.9 million for the years ended December 30, 2023, December 31, 2022 and January 1, 2022, respectively. This represents a decrease of 18.8% from 2022 to 2023 and an increase of 27.4% from 2021 to 2022.

The following table lists, for the periods indicated, the different sources of our revenue in dollars (thousands) and as percentages of our total revenue:

	December 30, 2023	Year Ended December 31, 2022	January 1, 2022
Systems and software	\$ 683,316 84 %	\$ 865,707 86 %	\$ 669,114 85 %
Parts	74,604 9 %	84,266 8 %	72,753 9 %
Services	57,948 7 %	55,210 6 %	47,032 6 %
Total revenue	\$ 815,868 100 %	\$ 1,005,183 100 %	\$ 788,899 100 %

Total systems and software revenue decreased \$182.4 million for the year ended December 30, 2023, as compared to the year ended December 31, 2022, primarily due to a decrease in units shipped of our metrology product lines to customers in advanced nodes applications. This decline was partially offset by an increase in units shipped of our inspection and lithography product lines to customers in specialty devices and advanced packaging applications. Parts and services revenue is generated from part sales, maintenance service contracts, and system upgrades, as well as time and material billable service calls. During fiscal 2023, the decrease in total parts and services revenue was primarily due to lower factory utilization by several of our customers resulting in a decline in their spare parts requirements.

Total systems and software revenue increased \$196.6 million for the year ended December 31, 2022, as compared to the year ended January 1, 2022, primarily due to an increase in overall demand for our products from semiconductor industry customers, particularly in advanced nodes applications, and specialty devices and advanced packaging. The year-over-year change in systems revenue was primarily due to an increase in units shipped in our metrology and inspection product lines. Parts and services revenue is generated from part sales, maintenance service contracts, and system upgrades, as well as time and material billable service calls. During fiscal 2022, the increase in parts and services revenue was primarily due to increased spending by our customers on system upgrades and repairs of existing systems.

The following table sets forth, for the periods indicated, our revenue by geographic region as percentages of our revenue.

	December 30, 2023	Year Ended December 31, 2022	January 1, 2022
Revenue	\$ 815,868	\$ 1,005,183	\$ 788,899
South Korea	21 %	22 %	20 %
Taiwan	17 %	20 %	25 %
China	17 %	25 %	19 %
United States	16 %	12 %	16 %
Japan	11 %	6 %	8 %
Southeast Asia	11 %	7 %	4 %
Europe	7 %	8 %	8 %
Total revenue	100 %	100 %	100 %

The overall Asia region continues to account for a majority of our revenues as a substantial amount of the worldwide capacity investments for semiconductor manufacturing continue to occur in this region and we expect that trend to continue.

Gross Profit. Our gross profit has been and will likely continue to be affected by a variety of factors, including manufacturing efficiencies, provision for excess and obsolete inventory, pricing by competitors or suppliers, new product introductions, production volume, inventory step-up from purchase accounting, customization and reconfiguration of systems, international and domestic sales mix, system and software product mix, and parts and services margins. Our gross profit was \$420.3 million, \$539.2 million and \$429.1 million for the years ended December 30, 2023, December 31, 2022, and January 1, 2022, respectively. Our gross profit represented 51.5%, 53.6% and 54.4% of our revenue for the years ended December 30, 2023, December 31, 2022, and January 1, 2022, respectively. The decrease in gross profit as a percentage of revenue from 2022 to 2023 was primarily due to decreased revenue volume, unfavorable product mix, and increased manufacturing costs due to inflationary pressures during the 2023 fiscal period. The decrease in gross profit as a percentage of revenue from 2021 to 2022 was primarily due to supply chain cost increases in the 2022 fiscal period, partially offset by higher factory utilization associated with increased sales volume during the 2022 fiscal period.

Operating Expenses.

Our operating expenses consist of:

- **Research and Development.** We believe that it is critical to continue to make substantial investments in research and development to ensure the availability of innovative technology that meets the current and projected requirements of our customers' most advanced designs. We have maintained, and intend to continue, our commitment to investing in research and development in order to continue to offer new products and technologies. Accordingly, we devote a significant portion of our technical, management and financial resources to research and development programs. Research and development expenditures consist primarily of salaries and related expenses of employees engaged in research, design and development activities. They also include consulting fees, the cost of related supplies and legal costs to defend our intellectual property. Our research and development expenses were \$104.4 million, \$112.0 million and \$96.1 million in fiscal years 2023, 2022 and 2021, respectively. The year-over-year dollar decrease from 2022 through 2023 was primarily due to decreases of \$4.6 million for the write-off of acquired in-process research and development assets and cost containment initiatives of \$3.3 million, partially offset by increases in depreciation expenses of \$0.6 million and travel expenses of \$0.3 million. The year-over-year dollar increase from 2021 through 2022 was primarily due to higher compensation costs of \$7.4 million for increased headcount and variable compensation costs, the write-off of purchased in process research and development assets of \$4.6 million and increased costs related to new product initiatives of approximately \$3.3 million. We continue to maintain our commitment to investing in new product development and enhancement to existing products.
- **Sales and Marketing.** Sales and marketing expenses are primarily comprised of salaries and related costs for sales and marketing personnel, as well as commissions and other non-personnel related expenses. Our sales and marketing expenses were \$61.8 million, \$65.7 million and \$57.2 million in fiscal years 2023, 2022 and 2021, respectively. The year-over-year dollar decrease from 2022 through 2023 was primarily due to a decrease in total compensation costs of \$1.5 million on lower headcount and variable compensation plan elements, a decrease in outside service expenses of \$0.8 million and a decrease in depreciation expense of \$0.7 million, partially offset by an increase in travel expenses of \$0.3 million. The year-over-year dollar increase from 2021 through 2022 was primarily due to increased total compensation costs of \$5.8 million for higher headcount and variable compensation plan costs. Higher travel related expenses of approximately \$0.4 million contributed to the overall increase.

- **General and Administrative.** General and administrative expenses are primarily comprised of salaries and related costs for general administrative personnel, as well as other non-personnel related expenses. Our general and administrative expenses were \$83.1 million, \$69.6 million and \$68.0 million in fiscal years 2023, 2022 and 2021, respectively. The year-over-year dollar increase from 2022 through 2023 was primarily due increased litigation expenses of \$7.4 million, restructuring charges of \$3.6 million for employee severance costs during the 2023 period, an increase in depreciation expense of \$1.9 million and an increase in facilities expenses of \$0.4 million. The year-over-year dollar increase from 2021 through 2022 was primarily due to increased facilities expenses of \$5.0 million, partially offset by a decrease of \$3.8 million in depreciation expense.

- **Amortization of Identifiable Intangible Assets.** Amortization of identifiable intangible assets, primarily purchased technology, was \$54.8 million, \$55.3 million and \$51.4 million in fiscal years 2023, 2022 and 2021, respectively. The year-over-year dollar decrease from 2022 through 2023 was primarily due to certain assets becoming fully amortized. The year-over-year dollar increase from 2021 through 2022 was primarily due to a full year of amortization being included in the 2022 fiscal period for in-process research and development that became classified as an identifiable intangible asset in the second half of 2021.

Interest income, net. In fiscal years 2023, 2022 and 2021, net interest income was \$20.4 million, \$5.0 million and \$1.2 million, respectively. The increases in net interest income from 2022 to 2023 and from 2021 to 2022 were due to higher average balances and higher interest rates during both the 2023 and 2022 periods, respectively.

Income taxes. The following table provides details of income tax (dollars in millions):

	December 30, 2023	Year Ended December 31, 2022	January 1, 2022
Income before provision for income taxes	\$ 132.6	\$ 241.6	\$ 155.7
Provision for income taxes	\$ 11.4	\$ 18.3	\$ 13.3
Effective tax rate	8.6%	7.6%	8.6%

The income tax provision differs from the federal statutory income tax rate of 21% for 2023 primarily due to a benefit related to the Foreign Derived Intangible Income Deduction ("FDII") of \$13.0 million, excess benefits related to stock compensation of \$3.4 million, tax benefits for research and development credits of \$6.4 million, and a one-time benefit of \$1.6 million related to the recognition of a tax benefit associated with the lapse of a statute of limitations. These benefits were partially offset by the inclusion of U.S. tax on foreign source income of \$0.5 million and non-deductible officer's compensation of \$2.3 million, and an increase to the Company's valuation allowance of \$2.9 million.

The income tax provision differs from the federal statutory income tax rate of 21% for 2022 primarily due to a benefit related to the Foreign Derived Intangible Income Deduction ("FDII") of \$25.4 million, excess benefits related to stock compensation of \$3.5 million, tax benefits for research and development credits of \$7.1 million, and a one-time benefit of \$1.5 million related to the recognition of a tax benefit associated with the lapse of a statute of limitations. These benefits were partially offset by the inclusion of U.S. tax on foreign source income of \$1.4 million and non-deductible officer's compensation of \$1.9 million.

The income tax provision differs from the federal statutory income tax rate of 21% for 2021 primarily due to a benefit related to the Foreign Derived Intangible Income Deduction ("FDII") of \$11.1 million, excess benefits related to stock compensation of \$3.8 million, tax benefits for research and development credits of \$3.6 million, tax benefit from foreign income being taxed at lower rates of \$3.8 million, and a one-time benefit of \$2.0 million from a reduction to recorded tax reserve related to a lapse of a statute of limitations. These benefits were partially offset by the inclusion of U.S. tax on foreign source income of \$1.7 million.

Our future effective income tax rate depends on various factors, such as tax legislation, the geographic composition of our pre-tax income, the amount of our pre-tax income as business activities fluctuate, non-deductible expenses incurred in connection with acquisitions and research and development credits as a percentage of aggregate pre-tax income.

Liquidity and Capital Resources

Our cash, cash equivalents and marketable securities consist of the following:

	Year Ended	
	December 30, 2023	December 31, 2022
Cash and cash equivalents	\$ 233,508	\$ 175,872
Marketable securities	464,303	371,912
Total cash, cash equivalents and marketable securities	<u>\$ 697,811</u>	<u>\$ 547,784</u>

Sources and Uses of Cash

A summary of cash provided by (used in) operating, investing, and financing activities is as follows:

	Year Ended		
	December 30, 2023	December 31, 2022	January 1, 2022
Cash provided by operating activities	\$ 171,973	\$ 136,703	\$ 175,281
Cash used in investing activities	\$ (103,387)	\$ (55,691)	\$ (141,793)
Cash (used in) provided by financing activities	\$ (9,475)	\$ (68,350)	\$ 2,670

Operating Activities

Cash provided by operating activities during fiscal 2023 was \$172.0 million, which reflects net income, adjusted to exclude the effect of non-cash operating charges, of \$204.5 million. Significant non-cash operating charges included depreciation, amortization, share-based compensation, provision for inventory valuation and deferred income taxes. Cash provided by operating activities in fiscal 2023 increased compared to fiscal 2022 primarily due to improved inventory management and lower income tax payments.

Our working capital was \$1,135.5 million at December 30, 2023 and \$974.3 million at December 31, 2022.

Investing Activities

We used \$103.4 million, \$55.7 million and \$141.8 million of cash in investing activities in fiscal 2023, 2022 and 2021, respectively. Capital expenditures, net of proceeds in fiscal 2023, 2022 and 2021 were \$19.8 million, \$18.4 million and \$12.0 million. Capital expenditures were primarily for investments in facility improvements, demonstration and testing equipment, manufacturing and network equipment. Purchases of marketable securities, net of proceeds from sales and maturities of marketable securities, for fiscal 2023, 2022 and 2021 was \$83.6 million, \$4.6 million and \$23.8 million, respectively. Net cash paid for acquisitions in fiscal 2022 and 2021 were \$4.6 million and \$23.8 million, respectively. There were no acquisitions in fiscal 2023.

From time to time, we evaluate whether to acquire new or complementary businesses, products or technologies. We may fund all of or a portion of the price of these investments or acquisitions in cash, stock, or a combination of cash and stock.

Financing Activities

We used \$9.5 million and \$68.4 million of cash in financing activities for fiscal 2023 and 2022, respectively. Financing activities provided \$2.7 million in fiscal 2021. Repurchases of common stock were \$3.2 million and \$65.3 million in fiscal 2023 and 2022, respectively. There were no repurchases of common stock in 2021. Tax withholding payments for vested equity awards, partially offset by proceeds from sales of shares through share-based compensation plans were \$5.5 million and \$0.8 million for fiscal 2023 and 2022, respectively. In fiscal 2021 proceeds received from sales of shares through share-based compensation plans, partially offset by tax withholding payments for vested equity award, provided cash of \$2.7 million. Payments for contingent consideration for acquired business were \$0.8 million and \$2.3 million in fiscal 2023 and 2022. There were no payments for contingent consideration for acquired business in fiscal 2021.

We have a credit agreement with a bank that provides for a line of credit that is secured by the marketable securities we have with the bank. We are permitted to borrow up to 70% of the value of eligible securities held at the time the line of credit is accessed. As of December 30, 2023, the available line of credit was approximately \$100.0 million with an available interest rate of 7.0%. The credit agreement is available to us until such time that either party terminates the arrangement at its discretion. To date, we have not utilized the line of credit.

Our future capital requirements will depend on many factors, including the timing and amount of our revenue and our investment decisions, which will affect our ability to generate additional cash. We expect that our existing cash, cash

equivalents, marketable securities and availability under our line of credit will be sufficient to meet our anticipated cash requirements for working capital, capital expenditures and other cash needs for the next 12 months following the filing of this Form 10-Q. Thereafter, if cash generated from operations and financing activities is insufficient to satisfy our working capital requirements, we may seek additional funding through bank borrowings, sales of securities or other means. In addition, a reduction in or volatility with respect to our stock price or a general market downturn could materially impact our ability to sell securities on favorable terms or at all. There can be no assurance that we will be able to raise any such capital on terms acceptable to us or at all.

Contractual Obligations

The following table summarizes our significant contractual obligations at December 30, 2023, and the effect such obligations are expected to have on our liquidity and cash flows in future periods. We are currently unable to provide a reasonably reliable estimate of the amount or periods when cash settlement of this liability may occur (dollars in thousands).

	Total	Payments due by period			
		Less than 1 year	1-3 years	3-5 years	More than 5 years
Operating lease obligations	\$ 21,673	\$ 5,929	\$ 9,429	\$ 5,192	\$ 1,123
Purchase obligations ⁽¹⁾	437,105	426,087	11,018	—	—
Total	<u>\$ 458,778</u>	<u>\$ 432,016</u>	<u>\$ 20,447</u>	<u>\$ 5,192</u>	<u>\$ 1,123</u>

(1) Represents our agreements to purchase goods and services consisting of outstanding purchase orders for goods and services.

Critical Accounting Policies and Estimates

Management's discussion and analysis of our financial condition and results of operations are based upon our Consolidated Financial Statements included in this Form 10-K, which have been prepared in accordance with accounting principles generally accepted in the United States. Note 2 of Notes to Consolidated Financial Statements describes the significant accounting policies used in the preparation of the consolidated financial statements. Certain of these significant accounting policies are considered to be critical accounting policies and involve critical accounting estimates. We review the accounting policies we use in reporting our financial results on a regular basis. The preparation of the financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue and expenses and related disclosure of contingent assets and liabilities. On an ongoing basis, we evaluate our estimates, including those related to revenue recognition, accounts receivable, inventories, business acquisitions, intangible assets, share-based payments, income taxes and warranty obligations. We base our estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Results may differ from these estimates due to actual outcomes being different from those on which we based our assumptions. These estimates and judgments are regularly reviewed by management on an ongoing basis at the end of each quarter prior to the public release of our financial results.

Management believes that the following are critical accounting estimates:

Revenue Recognition. Revenue is recognized when control of the promised goods or services are transferred to our customers in an amount that reflects the consideration we expect to be entitled to receive in exchange for those goods or services. We account for a contract when it has approval and commitment from both parties, the rights of the parties and payment terms are identified, the contract has commercial substance and collectability of consideration is probable.

Contracts with customers may include multiple performance obligations. For such arrangements, we allocate revenue to each performance obligation based on its relative standalone selling price. We generally determine standalone selling prices based on the prices charged to customers or the expected cost-plus margin.

Revenue from systems is recognized when we transfer control of the product to our customer. To indicate transfer of control, we must have a present right to payment, legal title must have passed to the customer and the customer must have the significant risks and rewards of ownership. We generally transfer control for system sales when the customer or the customer's agent picks up the system at our facility. We provide an assurance warranty on our systems for a period of twelve to fourteen months against defects in material and workmanship. We provide for the estimated cost of product warranties at the time revenue is recognized.

Depending on the terms of the systems arrangement, we may also defer the recognition of a portion of the consideration expected to be received because we have to satisfy a future obligation (e.g., installation and extended warranties). We use an

observable price to determine the standalone selling price for separate performance obligations or a cost-plus margin approach when one is not available.

Revenue from software licenses, which is primarily sold without systems, is recognized upfront at the point in time when the software is made available to the customer. Software licenses provide the customer with limited rights to use the software. Revenue from licensing support and maintenance is recognized as the support and maintenance are provided, which is over the contract period.

Revenue from parts is recognized when we transfer control of the product, which typically occurs when we ship the product from our facilities to the customer.

Revenue from services primarily consists of service contracts, which provide additional maintenance coverage beyond our assurance warranty on our products, service labor, consulting and training. Revenue from service contracts is recognized ratably over the term of the service contract. Revenue from service labor and consulting is recognized as services are performed.

We record contract liabilities when the customer has been billed in advance of completing our performance obligations. These amounts are recorded as deferred revenue in the Consolidated Balance Sheets.

Inventory Valuation. Inventories are stated at the lower of cost or net realizable value. Net realizable value is the estimated selling prices in the ordinary course of business, less predictable costs of completion, disposal and transportation. Cost is generally determined on a first-in, first-out basis, and includes material, labor and manufacturing overhead costs. We review and set standard costs as needed, but at a minimum, on an annual basis, at current manufacturing costs in order to approximate actual costs. We maintain reserves for our excess and obsolete inventory equal to the difference between the cost of inventory and the estimated market value based upon assumptions about future product lifecycles, product demand and market conditions. If actual product lifecycles, product demand and market conditions are less favorable than those originally projected by management, additional inventory write-downs may be required.

Long-Lived Assets. Goodwill is tested for impairment during the fourth quarter, or whenever events or circumstances indicate that its carrying value may not be recoverable. Goodwill impairment is tested at the reporting unit level, which is defined as an operating segment or one level below the operating segment. Goodwill is reviewed for impairment using either a qualitative assessment or a quantitative goodwill impairment test. If the Company chooses to perform a qualitative assessment and determine the fair value more likely than not exceeds the carrying value, no further evaluation is necessary. When the Company performs the quantitative goodwill impairment test, it compares fair value to carrying value, which includes goodwill. If fair value exceeds carrying value, the goodwill is not considered impaired. If the carrying value is higher than the fair value, the difference would be recognized as an impairment loss.

For other long-lived assets, we periodically review long-lived assets, other than goodwill, for impairment whenever changes in events or circumstances indicate that the carrying amount of an asset may not be recoverable. Assumptions and estimates used in the determination of impairment losses, such as future cash flows and disposition costs, may affect the carrying value of long-lived assets and the impairment of such long-lived assets, if any, could have a material effect on our consolidated financial statements.

Income Taxes. As part of the process of preparing our consolidated financial statements, we are required to estimate our current tax exposure together with our temporary differences resulting from differing treatment of items for tax and accounting purposes. These temporary differences result in deferred tax assets and liabilities, which are included within our consolidated balance sheet. We must assess the likelihood that our deferred tax assets will be recovered from future taxable income and to the extent we believe that recovery is not likely, we must establish a valuation allowance. Management judgment is required in determining our provision for income taxes and any valuation allowance recorded against our deferred tax assets. The need for a valuation allowance is based on our estimates of taxable income by jurisdiction in which we operate and the period over which our deferred taxes will be recoverable. In the event that actual results differ from these estimates or we adjust these estimates in future periods, we may need to adjust the valuation allowance, which could materially impact our financial position and results of operations.

We recognize liabilities for uncertain tax positions based on a two-step process. The first step requires us to determine if the weight of available evidence indicates that the tax position has met the threshold for recognition; therefore, we must evaluate whether it is more likely than not that the position will be sustained on audit, including resolution of any related appeals or litigation processes. The second step requires us to measure the tax benefit of the tax position taken, or expected to be taken, in an income tax return as the largest amount that is more than 50% likely of being realized when effectively settled. This measurement step is inherently difficult and requires subjective estimations of such amounts to determine the probability of various possible outcomes. We reevaluate the uncertain tax positions each quarter based on factors including, but not limited to, changes in facts or circumstances, changes in tax law, effectively settled issues, and new audit activity. Such a change in

recognition or measurement could result in the recognition of a tax benefit or an additional charge to the tax provision in the period.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Interest Rate and Credit Market Risk

We are exposed to changes in interest rates and market liquidity including our investments in certain available-for-sale securities. Our available-for-sale securities consist of fixed and variable rate income investments, such as municipal notes, municipal bonds and corporate bonds. We continually monitor our exposure to changes in interest rates, market liquidity and credit ratings of issuers for our available-for-sale securities. It is possible that we are at risk if interest rates, market liquidity or credit ratings of issuers change in an unfavorable direction. The magnitude of any gain or loss will be a function of the difference between the fixed or variable rate of the financial instrument and the market rate, and our financial condition and results of operations could be materially affected. Based on a sensitivity analysis performed on our financial investments held as of December 30, 2023, a hypothetical increase of 100 basis points in interest rates would result in a decrease of \$3.0 million in the fair value of our available-for-sale debt securities and would not have a material impact on our consolidated financial position, results of operations or cash flows.

Foreign Currency Risk

We enter into foreign currency forward contracts to minimize the short-term impact of exchange rate fluctuations on certain foreign currency denominated monetary assets and liabilities, primarily cash and intercompany receivables and payables. In addition, we hedge certain anticipated foreign currency cash flows, primarily on revenues denominated in Japanese yen. These forward contracts are not designated as accounting hedges, so the change in fair value of the forward exchange contracts is recognized under the caption "Other expense, net" in the Consolidated Statements of Operations for each reporting period. As of December 30, 2023, and December 31, 2022, we had thirty-eight and six outstanding forward contracts, respectively, with a total notional contract value of \$51.6 million and \$27.9 million, respectively. We do not use derivative financial instruments for trading or speculative purposes.

Item 8. Financial Statements and Supplementary Data.

The consolidated financial statements and related information required by this Item are set forth on the pages indicated in Item 15(a) of this Form 10-K.

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

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time period specified in SEC rules and forms. These controls and procedures are also designed to ensure that such information is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating disclosure controls and procedures, we have recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. Management is required to apply judgment in evaluating its controls and procedures.

We performed an evaluation under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, to assess the effectiveness of the design and operation of our disclosure controls and procedures under the Exchange Act as of December 30, 2023. Based on that evaluation, our management, including our principal executive officer and principal financial officer, concluded that our disclosure controls and procedures were effective as of December 30, 2023 at the reasonable assurance level.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). 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 accounting principles generally accepted in the United States of America. Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based on our evaluation, our management concluded that our internal control over financial reporting was effective as of December 30, 2023.

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 be circumvented or deteriorate.

Attestation Report of the Registered Public Accounting Firm

Our consolidated financial statements as of and for the year ended December 30, 2023 have been audited by Ernst & Young LLP, our independent registered public accounting firm, in accordance with the standards of the Public Company Accounting Oversight Board (United States). Ernst & Young LLP has also audited our internal control over financial reporting as of December 30, 2023, as stated in its attestation report included elsewhere in this Form 10-K.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) that occurred during our fiscal quarter ended December 30, 2023 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information.

Rule 10b5-1 Plan Elections

The table below provides the details of all trading plans adopted or terminated by a director or officer during the Company's last fiscal quarter. Each of the trading plans is intended to satisfy the affirmative defense conditions of Rule 10b5-1(c) of the Exchange Act.

Officer's name	Title	Adoption date	Expiration date	Aggregate number of securities to be sold
Michael P. Plisinski	Chief Executive Officer	12/13/2023	9/30/2024	40,000
Yoon Ah Oh	Vice President, General Counsel & Corporate Secretary	12/15/2023	12/13/2024	4,370

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspection.

Not applicable.

PART III

Certain information required by Part III is omitted from this Form 10-K because we expect to file a definitive proxy statement within one hundred twenty (120) days after the end of our fiscal year pursuant to Regulation 14A (the "Proxy Statement") for our Annual Meeting of Stockholders currently scheduled for May 22, 2024, and the information included in the Proxy Statement is incorporated herein by reference, as specified below.

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this Item with respect to directors and executive officers is incorporated by reference to the information under the headings "Proposal 1: Election of Directors," "Executive Officer Biographies" and "Corporate Governance Principles and Practices" in the Proxy Statement. Information regarding compliance with Section 16 of the Exchange Act is incorporated by reference to the information under the heading "Delinquent Section 16(a) Reports" in the Proxy Statement, if any.

Code of Business Conduct and Ethics. We have adopted a code of business conduct and ethics that applies to our principal executive officer, principal financial officer and controller. This code of business conduct and ethics is posted on our internet website address at <http://investors.ontoinnovation.com>. We will post on our website any amendment to or waiver from a provision of our code of business conduct and ethics as may be required, and within the time period specified, by applicable SEC rules.

Item 11. Executive Compensation.

The information required by this Item is incorporated by reference to the information under the headings "Executive Officer Compensation," "Compensation of Directors," "Executive Officer Compensation Tables," "Compensation Committee Report on Executive Officer Compensation," "Stock Ownership/Retention Guidelines for Directors" and "Compensation Committee Interlocks and Insider Participation" in the Proxy Statement.

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

The information required by this Item is incorporated by reference to the information under the headings "Security Ownership of Certain Beneficial Owners" and "Equity Compensation Plan Information" in the Proxy Statement.

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

The information required by this Item is incorporated by reference to the information under the headings "Related Persons Transaction Policy" and "Board Independence" in the Proxy Statement.

Item 14. Principal Accountant Fees and Services.

The information required by this Item is incorporated by reference to the information under the heading "Proposal 3: Ratification of Appointment of Independent Registered Public Accounting Firm" in the Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedule.

(a) The following documents are filed as part of this Form 10-K:

1. Financial Statements

The consolidated financial statements and consolidated financial statement information required by this Item are included on pages F-1 through F-9 of this report. The Reports of Independent Registered Public Accounting Firm appear on pages F-2 through F-4 of this report.

2. Financial Statement Schedule

See Index to financial statements on page F-1 of this report.

3. Exhibits

Exhibits are as set forth in the "Exhibit Index", provided below. Where so indicated, exhibits, which were previously filed, are incorporated by reference.

<u>Exhibit No.</u>	<u>Exhibit Description</u>	<u>Form</u>	<u>File Number</u>	<u>Date of First Filing</u>	<u>Exhibit No./Appendix Reference</u>
3.1	Amended and Restated Certificate of Incorporation of Onto Innovation Inc.	8-K	001-39110	October 28, 2019	3.2
3.2	Amended and Restated Bylaws of Onto Innovation Inc.	8-K	001-39110	January 27, 2020	3.1
4.1	Form of Common Stock Certificate	10-K	001-39110	February 25, 2020	4.2
4.2	Description of Securities	10-K	001-39110	February 25, 2020	4.1
10.1*	Rudolph Technologies, Inc. 2018 Stock Plan	8-K	001-36226	May 16, 2018	10.1
10.2*	Form of Employee Restricted Stock Unit Purchase Agreement pursuant to the Rudolph Technologies, Inc. 2018 Stock Plan	10-Q	001-36226	August 2, 2018	10.1
10.3*	Onto Innovation Inc. 2020 Stock Plan	8-K	001-39110	May 14, 2020	10.1
10.4*	Form of Employee Stock Option Agreement for usage under the Onto Innovation Inc. 2020 Stock Plan	8-K	001-39110	May 14, 2020	10.1
10.5*	Form of Director Stock Option Agreement for usage under the Onto Innovation Inc. 2020 Stock Plan	8-K	001-39110	May 14, 2020	10.1
10.6*+	Form of Employee Restricted Stock Unit Agreement for usage under the Onto Innovation Inc. 2020 Stock Plan	-	-	-	-
10.7*+	Form of Director Restricted Stock Unit Purchase Agreement for usage under the Onto Innovation Inc. 2020 Stock Plan	-	-	-	-
10.8*	Form of Employee Performance Stock Unit Purchase Agreement for usage under the Onto Innovation Inc. 2020 Stock Plan	10-Q	001-39110	August 5, 2021	10.1
10.9*	Form of Employee Incentive Restricted Stock Unit Purchase Agreement for usage under the Onto Innovation Inc. 2020 Stock Plan	10-Q	001-39110	November 4, 2021	10.1

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<u>Exhibit No.</u>	<u>Exhibit Description</u>	<u>Form</u>	<u>File Number</u>	<u>Date of First Filing</u>	<u>Exhibit No./Appendix Reference</u>
10.10*	Onto Innovation Inc. 2020 Employee Stock Purchase Plan	S-8	333-238492	May 19, 2020	10.2
10.11*	Form of Onto Innovation Inc. Indemnification Agreement	8-K	001-39110	September 13, 2021	10.1
10.12*	Employment Agreement, dated as of September 15, 2023, by and between Onto Innovation Inc. and Michael P. Plisinski* incorporated by reference to Exhibit 10.1 to the Company's Form 8-K filed with the SEC on September 15, 2023 (File No. 001-39110).	8-K	001-39110	September 15, 2023	10.1
10.13*	Offer Letter to Yoon Ah E. Oh, dated October 4, 2021, by and between Yoon Ah E. Oh and Onto Innovation Inc.	10-Q	001-39110	May 3, 2022	10.1
10.14*	Offer Letter to Mark Slicer, dated April 1, 2022, by and between Mark Slicer and Onto Innovation Inc.	8-K	001-39110	May 17, 2022	10.1
10.15*	Form of Executive Change in Control Agreement	10-K	001-39110	February 24, 2023	10.13
21.1+	Subsidiaries.	-	-	-	-
23.1+	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm.	-	-	-	-
31.1+	Rule 13a-14(a) Certification of Chief Executive Officer of the Registrant pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	-	-	-	-
31.2+	Rule 13a-14(a) Certification of Chief Financial Officer of the Registrant pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	-	-	-	-
32.1+	Certification of the Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	-	-	-	-
32.2+	Certification of the Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	-	-	-	-
97+	Onto Innovation Inc. Incentive Compensation Recovery Policy	-	-	-	-
101.INS	Inline XBRL Instance Document				
101.SCH	Inline XBRL Taxonomy Extension Schema Document				
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document				
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document				
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document				
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document				
104	Cover Page Interactive Data File (formatted in inline XBRL and contained in Exhibit 101)				
*	Management contract, compensatory plan or arrangement.				
+	Filed herewith				

ONTO INNOVATION INC.
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FINANCIAL STATEMENT SCHEDULE

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Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Onto Innovation Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Onto Innovation Inc. (the Company) as of December 30, 2023, and December 31, 2022, the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 30, 2023, and the related notes and financial statement schedule listed in the Index at Item 15(a) (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 30, 2023 and December 31, 2022, and the results of its operations and its cash flows for each of the three years in the period ended December 30, 2023, 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 30, 2023, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated February 26, 2024, expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's 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 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 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 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 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 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 financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of the 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 disclosure to which it relates.

Reserve for Excess and Obsolete Inventory

*Description of
the Matter*

As described in Notes 2 and 7 to the consolidated financial statements, the Company records inventory net of a reserve for excess and obsolete inventory resulting in net inventories of \$328 million as of December 30, 2023. The valuation of certain of the Company's inventory is subject to risks associated with supply and demand. As described in Note 2 to the consolidated financial statements, the Company maintains reserves for excess and obsolete inventory equal to the difference between the cost of inventory and its estimated net realizable value based upon assumptions about historical and future demand for the Company's products and market conditions.

Auditing management's estimate of the excess and obsolete inventory reserve was subjective and required significant judgment as the excess and obsolete inventory reserve is sensitive to changes in the Company's operations and assumptions used to estimate the reserve including management's assumptions with regards to product life-cycles, product demand and market conditions, which includes historical usage,

expected future usage, on-hand quantities of individual materials, and anticipated engineering design changes or advancements.

*How We
Addressed the
Matter in Our
Audit*

We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's excess and obsolete inventory reserve process, including those over the validity and reasonableness of the data and assumptions used in estimating the excess and obsolete inventory reserve.

To test the adequacy of the Company's excess and obsolete inventory reserve, we performed audit procedures that included, among others, assessing methodologies and assumptions used, testing the completeness and accuracy of the underlying data used by management in its analysis including the usage of historical materials, considering potential product obsolescence, observing physical inventory on-hand and inspecting historical gross margins to assess whether any items are being sold at a loss or lower margins that may need to be included in the reserve. We assessed the historical accuracy of management's estimated excess and obsolete inventory reserve and performed sensitivity analyses to evaluate changes in the estimate that result from changes in the Company's significant assumptions.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2008.

Iselin, New Jersey
February 26, 2024

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Onto Innovation Inc.

Opinion on Internal Control Over Financial Reporting

We have audited Onto Innovation Inc.'s internal control over financial reporting as of December 30, 2023, based on criteria established in Internal Control —Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Onto Innovation Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 30, 2023, based on the COSO criteria.

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 30, 2023 and December 31, 2022, the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 30, 2023, and the related notes and financial statement schedule listed in the Index at Item 15(a) and our report dated February 26, 2024 expressed an unqualified opinion thereon.

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 included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and 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/ Ernst & Young LLP

Iselin, New Jersey
February 26, 2024

ONTO INNOVATION INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share data)

	December 30, 2023	Year Ended December 31, 2022	January 1, 2022
Revenue	\$ 815,868	\$ 1,005,183	\$ 788,899
Cost of revenue	395,614	465,962	359,813
Gross profit	420,254	539,221	429,086
Operating expenses:			
Research and development	104,442	111,953	96,118
Sales and marketing	61,765	65,688	57,235
General and administrative	83,147	69,582	67,960
Amortization	54,822	55,284	51,366
Total operating expenses	304,176	302,507	272,679
Operating income	116,078	236,714	156,407
Interest income, net	20,356	5,011	1,163
	()	()	()
Other expense, net	3,852)	141)	1,888)
Income before provision for income taxes	132,582	241,584	155,682
Provision for income taxes	11,423	18,250	13,333
Net income	<u>\$ 121,159</u>	<u>\$ 223,334</u>	<u>\$ 142,349</u>
Earnings per share:			
Basic	\$ 2.47	\$ 4.52	\$ 2.89
Diluted	\$ 2.46	\$ 4.49	\$ 2.86
Weighted average number of shares outstanding:			
Basic	48,971	49,424	49,242

Diluted	49,318	49,764	49,728
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The accompanying notes are an integral part of these consolidated financial statements.

ONTO INNOVATION INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In thousands)

	December 30, 2023	Year Ended December 31, 2022	January 1, 2022
Net income	\$ 121,159	\$ 223,334	\$ 142,349
Other comprehensive income (loss), net of tax:			
		((
Change in net unrealized gains (losses) on available-for-sale marketable securities	3,660	2,447	537
	(((
Change in currency translation adjustments	1,549	8,879	2,715
)))
		((
Total other comprehensive income (loss), net of tax	2,111	11,326	3,252
))
Total comprehensive income	\$ 123,270	\$ 212,008	\$ 139,097

The accompanying notes are an integral part of these consolidated financial statements.

ONTO INNOVATION INC.
CONSOLIDATED BALANCE SHEETS
(In thousands, except per share data)

	December 30, 2023	December 31, 2022
ASSETS		
Current Assets:		
Cash and cash equivalents	\$ 233,508	\$ 175,872
Marketable securities	464,303	371,912
Accounts receivable, less allowance of \$ 2,659 at December 30, 2023 and \$ 1,572 at December 31, 2022	226,556	241,395
Inventories	327,773	324,282
Prepaid expenses and other current assets	31,127	21,411
Total current assets	1,283,267	1,134,872
Property, plant and equipment, net	103,611	91,980
Goodwill	315,811	315,811
Identifiable intangible assets, net	167,375	222,197
Deferred income taxes	18,836	4,778
Other assets	20,812	25,225
Total assets	\$ 1,909,712	\$ 1,794,863
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 49,869	\$ 54,526
Accrued liabilities	42,062	48,836
Deferred revenue	24,763	30,163
Other current liabilities	31,032	27,033

Total current liabilities	147,726	160,558
Deferred and other tax liabilities	—	7,366
Other non-current liabilities	25,451	30,513
Total liabilities	173,177	198,437
Commitments and contingencies (Note 8)		
Stockholders' equity:		
Preferred stock, \$		
0.001		
par value,		
3,000		
shares authorized,		
no		
shares		
issued and outstanding	—	—
Common stock, \$		
0.001		
par value,		
97,000		
shares authorized,		
49,086		
and		
48,684		
issued and outstanding at December 30, 2023 and December 31, 2022, respectively.	49	49
Additional paid-in capital	1,262,029	1,243,631
	((
Accumulated other comprehensive loss	7,899	10,010
))
Accumulated earnings	482,356	362,756
Total stockholders' equity	1,736,535	1,596,426
Total liabilities and stockholders' equity	<u>\$ 1,909,712</u>	<u>\$ 1,794,863</u>

The accompanying notes are an integral part of these consolidated financial statements.

ONTO INNOVATION INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	December 30, 2023	Year Ended December 31, 2022	January 1, 2022
Cash flows from operating activities:			
Net income	\$ 121,159	\$ 223,334	\$ 142,350
Adjustments to reconcile net income to net cash and cash equivalents provided by operating activities:			
Depreciation	12,390	9,378	14,435
Amortization of intangibles	54,822	55,284	51,366
Share-based compensation	25,513	24,426	19,542
Write-off of acquired in-process research and development	—	5,652	—
Acquired inventory step-up amortization	—	—	393
Provision for inventory valuation	10,015	9,313	8,175
	(((
Deferred income taxes	22,429	33,601	12,618
)))
Other, net	2,991	563	2,267
)))
Change in operating assets and liabilities, net of effects of business acquired:		((
Accounts receivable	12,151	65,140	27,829
)))
	(((
Income taxes	1,798	5,006	1,307
)))
Inventories	16,462	93,905	57,175
)))
	(((
Prepaid expenses and other assets	14,013	4,954	768
)))
	(((
Accounts payable	4,681	1,181	12,142
)))

	(
Accrued and other liabilities	11,281	11,304	21,694
)		
Net cash and cash equivalents provided by operating activities	171,973	136,703	175,281
Cash flows from investing activities:			
	(((
Purchases of marketable securities	480,458	371,287	361,022
)))
Proceeds from maturities and sales of marketable securities	396,844	338,645	255,063
	(((
Purchases of property, plant and equipment	22,573	18,405	12,039
)))
Proceeds from sale of property, plant and equipment	2,800	—	—
		((
Acquisitions, net of cash acquired	—	4,644	23,795
	())
Net cash and cash equivalents used in investing activities	103,387	55,691	141,793
)))
Cash flows from financing activities:			
	((
Purchases of common stock	3,197	65,257	—
))	
	(((
Tax payments related to shares withheld for share-based compensation plans	10,762	8,874	7,403
)))
	((
Payment of contingent consideration for acquired business	801	2,287	—
))	
Issuance of shares through share-based compensation plans	5,285	8,068	10,073
		(
	(
Net cash and cash equivalents (used in) provided by financing activities	9,475	68,350	2,670
))	
	(((
Effect of exchange rate changes on cash and cash equivalents	1,476	6,391	3,276
)))
Net increase in cash and cash equivalents	57,635	6,270	32,882
Cash and cash equivalents at beginning of year	175,872	169,602	136,720
Cash and cash equivalents at end of year	\$ 233,508	\$ 175,872	\$ 169,602

Supplemental disclosure of cash flow information:

Income taxes paid, net	\$	34,104	\$	58,687	\$	23,766
------------------------	----	--------	----	--------	----	--------

The accompanying notes are an integral part of these consolidated financial statements.

ONTO INNOVATION INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
For the years ended December 30, 2023,
December 31, 2022 and January 1, 2022
(In thousands)

	Common Stock Shares	Common Stock Amount	Additional Paid- in Capital	Accumulated Other Comprehensive Income / (Loss)	Accumulated Earnings	Total
Balance at December 26, 2020	48,758	49	1,233,967	4,568	26,162	1,264,746
Issuance of shares through share- based compensation plans, net	650	—	10,072	—	—	10,072
Net income	—	—	—	—	142,349	142,349
Share-based compensation	—	—	19,542	—	—	19,542
Share-based compensation plan withholdings	(108)	—	(7,402)	—	—	(7,402)
Currency translation	—	—	—	2,715	—	2,715
Unrealized loss on investments	—	—	—	537	—	537
Balance at January 1, 2022	49,300	49	1,256,179	1,316	168,511	1,426,055
Issuance of shares through share- based compensation plans, net	509	1	8,067	—	—	8,068
Repurchase of common stock	(1,018)	(1)	(36,167)	—	29,089	(65,257)
Net income	—	—	—	—	223,334	223,334
Share-based compensation	—	—	24,426	—	—	24,426
Share-based compensation plan withholdings	(107)	—	(8,874)	—	—	(8,874)
Currency translation	—	—	—	8,879	—	8,879
Unrealized loss on investments	—	—	—	2,447	—	2,447

				(
	48,684	49	1,243,631	10,010	362,756	1,596,426
Balance at December 31, 2022	<u> </u>	<u>\$</u>	<u>\$</u>	<u> </u>)	<u>\$</u>	<u>\$</u>
Issuance of shares through share-based compensation plans, net	573	—	5,285	—	—	5,285
	((((
Repurchase of common stock	46	—	1,638	—	1,559	3,197
))))
Net income	—	—	—	—	121,159	121,159
Share-based compensation	—	—	25,513	—	—	25,513
	(((
Share-based compensation plan withholdings	125	—	10,762	—	—	10,762
)))
				((
Currency translation	—	—	—	1,549	—	1,549
))
Unrealized gain on investments	—	—	—	3,660	—	3,660

				(
	49,086	49	1,262,029	7,899	482,356	1,736,535
Balance at December 30, 2023	<u> </u>	<u>\$</u>	<u>\$</u>	<u> </u>)	<u>\$</u>	<u>\$</u>

The accompanying notes are an integral part of these consolidated financial statements

ONTO INNOVATION INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(In thousands, except per share data)

1. Organization and Nature of Operations:

Onto Innovation Inc. ("Onto Innovation" or the "Company") is a worldwide leader in the design, development, manufacture and support of process control tools that perform macro-defect inspection and metrology, lithography systems, and process control analytical software used by semiconductor and advanced packaging device manufacturers. The Company delivers comprehensive solutions throughout the semiconductor fabrication process with our families of proprietary products that provide critical yield-enhancing information, enabling microelectronic device manufacturers to drive down costs and time to market of their devices. The Company provides process and yield management solutions used in both wafer processing facilities, often referred to as "front-end" manufacturing, and in device packaging and test facilities, commonly referred to as "back-end" manufacturing. The Company's advanced process control software portfolio includes powerful solutions for standalone tools, groups of tools, or factory-wide suites to enhance productivity and achieve significant cost savings. Onto Innovation's systems are backed by worldwide customer service and applications support. The Company has branch sales and service offices or subsidiaries in Korea, Japan, China, Taiwan, Singapore, Malaysia, Vietnam and in several countries in Europe. The Company operates in a single reportable segment and is a provider of process characterization equipment and software for wafer fabs and advanced packaging facilities.

2. Summary of Significant Accounting Policies:

Consolidation. The consolidated financial statements reflect the accounts of the Company and its wholly-owned subsidiaries. All intercompany accounts and transactions have been eliminated.

Fiscal Year. The fiscal year of 2023 began on January 1, 2023 and ended December 30, 2023. The fiscal year of 2022 began on January 2, 2022 and ended December 31, 2022. The fiscal year of 2021 began on December 27, 2020 and ended January 1, 2022.

Revenue Recognition. Revenue is recognized when control of the promised goods or services is transferred to the Company's customers in an amount that reflects the consideration the Company expects to be entitled to receive in exchange for those goods or services. The Company accounts for a contract when it has approval and commitment from both parties, the rights of the parties and payment terms are identified, the contract has commercial substance and collectability of consideration is probable.

The Company accounts for shipping and handling activities as the fulfillment of a promise to transfer goods to the customer and therefore records these activities under the caption "Cost of revenue." Sales tax and any other taxes collected concurrent with revenue producing activities are excluded from revenue. Incidental items that are immaterial in the context of the contract are recognized as expense.

Contracts with customers may include multiple performance obligations. For such arrangements, the Company allocates revenue to each performance obligation based on its relative standalone selling price. The Company generally determines standalone selling prices based on the prices charged to customers or the expected cost-plus margin.

Systems and Software Revenue

Revenue from systems is recognized when the Company transfers control of the product to the customer. To indicate transfer of control, the Company must have a present right to payment, legal title must have passed to the customer and the customer must have the significant risks and rewards of ownership. The Company generally transfers control for system sales when the customer or the customer's agent picks up the system at the Company's facility. The Company provides an assurance warranty on its systems for a period of twelve to fourteen months against defects in material and workmanship. The Company provides for the estimated cost of product warranties at the time revenue is recognized.

Depending on the terms of the systems arrangement, the Company may also defer the recognition of a portion of the consideration expected to be received because the Company has to satisfy a future obligation (e.g., installation and extended warranties). The Company uses an observable price to determine the standalone selling price for separate performance obligations or a cost-plus margin approach when one is not available.

ONTO INNOVATION INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)
(In thousands, except per share data)

Revenue from software licenses provides the customer with a right to use the software as it exists when made available to the customer. Revenue from software licenses, which is primarily sold with our systems, is recognized upfront at the point in time when the software is made available to the customer. Revenue from licensing support and maintenance is recognized as the support and maintenance are provided, which is over the contract period.

Parts Revenue

Revenue from parts is recognized when the Company transfers control of the product, which typically occurs when the Company ships the product from its facilities to the customer.

Services Revenue

Revenue from services primarily consists of service contracts, which provide additional maintenance coverage beyond the Company's assurance warranty on its products, service labor, consulting and training. Revenue from service contracts is recognized ratably over the term of the service contract. Revenue from service labor and consulting is recognized as services are performed. Revenue from installation services is recognized at a point in time when installation is complete.

Practical Expedients

The Company generally expenses sales commissions when incurred because the amortization period is one year or less. These costs are recorded within selling, general and administrative expenses.

The Company does not adjust the amount of consideration for the effects of a significant financing components, if any, as the payment terms are one year or less.

The Company does not disclose the value of remaining performance obligations for contracts with an original expected length of one year or less and contracts for which the Company recognizes revenue in the amount to which it has the right to invoice.

For additional information on the Company's revenue recognition, see Note 9 of Notes to the Consolidated Financial Statements.

Business Combinations. The Company accounts for business combinations under the acquisition method of accounting, which requires us to recognize separately from goodwill the assets acquired, and the liabilities assumed at their acquisition date fair values. While the Company uses its best estimates and assumptions to accurately value assets acquired and liabilities assumed at the acquisition date as well as contingent consideration, where applicable, the Company's estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, the Company records adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recognized in its consolidated statements of operations. Accounting for business combinations requires the Company's management to make significant estimates and assumptions, especially at the acquisition date including its estimates for intangible assets, contractual obligations assumed, restructuring liabilities, pre-acquisition contingencies, and contingent consideration, where applicable. Although the Company believes the assumptions and estimates it has made in the past have been reasonable and appropriate, they are based, in part, on historical experience and information obtained from the management of the acquired companies and are inherently uncertain. Estimates in valuing certain acquired intangible assets under the income approach include growth in future expected cash flows from product sales, acquired technologies, technology obsolescence rates, estimated cash flows from the projects when completed and discount rates. Unanticipated events and circumstances may occur that may affect the accuracy or validity of such assumptions, estimates or actual results.

Use of Estimates. The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Significant estimates made by management include the allowance for credit losses, excess and obsolete inventory, fair value of assets acquired and liabilities assumed in a business combination, recoverability and useful lives of property, plant and equipment and identifiable intangible assets, recoverability of goodwill,

ONTO INNOVATION INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)
(In thousands, except per share data)

recoverability of deferred tax assets, liabilities for product warranty, contingencies, including litigation reserves and share-based payments and liabilities for tax uncertainties. Actual results could differ from those estimates.

These estimates and assumptions are based on historical experience and on various other factors which the Company believes to be reasonable under the circumstances. The Company may engage third-party valuation specialists to assist with estimates related to the valuation of financial instruments, assets and stock awards associated with various contractual arrangements. Such estimates often require the selection of appropriate valuation methodologies and significant judgment. Actual results could differ from these estimates under different assumptions or circumstances and such differences could be material.

Cash and Cash Equivalents. Cash and cash equivalents include cash and highly liquid debt instruments with original maturities of three months or less when purchased.

Marketable Securities. The Company determined that its investment securities are to be classified as available-for-sale. Available-for-sale debt securities are carried at fair value, with the unrealized gains and losses reported in stockholders' equity under the caption "Accumulated other comprehensive loss." Realized gains and losses and, interest and dividends on available-for-sale securities are included in interest income and other, net. Available-for-sale securities are classified as current assets regardless of their maturity date if they are available for use in current operations. The Company reviews its investment portfolio to identify and evaluate investments that have indications of possible impairment. Factors considered in determining whether a loss is other-than-temporary include the length of time and extent to which fair value has been less than the cost basis, credit quality and the Company's ability and intent to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value. When a decline in fair value is determined to be other-than-temporary, unrealized losses on available-for-sale securities are charged against earnings. The specific identification method is used to determine the gains and losses on marketable securities.

For additional information on the Company's marketable securities, see Note 4 of Notes to the Consolidated Financial Statements.

Allowance for Credit Losses. The Company maintains an allowance for credit losses that is estimated based on a combination of factors including write-off history, aging analysis, forecast of future economic conditions and any specific known troubled accounts. The Company believes the allowance is adequate to cover expected losses on trade receivables. Provisions for expected credit losses are classified as selling, general and administrative expense in the Consolidated Statements of Operations. If the financial condition of the Company's customers were to deteriorate, resulting in an impairment of their ability to make payments, additional allowances may be required.

Inventories. Inventories are stated at the lower of cost or net realizable value. Net realizable value is the estimated selling prices in the ordinary course of business, less predictable costs of completion, disposal and transportation. Cost is generally determined on a first-in, first-out basis, and includes material, labor and manufacturing overhead costs. The Company reviews and sets standard costs as needed, but at a minimum, on an annual basis, at current manufacturing costs in order to approximate actual costs.

The Company evaluates inventories for excess quantities and obsolescence. The Company establishes inventory reserves when conditions exist that suggest that inventory may be in excess of anticipated demand or is obsolete based upon assumptions about historical and future demand for the Company's products and market conditions. In addition, inventories are evaluated for potential obsolescence due to the effect of known and anticipated engineering design changes. Once a reserve has been established, it is maintained until the item to which it relates is scrapped or sold. The Company regularly evaluates its ability to realize the value of inventory based on a combination of factors including the following: historical usage rates, forecasted sales, product end-of-life dates, estimated current and future market values and new product introductions. When recorded, reserves are intended to reduce the carrying value of the Company's inventory to its net realizable value. If actual demand for the Company's products deteriorates, or market conditions are less favorable than those that the Company projects, additional reserves may be required.

Property, Plant and Equipment. Property, plant and equipment are stated at cost. Depreciation of property, plant and equipment is computed using the straight-line method over the estimated useful lives of the assets, which are five to twenty-two years for buildings, three to ten years for machinery and equipment, three to ten years for furniture and fixtures, three years for computer equipment, and three to seven years for software. Leasehold improvements are amortized using the straight-line

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method over the lesser of the lease term or the estimated useful life of the related asset. Repairs and maintenance costs are expensed as incurred and major renewals and betterments are capitalized.

Long-Lived Assets and Finite-Lived Acquired Intangible Assets. Long-lived assets, such as property, plant, and equipment, and identifiable acquired intangible assets with finite useful lives, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized in the amount by which the carrying amount of the asset exceeds the fair value of the asset, which is generally based on discounted cash flows.

Goodwill and Indefinite Lived Intangible Assets. Goodwill and indefinite lived intangible assets are tested for impairment on an annual basis or when an event or changes in circumstances indicate that its carrying value may not be recoverable. Goodwill impairment is tested at the reporting unit level, which is defined as an operating segment or one level below the operating segment. The Company has three reporting units and

one
operating segment.

No

goodwill impairment occurred in fiscal years 2023, 2022, or 2021. Goodwill is reviewed for impairment using either a qualitative assessment or a quantitative goodwill impairment test. If the Company chooses to perform a qualitative assessment and determine the fair value more likely than not exceeds the carrying value, no further evaluation is necessary. When the Company performs the quantitative goodwill impairment test, it compares fair value to carrying value, which includes goodwill. If fair value exceeds carrying value, the goodwill is not considered impaired. If the carrying value is higher than the fair value, the difference would be recognized as an impairment loss.

Intangible assets with indefinite lives, including in-process research and development ("IPR&D"), are tested for impairment if impairment indicators arise and, at a minimum, annually. However, the Company is permitted to first assess qualitative factors to determine if a quantitative impairment test is necessary. Further testing is only required if the entity determines, based on the qualitative assessment, that it is more likely than not that an indefinite-lived intangible asset's fair value is less than its carrying amount. Otherwise, no further impairment testing is required. The indefinite-lived intangible asset impairment test consists of a one-step analysis that compares the fair value of the intangible asset with its carrying amount. If the carrying amount of an intangible asset exceeds its fair value, an impairment loss is recognized in an amount equal to that excess. We consider many factors in evaluating whether the value of intangible assets with indefinite lives may not be recoverable, including, but not limited to estimates of future cash flows, the discount rate, terminal growth rates, general economic conditions, our outlook and market performance of our industry and recent and forecasted financial performance.

For additional information on the Company's goodwill and purchased intangible assets, see Note 5 of Notes to the Consolidated Financial Statements.

Concentration of Credit Risk. Financial instruments, which potentially subject the Company to concentrations of credit risk, consist primarily of accounts receivable, cash and cash equivalents and marketable securities.

The Company maintains cash and cash equivalents and marketable securities with higher credit quality issuers and monitors the amount of credit exposure to any one issuer. The Company's investment policy provides guidelines and limits regarding credit quality, investment concentration, investment type, and maturity that the Company believes will provide liquidity while reducing risk of loss of capital. Investments are of a short-term nature and include investments in commercial paper, corporate debt securities, asset-backed securities, U.S. Treasury, U.S. Government, and U.S. Agency debt.

The Company's accounts receivable result primarily from the sale of semiconductor equipment, related accessories and replacement parts. The Company's customer base is highly concentrated and historically, a relatively small number of customers have accounted for a significant portion of its revenues. Write-offs of uncollectible accounts have historically not been material. The Company actively monitors its customers' financial strength to reduce the risk of loss.

Warranties. The Company generally provides a warranty on its products for a period of twelve to fourteen months against defects in material and workmanship. The Company provides for the estimated cost of product warranties at the time revenue is recognized. The estimated future warranty obligations are affected by the warranty periods, sales volumes, product failure rates, material usage and labor and replacement costs incurred in correcting a product failure. If actual product failure rates, material usage, labor or replacement costs differ from the Company's estimates, revisions to the estimated warranty obligations would be required. The warranty accrual represents the best estimate of the amount necessary to settle future and existing

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claims on products sold as of the balance sheet date. The Company periodically assesses the adequacy of its recorded warranty reserve and adjusts the amounts in accordance with changes in these factors.

Income Taxes. The Company accounts for income taxes using the asset and liability approach for deferred taxes which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in the Company's consolidated financial statements or tax returns. A valuation allowance is recorded to reduce a deferred tax asset to that portion which more likely than not will be realized.

For additional information on the Company's income taxes, see Note 12 of Notes to the Consolidated Financial Statements.

Translation of Foreign Currencies. The Company's international branches and subsidiaries primarily generate and expend cash in their local functional currency. Accordingly, all balance sheet accounts of these local functional currency branches and subsidiaries are translated into U.S. dollars at the fiscal period-end exchange rate, and income and expense accounts are translated into U.S. dollars using average rates in effect for the period. The resulting translation adjustments are recorded as cumulative translation adjustments and are recorded directly as a separate component of stockholders' equity under the caption, "Accumulated other comprehensive loss." The Company had accumulated exchange losses resulting from the translation of foreign operation financial statements of \$

8,664
and \$

7,115
as of December 30, 2023 and December 31, 2022, respectively.

Share-based Compensation. The Company measures the cost of employee services received in exchange for the award of equity instruments based on the fair value of the award at the date of grant. Compensation expense is recognized using the straight-line attribution method to recognize share-based compensation over the service period of the award, with adjustments recorded for forfeitures as they occur.

For additional information on the Company's share-based compensation plans, see Note 10 of Notes to the Consolidated Financial Statements.

Research and Development Costs. Expenditures for research and development are expensed as incurred.

Derivative Instruments and Hedging Activities. The Company's policy is to mitigate the effect of exchange rate fluctuations on certain foreign currency denominated business exposures. The Company has a policy that allows for the use of derivative financial instruments to hedge foreign currency exchange rate fluctuations on forecasted revenue and net monetary assets or liabilities denominated in various foreign currencies. The Company carries derivative financial instruments (derivatives) on the balance sheet at their fair values, in either prepaid expenses and other current assets or other current liabilities in the Consolidated Balance Sheets. The Company does not use derivatives for trading or speculative purposes. The Company does not believe that it is exposed to more than a nominal amount of credit risk in its foreign currency hedges, as counterparties are large, global and well-capitalized financial institutions. The Company's exposures are in liquid currencies (Japanese yen, euros, Korean won, Taiwanese dollars, Chinese renminbi, Singapore dollars and Israeli shekel), so there is minimal risk that appropriate derivatives to maintain the Company's hedging program would not be available in the future.

To hedge foreign currency risks, the Company uses foreign currency exchange forward contracts, where possible and prudent. These hedge contracts are valued using standard valuation formulas with assumptions about future foreign currency exchange rates derived from existing exchange rates, interest rates, and other market factors.

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The dollar equivalent of the U.S. dollar forward contracts and related fair values as of December 30, 2023 and December 31, 2022 were as follows:

	December 30, 2023	December 31, 2022
Notional amount	\$ 51,551	\$ 27,923

Fair value of liability	1,370	135
-------------------------	-------	-----

During the year ended December 30, 2023, the Company recognized a gain of \$

263

on maturities of forward contracts. During the years ended December 31, 2022 and January 1, 2022, the Company recognized losses of \$

3,487

and \$1,650 on maturities of forward contracts, respectively. The aggregate notional amounts of matured contracts were \$

319,370

, \$

365,985

and \$

420,460

for 2023, 2022 and 2021, respectively.

Contingencies and Litigation. The Company is subject to the possibility of losses from various contingencies, including certain legal proceedings, lawsuits and other claims. The Company accrues for a loss contingency when it concludes that the likelihood of a loss is probable and the amount of the loss can be reasonably estimated. If the Company concludes that loss contingencies that could be material to any one of its financial statements are not probable, but are reasonably possible, or are probable, but cannot be estimated, then the Company discloses the nature of the loss contingencies, together with an estimate of the range of possible loss or a statement that such loss is not reasonably estimable. The Company expenses as incurred the costs of defending legal claims against the Company. The Company does not recognize gain contingencies until realized. See Note 8 of the Notes to the Consolidated Financial Statements, "Commitments and Contingencies" for a detailed description.

Recent Accounting Pronouncements.

Recently Adopted or Effective

The Company has not adopted any new accounting standards during the 2023 fiscal year that have a material impact on the Company's Condensed Consolidated Financial Statements.

Updates Not Yet Effective

In November 2023, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2023-07, "Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures," which expands disclosures about a public entity's reportable segments and requires more enhanced information about a reportable segment's expenses, interim segment profit or loss, and how a public entity's chief operating decision maker uses reported segment profit or loss information in assessing segment performance and allocating resources. The guidance is effective for financial statements issued for fiscal years beginning after December 15, 2023, and interim periods within fiscal years beginning after December 15, 2024, with early adoption permitted. The Company is required to adopt this standard in the fiscal year 2024 for the annual reporting period ending December 28, 2024, with retrospective disclosure of prior periods presented. The Company is currently in the process of evaluating the impact of adoption on its Consolidated Financial Statements.

In December 2023, the FASB issued ASU 2023-09, "Income Taxes (Topic 740): Improvements to Income Tax Disclosures," which requires public entities to disclose consistent categories and greater disaggregation of information in the rate reconciliation and for income taxes paid. It also includes certain other amendments to improve the effectiveness of income tax disclosures. The guidance is effective for financial statements issued for annual periods beginning after December 15, 2024, with early adoption permitted. The Company is required to adopt this standard prospectively in fiscal year 2025 for the annual reporting period ending December 27, 2025. The Company is currently in the process of evaluating the impact of adoption on its Consolidated Financial Statements.

3. Fair Value Measurements:

Fair Value of Financial Instruments

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 and/or estimation methodologies could have a significant effect on the estimated fair value amounts. The carrying value of cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities approximates fair value because of the short-term maturity of these instruments.

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Fair Value Hierarchy

The Company applies a three-level valuation hierarchy for fair value measurements. This hierarchy prioritizes the inputs into three broad levels. Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities. Level 2 inputs are quoted prices for similar assets and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the asset or liability. Level 3 inputs are unobservable inputs based on management's assumptions used to measure assets and liabilities at fair value. A financial asset's or liability's fair value measurement classification within the hierarchy is determined based on the lowest level input that is significant to the fair value measurement.

The following table provides the assets and liabilities carried at fair value measured on a recurring basis at December 30, 2023 and December 31, 2022:

	Fair Value Measurements Using Significant Other Observable Inputs (Level 2)	
	December 30, 2023	December 31, 2022
Assets:		
Available-for-sale debt securities:		
Government notes and bonds	\$ 195,800	\$ 178,868
Asset-backed securities	—	1,534
Certificates of deposit	67,467	52,095
Commercial paper	99,635	80,079
Corporate bonds	101,401	59,335
Total assets	\$ 464,303	\$ 371,912
Liabilities:		
Foreign currency forward contracts	1,370	\$ 135
Total liabilities	\$ 1,370	\$ 135

Available-for-sale debt securities 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. The foreign currency forward contracts are primarily measured based on the foreign currency spot and forward rates quoted by the banks or foreign currency dealers. Investment prices are obtained from third party pricing providers, which model prices utilizing the above observable inputs, for each asset class.

See Note 4 for additional discussion regarding the fair value of the Company's marketable securities.

4. Marketable Securities:

At December 30, 2023 and December 31, 2022, marketable securities are categorized as follows:

	Amortized Cost	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Fair Value
December 30, 2023				
Government notes and bonds	\$ 195,733	\$ 393	\$ 326	\$ 195,800
Certificates of deposit	67,377	93	3	67,467

Commercial paper	99,591	54	10	99,635
Corporate bonds	101,146	391	136	101,401
Total marketable securities	<u>\$ 463,847</u>	<u>\$ 931</u>	<u>\$ 475</u>	<u>\$ 464,303</u>
December 31, 2022				
Government notes and bonds	\$ 181,196	\$ 27	\$ 2,355	\$ 178,868
Asset-backed securities	1,555	—	21	1,534
Certificates of deposit	52,190	24	118	52,095
Commercial paper	80,199	16	136	80,079
Corporate bonds	60,334	4	1,003	59,335
Total marketable securities	<u>\$ 375,474</u>	<u>\$ 71</u>	<u>\$ 3,633</u>	<u>\$ 371,912</u>

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)
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The amortized cost and estimated fair value of marketable securities classified by the maturity date listed on the security, regardless of the Consolidated Balance Sheet classification, is as follows at December 30, 2023 and December 31, 2022:

	December 30, 2023		December 31, 2022	
	Amortized Cost	Fair Value	Amortized Cost	Fair Value
Due within one year	\$ 331,136	\$ 330,937	\$ 311,934	\$ 309,385
Due after one through five years	132,711	133,366	63,540	62,527
Due after five through ten years	—	—	—	—
Due after ten years	—	—	—	—
Total marketable securities	<u>\$ 463,847</u>	<u>\$ 464,303</u>	<u>\$ 375,474</u>	<u>\$ 371,912</u>

The following table summarizes the estimated fair value and gross unrealized holding losses of marketable securities, aggregated by investment instrument and period of time in an unrealized loss position, at December 30, 2023 and December 31, 2022.

	In Unrealized Loss Position For Less Than 12 Months		In Unrealized Loss Position For Greater Than 12 Months	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
December 30, 2023				
Government notes and bonds	\$ 82,776	\$ 325	\$ 180	\$ 1
Certificates of deposit	11,839	3	—	—
Commercial paper	20,121	10	—	—
Corporate bonds	20,268	103	5,999	33
Total marketable securities	<u>\$ 135,004</u>	<u>\$ 441</u>	<u>\$ 6,179</u>	<u>\$ 34</u>
December 31, 2022				
Government notes and bonds	\$ 96,301	\$ 1,273	\$ 69,159	\$ 1,082
Asset-backed securities	1,555	21	—	—

Certificates of deposit	22,400	118	—	—
Commercial paper	50,550	136	—	—
Corporate bonds	28,975	637	28,769	366
Total marketable securities	<u>\$ 199,781</u>	<u>\$ 2,185</u>	<u>\$ 97,928</u>	<u>\$ 1,448</u>

See Note 3 for additional discussion regarding the fair value of the Company's marketable securities.

5. Goodwill and Purchased Intangible Assets:

Goodwill and purchased intangible assets with indefinite useful lives are not amortized but are reviewed for impairment annually during the fourth quarter of each fiscal year and whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable. The process of evaluating the potential impairment of goodwill and intangible assets requires significant judgment. The Company regularly monitors current business conditions and considers other factors including, but not limited to, adverse industry or economic trends, restructuring actions and lower projections of profitability that may impact future operating results. The Company performed its annual assessment in the fourth quarter of fiscal 2023 and concluded that

no
impairment charge was required.

Goodwill

There were

no

changes to the carrying amount of goodwill for the years ended December 30, 2023 and December 31, 2022.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)
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Purchased Intangible Assets

Purchased intangible assets as of December 30, 2023 and December 31, 2022 are as follows:

	Gross Carrying Amount	Accumulated Amortization	Net
December 30, 2023			
Finite-lived intangible assets:			
Developed technology	\$ 378,197	\$ 254,350	\$ 123,847
Customer and distributor relationships	73,321	34,782	38,539
Trademarks and trade names	14,171	9,182	4,989
Total identifiable intangible assets	\$ 465,689	\$ 298,314	\$ 167,375

December 31, 2022			
Finite-lived intangible assets:			
Developed technology	\$ 378,197	\$ 205,386	\$ 172,811
Customer and distributor relationships	73,321	30,195	43,126
Trademarks and trade names	14,171	7,911	6,260
Total identifiable intangible assets	\$ 465,689	\$ 243,492	\$ 222,197

Intangible asset amortization expense amounted to \$

54,822
, \$

55,284
and \$

51,366

for the years ended December 30, 2023, December 31, 2022 and January 1, 2022, respectively. Assuming no change in the gross carrying value of identifiable intangible assets and estimated lives, estimated amortization expenses are \$

49,137
for 2024, \$

32,587
for 2025, \$

31,394
for 2026, \$

23,173
for 2027 and \$

12,288
for 2028.

6. Leasing Arrangements:

The Company determines if an arrangement is a lease at its inception. Operating lease arrangements are comprised primarily of real estate and equipment agreements for which the right-of-use assets are included in "Other assets" and the corresponding lease liabilities, depending on their maturity, are included in "Other current liabilities" or "Other non-current liabilities" in the Consolidated Balance Sheets.

Right-of-use assets represent the right to use an underlying asset for the lease term and lease liabilities represent the obligation to make lease payments arising from the lease. Right-of-use assets and lease liabilities are recognized at the lease commencement date based on the estimated present value of lease payments over the lease term. The lease term includes options to extend the lease when it is reasonably certain that the option will be exercised. Lease agreements frequently require the Company to pay real estate taxes, insurance and maintenance costs. Leases with a term of one year or less are not recorded on the Consolidated Balance Sheets and lease expense for these leases is recognized on a straight-line basis over the lease term.

The Company uses its estimated incremental borrowing rate in determining the present value of lease payments considering the term of the lease, which is derived from information available at the lease commencement date, giving consideration to publicly available data for instruments with similar characteristics. The Company accounts for the lease and non-lease components as a single lease component.

Lease costs for operating leases were \$

6,527

and \$

6,368

for the years ended December 30, 2023 and December 31, 2022, respectively. Operating lease costs are generally recognized over the lease term. The Company elected the practical expedient to not provide comparable presentation for periods prior to adoption.

Details of the Company's operating leases are as follows:

Cash Flow Information	Year Ended	
	December 30, 2023	December 31, 2022
Cash paid for operating lease liabilities	\$ 6,527	\$ 6,368
Right-of-use assets obtained in exchange for operating lease liabilities	\$ 3,678	\$ 9,295

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	December 30, 2023	December 31, 2022
Operating Lease Information		
Weighted average remaining lease term	4.2	4.5
Weighted average discount rate	4.7 %	3.8 %
As of December 30, 2023, there was an insignificant amount of commitments for operating leases that have not yet commenced. The reconciliation of the maturities of operating leases to the lease liabilities recorded on the Consolidated Balance Sheet as of December 30, 2023 is as follows:		
Fiscal Year		
2024		5,929
		\$
2025		5,572
2026		3,857
2027		2,745
2028		2,447
Thereafter		1,123
Total undiscounted operating lease payments		21,673
Less: imputed interest		2,152
Present value of operating lease liabilities		19,521
		\$

7. Balance Sheet Components:

Inventories

Inventories are comprised of the following:

	December 30, 2023	December 31, 2022
Materials	234,471	231,029
	\$	\$
Work-in-process	67,816	69,072
Finished goods	25,486	24,181

Total inventories	327,773	324,282
	\$	\$
<i>Property, Plant and Equipment</i>		
Property, plant and equipment, net, is comprised of the following:		
	December 30, 2023	December 31, 2022
Land and building	47,889	50,344
	\$	\$
Machinery and equipment	69,828	56,924
Furniture and fixtures	3,921	2,949
Computer equipment and software	17,790	15,415
Leasehold improvements	22,089	18,539
	161,517	144,171
Accumulated depreciation	((
	57,906	52,191
))
Total property, plant and equipment, net	103,611	91,980
	\$	\$

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)
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Other assets

Other assets is comprised of the following:

	December 30, 2023	December 31, 2022
Operating lease right-of-use assets	\$ 18,360	\$ 20,746
Other	2,452	4,479
Total other assets	<u>\$ 20,812</u>	<u>\$ 25,225</u>

Accrued liabilities

Accrued liabilities is comprised of the following:

	December 30, 2023	December 31, 2022
Payroll and related expenses	\$ 33,052	\$ 36,529
Warranty	8,934	10,890
Other	76	1,417
Total accrued liabilities	<u>\$ 42,062</u>	<u>\$ 48,836</u>

Other current liabilities

Other current liabilities is comprised of the following:

	December 30, 2023	December 31, 2022
Customer deposits	\$ 9,972	\$ 12,482
Current operating lease obligations	5,494	5,678
Income tax payable	3,210	1,910
Accrued professional fees	1,751	968
Other accrued taxes	3,570	2,081
Other	7,035	3,914
Total other current liabilities	<u>\$ 31,032</u>	<u>\$ 27,033</u>

Other non-current liabilities

Other non-current liabilities is comprised of the following:

	December 30, 2023	December 31, 2022
Non-current operating lease obligations	\$ 14,027	\$ 16,345
Unrecognized tax benefits (including interest)	7,358	7,693
Deferred revenue	2,462	2,852
Other	1,604	3,623
Total non-current liabilities	\$ 25,451	\$ 30,513

8. Commitments and Contingencies:

Factoring

The Company maintains arrangements under which eligible accounts receivable in Japan are sold without recourse to unrelated third-party financial institutions. The Company sold \$

29,539

of receivables during the year ended December 30, 2023. There were no material gains or losses on the sale of such receivables. There were

no

amounts due from such third-party financial institutions at December 30, 2023.

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Intellectual property Indemnification Obligations

The Company has entered into agreements with customers that include limited intellectual property indemnification obligations that are customary in the industry. These guarantees generally require the Company to compensate the other party for certain damages and costs incurred as a result of third-party intellectual property claims arising from these transactions. The nature of the intellectual property indemnification obligations prevents the Company from making a reasonable estimate of the maximum potential amount it could be required to pay to its customers. Historically, the Company has not made any indemnification payments under such agreements and

no

amount has been accrued in the accompanying consolidated financial statements with respect to these indemnification guarantees.

Warranty Reserves

The Company generally provides a warranty on its products for a period of 12 to 14 months against defects in material and workmanship. The Company estimates the costs that may be incurred during the warranty period and records a liability in the amount of such costs at the time revenue is recognized. The Company's estimate is based primarily on historical experience. The Company periodically assesses the adequacy of its recorded warranty liabilities and adjusts the amounts as necessary. Settlements of warranty reserves are generally associated with sales that occurred during the 12 to 14 months prior to the year-end and warranty accruals are related to sales during the same year.

Changes in the Company's warranty reserves are as follows:

	December 30, 2023	Year Ended	December 31, 2022
Balance, beginning of the period	\$ 11,830		\$ 9,682
Accruals	9,505		16,040
Usage	(11,955)		(13,893)
Balance, end of the period	<u>\$ 9,380</u>		<u>\$ 11,830</u>

Legal Matters

From time to time, the Company is subject to legal proceedings and claims in the ordinary course of business. The following reflects an overview of the material developments with regard to the Company's pending material legal proceedings.

Optical Solutions Inc. v. Nanometrics Incorporated (Case No. 18-cv-00417-BLF): On August 2, 2017, Nanometrics was named as defendant in a complaint filed in New Hampshire Superior Court (the "Complaint"). The Complaint, brought by Optical Solutions, Inc. ("OSI"), alleged claims arising from a purported exclusive purchase contract between OSI and Nanometrics pertaining to certain products. The relief sought was the award of damages in an amount to be proven at trial, attorney's fees and costs as well as other relief the court deems just and proper. On September 18, 2017, Nanometrics removed the action to the United States District Court for the District of New Hampshire (the "District of New Hampshire"). On September 25, 2017, Nanometrics moved to transfer the Complaint to the United States District Court for the Northern District of California (the "Northern District of California"). On December 20, 2017, Nanometrics filed its complaint against OSI in the California Superior Court for the County of Santa Clara alleging claims arising from OSI's breach of certain purchase orders. The relief sought was the award of damages in an amount to be proven at trial including pre- and post-judgment interest, punitive damages, restitution for benefits unjustly received by OSI, attorney's fees and costs as well as other relief the court deems just and proper. Nanometrics' complaint was later removed by OSI to the Northern District of California. On May 29, 2018, the District of New Hampshire issued an order granting Nanometrics' motion to transfer the Complaint to the Northern District of California and denying Nanometrics' motion to dismiss the Complaint without prejudice. On June 14, 2018, the Complaint was consolidated with Nanometrics' complaint against OSI. On August 9, 2018, OSI filed an Amended Complaint. On September 19, 2018, Nanometrics filed a motion to dismiss OSI's Amended Complaint for failure to state a claim. Nanometrics' motion to dismiss was heard on February 28, 2019. On March 5, 2019, the Northern District of California granted Nanometrics' motion to dismiss with leave to amend. OSI filed a Second Amended Complaint on March 29, 2019. Nanometrics filed a motion to dismiss OSI's Second Amended Complaint on May 31, 2019. In October 2019, Nanometrics was renamed Onto Innovation Inc. as a result of the Merger. Thereafter, the Company's second motion to dismiss was heard on November 14, 2019. On November 26, 2019, the Northern District of California granted the Company's motion to dismiss with leave to amend. OSI filed a Third Amended Complaint on January 21, 2020. On March 2, 2020, the Company filed a motion to dismiss OSI's Third Amended Complaint and a hearing on the motion was held on June 11, 2020. On June 23, 2020, the Northern District of California granted the Company's motion to dismiss with prejudice with regard to two claims asserted by OSI and dismissed two other claims asserted by OSI with leave to amend. Thereafter, on July 7, 2020, OSI filed a Fourth Amended Complaint. On August 14, 2020, the Company filed a motion to dismiss with regard to one of the two remaining claims. On

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)
(In thousands, except per share data)

December 1, 2020, the Northern District of California denied this final motion to dismiss and as a result the Company filed its Answer in this matter on December 22, 2020. Discovery was closed and a trial date set for December 2023. Prior to trial, however, the parties resolved all outstanding claims between them in a confidential out-of-court settlement during fiscal 2023. The settlement did not have a material impact on the Company's financial position, results of operations or cash flows.

Open and Committed Purchase Orders

As of December 30, 2023, the Company has open and committed purchase orders of \$

437,105
, of which \$

426,087
is for less than one year.

Line of Credit

The Company has a credit agreement with a bank that provides for a line of credit which is secured by the marketable securities the Company has with the bank. The Company is permitted to borrow up to

70
% of the value of eligible securities held at the time the line of credit is accessed. The available line of credit as of December 30, 2023 was approximately \$

100,000
with an available interest rate of

7.0
%. The credit agreement is available to the Company until such time that either party terminates the arrangement at their discretion. The Company has not utilized the line of credit to date.

9. Revenue

The following table represents a disaggregation of revenue by timing of revenue:

	December 30, 2023	Year Ended December 31, 2022	January 1, 2022
Point-in-time	\$ 761,797	\$ 958,409	\$ 749,276
Over-time	54,071	46,773	39,623
Total revenue	<u>\$ 815,868</u>	<u>\$ 1,005,183</u>	<u>\$ 788,899</u>

See Note 14 of the Notes to the Consolidated Financial Statements for additional discussion of the Company's disaggregated revenue in detail.

Contract Liabilities

The Company records contract liabilities when the customer has been billed in advance of the Company completing its performance obligations primarily related to service contracts and installation. For contracts that have a duration of one year or less, these amounts are recorded as current deferred revenue in the Consolidated Balance Sheets. As of December 30, 2023 and December 31, 2022, the Company carried a long-term deferred revenue balance of \$

2,462
and \$

2,852
, respectively, in "other non-current liabilities" on the Consolidated Balance Sheets.

Changes in deferred revenue were as follows:

	December 30, 2023	Year Ended December 31, 2022
Balance, beginning of the period	\$ 33,014	\$ 31,672
Deferral of revenue	75,602	81,772

	((
	81,391	80,430
Revenue recognized))
	27,225	33,014
Balance, ending of the period	<u>\$</u>	<u>\$</u>

ONTO INNOVATION INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)
(In thousands, except per share data)

10. Share-Based Compensation and Employee Benefit Plans:

Share-Based Compensation Plans

The Company's share-based compensation plans are intended to attract and retain employees and to provide an incentive for them to assist the Company to achieve long-range performance goals and to enable them to participate in long-term growth of the Company. The Company settles restricted stock unit awards, employee stock purchase option exercises and stock option exercises with newly issued common shares.

Onto Innovation Inc. 2020 Stock Plan (the "2020 Plan"). The 2020 Plan provides for the grant of

3,744

stock options and other stock awards to employees, directors and consultants at an exercise price equal to the fair market value of the common stock on the date of grant. Options granted under the 2020 Plan typically grade vest over a three-year period and expire ten years from the date of grant. Restricted stock units granted under the 2020 Plan typically vest over a three-year period for employees and one year for directors; however, other vesting periods are allowable under the 2020 Plan. Restricted stock units ("RSUs") granted to employees have time based or performance-based vesting. As of December 30, 2023, there were

2,868

shares of common stock available for issuance pursuant to future grants under the 2020 Plan.

Onto Innovation Inc. 2020 Employee Stock Purchase Plan (the "2020 ESPP"). Under the terms of the 2020 ESPP, eligible employees may have up to

10

% of eligible compensation deducted from their pay and applied to the purchase of shares of Company common stock. The price the employee pays for each share of stock is

85

% of the lesser of the fair market value of Company common stock at the beginning or the end of the applicable six-month purchase period. The 2020 ESPP is intended to qualify under Section 423 of the Internal Revenue Code and is a compensatory plan as defined by FASB ASC 718, "Stock Compensation." Through the Company's employee stock purchase plans, employees purchased

91

,

142

and

242

shares during the twelve months ended December 30, 2023, December 31, 2022 and January 1, 2022, respectively. As of December 30, 2023 and December 31, 2022, there were

1,025

and

1,116

, shares available for issuance under the Company's employee stock purchase plan, respectively.

The following table reflects share-based compensation expense by type of award:

	December 30, 2023	Year Ended December 31, 2022	January 1, 2022
Share-based compensation expense:			
Restricted stock units, including all performance and market based awards	\$ 22,573	\$ 21,729	\$ 17,174
Stock options and employee stock purchase options	2,940	2,697	2,368
Total share-based compensation	25,513	24,426	19,542
Tax effect on share-based compensation	5,497	5,237	4,255
Net effect on net income	\$ 20,016	\$ 19,189	\$ 15,287
Effect on earnings per share:			

		(((
		0.41		0.39		0.31
Basic	\$)	\$)	\$)
		(((
		0.41		0.39		0.31
Diluted	\$)	\$)	\$)

ONTO INNOVATION INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)
(In thousands, except per share data)

Restricted Stock Units

During fiscal years 2023, 2022 and 2021, the Company issued both service-based RSUs and market-based performance RSUs ("PRSUs"). Service-based RSUs typically vest over a period of 3 years or less. Market-based PRSUs generally vest three years from the grant date if certain performance criteria are achieved and require continued employment. Based upon the terms of such awards, the number of shares that can be earned over the performance periods is based on the Company's Common Stock price performance compared to the market price performance of a designated benchmark index, ranging from

0
% to

200
% of target. The designated benchmark index was the Philadelphia Semiconductor Sector Index for market-based PRSUs issued in 2023, 2022 and 2021. The stock price performance or market price performance is measured using the closing price for the

20
-trading days prior to the dates the performance period begins and ends.

The following table summarizes the Company's combined service-based RSUs and market-based PRSUs:

	Number of Shares	Weighted Average Grant Date Fair Value
Nonvested at December 26, 2020	964	\$ 31.37
Granted	338	\$ 69.82
	(
Vested	441	\$ 30.90
)	
	(
Forfeited	96	\$ 42.40
)	
Nonvested at January 1, 2022	765	\$ 48.25
Granted	410	\$ 82.48
	(
Vested	373	\$ 42.87
)	
	(
Forfeited	59	\$ 58.98
)	
Nonvested at December 31, 2022	743	\$ 69.01
Granted	319	\$ 89.23
	(
Vested	415	\$ 59.20
)	
	(
Forfeited	63	\$ 84.11
)	
Nonvested at December 30, 2023	584	\$ 85.41

Of the

584
shares outstanding at December 30, 2023,

494
are service-based RSUs and

90
are market-based PRSUs. The fair value of the Company's service-based RSUs was calculated based on the fair market value of the Company's stock at the date of grant. The fair value of the Company's market-based PRSUs granted during fiscal years 2023, 2022, and 2021 was calculated using a Monte Carlo simulation model at the date of the grant, resulting in a weighted average grant-date fair value per share of \$

100.79
, \$

85.49
, and \$

80.04
, respectively.

As of December 30, 2023, there was \$

26,559
of total unrecognized compensation cost related to RSUs granted under the plans. That cost is expected to be recognized over a weighted average period of 1.4 years.

401(k) Savings Plan

The Company has a 401(k) savings plan that allows employees to contribute up to

100
% of their annual compensation to the Plan on a pre-tax or after-tax basis, limited to a maximum annual amount as set periodically by the Internal Revenue Service. The plan provides a

50
% match of all employee contributions up to

6
percent of the employee's salary. Matching contributions to the plan totaled \$

3,128
, \$

2,965
and \$

2,544
for the years ended December 30, 2023, December 31, 2022 and January 1, 2022, respectively.

11. Other Expense, Net:

Other expense, net is comprised of the following:

	December 30, 2023	Year Ended December 31, 2022	January 1, 2022
	(((
Foreign currency exchange losses, net	\$ 4,091)	\$ 73)	\$ 2,020)
		(
Other	239	68)	132
Total other expense, net	(((
	3,852	141	1,888
	\$)	\$)	\$)

ONTO INNOVATION INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)
(In thousands, except per share data)

12. Income Taxes:

The components of income tax expense are as follows:

	December 30, 2023	Year Ended December 31, 2022	January 1, 2022
Current:			
Federal	\$ 28,326	\$ 47,963	\$ 21,791
State	879	987	1,007
Foreign	4,647	2,901	3,153
	33,852	51,851	25,951
Deferred:			
Federal	(22,429)	(31,622)	(9,475)
State	242	1,506	540
Foreign	(242)	(473)	(2,603)
	22,429	33,601	12,618
Total income tax expense	\$ 11,423	\$ 18,250	\$ 13,333

The income before tax is comprised of the following:

	December 30, 2023	Year Ended December 31, 2022	January 1, 2022
Domestic operations	\$ 107,640	\$ 239,527	\$ 136,143
Foreign operations	\$ 24,942	\$ 2,057	\$ 19,539

The provision for income taxes differs from the amount of income tax determined by applying the applicable U.S. federal income tax rate of

% for the years ended December 30, 2023, December 31, 2022 and January 1, 2022, to income before provision for income taxes as follows:

December 30, 2023	Year Ended December 31, 2022	January 1, 2022
----------------------	------------------------------------	--------------------

Federal income tax provision at statutory rate	27,842	50,732	32,693
	\$	\$	\$
State taxes, net of federal effect	942	467	1,066
Foreign taxes, net of federal effect	(2,323)	(481)	(3,817)
Foreign Derived Intangible Income ("FDII") Deduction	(12,958)	(25,445)	(11,061)
US tax on foreign source income	513	1,423	1,721
Non-deductible officer's compensation	2,301	1,910	689
Research and development tax credit	(6,430)	(7,146)	(3,607)
Tax impact of audit and statute closures	(1,563)	(1,526)	(1,987)
Change in valuation allowance	2,180	(276)	(178)
Impact of the CARES Act	—	—	732
Other	919	(1,408)	(1,454)
Provision for income taxes	11,423	18,250	13,333
	\$	\$	\$
Effective tax rate	9 %	8 %	9 %

ONTO INNOVATION INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)
(In thousands, except per share data)

Deferred tax assets and liabilities are comprised of the following:

	December 30, 2023	December 31, 2022
Deferred tax assets:		
Reserves and accruals	\$ 16,658	\$ 17,231
Deferred revenue	4,082	3,512
Share-based compensation	3,495	3,942
Tax credit carryforward	13,960	12,197
Net operating losses	1,088	1,643
Depreciation and amortization	156	125
Capitalized research and development	34,165	20,234
Operating lease liabilities	3,744	4,162
Other	2,875	4,044
Gross deferred tax assets	80,223	67,090
Less: valuation allowance	(13,960)	(11,772)
Total deferred tax assets after valuation allowance	66,263	55,318
Deferred tax liabilities:		
Depreciation and amortization	(43,908)	(52,927)
Operating lease right of use assets	(3,519)	(4,890)
Other	—	89
Gross deferred tax liabilities	(47,427)	(57,906)
Net deferred tax assets (liabilities)	\$ 18,836	\$ 2,588

At December 30, 2023 and December 31, 2022, the Company had recorded valuation allowances of \$

13,960
and \$

11,772

, respectively, on a certain portion of the Company's deferred tax assets to reflect the deferred tax assets at the net amount that is more likely than not to be realized. The Company maintains a valuation allowance against its federal foreign tax credit carryforwards of \$

2,317

and state research and development credits of \$

11,644

In assessing the realizability of deferred tax assets, the Company uses a more likely than not standard. If it is determined that it is more-likely-than-not that deferred tax assets will not be realized, a valuation allowance must be established against the deferred tax assets. The ultimate realization of the assets is dependent on the generation of future taxable income during the periods in which the associated temporary differences become deductible. Management considers the scheduled reversal of deferred income tax liabilities, projected future taxable income and tax planning strategies when making this assessment. In making the determination that it is more likely than not that the Company's deferred tax assets will be realized as of December 30, 2023, the Company relied primarily on the reversal of deferred tax liabilities as well as projected future taxable income.

At December 30, 2023, the Company had tax effected state and foreign net operating loss carryforwards of \$

860
and \$

228

, respectively. The federal, state and foreign net operating loss carryforwards expire on various dates beginning in 2023 through 2037.

At December 30, 2023, the Company had foreign tax credit carryforwards and state research & development credits of \$

2,317

, and \$

16,213

, respectively. The foreign tax credit carryforwards are set to expire at various dates beginning December 31, 2029. The state research & development credits have no expiration dates.

As of December 30, 2023, the Company has not provided U.S. income taxes on all its foreign earnings. The Company continues to permanently reinvest the cash held offshore to support its working capital needs.

ONTO INNOVATION INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)
(In thousands, except per share data)

The total amount of unrecognized tax benefits are as follows:

	December 30, 2023	Year Ended December 31, 2022	January 1, 2022
Balance, beginning of the period	13,010	12,373	13,486
	\$	\$	\$
Gross increases—tax positions in prior period	29	456	156
Gross decreases—tax positions in prior period	(100)	—	204)
Gross increases—current-period tax positions	1,785	1,729	1,193
Closure of audit/statute limitation	(1,582)	(1,548)	2,258)
Balance, end of the period	13,142	13,010	12,373
	\$	\$	\$

The unrecognized tax benefits at December 30, 2023 and December 31, 2022 were \$

13,142
and \$

13,010
, respectively, of which \$

7,231
and \$

7,614

, respectively, would be reflected as an adjustment to income tax expense if recognized. The year over year increase from 2022 to 2023 is primarily due to additional unrecognized tax benefits related to federal and state tax exposures, offset by expiring tax statutes. It is reasonably possible that certain amounts of unrecognized tax benefits may reverse in the next 12 months; however, the Company does not expect such reversals to have a significant impact on its results of operations or financial position.

The Company recognizes accrued interest and penalties related to unrecognized tax benefits in income tax expense. During the years ended December 30, 2023, December 31, 2022 and January 1, 2022, the Company recognized approximately \$

146
, \$

149
and \$(

814

), respectively, in interest and penalties (benefit) expense associated with uncertain tax positions. As of December 30, 2023 and December 31, 2022, the Company had accrued interest and penalties expense included in the table of unrecognized tax benefits of \$

823
and \$

628

, respectively.

The Company is subject to U.S. federal income tax as well as income tax in multiple state and foreign jurisdictions. The Company is subject to ordinary statute of limitation rules of three and four years for federal and state returns, respectively. However, due to tax attribute carryforwards, the Company is subject to examination for tax years 2015 forward for U.S. federal tax purposes with respect to carryforward amounts. The Company is also subject to examination in various states for tax years 2003 forward with respect to carryforward amounts. The Company is subject to examination for tax years 2016 forward for various foreign jurisdictions. The Company believes that adequate amounts have been reserved for any adjustments that may ultimately result from any future examinations of these years.

In the normal course of business, the Company is subject to tax audits in various jurisdictions, and such jurisdictions may assess additional income taxes or other taxes against it. Although the Company believes its tax estimates are reasonable, the final determination of tax audits and any related litigation could be materially different from the Company's historical income tax provisions and accruals. The results of an audit or litigation could have a material adverse effect on the Company's results of operations or cash flows in the period or periods for which that determination is made.

13. Accumulated Other Comprehensive Income (Loss):

Comprehensive income includes net income, foreign currency translation adjustments, and net unrealized gains and losses on available-for-sale debt securities. See the Consolidated Statements of Comprehensive Income for the effect of the components of comprehensive income on the Company's net income.

The components of accumulated other comprehensive income (loss), net of tax, are as follows:

	Foreign currency translation adjustments	Net unrealized gains (losses) on marketable securities	Accumulated other comprehensive income (loss)
			(
Balance at January 1, 2022	\$ 1,764	\$ 448	\$ 1,316
	(((
Net current period other comprehensive loss	8,879	2,447	11,326
	(((
Balance at December 31, 2022	7,115	2,895	10,010
	(((
Net current period other comprehensive income (loss)	1,549	3,660	2,111
	(((
Balance at December 30, 2023	<u>\$ 8,664</u>	<u>\$ 765</u>	<u>\$ 7,899</u>

ONTO INNOVATION INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)
(In thousands, except per share data)

14. Segment Reporting and Geographic Information:

The Company is engaged in the design, development, manufacture and support of high-performance control metrology, defect inspection, lithography and data analysis systems used by microelectronics device manufacturers. The Company and its subsidiaries currently operate in a single operating segment: the design, development, manufacture and support of high-performance process control defect inspection and metrology, lithography and process control software systems used by microelectronics device manufacturers. Therefore, the Company has

one reportable segment. The Company's chief operating decision maker is the Chief Executive Officer (the "CEO"). The CEO allocates resources and assesses performance of the business and other activities at the reportable segment level.

The following table lists the different sources of revenue:

	December 30, 2023		Year Ended December 31, 2022		January 1, 2022	
Systems and software	\$ 683,316	84 %	\$ 865,707	86 %	\$ 669,114	85 %
Parts	74,604	9 %	84,266	8 %	72,753	9 %
Services	57,948	7 %	55,210	6 %	47,032	6 %
Total revenue	\$ 815,868	100 %	\$ 1,005,183	100 %	\$ 788,899	100 %

The Company's significant operations outside the United States include sales, service and application offices in Asia and Europe. For geographical revenue reporting, revenue is attributed to the geographic location to which the product is shipped. Revenue by geographic region is as follows:

	December 30, 2023	Year Ended December 31, 2022	January 1, 2022
Revenue from third parties:			
South Korea	\$ 169,323	\$ 224,172	\$ 160,373
Taiwan	141,915	199,104	194,458
China	136,940	250,968	151,027
United States	130,292	121,487	123,858
Japan	93,831	58,133	61,186
Southeast Asia	87,585	71,062	33,054
Europe	55,982	80,256	64,943

	815,868	1,005,183	788,899
Total revenue	\$	\$	\$

The following chart identifies our customers that represented 10% or more of total revenue for each of the last three fiscal years:

	2023	2022	2021
Samsung Semiconductor	19 %	13 %	16 %
Taiwan Semiconductor Manufacturing Co. Ltd.	14 %	15 %	18 %
SK Hynix Inc.	^	11 %	^

^ The customer accounted for less than 10% of total revenue during the period.

At December 30, 2023 and December 31, 2022,

two

customers, Taiwan Semiconductor Manufacturing Co. Ltd. and Samsung Semiconductor, accounted for more than

10

% of net accounts receivable.

Substantially all of the Company's long-lived assets are located within the United States of America.

ONTO INNOVATION INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS - (Continued)
(In thousands, except per share data)

15. Earnings Per Share:

Basic income per share is calculated using the weighted average number of shares of common stock outstanding during the period. Restricted stock units and stock options are included in the calculation of diluted earnings per share, except when their effect would be anti-dilutive.

The Company's basic and diluted earnings per share amounts are as follows:

	December 30, 2023	December 31, 2022	January 1, 2022
Numerator:			
Net income	\$ 121,159	\$ 223,334	\$ 142,349
Denominator:			
Basic earnings per share - weighted average shares outstanding	48,971	49,424	49,242
Effect of potential dilutive securities:			
Restricted stock units, employee stock purchase grants and stock options - dilutive shares	347	340	486
Diluted earnings per share - weighted average shares outstanding	49,318	49,764	49,728
Earnings per share:			
Basic	\$ 2.47	\$ 4.52	\$ 2.89
Diluted	\$ 2.46	\$ 4.49	\$ 2.86

16. Share Repurchase Authorization:

In November 2020, the Onto Innovation Board of Directors approved a share repurchase authorization, which allows the Company to repurchase up to \$

100,000

worth of shares of its common stock. Repurchases may be made through both public market and private transactions from time to time with shares purchased being subsequently retired. During the twelve months ended December 30, 2023, the Company repurchased and retired

46

shares of its common stock under this repurchase authorization and those shares were subsequently retired. At December 30, 2023, there was \$

31,577

available for future share repurchases under this share repurchase authorization.

The following table summarizes the Company's stock repurchases:

	December 30, 2023	Year Ended December 31, 2022	January 1, 2022
Shares of common stock repurchased	46	1,018	—
Cost of stock repurchased	\$ 3,197	\$ 65,257	\$ —
Average price paid per share	\$ 69.29	\$ 64.09	\$ -

NOTE 17. Restructuring

The Company initiated a restructuring plan to streamline operations and align the Company's cost structure with its business outlook for 2023. During the twelve months ended December 30, 2023, restructuring costs of \$

3,571
were recorded in operating expenses for employee severance and \$

7,027
were recorded in cost of goods sold for inventory write-downs primarily related to the exit of older product lines. All employee severance costs were paid during the twelve-month period.

ONTO INNOVATION INC. AND SUBSIDIARIES

SCHEDULE OF VALUATION AND QUALIFYING ACCOUNTS
(In thousands)

Column A	Column B		Column C		Column D	Column E
Description	Balance at Beginning of Period	Charged to (Recovery of) Costs and Expense	Charged to Other Accounts (net)	Deductions	Balance at End of Period	
Fiscal Year 2023:						
Allowance for credit losses	\$ 1,572	\$ 245	\$ 1,200	\$ 358	\$ 2,659	
Deferred tax valuation allowance	11,772	2,188	—	—	13,960	
Fiscal Year 2022:						
Allowance for credit losses	\$ 1,303	\$ 356	\$ —	\$ 87	\$ 1,572	
Deferred tax valuation allowance	10,948	824	—	—	11,772	
Fiscal Year 2021:						
Allowance for credit losses	\$ 784	\$ 955	\$ —	\$ 436	\$ 1,303	
Deferred tax valuation allowance	14,238	3,290	—	—	10,948	

SIGNATURES

PURSUANT TO THE REQUIREMENTS OF SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934, THE REGISTRANT HAS DULY CAUSED THIS REPORT TO BE SIGNED ON ITS BEHALF BY THE UNDERSIGNED, THEREUNTO DULY AUTHORIZED.

Onto Innovation Inc.
(Registrant)

By: /s/ Michael P. Plisinski
Michael P. Plisinski
Chief Executive Officer
Date: February 26, 2024

PURSUANT TO THE REQUIREMENTS OF THE SECURITIES EXCHANGE ACT OF 1934, THIS REPORT HAS BEEN SIGNED BELOW BY THE FOLLOWING PERSONS ON BEHALF OF THE REGISTRANT AND IN THE CAPACITIES AND ON THE DATES INDICATED.

Signature	Title	Date
/s/ Michael P. Plisinski Michael P. Plisinski	Chief Executive Officer (Principal Executive Officer)	February 26, 2024
/s/ Mark R. Slicer Mark R. Slicer	Senior Vice President, Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	February 26, 2024
/s/ Leo Berlinghieri Leo Berlinghieri	Director	February 26, 2024
/s/ Stephen D. Kelley Stephen D. Kelley	Director	February 26, 2024
/s/ David B. Miller David B. Miller	Director	February 26, 2024
/s/ Karen M. Rogge Karen M. Rogge	Director	February 26, 2024
/s/ Christopher A. Seams Christopher A. Seams	Director	February 26, 2024
/s/ May Su May Su	Director	February 26, 2024
/s/ Christine A. Tsingos Christine A. Tsingos	Director	February 26, 2024

Onto Innovation Inc.

Employee Restricted Stock Unit Purchase Agreement

THIS AGREEMENT ("Agreement"), dated _____, 20____ (the "Award Date"), is made between Onto Innovation Inc., a Delaware corporation, hereinafter referred to as the "Company," and _____ (the "Participant").

1. Definitions. All capitalized terms used in this Agreement without definition shall have the meanings ascribed in the Onto Innovation 2020 Stock Plan, as amended from time to time (the "Plan"). In addition, the following definition shall apply:

- "Retirement Eligible" shall mean the Participant has achieved a combination of age plus years of service with the company totaling 70, with a base minimum age of 58 years old and a minimum service term of five (5) years.
- "Retirement" shall mean Participant has become Retirement Eligible and has formally notified the Company of his/her intention to retire from the employ of the Company on a date certain and does so retire or as otherwise approved by the Administrator.

2. Award of Restricted Stock Units.

(a) Award. In consideration of Participant's agreement to remain in the employ of Company or one of its Subsidiaries, and for other good and valuable consideration, the Company hereby issues to Participant, as of the Award Date, the grant of Restricted Stock Units ("RSUs") covering shares ("Shares") of common stock of the Company ("Common Stock") as described in Attachment I – Notice of Award (the "Notice of Award") attached to this Agreement (the "Award"). The number of RSUs subject to the Award (which shall be subject to adjustment in accordance with Section 14 of the Plan) is set forth in the Notice of Award. Each RSU represents the right to receive one Share, subject to the terms and conditions of this Agreement. Upon granting of the Award, all RSUs shall be credited to Participant's employee stock plan account established at the stock plan administration service determined by Company (the "Stock Service"). The current Stock Service is set forth in the Notice of Award.

(b) Vested Shares to be Issued in Book Entry Form. Upon vesting of the RSUs and the satisfaction of all other applicable conditions set forth in this Agreement, the Company shall cause uncertificated Shares to be issued to Participant's account. Shares to be delivered to Participant under the terms of this Award shall be delivered to Participant no later than two and one-half months following the last day of the year that includes the date of vesting and lapse of Restrictions, provided that Company may further delay the distribution of Shares with respect to RSUs that become vested under Section 4(b) as a result of Participant's death, but not beyond such period as is permitted under Section 409A of the Code (as defined below).

(c) Plan. The Award granted hereunder is subject to the terms and provisions of the Plan, including without limitation, Article 14(a) thereof. The Award constitutes Restricted Stock Units pursuant to Section 8 of the Plan.

3. Restrictions.

(a) Forfeiture. Except only as may otherwise be expressly set forth in (i) any employment, severance or change in control agreement of the Company or a Subsidiary with Participant, or (ii) Section 4 below related to the Retirement or death of the Participant, any Award which is not vested as of the date Participant ceases to be an employee of Company or one of its Subsidiaries shall thereupon be forfeited immediately and terminate without any further action by Company.

(b) Vesting and Lapse of Restrictions. Subject to the terms of this Agreement, the RSUs covered by this Award shall vest and all Restrictions thereon shall lapse in accordance with the schedule set forth in the Notice of Award, provided in each case that Participant remains continuously as an employee of Company or a Subsidiary from the Award Date through the particular scheduled vesting date therefor (except only as may otherwise be expressly set forth in (i) any employment, severance or change in control agreement of the Company or a Subsidiary with Participant, or (ii) Section 4 below related to the Retirement or death of the Participant). For purposes of this Agreement, "Restrictions" shall mean the exposure to forfeiture set forth in this Award.

(c) Acceleration of Vesting. Notwithstanding any other provision of this Award, any time-based Award shall become fully vested and all Restrictions applicable to such Award shall lapse in the event of a Change in Control event (as defined in Section 2(h) of the Plan) and the successor or acquiring corporation or an affiliate thereof does not assume or substitute for this Award in accordance with Section 14(c)(i) of the Plan. Should the successor or acquiring corporation or an affiliate thereof assume or substitute for the time-based Award in accordance with Section 14(c)(i) of the Plan, then no accelerated vesting or lapse of Restrictions of this Award shall apply, except as the Board may otherwise determine or as provided in an employment or other written agreement with the Participant.

(d) Tax Withholding: Issuance of Uncertificated Shares for Participants Domiciled Outside the U.S. For Participants domiciled outside of the United States, the provisions set forth herein related to U.S. federal and/or state tax withholding do not apply. Shares shall be delivered to such Participant or his or her legal representative at the time the vesting requirements as provided in this Award shall have been satisfied. Participants domiciled outside the U.S. are advised to consult with a local tax advisor regarding the tax ramifications of the Award in their country of residence and assure compliance with such tax obligations.

(e) Tax Withholding for Participants Domiciled in U.S. Withholding Requirements. By accepting this Award, Participant agrees to make appropriate arrangements with the Company for the satisfaction, as of the applicable withholding date, of all applicable federal, state and local tax withholding requirements, including in connection with the vesting and settlement of this Award. No Shares will be issued until satisfaction of such applicable tax withholding has been received by the Company. Prior to the delivery of any Shares pursuant to this Award, the Company will have the power and the right to deduct or withhold an amount sufficient to satisfy federal, state, local, foreign or other taxes (including the Participant's FICA obligation) required to be withheld with respect to the vesting or settlement of this Award.

(f) Withholding Arrangements. The Company, pursuant to such procedures as it will specify from time to time, will permit Participant to satisfy such tax withholding obligation, in each case as of the applicable tax withholding date, by (without limitation and in such combinations as the Participant may elect):

- (i) paying cash or by personal check, certified check or bank check or wire transfer of immediately available funds;
- (ii) electing to have the Company withhold otherwise deliverable Shares having a Fair Market Value equal to the minimum statutory amount required to be withheld; or
- (iii) delivering to the Company already-owned Shares having a Fair Market Value equal to the minimum statutory amount required to be withheld.

The Fair Market Value of the Shares to be withheld or delivered will be determined as of the date that the taxes are required to be withheld. Participant may elect to make prior arrangements with the Stock Service to sell Shares as of the vesting date and apply the appropriate amount of the proceeds thereof to the applicable tax withholding amount and remit any balance of the proceeds to Participant, provided that if Participant elects to have any Shares sold by the Stock Service or otherwise, any such proposed sale of Shares shall be in compliance with and satisfy all requirements and conditions under the Onto Innovation Inc. Insider Trading Compliance Program.

4.Retirement; Death.

(a) Subject to the terms of this Agreement, in the event of the Retirement of the Participant, the RSUs shall vest based on the vesting schedule set forth in the Notice of Award for time-based Awards. For clarity, in the event of the Participant's Retirement, there will be no acceleration of an Award's vesting schedule or forfeiture of unvested Awards.

(b) Subject to the terms of this Agreement, in the event of the death of the Participant while employed by Company, any unvested RSUs shall become immediately vested.

5.Company Share Issuance Prerequisites. Company shall not be required to issue or deliver any Shares prior to the fulfillment of all of the following conditions:

(a) the admission of the Shares to listing on all stock exchanges on which such Common Stock is then listed;

(b) the completion of any registration or other qualification of the Shares under any state or federal law or under rulings or regulations of the Securities and Exchange Commission or other governmental regulatory body, which the Company shall, in its sole and absolute discretion, deem necessary and advisable;

(c) the obtaining of any approval or other clearance from any state or federal governmental agency that the Company shall, in its absolute discretion, determine to be necessary or advisable; and

(d) the lapse of any such reasonable period of time following the date the Restrictions lapse as the Company may from time to time establish for reasons of administrative convenience.

6.Restricted Stock Units Not Transferable. No RSUs or any interest or right therein or part thereof shall be liable for the debts, contracts or engagements of Participant or his or her successors in interest or shall be subject to disposition by transfer, alienation, anticipation, pledge, encumbrance, assignment or any other means whether such disposition be voluntary or involuntary or by operation of law by judgment, levy, attachment, garnishment or any other legal or equitable proceedings (including bankruptcy), and any attempted disposition thereof shall be null and void and of no effect; *provided, however*, that this Section 6 shall not prevent transfers by will or by applicable laws of descent and distribution if permitted under the Plan.

7.Rights as Stockholder. Until Participant has satisfied all requirements for vesting and the satisfaction of all conditions set forth in this Agreement and Shares have been issued to Participant, Participant shall not be deemed to be a shareholder or to have any of the rights of a shareholder with respect to any such Shares.

8.Not a Contract of Employment. Nothing in this Agreement or in the Plan shall confer upon Participant any right to continue to serve as an employee or other Service Provider of Company or any of its Subsidiaries.

9. Governing Law. The laws of the State of Delaware shall govern the interpretation, validity, administration, enforcement and performance of the terms of this Agreement and the Award regardless of the law that might be applied under principles of conflicts of laws.

10.Conformity to Securities Laws. Participant acknowledges that the Plan and this Award are intended to conform to the extent necessary with all provisions of the Securities Act of 1933, as amended, and the Exchange Act, and all regulations and rules promulgated thereunder by the Securities and Exchange Commission, including without limitation Rule 16b-3 under the Exchange Act. Notwithstanding anything herein to the contrary, the Plan shall be administered, and the Awards are granted, only in such a manner as to conform to such laws, rules and regulations.

11. Amendment, Suspension and Termination. The Awards may be wholly or partially amended or otherwise modified, suspended or terminated at any time or from time to time by the Compensation Committee of the Board of Directors of the Company, which is the Administrator of the Plan (the "Committee"), *provided* that, except as otherwise provided by the Plan, neither the amendment, suspension nor termination of this Agreement shall, without the consent of Participant, alter or impair any material rights of Participant under this Award.

12. Notices. Notices required or permitted hereunder shall be given in writing and shall be deemed effectively given upon personal delivery or upon deposit in the United States mail by certified mail, with postage and fees prepaid, addressed to Participant at his or her address then shown in Company records, and to Company at its principal executive office.

13. Severability. The provisions of this Agreement are severable and if any one or more provisions are determined to be illegal or otherwise unenforceable, in whole or in part, the remaining provisions will nevertheless be binding and enforceable.

14. Section 409A.

(a) This Award is intended to constitute a "short-term deferral" for purposes of Section 409A of the Internal Revenue Code of 1986, as amended ("Code") and the rules and regulations promulgated thereunder and is intended to comply with the requirements of Section 409A of the Code so as not to be subject to taxes, interest or penalties under Section 409A of the Code. This Agreement shall be interpreted and administered to give effect to such intention and understanding.

(b) Notwithstanding anything in this Agreement to the contrary, any payment or issuance of Shares to be made to the Participant under this Award in connection with Participant's separation from service shall not be made until the date six months and one day after the date of the Participant's separation from service to the extent necessary to comply with Section 409A(a)(B)(i) of the Code and applicable Treasury regulations thereunder, after giving effect to the extent applicable to the short-term deferral exemption under Treasury Regulation §1.409A-1(b)(4) and the severance pay exemption under Treasury Regulation §1.409A-1(b)(9)(iii). Following any such six-month and one-day delay, all such delayed payments will be paid in a single lump sum on the date six months and one day after the Participant's separation from service. For the purposes of this Agreement, "separation of service" means a separation from service as defined in Section 409A of the Code determined using the default provisions set forth in Treasury Regulation §1.409A-1(h) or any successor regulation thereto. Each and every payment or issuance of Shares made pursuant to this Award shall be deemed a separate payment or issuance and not a series of payments or issuances.

(c) If any provision of this Award would, in the reasonable, good faith judgment of the Committee, result or likely result in the imposition on the Participant, beneficiary or any other person claiming by or through the Participant, of any additional tax, accelerated taxation, interest or penalties under Section 409A of the Code, the Committee may, in its sole discretion, modify the terms of this Award or take any other such action, without the consent of the Participant or any spouse, beneficiary or any other person claiming by or through the Participant, in the manner that the Committee may reasonably and in good faith determine to be necessary or advisable to avoid the imposition of such additional tax, accelerated taxation, interest or penalties or otherwise comply with Sections 409A of the Code. However, nothing in this Agreement is intended to or shall create any obligation or liability on the part of the Company or the Committee or its members to modify the Agreement, the Award or any RSUs or other rights granted hereunder nor guarantee that the Participant will not be subject to additional taxes, accelerated taxation, interest or penalties under Section 409A of the Code.

Participant represents that he or she has read this Agreement and the Plan and is familiar with the terms and provisions of each. Participant acknowledges that the Award is issued pursuant to, and is subject to the terms and conditions of, the Plan, and Participant will be bound by the terms of the Plan as if it were set forth verbatim in this Agreement. Participant agrees to comply with all rules the Committee may establish from time to time with respect

to the Plan. Participant agrees to accept as binding, conclusive and final all decisions or interpretations of the Committee with respect to any questions arising under the Plan or this Agreement. Participant further acknowledges and agrees that this Agreement (including the Plan) constitutes the entire agreement between the parties with respect to the Award and that this Agreement (including the Plan) supersedes any and all prior agreements, whether written or oral, between the parties with respect to the Award.

IN WITNESS WHEREOF, this Agreement has been executed and delivered by the parties hereto as of the date first set forth above.

ONTO INNOVATION INC. PARTICIPANT

By: _____
Name: Name:
Title:

**ATTACHMENT I
NOTICE OF AWARD**

PARTICIPANT INFORMATION:

Participant Name: _____

Participant Residence Address: «STREET1»
«STREET2»
«CITY», «STATE» «ZIP»
«COUNTRY»

Participant Section 16 Status: Participant FORMCHECKBOX is FORMCHECKBOX is not a Section 16 Insider of Company.

AWARD INFORMATION:

Award Date: _____

Aggregate number of Restricted Stock Units subject to the Award: _____

Grant Number: _____

Type of Award: FORMCHECKBOX Time-based FORMCHECKBOX Other: _____

Vesting Schedule:

FORMCHECKBOX The time-based Award shall vest and Restrictions shall lapse with respect to _____ percent of the Shares subject to the Award (rounded down to the next whole number of shares) on each of the first _____ anniversaries of the Award Date.

FORMCHECKBOX The Award shall vest and Restrictions shall lapse with respect to

Additional Vesting Requirements:

Company Stock Plan Administration Service (the "Stock Service"): _____



EXHIBIT 10.7

Onto Innovation Inc.

Director Restricted Stock Unit Purchase Agreement

THIS AGREEMENT ("Agreement"), dated_ (the "Award Date"), is made between Onto Innovation Inc., a Delaware corporation, hereinafter referred to as the "Company," and MERGEFIELD First «First» MERGEFIELD Last «Last» (the "Participant").

1.Definitions. All capitalized terms used in this Agreement without definition shall have the meanings ascribed in the Onto Innovation 2020 Stock Plan, as amended from time to time (the "Plan").

2.Award of Restricted Stock Units.

(a)Award. In consideration of Participant's agreement to remain in the service as a Director of Company and for other good and valuable consideration, the Company hereby issues to Participant, as of the Award Date, the award for Restricted Stock Units ("RSUs") covering shares ("Shares") of common stock of the Company ("Common Stock") as described in Attachment I – Notice of Award (the "Notice of Award") attached to this Agreement (the "Award"). The number of RSUs subject to the Award (which shall be subject to adjustment in accordance with Section 14 of the Plan) is set forth in the Notice of Award. Each RSU represents the right to receive one Share, subject to the terms and conditions of this Agreement. Upon granting of the Award, all RSUs shall be credited to Participant's stock plan account established at the stock plan administration service determined by Company (the "Stock Service"). The current Stock Service is set forth in the Notice of Award.

(b) Vested Shares to be Issued in Book Entry Form. Upon vesting of the RSUs and the satisfaction of all other applicable conditions set forth in this Agreement, the Company shall cause uncertificated Shares to be issued to Participant's account. Shares to be delivered to Participant under the terms of this Award shall be delivered to Participant no later than two and one-half months following the last day of the year that includes the date of vesting and lapse of Restrictions, provided that Company may further delay the distribution of Shares with respect to RSUs that become vested under Section 4(g) as a result of Participant's death, but not beyond such period as is permitted under Section 409A of the Code (as defined below).

(c)Plan. The Award granted hereunder is subject to the terms and provisions of the Plan, including without limitation, Article 14(a) thereof. The Award constitutes Restricted Stock Units pursuant to Section 8 of the Plan.

3.Restrictions.

(a) Forfeiture. Except only as may otherwise be expressly set forth in Section 3(f) below related to the death of the Participant, any Award which is not vested as of the date Participant ceases to be a Director of Company shall thereupon be forfeited immediately and terminate without any further action by Company.

(b) Vesting and Lapse of Restrictions. Subject to the terms of this Agreement, the RSUs covered by this Award shall vest and all Restrictions thereon shall lapse in accordance with the

schedule set forth in the Notice of Award, provided in each case that Participant remains continuously as a Director of Company from the Award Date through the particular scheduled vesting date therefor (except only as may otherwise be expressly set forth in (i) the Notice of Award, or (ii) Section 3(f) below related to the death of the Participant). For purposes of this Agreement, "Restrictions" shall mean the exposure to forfeiture set forth in this Award.

(c)Acceleration of Vesting. Notwithstanding any other provision of this Award, the Award shall become fully vested and all Restrictions applicable to such Award shall lapse in the event of a Change in Control event and the successor or acquiring corporation or an affiliate thereof does not assume or substitute for this Award in accordance with Section 14(c)(i) of the Plan. Should the successor or acquiring corporation or an affiliate thereof assume or substitute for this Award in accordance with Section 14(c)(i) of the Plan, then no accelerated vesting or lapse of Restrictions of this Award shall apply, except as the Board may otherwise determine or as provided in a written agreement with the Participant.

(d)Tax Withholding: Issuance of Uncertificated Shares for Participants Domiciled Outside the U.S. For Participants domiciled outside of the United States, the provisions set forth herein related to U.S. federal and/or state tax withholding do not apply. Shares shall be delivered to such Participant or his or her legal representative at the time the vesting requirements as provided in this Award shall have been satisfied. Participants domiciled outside the U.S. are advised to consult with a local tax advisor regarding the tax ramifications of the Award in their country of residence and assure compliance with such tax obligations.

(e)Tax Withholding: Conditions to Issuance of Uncertificated Shares for Participants Domiciled within the U.S.

(i) For Participants domiciled in the United States, Shares shall be delivered to Participant or his or her legal representative at such time as the vesting requirements as provided in this Award have been satisfied.

(ii) Participant is fully responsible for all applicable tax obligations related to the vesting of the Shares, including but not limited to Participant's federal, state, and local income tax. It is acknowledged that Company shall not withhold any taxes related to the vesting of the Shares on behalf of Participant. Company shall issue to Participant a 1099 Form at year end coinciding with the vesting of the Shares hereunder.

(f)Death. Subject to the terms of this Agreement, in the event of the death of the Participant while serving as a Director of Company, any unvested RSUs shall become immediately vested.

4. Company Share Issuance Prerequisites. Company shall not be required to issue or deliver any Shares prior to the fulfillment of all of the following conditions:

(a) the admission of the Shares to listing on all stock exchanges on which such Common Stock is then listed;

(b) the completion of any registration or other qualification of the Shares under any state or federal law or under rulings or regulations of the Securities and Exchange Commission or other governmental regulatory body, which the Company shall, in its sole and absolute discretion, deem necessary and advisable;

(c) the obtaining of any approval or other clearance from any state or federal governmental agency that the Company shall, in its absolute discretion, determine to be necessary or advisable; and

(d) the lapse of any such reasonable period of time following the date the Restrictions lapse as the Company may from time to time establish for reasons of administrative convenience.

5. Restricted Stock Units Not Transferable. No RSUs or any interest or right therein or part thereof shall be liable for the debts, contracts or engagements of Participant or his or her successors in interest or shall be subject to disposition by transfer, alienation, anticipation, pledge, encumbrance, assignment or any other means whether such disposition be voluntary or involuntary or by operation of law by judgment, levy, attachment, garnishment or any other legal or equitable proceedings (including bankruptcy), and any attempted disposition thereof shall be null and void and of no effect; *provided, however*, that this Section 5 shall not prevent transfers by will or by applicable laws of descent and distribution if permitted under the Plan.

6. Rights as Stockholder. Until Participant has satisfied all requirements for vesting and the satisfaction of all conditions set forth in this Agreement and Shares have been issued to Participant, Participant shall not be deemed to be a shareholder or to have any of the rights of a shareholder with respect to any such Shares.

7. Not a Contract of Employment. Nothing in this Agreement or in the Plan shall confer upon Participant any right to serve as an employee or other Service Provider of Company or any of its Subsidiaries.

8. Governing Law. The laws of the State of Delaware shall govern the interpretation, validity, administration, enforcement and performance of the terms of this Agreement and the Award regardless of the law that might be applied under principles of conflicts of laws.

9. Conformity to Securities Laws. Participant acknowledges that the Plan and this Award are intended to conform to the extent necessary with all provisions of the Securities Act of 1933, as amended, and the Exchange Act, and all regulations and rules promulgated thereunder by the Securities and Exchange Commission, including without limitation Rule 16b-3 under the Exchange Act. Notwithstanding anything herein to the contrary, the Plan shall be administered, and the Awards are granted, only in such a manner as to conform to such laws, rules and regulations.

10. Amendment, Suspension and Termination. The Awards may be wholly or partially amended or otherwise modified, suspended or terminated at any time or from time to time by the Compensation Committee of the Board of Directors of the Company, which is the Administrator of the Plan (the "Committee"), *provided* that, except as otherwise provided by the Plan, neither the amendment, suspension nor termination of this Agreement shall, without the consent of Participant, alter or impair any material rights of Participant under this Award.

11. Notices. Notices required or permitted hereunder shall be given in writing and shall be deemed effectively given upon personal delivery or upon deposit in the United States mail by certified mail, with postage and fees prepaid, addressed to Participant at his or her address then shown in Company records, and to Company at its principal executive office.

12. Severability. The provisions of this Agreement are severable and if any one or more provisions are determined to be illegal or otherwise unenforceable, in whole or in part, the remaining provisions will nevertheless be binding and enforceable.

13. Section 409A.

(a) This Award is intended to constitute a “short-term deferral” for purposes of Section 409A of the Internal Revenue Code of 1986, as amended (“Code”) and the rules and regulations promulgated thereunder and is intended to comply with the requirements of Section 409A of the Code so as not to be subject to taxes, interest or penalties under Section 409A of the Code. This Agreement shall be interpreted and administered to give effect to such intention and understanding.

(b) Notwithstanding anything in this Agreement to the contrary, any payment or issuance of Shares to be made to the Participant under this Award in connection with Participant's separation from service shall not be made until the date six months and one day after the date of the Participant's separation from service to the extent necessary to comply with Section 409A(a)(B)(i) of the Code and applicable Treasury regulations thereunder, after giving effect to the extent applicable to the short-term deferral exemption under Treasury Regulation §1.409A-1(b)(4) and the severance pay exemption under Treasury Regulation §1.409A-1(b)(9)(iii). Following any such six-month and one day delay, all such delayed payments will be paid in a single lump sum on the date six months and one day after the Participant's separation from service. For the purposes of this Agreement, “separation of service” means a separation from service as defined in Section 409A of the Code determined using the default provisions set forth in Treasury Regulation §1.409A-1(h) or any successor regulation thereto. Each and every payment or issuance of Shares made pursuant to this Award shall be deemed a separate payment or issuance and not a series of payments or issuances.

(c) If any provision of this Award would, in the reasonable, good faith judgment of the Committee, result or likely result in the imposition on the Participant, beneficiary or any other person claiming by or through the Participant, of any additional tax, accelerated taxation, interest or penalties under Section 409A of the Code, the Committee may, in its sole discretion, modify the terms of this Award or take any other such action, without the consent of the Participant or any spouse, beneficiary or any other person claiming by or through the Participant, in the manner that the Committee may reasonably and in good faith determine to be necessary or advisable to avoid the imposition of such additional tax, accelerated taxation, interest or penalties or otherwise comply with Sections 409A of the Code. However, nothing in this Agreement is intended to or shall create any obligation or liability on the part of the Company or the Committee or its members to modify the Agreement, the Award or any RSUs or other rights granted hereunder nor guarantee that the Participant will not be subject to additional taxes, accelerated taxation, interest or penalties under Section 409A of the Code.

Participant represents that he or she has read this Agreement and the Plan and is familiar with the terms and provisions of each. Participant acknowledges that the Award is issued pursuant to, and is subject to the terms and conditions of, the Plan, and Participant will be bound by the terms of the Plan as if it were set forth verbatim in this Agreement. Participant agrees to comply with all rules the Committee may establish from time to time with respect to the Plan. Participant agrees to accept as binding, conclusive and final all decisions or interpretations of the Committee with respect to any questions arising under the Plan or this Agreement. Participant further

acknowledges and agrees that this Agreement (including the Plan) constitutes the entire agreement between the parties with respect to the Award and that this Agreement (including the Plan) supersedes any and all prior agreements, whether written or oral, between the parties with respect to the Award.

IN WITNESS WHEREOF, this Agreement has been executed and delivered by the parties hereto as of the date first set forth above.

ONTO INNOVATION INC. PARTICIPANT

By: _____
Name: MERGEFIELD First «First» MERGEFIELD Last «Last»
Title:

**ATTACHMENT I
NOTICE OF AWARD**

PARTICIPANT INFORMATION:

Participant Name: MERGEFIELD First «First» MERGEFIELD Last «Last»

Participant Residence Address: MERGEFIELD Address «Address»
MERGEFIELD City «City», MERGEFIELD State «State» MERGEFIELD Zip «Zip»

Participant Section 16 Status: Participant FORMCHECKBOX is FORMCHECKBOX is not a Section 16 Insider of Company.

AWARD INFORMATION:

Award Date:

Award to Director is an: FORMCHECKBOX Initial Grant FORMCHECKBOX Annual Grant FORMCHECKBOX Other Grant

Aggregate number of Restricted Stock Units subject to the Award: MERGEFIELD Grant_Amount «Grant_Amount»

Grant Number: MERGEFIELD Grant_Number «Grant_Number»

Vesting Schedule:

FORMCHECKBOX Initial Grant: The Award shall vest and Restrictions shall lapse with respect to one hundred percent (100%) of the Shares subject to the Award on the first anniversary of the Award Date.

FORMCHECKBOX Annual Grant: The Award shall vest and Restrictions shall lapse with respect to one hundred percent (100%) of the Shares subject to the Award on the first anniversary of the Award Date provided however that if the Participant is not re-elected as a Director at the Annual Shareholders Meeting corresponding to the first anniversary of the Award Date, then one hundred percent (100%) of the Shares subject to the Award shall fully vest as of the date of said Annual Shareholders Meeting.

FORMCHECKBOX Other Grant: The Award shall vest and Restrictions shall lapse with respect to

Additional Vesting Requirements:

Stock Plan Administration Service (the "Stock Service"): _____

SUBSIDIARIES

<u>Name</u>	<u>Jurisdiction</u>
Rudolph Technologies, Inc.	U.S.A.
4D Technology Corporation	U.S.A.
Inspectrology LLC	U.S.A.
Onto Innovation Japan Co. Ltd.	Japan
Onto Innovation (Shanghai) Trading Co., Ltd.	China
Nanometrics China Company Ltd.	China
Onto Innovation Germany GmbH	Germany
Onto Innovation Hong Kong Limited	Hong Kong
Onto Innovation Europe, B.V.	Netherlands
Onto Innovation Switzerland GmbH	Switzerland
Onto Innovation Korea Ltd.	Korea
Onto Innovation Southeast Asia Pte. Limited	Singapore
Onto Innovation Ireland Limited	Ireland
Onto Innovation Malaysia Sdn. Bhd.	Malaysia
Onto Innovation Vietnam PTE Company Limited	Vietnam
Neta SAS	France

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

(1) Registration Statement (Form S-8 No. 333-238492) pertaining to the Onto Innovation Inc. 2020 Employee Stock Purchase Plan.

of our reports dated February 26, 2024, with respect to the consolidated financial statements of Onto Innovation Inc. and the effectiveness of internal control over financial reporting of Onto Innovation Inc. included in this Annual Report (Form 10-K) of Onto Innovation Inc. for the year ended December 30, 2023.

/s/ Ernst & Young LLP

Iselin, New Jersey
February 26, 2024

**Rule 13a-14(a) Certification of Chief Executive Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002**

I, Michael P. Plisinski, certify that:

1. I have reviewed this annual report on Form 10-K of Onto Innovation Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 26, 2024

By: /s/ Michael P. Plisinski
Michael P. Plisinski
Chief Executive Officer

**Rule 13a-14(a) Certification of Chief Financial Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002**

I, Mark R. Slicer, certify that:

1. I have reviewed this annual report on Form 10-K of Onto Innovation Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 26, 2024

By: /s/ Mark R. Slicer
Mark R. Slicer
Chief Financial Officer

**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**

I, Michael P. Plisinski, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Onto Innovation Inc. on Form 10-K for the year ended December 30, 2023 fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934 and that the information contained in the Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of Onto Innovation Inc.

Date: February 26, 2024

By: /s/ Michael P. Plisinski
Michael P. Plisinski
Chief Executive Officer

**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**

I, Mark R. Slicer, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Onto Innovation Inc. on Form 10-K for the year ended December 30, 2023 fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934 and that the information contained in the Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of Onto Innovation Inc.

Date: February 26, 2024

By: /s/ Mark R. Slicer
Mark R. Slicer
Chief Financial Officer

**ONTO INNOVATION INC.
INCENTIVE COMPENSATION RECOVERY POLICY**

I. Purpose

The purpose of this Incentive Compensation Recovery Policy, as may be amended from time to time ("Policy"), is to describe the circumstances under which the Covered Executives (as defined below) will be required to repay or return Incentive Compensation (as defined below) to Onto Innovation Inc. (the "Company"). Each Covered Executive is required to sign and return to the Company the acknowledgement form attached to this Policy pursuant to which such Covered Executive will agree to be bound by, and to abide by, the terms of this Policy ("Acknowledgement Form"). This Policy is effective as of August 1, 2023, 2023 (the "Effective Date"). As of the Effective Date, this Policy supersedes and replaces the Onto Innovation Inc. Clawback Policy dated October 31, 2019, as revised on August 2, 2022.

II. Administration

This Policy shall be administered by the Compensation Committee (the "Committee") of the Company's Board of Directors (the "Board"). The Committee is authorized to interpret and construe this Policy and to make all determinations necessary, appropriate, or advisable for the administration of this Policy. Any determinations made by the Committee shall be final and binding on all affected individuals.

III. Definitions

For purposes of this Policy, the following capitalized terms have the meanings set forth below. Other defined terms not defined in this section are defined elsewhere in this Policy.

A. "Accounting Restatement" means an accounting restatement due to the material noncompliance of the Company with any financial reporting requirement under the securities laws, including any required accounting restatement (a) to correct an error in previously issued financial statements that is material to the previously issued financial statements (a "Big R" restatement), or (b) that corrects an error that is not material to previously issued financial statements, but would result in a material misstatement if the error were corrected in the current period or left uncorrected in the current period (a "little r" restatement).

The following types of changes to financial statements do not represent error corrections, and therefore would not trigger application of this Policy: (a) retrospective application of a change in accounting principle; (b) retrospective revision to reportable segment information due to a change in the structure of the Company's internal organization; (c) retrospective reclassification due to a discontinued operation; (d) retrospective application of a change in reporting entity, such as from a reorganization of entities under common control; or (e) retrospective revision for stock splits, reverse stock splits, stock dividends or other changes in capital structure. The foregoing list is not intended to be exhaustive and is subject to any changes in applicable accounting standards.

B. “Covered Executive” has the meaning set forth in Section IV below.

C. “Eligible Incentive Compensation” means all Incentive Compensation (as defined below) that is Received (as defined below) by a Covered Executive (a) on or after the Effective Date, (b) who served as a Covered Executive at any time during the performance period for that Incentive Compensation, (c) while the Company has a class of securities listed on the NYSE or other national securities exchange or national securities association, and (d) during the applicable Recovery Period (as defined below). For purposes of clarity, in order for Incentive Compensation to qualify as Eligible Incentive Compensation, all four of the conditions listed in this Section III.C must be satisfied.

D. “Excess Compensation” means, with respect to each Covered Executive in connection with an Accounting Restatement, the amount of Eligible Incentive Compensation that exceeds the amount of Incentive Compensation that otherwise would have been Received had it been determined based on the restated amounts, computed without regard to any taxes paid, as determined by the Committee.

E. “Financial Reporting Measures” are measures that are determined and presented in accordance with the accounting principles used in preparing the Company’s financial statements, and all other measures that are derived wholly or in part from such measures. Stock price and total shareholder return (and any measures that are derived wholly or in part from stock price or total shareholder return) are considered Financial Reporting Measures for purposes of this Policy. For the avoidance of doubt, a Financial Reporting Measure need not be presented in the Company’s financial statements or included in a filing with the Securities and Exchange Commission (“SEC”).

F. “Incentive Compensation” means any compensation that is granted, earned or vested based wholly or in part upon the attainment of a Financial Reporting Measure.

G. Incentive Compensation shall be deemed “Received” by a Covered Executive in the Company’s fiscal period during which the Financial Reporting Measure applicable to such Incentive Compensation is attained, even if payment or grant of the Incentive Compensation occurs after the end of that period.

H. “Recovery Period” means, with respect to any Accounting Restatement, the Company’s three completed fiscal years immediately preceding the Restatement Date (as defined below) and any transition period (that results from a change in the Company’s fiscal year) of less than nine months within or immediately following those three completed fiscal years.

I. “Restatement Date” means the earlier to occur of (a) the date the Board, a committee of the Board or the officers of the Company authorized to take such action if Board action is not required, concludes, or reasonably should have concluded, that the Company is required to prepare an Accounting Restatement, or (b) the date a court,

regulator or other legally authorized body directs the issuer to prepare an Accounting Restatement.

IV. Covered Executives

This Policy applies to each individual who is or was designated as an “officer” of the Company under Rule 16a-1(f) under the Securities Exchange Act of 1934, as amended (each a “Covered Executive”), whether or not such Covered Executive is serving at the time the Excess Compensation is required to be repaid to the Company. This Policy will apply without regard to whether any misconduct occurred or whether the Covered Executive had any individual knowledge or responsibility related to the erroneous financial statements necessitating the relevant Accounting Restatement.

V. Recoupment of Excess Compensation; Accounting Restatement

A. In the event of an Accounting Restatement, the Company will recover reasonably promptly any Excess Compensation in accordance with this Policy. Accordingly, the Committee will promptly determine the amount of any Excess Compensation for each Covered Executive in connection with such Accounting Restatement and will promptly thereafter provide each Covered Executive with a written notice regarding the required repayment or return, as applicable, and setting forth the amount of Excess Compensation due. For Eligible Incentive Compensation based on (or derived from) stock price or total shareholder return where the amount of Excess Compensation is not subject to mathematical recalculation directly from the information in the applicable Accounting Restatement, the amount will be determined by the Committee based on a reasonable estimate of the effect of the Accounting Restatement on the stock price or total shareholder return upon which the Eligible Incentive Compensation was Received (in which case, the Company will maintain documentation of the determination of such reasonable estimate and provide such documentation to the New York Stock Exchange (“NYSE”).

B. The Committee has broad discretion, based on all applicable facts and circumstances, including consideration of pursuing an appropriate balance of cost and speed of recovery, to determine the appropriate means of recovery of Excess Compensation, subject to it occurring reasonably promptly. To the extent that the Committee determines that a method of recovery other than repayment by the Covered Executive in a lump sum in cash or property is appropriate, the Company will, subject to Section V.D, determine alternative means of recovery, which may include an offer to enter into a repayment agreement (in a form reasonably acceptable to the Committee) with the Covered Executive. For the avoidance of doubt, except as set forth in Section V.D below, in no event may the Company accept an amount that is less than the amount of Excess Compensation in satisfaction of a Covered Executive's obligations under this Policy.

C. To the extent that a Covered Executive fails to repay all Excess Compensation to the Company when due (as determined in accordance with Section V.B above), the Company will take all actions reasonable and appropriate to recover such Excess Compensation from the applicable Covered Executive. The applicable Covered Executive may, in the discretion of the Committee, be required to reimburse the Company for any and all expenses reasonably incurred (including legal fees) by the

Company in recovering such Excess Compensation in accordance with the immediately preceding sentence.

D. Notwithstanding anything in this Policy to the contrary, the Company will not be required to take the actions contemplated by this Section V if the following conditions are met and the Committee determines that recovery would be impracticable:

1. The direct expenses paid to a third party to assist in enforcing the Policy against a Covered Executive would exceed the amount to be recovered, after the Company has made a reasonable attempt to recover the applicable Excess Compensation, documented such attempts and provided such documentation to NYSE;
2. Recovery would violate home country law where that law was adopted prior to November 28, 2022, provided that, before determining that it would be impracticable to recover any amount of Excess Compensation based on violation of home country law, the Company has obtained an opinion of home country counsel, acceptable to the NYSE, that recovery would result in such a violation and a copy of the opinion is provided to NYSE; or
3. Recovery would likely cause an otherwise tax-qualified retirement plan, under which benefits are broadly available to employees of the Company, to fail to meet the requirements of Sections 401(a)(13) or 411(a) of the Internal Revenue Code of 1986, as amended, and regulations thereunder.

VI. Indemnification Prohibition

The Company is prohibited from indemnifying any Covered Executive against the loss of any Excess Compensation that is repaid, returned or recovered in accordance with the terms of this Policy or any claims relating to the Company's enforcement of its rights under this Policy. This prohibition also applies to payment to, or reimbursement of, a Covered Executive for premiums for any insurance policy covering any potential losses under this Policy. Further, the Company may not enter into any agreement that exempts any Incentive Compensation from the application of this Policy or that waives the Company's right to recovery of any Excess Compensation, and this Policy will supersede any such agreement (whether entered into before, on or after the Effective Date).

VII. Amendment; Termination

The Committee may amend or terminate this Policy from time to time in its discretion. Notwithstanding anything in this section to the contrary, no amendment or termination of this Policy will be effective if such amendment or termination would (after taking into account any actions taken by the Company contemporaneously with such amendment or termination) cause the Company to violate any federal securities laws, SEC rule or the rules of the NYSE or any national securities exchange or national securities association on which the Company's securities are then listed.

VIII. Other Recoupment Rights; No Additional Payments

The Committee intends that this Policy will be applied to the fullest extent of the law. The Committee may require, through execution of the Acknowledgment Form or otherwise, that any employment agreement, equity award agreement, or any other agreement, plan or arrangement entered into or adopted on or after the Effective Date will, as a condition to the grant of any benefit thereunder, require a Covered Executive to agree to abide by the terms of this Policy. Any right of recoupment under this Policy is in addition to, and not in lieu of, any other remedies or rights of recoupment that may be available to the Company under the Sarbanes-Oxley Act of 2002 or other applicable law, regulation, rule, or Company policy, or pursuant to the terms of any employment agreement, equity award agreement, or similar agreement, plan or arrangement and any other legal remedies available to the Company; *provided*, that in the event of a conflict between this Policy and any Company policy, employment agreement, equity award agreement, or similar agreement, plan or arrangement, the terms of this Policy will govern.

IX. Successors

This Policy shall be binding and enforceable against all Covered Executives and their beneficiaries, heirs, executors, administrators or other legal representatives.

**Onto Innovation Inc.
Incentive Compensation Recovery Policy
Acknowledgment Form**

By signing below, the undersigned acknowledges and confirms that the undersigned has received and reviewed a copy of the Company's Incentive Compensation Recovery Policy, as may be amended from time to time (the "Policy"). Capitalized terms used but not otherwise defined in this Acknowledgement Form have the meaning set forth in the Policy.

By signing this Acknowledgement Form, the undersigned acknowledges and agrees that the undersigned is and will continue to be subject to the Policy both during and after the undersigned's employment with the Company and that the terms of the Policy are hereby incorporated by reference in any agreement, plan or arrangement providing for payment of Incentive Compensation to any Covered Executive. Further, by signing below, the undersigned agrees to abide by the terms of the Policy, including, without limitation, by returning or repaying any Excess Compensation (as defined in the Policy) to the Company to the extent required by, and in a manner permitted by, the Policy.

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Signature

-

Printed Name

____, 20__

Dated
