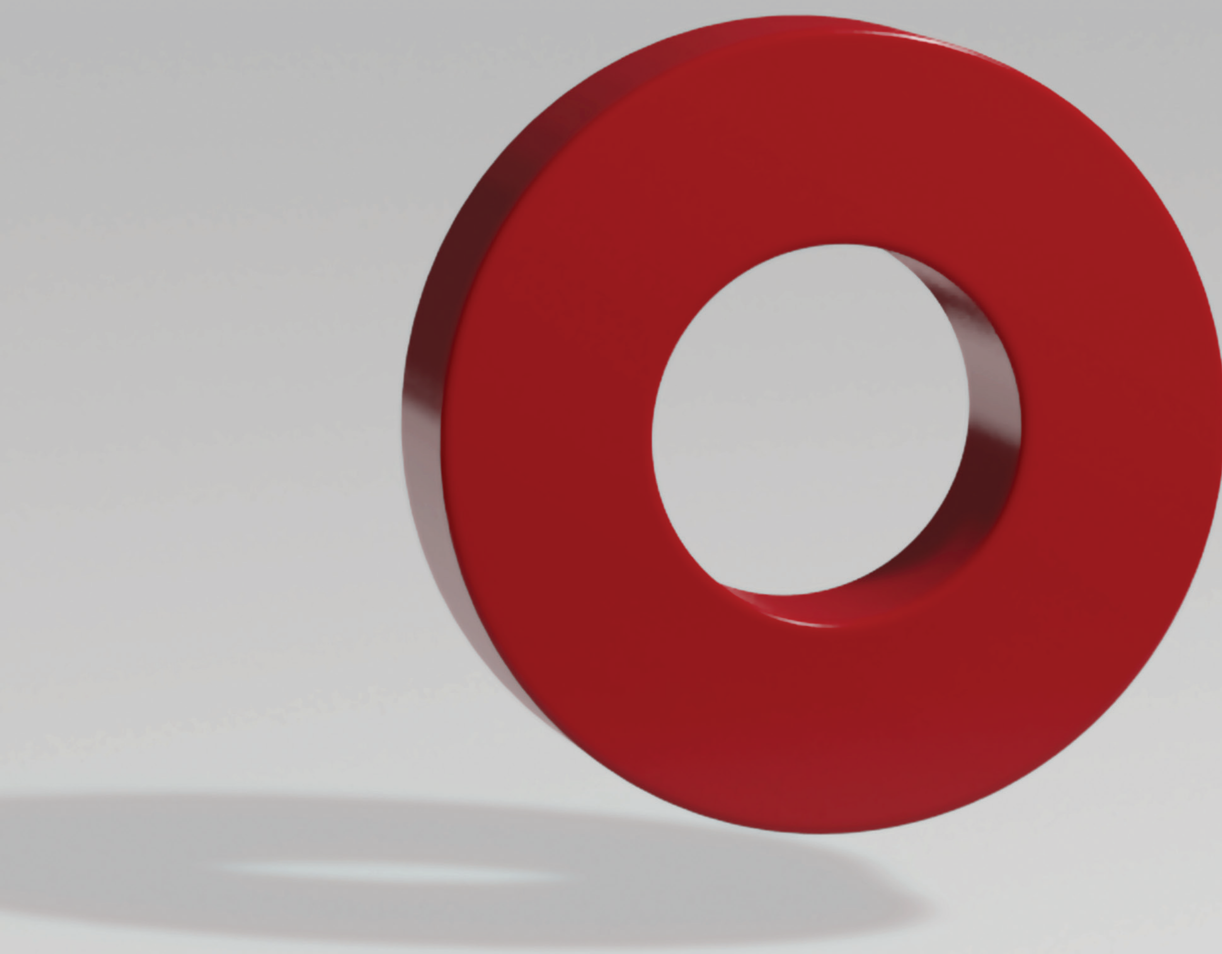
onto innovation™

2020
Annual Report + 2021 Proxy



Dear Shareholders

We want to begin by expressing our gratitude to the Onto Innovation team and the inspiring way this team came together in 2020 to overcome the many challenges throughout the year while meeting and exceeding the commitments we made to customers, shareholders, and each other. As a result, we finished 2020 with a solid financial foundation, and in 2021 we expect to deliver our gross and operating margins within our long-term operating model. In addition to our margins, we expect cash from operations in 2021 to exceed the $106 million that we generated in 2020. We finished the year with record revenue in the fourth quarter and guided the first half of 2021 to be more than 20% greater than the first half of 2020.

More importantly, we have expanded our product portfolio, which results in an estimated $700 million in new addressable market opportunities for 2021, across the entire semiconductor value chain. In addition, we see continued market growth as a result of our broader position within our customers and also the broader reach the semiconductor industry is having across the globe. Industry analysts forecast another record year for wafer fab equipment expected to grow 15%-17% in 2021. This growth is driven by multiple inflections converging all at once. New high performance compute engines are needed to enable a new wave of artificial intelligence applications in vision, security, commerce, conversational speech, and more. We are in the early stages of a transformational conversion to 5G communications with the bandwidth and low latency to enable applications such as autonomous driving, intelligent factories, and collaborative robots. We also see markets increasing investments in green technology such as smart grids to support more flexible and efficient power distribution from traditional sources as well as distributed solar and wind energy sites. Multiple nations are announcing bans on the sale of new combustion engines over the next 10-15 years and the automobile industry is responding with significant electric vehicle (EV) investments and the introduction of new EV models. This is expected to result in a 25% CAGR for the compound semiconductor market.

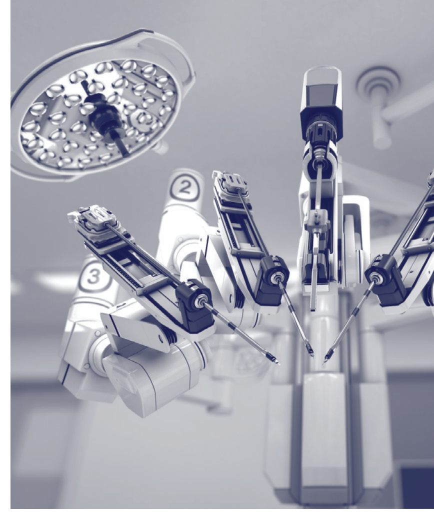
Given the more important role semiconductors are playing in helping to create a smarter, greener, and more sustainable planet, we are also focused on our social responsibility and sustainability. Our growing role in the industry means we share a growing responsibility to our communities and environment. We are proud to be publishing our first Corporate Social Responsibility report for 2020. Our vision is to transform our entire business to help drive a more efficient, and low-carbon future, and to support our customers and communities to achieve more, with less impact. We're reducing our impact on climate change by using clean power sources and driving energy efficiency in our operations. Our 2025 goals are to reduce our comprehensive carbon footprint by 30%, increase our renewable energy use by 30%, and reduce hazardous waste landfill by over 30%.

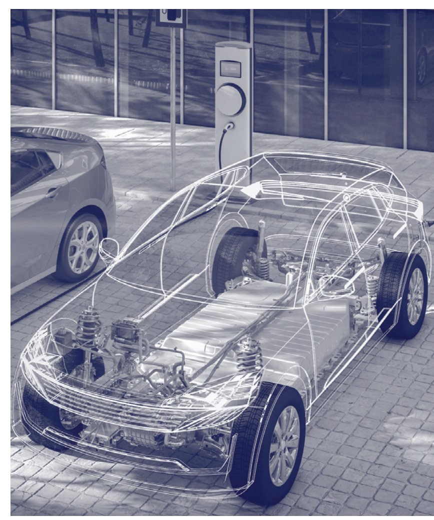
We started by thanking our passionate and talented team and we will conclude with a sincere thank you and appreciation to our loyal shareholders, customers, suppliers, and all who contributed to Onto Innovation's success as we look forward to continued growth and a very bright future in 2021 and beyond.

Sincerely,

Michael P. Plisinski
Chief Executive Officer

Christopher A. Seams
Chairman of the Board





SAFE HARBOR STATEMENT

This Annual Report contains forward-looking statements, including those regarding anticipated growth and trends in our businesses and markets, industry outlooks, market share, technology transitions, our business, strategies and financial performance, our development of new products, technologies and capabilities, and other statements that are not historical fact, and actual results could differ materially. Risk factors that could cause actual results to differ are set forth in the "Risk Factors" section of, and elsewhere in, our 2020 Annual Report on Form 10-K included in this report and other filings with the Securities and Exchange Commission. All forward-looking statements are based on management's estimates, projections and assumptions as of the date hereof, and Onto Innovation undertakes no obligation to update any such statements.

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 26, 2020
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
Common Stock, $0.001 par value per share	**ONTO**	**New York Stock Exchange (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. ☒

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 $1,568,582,829 based on the closing price of the Common Stock on the New York Stock Exchange on June 26, 2020.

The number of shares of the registrant's Common Stock outstanding as of February 4, 2021 was 48,883,050.

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 11, 2021.

TABLE OF CONTENTS

FORWARD-LOOKING STATEMENTS

Certain statements in this Annual Report on Form 10-K (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", including those concerning:

- anticipated effects of, and future actions to be taken in response to the COVID-19 pandemic,
- our business momentum and future growth,
- acceptance of our products and services,
- our ability to deliver both products and services consistent with our customers' demands and expectations and to strengthen our market position,
- our expectations of the semiconductor market outlook,
- future revenue, gross profits, research and development and engineering expenses, selling, general and administrative expenses,
- product introductions,
- technology development,
- manufacturing practices,
- cash requirements,
- 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,
- our anticipated revenue as a result of acquisitions, and
- our ability to be successful in managing our cost structure and cash expenditures and results of litigation.

The statements contained in this Form 10-K that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and within the meaning of 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.

The forward-looking statements contained herein reflect our expectations with respect to future events and are subject to certain risks, uncertainties and assumptions. Actual results may differ materially from those included in such forward-looking statements for a number of reasons including, but not limited to, the following:

- effects of the COVID-19 pandemic and the measures being taken to limit the spread of COVID-19, including impact on demand for our products, reduction in production levels, R&D activities, and qualification activities with our customers, increased costs, disruptions to our supply chain and a decrease in availability under our credit agreement;
- variations in the level of orders which can be affected by general economic conditions;
- seasonality and growth rates in the semiconductor manufacturing industry and in the markets served by our customers;
- the global economic and political climates;
- difficulties or delays in product functionality or performance;
- the delivery performance of sole source vendors;
- the timing of future product releases;
- failure to respond adequately to either changes in technology or customer preferences;
- changes in pricing by us or our competitors;
- our ability to manage growth; changes in management;
- risk of nonpayment of accounts receivable;
- changes in budgeted costs;
- our ability to leverage our resources to improve our position in our core markets, to weather difficult economic environments, to open new market opportunities and to target high-margin markets;
- the strength/weakness of the back-end and/or front-end semiconductor market segments;
- the imposition of tariffs or trade restrictions and costs, burdens and restrictions associated with other governmental actions;
- the ability to successfully complete the integration of the businesses of Rudolph Technologies, Inc. ("Rudolph") and Nanometrics Incorporated ("Nanometrics") and to maintain the anticipated synergies and value-creation contemplated by the merger of Rudolph and Nanometrics (the "2019 Merger") within the expected time frame;

- unanticipated difficulties or expenditures relating to the completion of integration of the Rudolph and Nanometrics businesses;
- the response of business partners and retention as a result of the 2019 Merger;
- the diversion of management time in connection with the integration; and
- the “Risk Factors” set forth in Item 1A.

You should carefully review the cautionary statements and “Risk Factors” contained in this Form 10-K. You should also review any additional disclosures and cautionary statements and “Risk Factors” we include from time to time in our quarterly reports on Form 10-Q, current reports on Form 8-K and other filings we make with the Securities and Exchange Commission (the “SEC”). The 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 process control tools that perform macro defect inspection and metrology, lithography systems, and process control analytical software used by semiconductor wafer and advanced packaging device manufacturers. Our products are also used in a number of other high technology industries including: silicon wafer; light emitting diode ("LED"); vertical-cavity surface-emitting laser (VCSEL"); micro-electromechanical system ("MEMS"); CMOS image sensor ("CIS"); power device; RF filter; 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 device packaging and test facilities, (or "back-end" manufacturing), respectively through a portfolio of standalone systems for macro-defect inspection, packaging lithography, probe card test and analysis, 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 properties, including three-dimensional features and film thickness, as well as optical, electrical and material properties. Our primary area of focus are products that provide critical yield-enhancing information, which is used by microelectronic device manufacturers to drive down costs and to decrease the time to market of their devices. All of 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, 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.

2019 Merger

On October 25, 2019, we became Onto Innovation Inc. upon the effectiveness of the 2019 Merger. We accounted for the 2019 Merger as a reverse acquisition using the acquisition method of accounting in accordance with generally accepted accounting principles ("GAAP"). GAAP requires that either Nanometrics or Rudolph is designated as the acquirer for accounting and financial reporting purposes ("Accounting Acquirer"). Based on the evidence available, Rudolph was designated as the Accounting Acquirer while Nanometrics was the acquirer for legal purposes. Therefore, Rudolph's historical results of operations replaced Nanometrics' historical results of operations for all periods prior to the 2019 Merger. See Note 3 in Part II, Item 8 of this Form 10-K for more details regarding the 2019 Merger.

Key Events in Fiscal 2020

Impact of COVID-19. The spread of COVID-19 during 2020 has caused an economic downturn on a global scale, as well as significant volatility in the financial markets. As of December 26, 2020, our operations have been impacted by our pandemic response, as described below. However, we have not experienced significant financial impact directly related to the pandemic.

We have prioritized the health and safety of our employees and customers in our pandemic response. As governmental authorities have implemented restrictions on commercial operations, we have continued to ensure compliance with these directives while also maintaining business continuity for our essential operations. We have a global workforce and we maintain offices in the U.S., South Korea, Japan, Taiwan, China, Singapore and Europe. Our operations at these offices are subject to various governmental directives and, as a result thereof, we have instituted a work-from-home policy for these employees to the extent practical. Our manufacturing operations are conducted solely in the U.S. Where our essential employees are required to continue to report to work to perform their responsibilities, we have implemented staggered shifts or otherwise adjusted work schedules to maximize our operating capacity while adhering to applicable restrictions, including recommended distancing between persons. We have also provided our essential employees with appropriate protective equipment and have enhanced and increased cleanings at our facilities. At this time, we have not experienced any reduction in productivity, though we have incurred certain costs related to the implementation of these policies and practices. We may take further actions that we determine to be in the best interests of our employees or that may be required by federal, state, or local authorities.

We cannot at this time predict the impact that the COVID-19 pandemic will have on our financial condition and operations, although we are continuing to monitor our supply chain and orders from customers for COVID-19-related changes. Disruptions to our supply chain in connection with the sourcing of materials, equipment and engineering support, and services from geographic areas that have been impacted significantly by COVID-19 may pose risks to our business, results of operations and financial condition. In this time of uncertainty as a result of the COVID-19 pandemic, we are continuing to serve our customers while taking every precaution to provide a safe work environment for our employees and customers.

To date, the COVID-19 pandemic has disrupted the way that we conduct business, but it has not had a material adverse impact on our operations, though we have implemented operational changes to protect the health and safety of our employees and customers as part of our pandemic response. However, the extent of the pandemic's effect on our operational and financial performance will depend in large part on future developments, which cannot be predicted with confidence at this time. Future developments include, but are not limited to: (i) the ultimate duration, scope and severity of the pandemic, including seasonal resurgences or sporadic resurgences that may follow periods of containment, (ii) restrictive actions taken to contain or mitigate the impact of COVID-19, such as the extent of restrictions on gatherings and travel, (iii) the impact on governmental programs and budgets, (iv) the severity of newly identified strains of the virus, (v) the timing, availability and efficacy of the various COVID-19 vaccines, and (vi) the resumption of widespread economic activity. Trade tensions between the United States and China may escalate as a result of COVID-19 or otherwise and could result in the imposition of additional tariffs, trade restrictions or policy changes, any of which could increase costs of our product components and pricing of, and consumer demand for, our products, which could have a negative effect on our results of operations.

Although the inherent uncertainty of the unprecedented and rapidly evolving crisis makes it difficult to predict with any confidence the likely impact on our future operations, the COVID-19 pandemic could have a material adverse impact on our consolidated business, results of operations and financial condition. For a discussion of certain risks related to COVID-19 and the international nature of our business and our operations, see Part II, Item 1A – Risk Factors of this Form 10-K.

Trade Restriction and Emerging Regulation. In 2020, the U.S. Department of Commerce's Bureau of Industry and Security ("BIS") announced new Export Administration Regulations ("EAR") specifically applicable to: Huawei Technologies Co., Ltd.; Semiconductor Manufacturing International Corporation (SMIC) and their affiliates. We have assessed the potential impact of the new BIS rules and EAR, and do not believe that they will have a material direct impact on our business, financial condition or results of operations, but they could have indirect impacts, including increasing tensions in U.S. and Chinese trade relations, potentially leading to negative sentiments towards U.S.-based companies among Chinese consumers. For additional information, please see Part II Item 1A. Risk Factors – *Risks Related to Our Business*.

Share Repurchase Program. On November 23, 2020, our Board of Directors approved a share repurchase authorization to repurchase up to $100 million of our common stock. This authorization replaces the remaining balance of $28 million from the prior repurchase authorization. Repurchases may be made through both public market and private transactions. For the fiscal year ended December 26, 2020, approximately 1.9 million shares were cumulatively repurchased for a total value of $52 million. We ended our 2020 fiscal year with shares outstanding totaling 48.8 million.

The new share repurchase authorization does not obligate Onto Innovation to repurchase any particular amount of common stock during any period and the program may be modified or suspended at any time at our discretion. Stock repurchases may be made from time to time and the actual amount repurchased will depend on a variety of factors including market conditions.

Industry Background

We participate in the sale, design, manufacture, marketing and support of process control systems for optical critical dimension metrology, thin film metrology, wafer inspection, 2D and 3D macro inspection and lithography tools for advanced packaging as well as advanced analytical software for semiconductor manufacturing and certain industrial applications and scientific research. Our principal market is semiconductors. Semiconductors, primarily packaged as integrated circuits within electronic devices, include 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 the devices as they are fabricated on silicon wafers to improve device performance and manufacturing yields. Our end customers manufacture many types of integrated circuits for a multitude of applications, each having unique manufacturing challenges. This includes integrated circuits to enable information processing and management (logic integrated circuits), memory storage (NAND, 3D-NAND, NOR, and DRAM), analog devices (e.g., Wi-Fi and 5G radio integrated circuits, power devices) MEMS sensor devices (accelerometers, pressure sensors, microphones), image sensors, and other end markets including components for hard disk drives, LEDs, and power management.

Current Trends

Business Environment

Our metrology systems and software are primarily used for controlling certain manufacturing processes utilized in the production of advanced, or leading-edge, wafer designs. The shrinking of features such as the constituents that form a single transistor are known as node reductions. The identification of a specific node usually refers to the dimension associated with one of the transistor's constituents. Advanced nodes are associated with transistor dimensions less than 16nm, with high volume manufacturing at one of our largest customers extending advanced nodes to as small as 5nm in 2020. Our metrology systems used to measure and characterize these small features are generally purchased when a customer is beginning to establish manufacturing 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 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.

Our inspection systems, lithography systems, and software are primarily used for processing and inspecting advanced packaging associated with the back-end described above. The advanced packaging techniques represent a very wide variety of assembly methods in order to connect individual chips to a larger PC Board, or connecting a group of chips together to form a "system in a package" ("SIP"), also known as heterogeneous integration ("HI"), or chiplets. Many of these advanced packages require lithographic imaging to produce copper interconnections between the chip and the PC Board or between chips in the case of SIP or HI advanced packages. Our inspection systems and software are used for process control and detection of potential reliability failures in nearly all of these packages. Unlike the cyclical nature of our metrology equipment associated with node shrinks, our sales revenue for advanced packaging is generally driven by assembly volumes. Inspection of the chips being integrated remains as a very high rate in order to avoid a single defective chip from being assembled into a relatively expensive package, making the inspection process control systems attach rates quite linear with production volumes of these devices. The introduction of 5G handsets and high-performance computing ("HPC") continue to drive demand for advanced packaging; however, macroeconomic conditions, including COVID-19 and U.S-China trade disputes could curtail demand for higher volumes in the future.

A significant portion of the global workforce began working from home as part of corporate efforts to isolate and protect workers from COVID-19. This resulted in extremely high usage of data centers and cloud processing that drove higher demand for increased memory and HPC devices that were rapidly installed. In addition, the wireless 5G networks were already starting to drive demand for new, 5G phones in 2020. That demand is expected to increase in the first half of 2021 as new phones from Apple and Samsung were introduced to the market in 2020. The building of the 5G network over the next several years will also bring more machine-to-machine communications, called IoT. These macro-drivers all increase the need for semiconductors and packaging to deliver higher computing power in a single package, faster speeds for memory and logic devices, while reducing power consumption and cost. These advances generally can be achieved by node reductions/shrinks and by advanced packaging for high bandwidth memory and HI packaging. As discussed above, these trends in front-end and back-end complexity are driving the demand for sophisticated metrology and inspection systems in order to achieve the semiconductor performance required while achieving a profitable manufacturing yield.

In 2020, Onto Innovation completed certain integration activities and launched four new metrology systems and one new macro defect inspection system into the marketplace. These new products were introduced as logic and foundries were increasing their capacity while following aggressive plans to transition their manufacturing to smaller nodes. Other customer interactions at memory and specialty device manufacturers as well as providers of advanced packaging centered around satisfying the immediate demand for these devices with our existing product portfolio, while partnering with R&D groups to prepare for the process controls needed for the next generation of semiconductors and packaging that will require the latest systems from Onto Innovation. We believe our strong engineering teams have, and will continue to, deliver new products to our customers, followed by our field engineers providing customer support, while simultaneously achieving and surpassing our cost synergy targets that were established at the onset of our merger. While revenues in the four quarters of 2020 fluctuated as customers transitioned to advanced nodes, the Company was able to achieve operating margins and earnings at the high end of our quarterly guidance and analysts' estimates.

Advanced Nodes refers to leading-edge integrated circuits where the feature sizes of transistors and other features continue to shrink in specified steps, or nodes measured in nanometers (nm). Demand for our products continues to be driven by our customers' desire for higher overall chip performance without increasing the chip size, 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 paths for performance gains are geometric scaling, known as node shrinks, or scaling in three 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, and stacked devices. To scale NAND memory, a new 3D stacking architecture has been implemented with as many as 96 device layers for a device 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 that is capable of measuring these advanced nodes as certain features shrink to 7nm, 5nm and 3nm.

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. The 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 these wafers must also be scanned for any impurities contained in the silicon. This compositional analysis is measured using our Fourier Transform Infrared ("FTIR") systems.

Advanced Packaging refers to a variety of technologies that enable the miniaturization of electronic products, such as portable consumer devices, including smartphones, watches, and tablets. In electronics manufacturing, integrated circuit packaging is 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 that provides external connections to a printed circuit board and also prevents physical damage to the chip and corrosion. Advanced Packaging refers loosely to the conductors and other structures that often interconnect multiple die, feed them with electric power and create signal paths to and from the 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 and other devices. The technology involves stacking individual die 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, which allows 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.

Fan-out wafer level packages are another advanced packaging technology using copper pillars/bumps to vertically connect a wide variety of stacked die for 2.5D, and 3D integration techniques and are considered the next disruptive technology for several reasons. First, fan-out wafer level packages significantly reduce the space needed inside an electronic device, such as a smartphone, by combining multiple chips/functions into a single package, often called a System-in-Package ("SIP"). Next, it improves the system's performance by reducing power and signal conductor lengths, which previously were routed from package to package through a printed circuit ("PC") board. Using thin redistribution layers ("RDLs") to "fan out" power and signal connections to the larger contacts on the PC board eliminates the need for a ceramic or laminated substrate, which accounts for 35 percent of the packaging cost. 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, fan-out wafer level packages provide the functionality needed in high-end mobile and wearable products.

The current and projected adoption of smart mobile devices with designed-in capability to enable multiple functions in a single device continues to grow. In reality, there are no longer single function devices, but instead, a combined single device provides multiple functions such as phone, GPS, camera, and internet browser. Aided by a myriad of available "apps," the potential uses seem endless. As a result, these added functions in mobile products are driving semiconductor advanced packaging and display manufacturers to implement next-generation technologies, such as 5G communications, to meet these requirements. These technology shifts encompass multiple high-value process steps that are creating opportunities for our solutions.

Panel Manufacturing. The current process to manufacture advanced packaging involves attaching known good die to a 300mm wafer, used as a temporary carrier when adding components such as RDLs and copper pillars. 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 reconstituted 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 ("CoO") and increase productivity are transitioning from 300mm wafers to large rectangular panels, which can be as large as 600mm x 600mm. 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 panel manufacturing. For example, the JetStep® S lithography system, having emerged from the flat panel display market, is readily capable of processing RDLs on both glass and organic laminate panels in the semiconductor advanced packaging market. The Firefly® series, designed for high resolution inspection, can provide location information to the JetStep S tool for each die, which greatly improves lithography throughput using our exclusive StepFAST™ process. It also delivers a combination of defect detection and substrate flexibility in a single 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 process 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 wafers processed today in a semiconductor wafer fab. In front-end processes, optical critical dimension ("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 final manufacturing (back-end) 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 all of the data gathered into useful knowledge for our customers to make yield-enhancing decisions, which lower their cost of goods sold ("COGS") and improve their margins.

Onto Innovation's Products

Automated Metrology Systems. Our automated systems primarily consist of fully automated metrology systems that are employed in semiconductor production environments. The Atlas family of products represent our line of high-performance 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 NanoCD™ suite of solutions including our NanoDiffract® software, SpectraProbe™ software and NanoGen™ scalable computing engine that enables visualization, modeling, and analysis of complex structures.

NanoDiffract 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 NanoDiffract 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 NanoDiffract 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 NanoDiffract 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 include the latest technology for OCD, and thin film metrology, and have been successfully qualified on numerous independent Wafer Fabrication Equipment Suppliers' platforms. Our NanoCD suite of solutions is sold in conjunction with our IMPULSE systems.

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, electrical 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") spectroscope 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®, and the latest Dragonfly® G2 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. 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 off-line 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 strategically-placed inspection points, this analysis may pinpoint the source of the defects so corrective action can be taken.

Opaque Film Metrology. The MetaPULSE® 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 in a non-destructive manner. 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 systems, used initially 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.

Probe Card Test and Analysis. The combination of fast 3D-OCM (optical comparative metrology) technology with improved testing accuracy and repeatability is designed to reduce total test time for even the most advanced large area probe cards. The 3D capabilities enable users to analyze probe marks and probe tips in a rapid and information-rich format.

Industrial, Scientific, and Research Markets — 4D Technology. In November of 2018, Nanometrics acquired 4D Technology Corporation, based in Tucson Arizona. 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 light from a mercury arc lamp 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. Images can be "stitched" together precisely to form larger circuit patterns without any noticeable change in circuit performance. 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, power distribution efficiency, and higher frequency, integrated device manufacturers ("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 JetStep X700 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.

Flat Panel Display ("FPD") Lithography. A critical aspect of any leading mobile device is the display. The display serves as the window to the user. Therefore, it must effectively present graphics from a variety of apps, such as detailed maps, high resolution photos, and streaming video in order to provide an enhanced user experience. To accomplish this, the display's thin film transistor ("TFT") backplane, which controls the individual pixels, must operate at a high frequency and not limit the pixel resolution. As a result, the transistors must have high mobility and only use a small portion of the pixel aperture. The backplane is manufactured on a sheet of glass; like the packaging substrate, it is non-flat and tends to distort further during processing. Additionally, the displays are getting larger. Manufacturers are looking to utilize larger glass substrates, making throughput a challenge for the lithography equipment. To overcome this, our JetStep G Series uses high-fidelity optics and the largest printable stepper field available, enabling more displays per exposure. This feature, combined with on-the-fly auto-focus and magnification compensation, maximizes throughput and yield. Finally, our patented grid stage allows the system to be easily configurable to meet the customer desired substrate size.

Process Control Software. We provide a wide range of advanced process control solutions, all 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 150 microelectronic device manufacturers have purchased Onto Innovation tools and software for installation at multiple sites. We support a diverse customer base in terms of both geographic location and type of device manufactured. Our customers are located in over 20 countries. We do not have purchase contracts with any of our customers that obligate them to continue to purchase our products. The following chart identifies our customers that represented 10% or more of total revenue for each of the last three years:

	2020	2019	2018
Samsung Semiconductor...	*	^	^
Taiwan Semiconductor Manufacturing Co. Ltd.	*	*	^
SK Hynix Inc.	^	*	*

* The customer accounted for more than 10% 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 U.S., South Korea, Japan, Taiwan, China, 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 which range 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 U.S., South Korea, Taiwan, China, Japan, Singapore, Israel, and European locations.

Competition

We offer various products for various semiconductor manufacturing process steps, and several of our products extend across the same process flow. However, for process control of each of these process steps, we have multiple established and potential competitors, some of which may have greater financial, research, engineering, manufacturing and marketing resources than we have. We may also face future competition from new market entrants from other overseas and domestic sources. We expect our competitors to continue to improve the design and performance of their current products and processes, and to introduce new products and processes with improved price and performance characteristics. In order to remain competitive, we believe that we will require significant financial resources to offer a broad range of products, and to maintain customer service and support centers worldwide, and to invest in product research and development.

In every market in which we participate, the global semiconductor equipment industry is intensely competitive, and driven by rapid technological adoption cycles. Our ability to compete effectively depends upon our ability to continuously improve our products, applications and services, and our ability to develop new products, applications and services that meet constantly evolving customer requirements.

In automated systems for the semiconductor industry, our principal competitors are KLA Corporation (“KLA”) and Nova Measuring Instruments Ltd. (“Nova”) for thin film and critical dimension OCD metrology. Our principal competitor for advanced packaging inspection is Camtek Ltd. (“Camtek”). While the advanced packaging lithography market is served by various competitors, our primary competitors are Veeco Instruments, Inc. (“Veeco Instruments”) and, to a lesser extent, Nikon Corporation (“Nikon”). 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 all 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.

We rely on a number of limited source suppliers for certain parts and subassemblies. This reliance creates a potential inability to obtain an adequate supply of required components, and reduced control over pricing and time of delivery of components. An inability to obtain adequate supplies would require us to seek alternative sources of supply or might require us to redesign our systems to accommodate different components or subassemblies. To date, we have not experienced any significant delivery delays. However, if we were forced to seek alternative sources of supply, manufacture such components or subassemblies internally, or redesign our products, this could prevent us from shipping our products to our customers on a timely basis, which could have a material adverse effect on our operations.

The impacts of the COVID-19 pandemic on our suppliers are uncertain, evolving and dependent on numerous unpredictable factors outside of our control. If our suppliers experience closures or reductions in their capacity utilization levels in the future, we may have difficulty sourcing materials necessary to fulfill production requirements. Disruptions to our business and supply chain (and the business and supply chains of our customers) could cause significant delays in shipments of our products until we are able to shift our manufacturing, assembling or testing from the affected subcontractor to another third-party vendor. Capacity is currently limited at certain of our third-party foundry, assembly and test subcontractors due to a spike in semiconductor demand.

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 is 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 26, 2020, we have been granted, or hold exclusive licenses to 466 U.S. and foreign patents. The patents we own, jointly own or exclusively license have expiration dates ranging from 2021 to 2039. We also have 87 pending regular and provisional applications in the U.S. and other countries. Our patents and applications principally cover various aspects of metrology, macro-defect detection and classification, altered material characterization, lithography techniques and automation.

Our pending patents may never be issued, and even if they are, these patents, our existing patents and the patents we license may not provide sufficiently broad protection to protect our proprietary rights, or they may prove to be unenforceable. To protect our proprietary rights, we also rely on a combination of copyrights, trademarks, trade secret laws, contractual provisions and licenses and non-disclosure agreements. There can be no assurance (i) that any patents issued to or licensed by us will not be challenged, invalidated or circumvented, (ii) that the rights granted thereunder will provide us with a competitive advantage or (iii) that we will be able to fully protect our technology. Additionally, others may obtain patents and assert them against us. From time to time, we receive communications from third parties asserting that our systems may contain design features that such third parties claim may infringe upon their proprietary rights.

The laws of some foreign countries do not protect our proprietary rights to the same degree as do the laws of the United States, and many U.S. companies have encountered substantial infringement problems in protecting their proprietary rights against infringement in such countries, some of which are countries in which we have sold and continue to sell products. There is a risk that our means of protecting our proprietary rights may not be adequate. For example, our competitors may independently develop similar technology or duplicate our products. If we fail to adequately protect our intellectual property, it would be easier for our competitors to sell competing products.

Human Capital and Talent

As of December 26, 2020, we had approximately 1,247 staff globally, 353 in research and development, 187 in operations, 124 in administration and 583 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 60% of our employees are located in the U.S., 36% 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 are committed to promoting and cultivating 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.

In order to ensure that we are meeting our human capital and talent objectives, we frequently utilize employee surveys to understand the effectiveness of our employee and Company programs and where we can improve across the Company. Our latest survey, completed during fiscal 2020, had a participation rate of over 81% of all our employees. Through the survey, our employees indicated that the Company's greatest strengths include ensuring that employees know what is expected of them, providing a caring work environment, fostering an environment where employees have the opportunity to do their best and commitment to quality.

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 the organization is legally compliant in all states and countries in which we operate.

Safety, Health and Wellness. We are committed to providing 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.

In response to the COVID-19 pandemic, we implemented a response plan that we believe was in the best interest and health of our employees and the communities in which we operate. This included largely transitioning our global workforce to a remote work model, while implementing additional safety measures for essential employees continuing critical on-site work.

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

All of 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 quality and environmental performance, as demonstrated through our product and process qualification commitments, including ISO 9001 Quality Management;
- Produce 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 2020 Interim Corporate Social Responsibility Report (located on our website at https://ontoinnovation.com/company/corporate-social-responsibility) for more detailed information regarding our ESG initiatives. Nothing on our website, including our Corporate Social Responsibility 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:

- 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;
- 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; and
- 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.

Our compliance with these laws and regulations has not had a material impact on our financial position, results of operations, capital expenditures, earnings or competitive position.

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 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 summary, 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.

The risks and uncertainties described below are not the only ones we face. If any of the following risks actually occurs, our business, financial condition or results of operations could be materially adversely affected. Many of the risks and uncertainties described below may be exacerbated by the COVID-19 pandemic and any worsening of the global business and economic environment as a result.

Risks Related to Our Business

The effects of the COVID-19 pandemic have affected our business and could in the future adversely affect our business, results of operations, and financial condition.

The effects of a public health crisis caused by the COVID-19 pandemic and the measures being taken to limit the spread of COVID-19 are uncertain and difficult to predict, but pose the following risks to our business, results of operations and financial condition:

- A likely decrease in short-term and/or long-term demand for our products and disruptions to our operations resulting from the immediate consequences of and responses to the pandemic, including precautionary measures instituted by governments and businesses to mitigate its spread, which have raised the prospect of an extended global recession, which would adversely impact the businesses of our customers, suppliers and partners;
- Changes in our operations in response to COVID-19 and employee illnesses resulting from the pandemic, which have impacted the way that we operate and conduct business, and may result in inefficiencies or delays and/or negatively impact our operations, including, but not limited to, the following:
    - reduction in sales and qualification activities with our customers;
    - reduction in product development efforts; and
    - reduction in production levels.

  In addition there may be incremental costs related to business continuity initiatives, which cannot be avoided or alleviated through succession planning, employees working remotely or teleconferencing technologies as well as inefficiencies, delays, and increased costs resulting from our efforts to mitigate the impact and spread of COVID-19 through the changes in our operations which we have enacted at certain of our locations around the world in an effort to protect our employees' health and well-being (including the implementation of work-from-home policies, social-distancing measures, modified work schedules and shifts, the suspension of employee travel, and limits on the number of employees attending in-person meetings and the number of people permitted to be present at our facilities at any one time);
- Management focus on mitigating the impact of the COVID-19 pandemic, which has required and will continue to require a substantial investment of time and resources across our enterprise, which has resulted and can be expected to continue to result in a diversion of management attention and resources;
- Disruptions to our supply chain in connection with the sourcing of materials, equipment and engineering support, and services from geographic areas that have been impacted by COVID-19 and by efforts to contain the spread of COVID-19;
- A decrease in availability under our credit agreement, which permits us to borrow up to 70% of the value of eligible securities held at the time the line of credit is accessed, due a decrease in the value of eligible securities resulting from the impact of COVID-19 on global markets; and
- Difficulty accessing capital, if needed in the future, through a sale of securities, or in obtaining favorable terms of such securities, due to market conditions generally or a decline or volatility in the market for our securities.

The resumption of normal business operations after such interruptions may be delayed or constrained by lingering effects of COVID-19 on our suppliers, third-party service providers, and/or customers. These effects, alone or taken together, could have a material adverse effect on our business, results of operations, legal exposure, or financial condition. The duration of the COVID-19 pandemic, resurgences, the severity of newly identified strains of the virus and the timing, availability and efficacy of vaccines cannot be determined. A sustained or prolonged outbreak, or a delayed or slower-than-anticipated vaccine rollout, could exacerbate the adverse impact of such measures.

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 five 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.

Our customers may be unable to pay us for our products and services.

Our customers include some companies that may, from time to time, encounter financial difficulties. If a customer's financial difficulties become severe, the customer may be unwilling or unable to pay our invoices in the ordinary course of business, which could adversely affect collections of both our accounts receivable balance and unbilled services. The bankruptcy of a customer with a substantial account balance owed to us could have a material adverse effect on our financial condition and results of operations. In addition, if a customer declares bankruptcy after paying us certain invoices, a court may determine that we are not properly entitled to that payment and may require repayment of some or all of the amount we received, which could adversely affect our financial condition and results of operations.

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 resulting 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. 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, 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.

Most of our revenue has been derived from customers outside of the United States, subjecting us to operational, financial and political risks, such as unexpected changes in regulatory requirements, tariffs, political and economic instability, outbreaks of hostilities, natural disasters, climate change and difficulties in managing foreign sales representatives and foreign branch operations, as well as risks associated with foreign currency fluctuations.

Due to the significant level of our international sales, we are subject to a number of material risks, including:

Compliance with foreign laws. 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 with which we are not familiar, 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.

Unexpected changes in legal and regulatory requirements including tariffs and other market barriers. 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 United States companies such as ourselves, particularly with respect to the ongoing trade negotiations between the United States and China.

Over the last several years and accelerating in 2020, 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, effective June 29, 2020, the U.S. Department of Commerce imposed new export controls on the transfer of many U.S. products and technologies, including many commercial-grade electronics, to "military end users" or for "military end use" in China, which may include many Chinese commercial companies that sell products to or do business with the Chinese military. Likewise, beginning in May 2019, the U.S. Department of Commerce has imposed significant restrictions on the transfer of any products from the United States, as well as many products produced overseas that incorporate U.S. content or rely on U.S. software or technology, to Huawei Technologies Co., Ltd., and a large number of its overseas affiliates, including HiSilicon, followed by a comparable action in December of 2020, related to Semiconductor Manufacturing International Corporation (SMIC)., and a large number of its overseas affiliates, including Ningbo Semiconductor International Corporation (NSIC). The U.S. government is also engaged in an ongoing process of assessing which "emerging and foundational technologies" warrant new or additional controls, which could subject additional U.S.-origin products and services to more stringent export restrictions. It is possible that these modified regulations, and any future regulations could reduce demand for our products. In particular, these restrictive measures may reduce overall global demand for our customers' products or for other products produced or manufactured in the United States or based on United States technology, in turn reducing demand for our products, which could have a material adverse effect on our business, financial condition and results of operations.

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. 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. 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 U.S., these events may result in reduced demand for our products. There is considerable political instability in Taiwan related to its disputes with China and in South Korea related to its disputes with North Korea. In addition, several Asian countries, particularly Japan, have experienced significant economic instability. An outbreak of hostilities or other political upheaval in China, Taiwan or South Korea, or an economic downturn in Japan or other countries, 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 and climate change. Natural disasters, changes in climate and geo-political events 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. There may also be conflict or uncertainty in the countries in which we operate, including public health issues (for example, an outbreak of a contagious disease such as COVID-19, avian influenza, measles or Ebola), safety issues, natural disasters, fire, disruptions of service from utilities, nuclear power plant accidents or general economic or political unrest, including war, civil unrest or terrorist attacks.

Difficulties in staffing and managing foreign branch operations. During periods of tension between the governments of the United States and certain other countries, it is often difficult for United States 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 as compared to the U.S. Dollar. 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 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.

FCPA and Other Anti-Corruption Laws. We are subject to the Foreign Corrupt Practices Act of 1977 ("FCPA"), and other laws that prohibit improper payments or offers of payments to foreign 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 less than effective, 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.

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. Our product liability insurance policy currently provides $2.0 million of aggregate coverage, with an overall umbrella limit of $14.0 million. 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.

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. 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.

In addition, our competitors may provide innovative technology that may have performance advantages over systems we currently offer or may offer in the future. They may be able to develop products comparable or superior to those that we offer or may adapt more quickly to new technologies or evolving customer requirements. In particular, while we currently are developing additional product enhancements that we believe will address future customer requirements, we may fail in a timely manner to complete the development or introduction of these additional product enhancements successfully, or these product enhancements may not achieve market acceptance or be competitive.

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 favor 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 research and development costs.

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 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. Our ability to commercially introduce and successfully market new systems are 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. In addition, 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. As a result, 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 our market share, revenue, operating results or stock price would 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.

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, such as Applied Materials, Inc., Ebara Corporation, Lam Research Corporation and Tokyo Electron, are unable to sell such products, if they choose to focus their attention on products that do not integrate our systems, or if they choose to develop competing systems, our business could suffer.

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.

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, and we rely, in part, on patent and trade secret law and confidentiality agreements to protect that technology. 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 transparent and opaque thin film metrology, lithography and macro-defect inspection systems, and have filed applications for additional patents. Any of our pending patent applications may be rejected, 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 may be challenged by third parties. Further, third parties may also design around these patents. In addition to patent protection, we rely upon trade secret protection for our confidential and proprietary information and technology. We routinely enter into confidentiality agreements with our employees and other third parties. Even though these agreements are in place, there can be no assurances that trade secrets and proprietary 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. Costly and time-consuming litigation might be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection might adversely affect our ability to continue our research or bring products to market.

The laws of some foreign countries, including China, Japan, South Korea and Taiwan, where we do business, do not protect our proprietary rights to as great an extent as do the laws of the United States, and many U.S. companies have encountered substantial problems in protecting their proprietary rights against infringement abroad. For example, litigation discovery practice in China, Japan, South Korea, and Taiwan is not as robust as the U.S., so it can be more difficult to determine if a company is infringing on our patents and more challenging to bring a lawsuit. Similarly, China’s protection of intellectual property rights historically has been less stringent and robust compared to other countries such as the United States, and consequently intellectual property rights and confidentiality protections in China may not be as effective as in the United States or other countries. Monitoring and preventing unauthorized use are also difficult and the measures we take to protect our intellectual property rights may not be adequate. Accordingly, infringement of our intellectual property rights poses a serious risk of doing business in China. Consequently, there is a risk that we may be unable to adequately protect our proprietary rights in certain foreign countries. If this occurs, it would be easier for our competitors to develop and sell competing products in these countries.

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.

We may be required to initiate litigation in order to enforce any patents issued to or licensed by us or to determine the scope or validity of a third party’s patent or other proprietary 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 issued to or licensed by us will not be challenged, invalidated or circumvented, or that the rights granted thereunder will provide us with a competitive advantage.

In addition, our commercial success depends in part on our ability to avoid infringing or misappropriating patents or other proprietary 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 proprietary 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 proprietary 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 important intellectual property rights could hinder our ability to sell our systems or to make the sale of these systems more expensive.

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 Corporation, Nova Measuring Instruments, Camtek and Veeco Instruments. We compete to a lesser extent with Nikon. 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 customers and potential customers in the semiconductor device manufacturing industry are large companies that require global support and service for their semiconductor capital equipment. We believe that our global support and service infrastructure is sufficient to meet the needs of our customers and potential customers. However, some of our competitors have more extensive 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.

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 through resignations, retirement or other circumstances, each of whom would be extremely difficult to replace, could harm our business and operating results. Although we have 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.

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 the 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 Milpitas, California and Bloomington, Minnesota. We use contract manufacturers in China, Israel, 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. If we cannot timely deliver our systems, our results from operations and cash flows could be materially and adversely affected.

We may 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.

We may outsource 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.

We are in the process of consolidating a world-wide enterprise resource planning ("ERP") system, and problems with the design or implementation of this ERP system could interfere with our business and operations.

We are currently engaged in a multi-year process of conforming all our operations to one global enterprise resource planning ("ERP") system. The ERP system is designed to accurately maintain the Company's books and records and enhance the speed and quality of information provided to our management team for use in the operation and management of our business. The Company's ERP transition has required, and will continue to require, the investment of significant human and financial resources. We may not be able to successfully implement the ERP transition without experiencing delays, increased costs and other difficulties. Beyond cost and scheduling, if there are flaws in the implementation of the ERP system, or if the ERP system does not operate as expected, this may pose risks to the Company's ability to operate successfully and efficiently, including the risk that the effectiveness of our disclosure controls and procedures or internal controls over financial reporting may be negatively impacted, affecting our ability to make timely and accurate SEC filings. If we are unable to successfully implement the consolidated ERP system as planned, our financial position, results of operations and cash flows could be negatively impacted.

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.

As part of our business, we store our data and certain data about our customers, vendors and employees in our information technology system. While we have security measures in place that are designed to protect this information and prevent data loss and other security breaches, if these measures are breached as a result of third-party action, employee error, malfeasance, break-ins or otherwise, and someone obtains unauthorized access to our customers', vendors' or employees' data, we could face loss of business, regulatory investigations or court orders, our reputation could be severely damaged, 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. In response to the COVID-19 pandemic, our expanded reliance on remote access to our information systems has further increased our exposure to potential cybersecurity breaches. 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, we may be unable to anticipate these techniques or to implement adequate preventative measures. In addition, third parties may attempt to fraudulently induce employees or users to disclose information to gain access to our data or our customers' data. If any of these events occur, our or our customers' and vendors' information could be accessed or disclosed improperly. Any or all of these 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.

The General Data Protection Regulation ("GDPR") is a regulation in European Union ("EU") law on data protection and privacy for all individuals within the EU and the European Economic Area ("EEA"). It also addresses the export of personal data outside the EU and EEA areas. Appropriate technical and organizational measures are necessary to implement these data protection principles. We may also be subject to other data privacy laws in the United States and the other countries in which we operate.

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. 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. 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.

If we do not manage our supply chain effectively, our operating results may be adversely affected.

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. Although the current tariff environment has not had a material adverse effect on our costs to date, further deterioration in the tariff environment, or changes in suppliers, may cause our costs to increase, which if we are not able to offset by charging higher sales prices, will cause a decline in our margins. To improve our margins on a product, we will need to establish high volume supply agreements with our vendors. We cannot be certain that we will be able to timely negotiate vendor supply agreements on improved terms and conditions, 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.

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 many 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. Disruption or termination of the supply of these components could delay shipments of our systems, damage our customer relationships and reduce our sales. From time to time in the past, we have experienced temporary difficulties in receiving shipments from our suppliers. The lead-time required for shipments of some of our components can be as long as 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. 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.

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 changing technologies, customer demands and competitive pressures. 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;
- 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 place a significant strain on our management, financial, operational, technical, sales and administrative resources. Any failure to effectively manage our growth may cause our business to suffer and our stock price to decline.

Risks Related to Tax Laws, 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. 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.

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. 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 a period of unprecedented 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. 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. In addition, we enter into factoring arrangements with certain financial institutions to sell a certain portion of our trade receivables. If we were to stop entering into these factoring arrangements, our operating results, financial condition and cash flows could be adversely impacted by delays or failure to collect the trade receivables. However, by entering into these arrangements, we are exposed to additional risks. If any of these financial institutions experiences financial difficulties or is otherwise unable to honor the terms of our factoring arrangements, we may experience material financial losses due to the failure of such arrangements, which could have an adverse impact upon our operating results, financial condition and cash flows.

We are subject to various environmental laws and regulations that could impose substantial costs upon us and 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. We may unintentionally violate environmental laws or regulations in the future as a result of human error, equipment failure or other causes.

Risks Related to the 2019 Merger

Any ongoing actions related to the combination of the businesses of Rudolph and Nanometrics may be more difficult, costly or time-consuming than expected and we may fail to realize the anticipated benefits of the 2019 Merger, which may adversely affect our business results and negatively affect the value of our common stock.

The success of the 2019 Merger depends on, among other things, our ability to combine the businesses of Rudolph and Nanometrics in a manner that realizes cost savings and facilitates growth opportunities.

In addition, we must achieve the anticipated growth and cost savings without adversely affecting current revenues and investments in future growth. If we are not able to successfully achieve these objectives, the anticipated benefits of the 2019 Merger may not be realized fully, or at all, or may take longer to realize than expected.

An inability to realize the full extent of the anticipated benefits of the 2019 Merger, as well as any delays encountered in any remaining activities which are part of the integration process, could have an adverse effect upon our revenues, level of expenses and operating results, which may adversely affect the value of our common stock.

In addition, any remaining integration activities may result in additional and unforeseen expenses, and the anticipated benefits of the integration plan may not be realized. Actual growth and cost savings, if achieved, may be lower than what we expect and may take longer to achieve than anticipated. If we are not able to adequately address any remaining integration challenges, we may be unable to realize the anticipated benefits of the integration of Rudolph and Nanometrics.

The failure to complete the successful integration of the businesses and operations of Rudolph and Nanometrics in the expected time frame may adversely affect our future results.

Prior to completion of the 2019 Merger, Rudolph and Nanometrics operated independently. There can be no assurances that their businesses can be fully integrated successfully. It is possible that the ongoing integration process could result in the loss of key employees, the loss of customers, the disruption of our ongoing businesses, inconsistencies in standards, controls, procedures and policies, unexpected integration issues, higher than expected integration costs or an overall post-completion integration process that takes longer than originally anticipated. Specifically, the following issues, among others, continue to be addressed in integrating the operations of Rudolph and Nanometrics in order to realize the anticipated benefits of the 2019 Merger so we perform as expected:

- integrating and unifying the offerings and services available to customers;
- harmonizing the companies' operating practices, employee development and compensation programs, internal controls and other policies, procedures and processes;
- consolidating the companies' administrative and information technology infrastructure; and
- coordinating geographically dispersed organizations.

In addition, at times the attention of certain members of management and resources may be focused on the integration of the businesses of the two companies and diverted from day-to-day business operations or other opportunities that may have been beneficial, which may disrupt our business.

Risks Related to the Global Economy and Semiconductor Industry

Cyclicality in the semiconductor device industry has led to substantial decreases in demand for our systems 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 years, 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. 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 our chief executive officer or Board of Directors;
- advance notice requirements for stockholder proposals and director nominations by stockholders;
- limitations on the ability of stockholders to amend, alter or repeal our by-laws; and
- the authority of our board 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 the COVID-19 pandemic, or other future 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 2. Properties.

Our principal executive office building is located at 16 Jonspin Road in Wilmington, Massachusetts. We own our Milpitas and Richardson facilities 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, Germany and France. 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	50,000
Milpitas, California	Engineering, Manufacturing, Service and Administration	134,000
Budd Lake, New Jersey	Engineering, Service and Administration	49,000
Bloomington, Minnesota	Engineering, Manufacturing, Service and Administration	98,500
Bend, Oregon	Engineering and Service	13,000
Hillsboro, Oregon	Engineering and Service	27,000
Richardson, Texas	Engineering	21,000
Snoqualmie, Washington	Engineering and Service	20,500
Tucson, Arizona	Engineering, Manufacturing and Service	19,000
Taiwan	Sales and Service	27,500
China	Sales, Service and Engineering	26,700
South Korea	Sales and Service	26,000
Japan	Sales and Service	20,000
Singapore	Sales and Service	12,000

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 Note 9, “Commitments and Contingencies” to the Consolidated Financial Statements is incorporated herein by reference.

Item 4. Mine Safety Disclosures.

None.

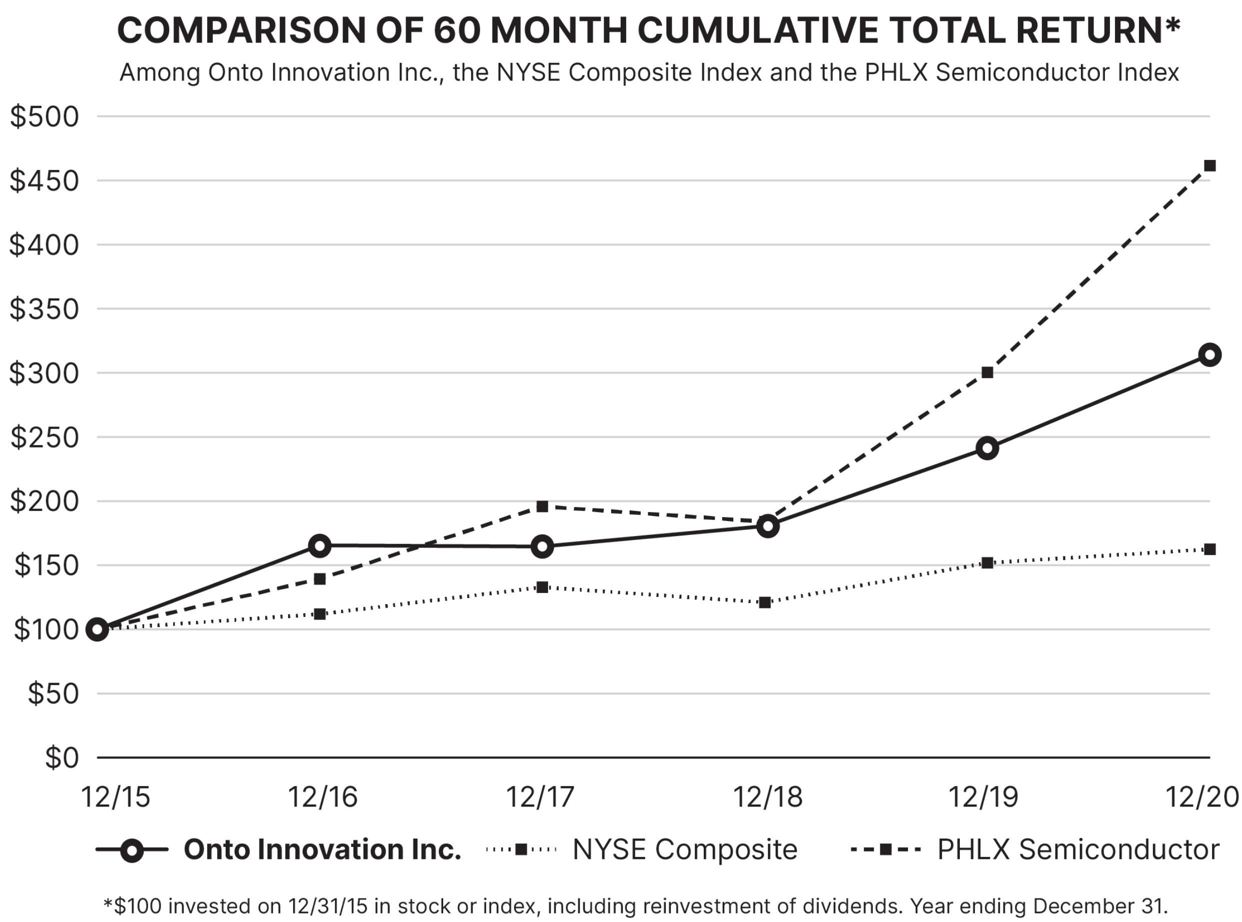
PART II

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

Our common stock is quoted on the New York Stock Exchange ("NYSE") under the symbol "ONTO." 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 the industry specific index, PHLX Semiconductor Index, for the period commencing on December 31, 2015 and ending on December 31, 2020. Historical data for Onto Innovation in the line graph for the period commencing on December 31, 2015 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, 2015 in the Company's common stock and in each index. No cash dividends have been declared or paid on the Company's common stock. Stockholder returns over the indicated period should not be considered indicative of future stockholder returns.



	12/15	12/16	12/17	12/18	12/19	12/20
Onto Innovation Inc.	100.00	165.52	164.60	180.52	241.35	314.07
NYSE Composite	100.00	111.94	132.90	121.01	151.87	162.49
PHLX Semiconductor	100.00	139.32	195.81	183.97	300.35	461.53

As of February 4, 2021, there were 123 stockholders of record of our common stock and approximately 20,277 beneficial stockholders.

We have never declared or paid a cash dividend on our common stock and we currently do not intend to. 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 new share repurchase authorization, which allows us to repurchase up to $100 million worth of shares of our common stock. This share repurchase authorization replaces the remaining balance of $28 million from the prior share repurchase authorization. Repurchases may be made through both public market and private transactions from time to time. At December 26, 2020, there was $100 million available for future share repurchases.

For further information, see Note 17 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 and stock option exercises under the Company's equity incentive program. During the three and twelve months ended December 26, 2020, we withheld 12 thousand and 118 thousand shares through net share settlements, respectively. For the three and twelve month periods ended December 26, 2020, net share settlements cost $0.5 million and $4.1 million, respectively. Please refer to Note 11 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 26, 2020 (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
September 27, 2020 to October 26, 2020.............	5	$ 40.21	—	$ 28,000
October 27, 2020 to November 26, 2020.............	1	$ 37.66	—	$ 100,000
November 27, 2020 to December 26, 2020	6	$ 44.54	—	$ 100,000
Three Months Ended December 26, 2020	12	$ 42.22	—	

[1] Includes shares withheld through net share settlements.

Item 6. Selected Financial Data.

Not required.

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," 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 semiconductors, primarily semiconductors packaged as integrated circuits within electronic devices, including 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 the 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 integrated circuits for a multitude of applications, each having unique manufacturing challenges. This includes integrated circuits to enable information processing and management (logic integrated circuits), memory storage (NAND, 3D-NAND, NOR, and DRAM), analog devices (Wi-Fi and 5G radio integrated circuits, power devices) MEMS sensor devices (accelerometers, pressure sensors, microphones), image sensors, and other end markets including components for 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.

During 2020, we completed certain integration activities and launched four new metrology systems into the marketplace. These new products were introduced as logic and foundry customers were increasing their capacity while following aggressive plans to transition their manufacturing to smaller nodes. Customer interactions centered around satisfying the immediate demand for logic devices with our existing product portfolio, while partnering with R&D groups to prepare for the process controls needed for the next generation of semiconductors that will require the latest systems from us. Our strong engineering teams have, and will continue to, deliver new products to our customers, followed by our field engineers providing customer support, while simultaneously achieving and surpassing our cost synergy targets that were established at the onset of the 2019 Merger.

On February 28, 2020, our Board of Directors determined that it is in the best interests of the Company to change its fiscal year end from December 31 to a 52-53 week fiscal year ending on the Saturday closest to December 31. The change is intended to align our fiscal periods more closely with industry peers and improve comparability. We made the fiscal year change on a prospective basis and have not adjusted operating results for prior periods. The fiscal year of 2020 began on January 1, 2020 and ended December 26, 2020.

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

	Year Ended		
	December 26, 2020	December 31, 2019[(1)]	December 31, 2018[(1)]
Revenue	$ 556,496	$ 305,896	$ 273,784
Gross profit	$ 278,453	$ 135,028	$ 148,279
Gross profit as a percent of revenue	50%	44%	54%
Total operating expenses	$ 251,776	$ 140,071	$ 97,195
Net income	$ 31,025	$ 1,910	$ 45,096
Diluted earnings per share	$ 0.63	$ 0.06	$ 1.74

(1) On October 25, 2019, the merger of Nanometrics with Rudolph was consummated and resulted in the combined company, which was renamed Onto Innovation Inc. Rudolph is treated as the accounting acquirer in the 2019 Merger and

therefore the financial results include Rudolph for all periods presented and the financial results of the former Nanometrics for the periods on or after October 26, 2019.

Our business is affected by the annual spending patterns of our customers on semiconductor capital equipment. The amount that our customers devote to capital equipment spending depends on a number of factors, including general worldwide economic conditions as well as other economic drivers such as personal computers, mobile devices, data centers, artificial intelligence and automotive sales. Current forecasts by industry analysts for the semiconductor device manufacturing industry project capital equipment spending to increase approximately 14% to 16% for 2021 as compared to 2020. Our revenue and profitability tend to follow the trends of certain segments within the semiconductor market.

Historically, a significant portion of our revenue in each quarter and year has been derived from sales to relatively few customers, and we expect this trend to continue. For the years ended December 26, 2020, December 31, 2019 and December 31, 2018, aggregate sales to customers that individually represented at least five percent of our revenue accounted for 54.6%, 42.7%, and 18.3% of our revenue, respectively.

Our cash, cash equivalents and marketable securities balance increased to $373.7 million at the end of fiscal 2020 compared to $320.2 million at the end of the fiscal 2019. This increase was primarily the result of $106.0 million of cash generated from operating activities. In addition, the Company used approximately $52.0 million to repurchase 1.9 million shares of common stock during 2020.

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.

	Year Ended December 26,	Year Ended December 31,	
	2020	2019	2018
Revenue	100.0%	100.0%	100.0%
Cost of revenue	50.0%	55.9%	45.8%
Gross profit	50.0%	44.1%	54.2%
Operating expenses:			
Research and development	15.2%	15.8%	14.6%
Sales and marketing	8.6%	9.2%	8.0%
General and administrative	11.7%	17.4%	12.3%
Amortization	9.7%	3.4%	0.6%
Total operating expenses	45.2%	45.8%	35.5%
Operating income (loss)	4.8%	(1.7)%	18.7%
Interest income, net	0.5%	1.2%	0.8%
Other income (expense), net	(0.5)%	0.3%	—%
Income (loss) before provision (benefit) for income taxes	4.8%	(0.2)%	19.5%
Provision (benefit) for income taxes	(0.7)%	(0.8)%	3.0%
Net income	5.5%	0.6%	16.5%

Results of Operations for 2020, 2019 and 2018

Revenue. Our revenue is derived from the sale of our systems and software, spare parts, and services. Our revenue was $556.5 million, $305.9 million and $273.8 million for the years ended December 26, 2020, December 31, 2019 and December 31, 2018, respectively. This represents an increase of 81.9% from 2019 to 2020 and an increase of 11.7% from 2018 to 2019. The increase in revenue of 81.9% in the fiscal year ended December 26, 2020 compared to the prior year is primarily attributable to revenue from the 2019 Merger now including revenue from the legacy Nanometrics business for the full fiscal year and increased investments from our foundry and logic customers. The increase in revenue from 2018 to 2019 was primarily due to the inclusion of revenue from legacy Nanometrics business for the period from October 25, 2019, the effective date of the 2019 Merger, through December 31, 2019.

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

	Year Ended December 26, 2020		Year Ended December 31, 2019		2018	
Systems and software	$450,459	80%	$255,723	84%	$234,241	86%
Parts	65,444	12%	34,892	11%	28,658	10%
Services	40,593	8%	15,281	5%	10,885	4%
Total revenue	$556,496	100%	$305,896	100%	$273,784	100%

Total systems and software revenue increased $194.7 million for the year ended December 26, 2020 as compared to the year ended December 31, 2019 primarily due to the inclusion of revenue from legacy Nanometrics for the period. The year-over-year change in systems revenue was primarily due to an increase of $178.6 million of revenue from legacy Nanometrics for the period and increased investment from our foundry and logic customers. The year-over-year increase in parts and services revenue in absolute dollars from 2019 to 2020 was primarily due to an increase of $54.3 million of parts and service revenue from legacy Nanometrics for 2020. Parts and services revenue is generated from part sales, maintenance service contracts, system upgrades, as well as time and material billable service calls.

Total systems and software revenue increased $21.5 million for the year ended December 31, 2019 as compared to the year ended December 31, 2018 primarily due to the inclusion of revenue from legacy Nanometrics for the period from the effective date of the 2019 Merger. The year-over-year change in systems revenue was driven by an increase of $29.9 million in process control systems revenue due to inclusion of $56.0 million of revenue from legacy Nanometrics for the period from the effective date of the 2019 Merger. This increase was partially offset by decreased demand for our products in both advanced packaging and front-end systems. Software licensing, support and maintenance revenue decreased $4.0 million, primarily due to a decrease in revenue from our process control and yield management software. The year-over-year increase in parts and services revenue in absolute dollars from 2018 to 2019 was primarily due to the inclusion of $10.3 million of parts and service revenue from legacy Nanometrics for the period from the effective date of the 2019 Merger. Parts and services revenue is generated from part sales, maintenance service contracts, system upgrades, as well as time and material billable service calls.

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

	Year Ended December 26, 2020	Year Ended December 31, 2019	2018
Revenue	$ 556,496	$ 305,896	$ 273,784
China	22%	26%	23%
Taiwan	22%	22%	17%
South Korea	16%	14%	19%
United States	15%	15%	16%
Japan	11%	10%	8%
Europe	9%	8%	10%
Southeast Asia	5%	5%	7%
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 continue to be affected by a variety of factors, including inventory step-up from purchase accounting, manufacturing efficiencies, provision for excess and obsolete inventory, pricing by competitors or suppliers, new product introductions, production volume, customization and reconfiguration of systems, international and domestic sales mix, system and software product mix, and parts and services margins. Our gross profit was $278.5 million, $135.0 million and $148.3 million for the years ended December 26, 2020, December 31, 2019 and December 31, 2018, respectively. Our gross profit represented 50.0%, 44.1% and 54.2% for the years ended December 26, 2020, December 31, 2019 and December 31, 2018, respectively. The increase in gross profit as a percentage of revenue from 2019 to 2020 was primarily due to a favorable impact from higher revenue volume of products and services from the 2019 Merger with inclusion of legacy Nanometrics results for the full fiscal year, partially offset by additional charges for excess and obsolete inventory. During the fourth quarter of the year ended December 26, 2020, we recognized a write-down of inventory in the amount of $8.1 million for our JetStep X300 product line to net realizable value based on future demand and market conditions. The decrease in gross profit as a percentage of revenue from 2018 to 2019 was primarily due to charges to cost of goods sold including a $15.4 million charge for the sale of inventory written-up to fair value upon the 2019 Merger and $7.8 million in additional charges related to excess and obsolete inventory.

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 patents. Our research and development expenses were $84.6 million, $48.4 million and $40.0 million in fiscal years 2020, 2019 and 2018, respectively. The year-over-year dollar increases from 2018 through 2020 were primarily due to the 2019 Merger where research and development expenses for legacy Nanometrics was included for the full 2020 fiscal year and in 2019 included from October 25, 2019 to December 31, 2019. 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 $48.1 million, $28.3 million and $22.0 million in fiscal years 2020, 2019 and 2018, respectively. The year-over-year dollar increases from 2018 through 2020 were primarily due to the 2019 Merger where sales and marketing expenses for legacy Nanometrics was included for the full 2020 fiscal year and in 2019 included from October 25, 2019 to December 31, 2019.
- *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 $65.3 million, $53.0 million and $33.7 million in fiscal years 2020, 2019 and 2018, respectively. The year-over-year dollar increases from 2018 through 2020 were primarily due to the 2019 Merger where general and administrative expenses for legacy Nanometrics was included for the full 2020 fiscal year and in 2019 included from October 25, 2019 to December 31, 2019.
- *Amortization of Identifiable Intangible Assets*. Amortization of identifiable intangible assets was $53.7 million, $10.4 million and $1.5 million in fiscal years 2020, 2019 and 2018, respectively. The year-over-year dollar increases from 2018 through 2020 were primarily due to additional amortization recorded associated with additional purchased intangible assets recorded as a result of the 2019 Merger where such amortization expense was included for the full 2020 fiscal year and in 2019 included from October 25, 2019 to December 31, 2019.

Interest income (expense), net. In fiscal years 2020, 2019 and 2018, net interest income was $2.9 million, $3.7 million and $2.2 million, respectively. The decrease in net interest income from 2019 to 2020 was due to lower interest rates during the 2020 period, partially offset by additional interest income on a higher marketable securities balance following the 2019 Merger. The increase in net interest income from 2018 to 2019 was due to interest earned on our marketable securities and additional interest income on a higher marketable securities balance following the 2019 Merger.

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

	Year Ended December 26, 2020	Year Ended December 31, 2019	Year Ended December 31, 2018
Income (loss) before provision (benefit) for income taxes	$ 26.9	$ (0.6)	$ 53.3
Provision (benefit) for income taxes	$ (4.2)	$ (2.5)	$ 8.3
Effective tax rate	(15.5)%	(419.9)%	15.5%

The income tax provision differs from the federal statutory income tax rate of 21% for 2020 primarily due to a benefit related to the Foreign Derived Intangible Income Deduction ("FDII") of $4.3 million, tax benefits for research and development credits of $4.9 million, and a one-time benefit related to the closure of an IRS audit for tax years 2016 through 2018 of $2.9 million. These benefits were partially offset by the inclusion of Global Intangible Low-Taxed Income ("GILTI") of $2.0 million.

The income tax provision differs from the federal statutory income tax rate of 21% for 2019 primarily due to a benefit related to the FDII of $2.3 million and tax benefits for research and development credits of $2.1 million, partially offset by non-deductible transaction costs of $1.1 million and Section 162(m) limitation on the deductibility of executive compensation of $0.8 million.

The income tax provision differs from the federal statutory income tax rate of 21% for 2018 primarily due to FDII from Public law No. 115-97, known as the Tax Cuts and Jobs Act (the "Tax Act") of $2.2 million, tax benefits for research and development credits of $2.3 million, offset by a Section 162(m) limitation on the deductibility of executive compensation of $0.5 million and additional Accounting Standards Codification ("ASC") 740-10 tax reserves of $0.6 million.

Our future effective income tax rate depends on various factors, such as future impacts of the Tax Act, possible further 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.

On March 27, 2020, the "Coronavirus Aid, Relief and Economic Security Act" (the "CARES Act") was enacted. The CARES Act includes provisions relating to refundable payroll tax credits, deferral of the employer portion of certain payroll taxes, net operating loss carryback periods, alternative minimum tax credit refunds, modifications to the net interest deduction limitations and technical corrections to tax depreciation methods for qualified improvement property. The Company filed a claim for a refund of prior years' income taxes paid under the provisions of the CARES Act which resulted in a tax benefit of $1.1 million as the 2019 net operating loss was carried back to a year with higher tax rates.

Liquidity and Capital Resources

At December 26, 2020, we had $373.7 million of cash, cash equivalents and marketable securities and $611.6 million in working capital. At December 31, 2019, our cash, cash equivalents and marketable securities totaled $320.2 million, while working capital amounted to $555.9 million.

Net cash and cash equivalents provided by operating activities for the years ended December 26, 2020, December 31, 2019 and December 31, 2018 totaled $106.0 million, $18.1 million and $35.1 million, respectively.

- Cash provided by operating activities increased in fiscal 2020 compared to fiscal 2019 primarily due to higher net income, adjusted to exclude the effect of non-cash charges, of $81.3 million, an increase in accrued and other liabilities of $24.5 million, a decrease in prepaid expenses and other assets of $16.5 million and an increase in accounts payable of $23.5 million, partially offset by an increase in inventories of $33.1 million, an increase in accounts receivable of $16.1 million and a decrease in income taxes of $8.8 million.
- Net cash and cash equivalents provided by operating activities decreased in fiscal 2019 compared to fiscal 2018 primarily due to lower net income, adjusted to exclude the effect of non-cash charges, of $10.8 million, a decrease in accounts payable of $15.7 million, an increase in accounts receivable of $10.4 million and a decrease in accrued and other liabilities of $6.8 million and an increase in prepaid expenses and other assets of $2.0 million, which were partially offset by an increase in inventories of $22.2 million and a decrease in income taxes of $6.6 million.

Net cash and cash equivalents used in investing activities for the year ended December 26, 2020 was $48.6 million. For the years ended December 31, 2019 and December 31, 2018, investing activities provided net cash and cash equivalents of $4.1 million and $33.8 million, respectively.

- During the year ended December 26, 2020, net cash used in investing activities included purchases of marketable securities, net of proceeds from sales of marketable securities of $47.6 million and purchases of property, plant and equipment of $3.8 million, partially offset by cash received from convertible note receivable of $2.8 million.
- During the year ended December 31, 2019, net cash provided by investing activities included cash acquired in the 2019 Merger of $43.9 million, partially offset by purchases of marketable securities, net of proceeds from marketable securities of $33.0 million and purchases of property, plant and equipment of $6.8 million.
- During the year ended December 31, 2018, net cash provided by investing activities included proceeds from sales of marketable securities, net of purchases of marketable securities of $46.3 million, partially offset by purchases of property, plant and equipment of $7.5 million and cash advanced on a convertible note receivable of $5.0 million.

Net cash used in financing activities was $53.7 million, $4.2 million and $23.9 million for the years ended December 26, 2020, December 31, 2019 and December 31, 2018, respectively.

- During the year ended December 26, 2020, financing activities used cash to primarily purchase shares of our common stock under the share repurchase authorization of $52.0 million.
- During the year ended December 31, 2019, financing activities used cash to primarily pay taxes related to shares withheld for share based compensation plans of $2.5 million and pay contingent consideration for acquired business

of $1.8 million.

- During the year ended December 31, 2018, financing activities used cash to primarily purchase shares of our common stock under share repurchase authorizations of $21.1 million and pay taxes related to shares withheld for share based compensation plans of $1.9 million.

From time to time, we evaluate whether to acquire new or complementary businesses, products and/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.

In November 2020, the Company's Board of Directors approved a share repurchase authorization, which allows the Company to repurchase up to $100 million worth of shares of its common stock. This share repurchase authorization replaces the remaining balance of $28 million from the prior share repurchase authorization. Repurchases may be made through both public market and private transactions from time to time. At December 26, 2020, there was $100 million available for future share repurchases.

For further information regarding our share repurchases, see Note 17 in the accompanying Notes to the Consolidated Financial Statements included in this Form 10-K.

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 26, 2020, the available line of credit was approximately $78.4 million with an available interest rate of 1.8%. 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. In addition, although the ultimate impact of the COVID-19 pandemic on our future results remains uncertain, we believe our business model and our current cash reserves leave us well-positioned to manage our business through this crisis as it continues to unfold. 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-K. 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. Market conditions due to the COVID-19 pandemic may have an impact on our ability to access such additional funding. Our borrowing capacity under our existing line of credit is tied to the value of eligible securities held at the time of borrowing, which may be negatively impacted by market conditions due to COVID-19 and government responses thereto. 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 26, 2020, and the effect such obligations are expected to have on our liquidity and cash flows in future periods. This table excludes the liability for unrecognized tax benefits that totaled approximately $8.9 million at December 26, 2020. 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).

	Payments due by period				
	Total	**Less than 1 year**	**1-3 years**	**3-5 years**	**More than 5 years**
Operating lease obligations	$ 24,242	$ 5,185	$ 10,850	$ 4,832	$ 3,375
Open and committed purchase orders	137,819	136,526	273	—	1,020
Total	$ 162,061	$ 141,711	$ 11,123	$ 4,832	$ 4,395

Off-Balance Sheet Arrangements

The Company does not have any off balance sheet arrangements that have or are reasonably likely to have a material current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources.

Critical Accounting Policies

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. We review the accounting policies we use in reporting our financial results on a regular basis. The preparation of these 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. We believe the following critical accounting policies affect our more significant judgments and estimates used in the preparation of our Consolidated Financial Statements.

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.

We account for shipping and handling activities as the fulfillment of a promise to transfer goods to the customer and therefore record 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, 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, training 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 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, consulting and training 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.

Business combinations. We account 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 we use our best estimates and assumptions to accurately value assets acquired and liabilities assumed at the acquisition date as well as contingent consideration, where applicable, our 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, we record 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 our consolidated statements of operations. Accounting for business combinations requires our management to make significant estimates and assumptions, especially at the acquisition date including our estimates for intangible assets, contractual obligations assumed, restructuring liabilities, pre-acquisition contingencies, and contingent consideration, where applicable. Although we believe the assumptions and estimates we have 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.

Excess and Obsolete Inventory. 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.

Goodwill and Indefinite Lived Intangible 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. The Company has one 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.

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.

There was no impairment of goodwill or IPR&D for the years presented.

Long-Lived Assets and Finite-Lived Acquired Intangible 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. During the year ended December 31, 2019, we recognized a $0.5 million impairment loss on long-lived assets. No such indicators were noted in 2020 or 2018.

Accounting for Income Taxes. As part of the process of preparing our consolidated financial statements, we are required to estimate our actual 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 then 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. At December 26, 2020 and December 31, 2019, we had recorded valuation allowances of $14.2 million and $14.2 million on certain of our deferred tax assets to reflect the deferred tax assets at the net amount that is more likely than not to be realized. We evaluated the realizability of the deferred tax assets based on positive earnings as well as the projected earnings in future years and believe it is more likely than not that the substantial majority of our deferred tax asset will be realized in the future years. We will continue to monitor the realizability of the deferred tax assets and evaluate the valuation allowance.

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.

Although we believe the measurement of our liabilities for uncertain tax positions is reasonable, no assurance can be given that the final outcome of these matters will not be different than what is reflected in the historical income tax provisions and accruals. If additional taxes are assessed as a result of an audit or litigation, it could have a material effect on our income tax provision and net income in the period or periods for which that determination is made.

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 26, 2020, an immediate adverse change of 10% in interest rates (e.g. 1.00% to 1.10%) would result in a decrease of $1.5 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

A substantial portion of our systems and software revenues are denominated in U.S. dollars. However, our international operations are exposed to foreign currency exchange rate fluctuations arising from U.S. dollar denominated intercompany balances between our U.S. headquarters and that of our foreign owned entities. Since each foreign entity's functional currency is generally denominated in its local currency, there is exposure to foreign exchange risk when the foreign entity's intercompany balance is remeasured at a reporting date, resulting in transaction gains or losses. The intercompany balance, exposed to foreign currency risk, as of December 26, 2020 was approximately $29.6 million. A hypothetical change of 10% in the relative value of the U.S. dollar versus local functional currencies could result in approximately $0.5 million in foreign currency exchange losses / (gains).

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 (income) expense" in the Consolidated Statements of Operations for each reporting period. As of December 26, 2020, and December 31, 2019, we had eight and seventeen outstanding forward contracts with a total notional contract value of $37.6 million and $38.9 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 26, 2020. 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 26, 2020 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) ("COSO"). Based on our evaluation, our management concluded that our internal control over financial reporting was effective as of December 26, 2020.

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 26, 2020 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 26, 2020, as stated in its attestation report included elsewhere in this Form 10-K.

Changes in Internal Control over Financial Reporting

In October 2019, we completed the merger with Nanometrics which operated under its own set of systems and internal controls. During the year ended December 26, 2020, we completed the integration of Nanometrics into our financial reporting processes and procedures and internal control over financial reporting. In addition, in January 2020, we implemented a new enterprise resource planning ("ERP") system in our domestic legacy Rudolph business to provide better support for our changing business needs and plans for future growth. As a result of this implementation, we modified certain existing internal controls over financial reporting and implemented certain new controls relating to the ERP system. We will continue to evaluate the design and operating effectiveness of our internal controls during subsequent periods.

Other than noted above, there have been no additional changes in the Company's internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) that occurred during the Company's year ended December 26, 2020 that have materially affected, or are reasonably likely to materially affect, its internal control over financial reporting. We have not experienced any material impact to our internal controls over financial reporting due to the fact that most of our employees responsible for financial reporting are working remotely during the COVID-19 pandemic. We are continually monitoring and assessing the impact of the COVID-19 pandemic on our internal controls to minimize the impact to their design and operating effectiveness.

Item 9B. Other Information.

None.

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 11, 2021, and the information included in the Proxy Statement is incorporated herein by reference.

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this Item with respect to directors and executive officers is included under the headings "Proposal One: Election of Directors," "Executive Officers" and "Corporate Governance Principles and Practices" in the Proxy Statement, which is incorporated herein by reference. 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.

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 included under the headings "Executive Compensation," "Compensation of Directors," "Compensation Committee Report on Executive Compensation," "Stock Ownership/Retention Guidelines for Directors" and "Compensation Committee Interlocks and Insider Participation" in the Proxy Statement, which is incorporated herein by reference.

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

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

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

The information required by this Item is included under the headings "Related Persons Transactions Policy" and "Board Independence" in the Proxy Statement, which is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services.

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

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-10 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.

Exhibit No.	Exhibit Description	Form	File Number	Date of First Filing	Exhibit No./Appendix Reference
2.1	Agreement and Plan of Merger, dated as of June 23, 2019, by and among Nanometrics Incorporated, Rudolph Technologies, Inc. and PV Equipment Inc.	8-K	000-13470	June 24, 2019	2.1
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	4.1
4.2	Description of Securities	10-K	001-39110	February 25, 2020	4.2
10.1	Nanometrics Incorporated Amended and Restated 2003 Employee Stock Purchase Plan	DEF14A	000-13470	April 4, 2016	Appendix 1
10.1.1	Form of Subscription Agreement Under the Nanometrics Incorporated Amended and Restated 2003 Employee Stock Purchase Plan	S-8	333-40866	June 24, 2019	4.1
10.2*	Nanometrics Incorporated Amended and Restated 2005 Equity Incentive Plan	DEF14A	000-13470	April 4, 2017	Appendix B
10.2.1*	Form of Performance-Based Restricted Stock Unit Agreement	8-K	000-13470	March 24, 2015	99.1
10.2.2*	Nanometrics Incorporated Amended and Restated 2005 Equity Incentive Plan forms of Stock Option and Restricted Stock Unit Agreements	10-K	000-13470	March 13, 2008	10.8
10.3*	Rudolph Technologies, Inc. 2009 Stock Plan	DEFR14A	000-27965	May 8, 2009	Appendix A
10.3.1*	Amended form of Employee Restricted Stock Unit Purchase Agreement pursuant to the Rudolph Technologies, Inc. 2009 Stock Plan	10-Q	001-36226	August 3, 2017	10.12
10.4*	Rudolph Technologies, Inc. 2018 Stock Plan	8-K	001-36226	May 16, 2018	10.1
10.4.1*	Form of Employee Performance Stock Unit Purchase Agreement pursuant to the Rudolph Technologies, Inc. 2018 Stock Plan	10-Q	001-36226	August 2, 2018	10.1

Exhibit No.	Exhibit Description	Form	File Number	Date of First Filing	Exhibit No./Appendix Reference
10.4.2*	Form of Employee Stock Option Agreement pursuant to the Rudolph Technologies, Inc. 2018 Stock Plan	10-Q	001-36226	August 2, 2018	10.2
10.5*	Onto Innovation Inc. 2020 Stock Plan and forms of restricted stock units purchase agreements, performance stock unit purchase agreements and stock option agreements.	8-K	001-39110	May 14, 2020	10.1
10.6*	Onto Innovation Inc. 2020 Employee Stock Purchase Plan	S-8	333-238492	May 19, 2020	10.2
10.7*	Compensation Arrangements with Named Executive Officers	8-K	000-13470	March 1, 2018	5.02
10.8*	Form of Indemnification Agreement between the Nanometrics Incorporated and each of its directors and executive officers	8-K	000-13470	February 20, 2013	10.1
10.9*	Form of Indemnity Agreement	8-K	001-36226	June 24, 2019	10.1
10.10*	Form of Indemnification Agreement	8-K	001-39110	November 6, 2019	10.1
10.11*	General Severance Benefits and Change in Control Severance Benefits Agreement between Kevin Heidrich and Nanometrics Incorporated, dated May 19, 2015.	8-K	000-13470	May 22, 2015	10.4
10.12*	General Severance Benefits and Change in Control Severance Benefits Agreement between Rollin Kocher and Nanometrics Incorporated, dated November 10, 2016.	10-K	000-13470	March 3, 2017	10.22
10.13*	Management Agreement, dated as of July 24, 2000 by and between Rudolph Technologies, Inc. and Steven R. Roth as restated and amended on July 29, 2014.	10-Q	001-36226	August 6, 2014	10.2
10.14*	Employment Agreement, dated as of November 9, 2015, by and between Rudolph Technologies, Inc. and Michael Plisinski.	8-K	001-36226	November 9, 2015	10.1

Exhibit No.	Exhibit Description	Form	File Number	Date of First Filing	Exhibit No./Appendix Reference
10.15*	Executive Change of Control Agreement, dated August 20, 2009, by and between Rudolph Technologies, Inc. and Robert A. Koch.	10-Q	000-27965	November 6, 2009	10.3
10.16	License Agreement, dated June 28, 1995, between Rudolph Technologies Inc. and Brown University Research Foundation.	S-1	333-86821	September 9, 1999	10.1
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.	—	—	—	—
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.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS AND FINANCIAL STATEMENT SCHEDULE

Report of Independent Registered Public Accounting Firm

To the Shareholders 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 26, 2020 and December 31, 2019, the related consolidated statements of operations, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 26, 2020, 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 26, 2020 and December 31, 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 26, 2020, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 26, 2020, 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 19, 2021 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.

	Excess Inventory Reserve
Description of the Matter	As described in Note 8 to the consolidated financial statements, the Company had net inventories of \$191.2 million as of December 26, 2020, which included materials of \$124.9 million, work-in-progress of \$44.8 million, and finished goods of \$21.5 million. 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 19, 2021

Report of Independent Registered Public Accounting Firm

To the Shareholders 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 26, 2020, 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 26, 2020, 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 26, 2020 and December 31, 2019, the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 26, 2020, and the related notes and financial statement schedule listed in the Index at Item 15(a) and our report dated February 19, 2021 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 19, 2021

ONTO INNOVATION INC.

CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share data)

	Year Ended December 26,	Year Ended December 31,	
	2020	2019	2018
Revenue	$ 556,496	$ 305,896	$ 273,784
Cost of revenue	278,043	170,868	125,505
Gross profit	278,453	135,028	148,279
Operating expenses:			
Research and development	84,584	48,358	39,953
Sales and marketing	48,136	28,251	22,010
General and administrative	65,310	53,017	33,698
Amortization	53,746	10,445	1,534
Total operating expenses	251,776	140,071	97,195
Operating income (loss)	26,677	(5,043)	51,084
Interest income, net	2,899	3,666	2,206
Other income (expense), net	(2,708)	780	56
Income (loss) before provision (benefit) for income taxes	26,868	(597)	53,346
Provision (benefit) for income taxes	(4,157)	(2,507)	8,250
Net income	$ 31,025	$ 1,910	$ 45,096
Earnings per share:			
Basic	$ 0.63	$ 0.06	$ 1.77
Diluted	$ 0.63	$ 0.06	$ 1.74
Weighted average number of shares outstanding:			
Basic	49,136	29,729	25,470
Diluted	49,475	30,007	25,895

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

ONTO INNOVATION INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In thousands)

	Year Ended December 26, 2020	Year Ended December 31, 2019	Year Ended December 31, 2018
Net income	$ 31,025	$ 1,910	$ 45,096
Other comprehensive income (loss), net of tax:			
Change in net unrealized gains (losses) on available-for-sale marketable securities	123	(44)	136
Change in currency translation adjustments	5,043	709	(194)
Total other comprehensive income (loss), net of tax	5,166	665	(58)
Total comprehensive income	$ 36,191	$ 2,575	$ 45,038

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 26, 2020	December 31, 2019
ASSETS		
Current Assets:		
Cash and cash equivalents	$ 136,720	$ 130,673
Marketable securities	237,002	189,563
Accounts receivable, less allowance of $784 in 2020 and $1,247 in 2019	149,251	123,656
Inventories	191,217	176,134
Prepaid expenses and other current assets	17,471	21,638
Total current assets	731,661	641,664
Property, plant and equipment, net	87,950	98,420
Goodwill	306,632	307,148
Identifiable intangible assets, net	318,357	371,953
Deferred income taxes	2,235	1,456
Other assets	21,337	27,939
Total assets	$ 1,468,172	$ 1,448,580
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 40,183	$ 27,738
Accrued liabilities	37,075	26,204
Deferred revenue	14,334	12,629
Other current liabilities	28,499	19,172
Total current liabilities	120,091	85,743
Deferred and other tax liabilities	55,623	67,040
Other non-current liabilities	27,712	31,771
Total liabilities	203,426	184,554
Commitments and contingencies (Note 9)		
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, 48,758 and 50,184 issued and outstanding at December 26, 2020 and December 31, 2019, respectively	49	50
Additional paid-in capital	1,233,967	1,269,437
Accumulated other comprehensive income (loss)	4,568	(598)
Accumulated earnings (deficit)	26,162	(4,863)
Total stockholders' equity	1,264,746	1,264,026
Total liabilities and stockholders' equity	$ 1,468,172	$ 1,448,580

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

ONTO INNOVATION INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 26,	Year Ended December 31,	
	2020	2019	2018
Cash flows from operating activities:			
Net income	$ 31,025	$ 1,910	$ 45,096
Adjustments to reconcile net income to net cash and cash equivalents provided by operating activities:			
Depreciation	13,832	5,965	4,848
Amortization of intangibles	53,746	10,445	1,534
Share-based compensation	17,662	10,585	6,062
Acquired inventory step-up amortization	10,678	15,370	—
Provision for inventory valuation	14,703	10,841	3,042
Deferred income taxes	(11,631)	(4,116)	2,163
Other, net	4,711	2,459	1,558
Change in operating assets and liabilities net of assets acquired and liabilities assumed in merger:			
Accounts receivable	(25,816)	(9,721)	706
Income taxes	(1,196)	7,648	1,056
Inventories	(42,409)	(9,338)	(31,545)
Prepaid expenses and other assets	11,409	(5,079)	(3,101)
Accounts payable	11,403	(12,138)	3,512
Accrued and other liabilities	17,867	(6,685)	163
Net cash and cash equivalents provided by operating activities	105,984	18,146	35,094
Cash flows from investing activities:			
Purchases of marketable securities	(313,027)	(127,462)	(140,018)
Proceeds from sales of marketable securities	265,409	94,486	186,332
Purchases of property, plant and equipment	(3,829)	(6,802)	(7,542)
Cash acquired from merger	—	43,882	—
Cash received from (advanced on) convertible note receivable	2,848	—	(5,000)
Net cash and cash equivalents provided by (used in) investing activities	(48,599)	4,104	33,772
Cash flows from financing activities:			
Purchases of common stock	(52,000)	(744)	(21,069)
Tax payments related to shares withheld for share-based compensation plans	(4,052)	(2,540)	(1,921)
Payment of contingent consideration for acquired business	(569)	(1,758)	(1,543)
Issuance of shares through share-based compensation plans	2,919	844	624
Net cash and cash equivalents used in financing activities	(53,702)	(4,198)	(23,909)
Effect of exchange rate changes on cash and cash equivalents	2,364	233	(339)
Net increase in cash and cash equivalents	6,047	18,285	44,618
Cash and cash equivalents at beginning of year	130,673	112,388	67,770
Cash and cash equivalents at end of year	$ 136,720	$ 130,673	$ 112,388
Supplemental disclosure of cash flow information:			
Income taxes paid (received), net	$ 6,415	$ (3,848)	$ 4,301

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 26, 2020,
December 31, 2019 and December 31, 2018
(In thousands)

	Common Stock		Additional Paid-in	Accumulated Other Comprehensive	Accumulated Earnings /	
	Shares	Amount	Capital	Income / (Loss)	(Deficit)	Total
Balance at December 31, 2017	25,416	$ 32	$ 386,196	$ (1,205)	$ (51,869)	$ 333,154
Issuance of shares through share-based compensation plans, net	358	—	624	—	—	624
Repurchase of common stock	(853)	(1)	(21,068)	—	—	(21,069)
Net income	—	—	—	—	45,096	45,096
Share-based compensation	—	—	6,062	—	—	6,062
Share-based compensation plan withholdings	(66)	—	(1,921)	—	—	(1,921)
Currency translation	—	—	—	(194)	—	(194)
Unrealized gain on investments	—	—	—	136	—	136
Balance at December 31, 2018	24,855	31	369,893	(1,263)	(6,773)	361,888
Effect of merger	25,060	19	890,112	—	—	890,131
Issuance of shares through share-based compensation plans, net	377	—	2,131	—	—	2,131
Repurchase of common stock	(30)	—	(744)	—	—	(744)
Net income	—	—	—	—	1,910	1,910
Share-based compensation	—	—	10,585	—	—	10,585
Share-based compensation plan withholdings	(78)	—	(2,540)	—	—	(2,540)
Currency translation	—	—	—	709	—	709
Unrealized loss on investments	—	—	—	(44)	—	(44)
Balance at December 31, 2019	50,184	50	1,269,437	(598)	(4,863)	1,264,026
Issuance of shares through share-based compensation plans, net	668	1	2,918	—	—	2,919
Repurchase of common stock	(1,882)	(2)	(51,998)	—	—	(52,000)
Net income	—	—	—	—	31,025	31,025
Share-based compensation	—	—	17,662	—	—	17,662
Share-based compensation plan withholdings	(118)	—	(4,052)	—	—	(4,052)
Other	(94)	—	—	—	—	—
Currency translation	—	—	—	5,043	—	5,043
Unrealized gain on investments	—	—	—	123	—	123
Balance at December 26, 2020	48,758	$ 49	$ 1,233,967	$ 4,568	$ 26,162	$ 1,264,746

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

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," 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 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. In the first quarter of 2020, the Company changed its fiscal year end from December 31 to a 52-53 week fiscal year ending on the Saturday closest to December 31. The Company made the fiscal year change on a prospective basis and has not adjusted operating results for prior periods. The fiscal year of 2020 began on January 1, 2020 and ended December 26, 2020. Financial statements for 2019 and 2018 continue to be presented on the basis of our previous calendar year end.

Revenue Recognition. Revenue is recognized when control of the promised goods or services are 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 has elected to account 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. These accounting policy elections are consistent with the manner in which the Company has historically recorded these items.

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, training 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.

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 are 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, consulting and training 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 component as the payment terms are generally 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 10 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.

For additional information on the Company's business combinations, see Note 3 of Notes to the Consolidated Financial Statements.

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, 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.

The Company also assessed the impacts of COVID-19 on the above accounting matters as of December 26, 2020 and through the date of this report. While there was not a material impact as of and for the year ended December 26, 2020 and through the date of this report, future actual magnitude and duration of COVID-19, as well as other associated factors, could result in material negative impacts to the Company's condensed consolidated financial statements in future reporting periods.

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 all of 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 5 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, including as a result of COVID-19, 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 of usage, 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 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. For the year ended December 31, 2019, there was an impairment to an item in property, plant and equipment of $507, which was recorded in general and administrative expenses in the Consolidated Statements of Operations. There were no impairments of long-lived assets for the years ended December 26, 2020 and December 31, 2018.

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 one operating segment. No goodwill impairment occurred in fiscal years 2020, 2019, or 2018. 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.

There was no impairment of goodwill or IPR&D for the years ended December 26, 2020, December 31, 2019 and December 31, 2018.

For additional information on the Company’s goodwill and purchased intangible assets, see Note 6 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, including as a result of COVID-19.

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 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 13 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 $4,479 and $564 as of December 26, 2020 and December 31, 2019, 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 11 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 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, British pound sterling, 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.

The dollar equivalent of the U.S. dollar forward contracts and related fair values as of December 26, 2020 and December 31, 2019 were as follows:

	December 26, 2020	December 31, 2019
Notional amount	$ 37,580	$ 38,887
Fair value of asset (liability)	(36)	120

During the year ended December 26, 2020 and December 31, 2019, the Company recognized a gain of $510 and $343 on maturities of forward contracts, respectively. During the year ended December 31, 2018, the Company recorded a loss of $81 on maturities of forward contracts. The aggregate notional amounts of matured contracts were $373,749, $58,522 and $8,465 for 2020, 2019 and 2018, 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 9 of the Notes to the Consolidated Financial Statements, "Commitments and Contingencies" for a detailed description.

Recent Accounting Pronouncements.

Recently Adopted

Effective January 1, 2020, the Company adopted Accounting Standards Update ("ASU") No. 2018-13, "Fair Value Measurement (Topic 820): Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement." This ASU is part of the Financial Accounting Standard Board's ("FASB") larger disclosure framework project intended to improve the effectiveness of financial statement footnote disclosure. ASU No. 2018-13 modifies required fair value disclosures related primarily to Level 3 investments. This ASU is effective for annual periods beginning after December 15, 2019 and interim periods within those annual periods. The adoption of ASU No. 2018-13 did not have a material impact on the Company's consolidated financial position, results of operations, and cash flows.

Effective January 1, 2020, the Company adopted ASU No. 2017-09, "Compensation - Stock Compensation (Topic 718): Scope of Modification Accounting." This ASU amends the scope of modification accounting for share-based payment arrangements and provides guidance on the types of changes to the terms or conditions of share-based payment awards to which an entity would be required to apply modification accounting under Accounting Standards Codification ("ASC") 718. The ASU is effective for the fiscal years beginning after December 15, 2019 and for interim periods within those fiscal years. The adoption of ASU No. 2017-09 did not have a material impact on the Company's consolidated financial position, results of operations, and cash flows.

Effective January 1, 2020, the Company adopted ASU No. 2016-13, "Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments," which represents a credit loss standard that changes the impairment model for most financial assets and certain other financial instruments. Specifically, this guidance requires entities to utilize a new "expected loss" model as it relates to trade receivables, notes receivable and other commitments to extend credit held by a reporting entity. In addition, entities are required to recognize an allowance for estimated credit losses on available-for-sale debt securities, regardless of the length of time that a security has been in an unrealized loss position. This guidance is effective for annual reporting periods beginning after December 15, 2019, including interim periods within those annual reporting periods, with early adoption permitted. The adoption of ASU No. 2016-13 did not have a material impact on the Company's consolidated financial position, results of operations, and cash flows.

Recently Issued

In December 2019, the FASB issued ASU No. 2019-12, "Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes." This standard simplifies the accounting for income taxes by eliminating certain exceptions to the guidance in Topic 740 related to the approach for intraperiod tax allocation, the methodology for calculating income taxes in an interim period and the recognition of deferred tax liabilities for outside basis differences. The new guidance also simplifies aspects of the accounting for franchise taxes and enacted changes in tax laws or rates and clarifies the accounting for transactions that result in a step-up in the tax basis of goodwill and allocating consolidated income taxes to separate financial statements of entities not subject to income tax. ASU No. 2019-12 is effective for fiscal years beginning after December 15, 2020, with early adoption permitted. Upon adoption, the Company must apply certain aspects of this standard retrospectively for all periods presented while other aspects are applied on a modified retrospective basis through a cumulative-effect adjustment to retained earnings as of the beginning of the fiscal year of adoption. The Company is currently evaluating the impact of this new standard on its consolidated financial position, results of operations, and cash flows.

Recently issued accounting guidance not discussed above is not applicable or did not have, or is not expected to have, a material impact to the Company.

3. Business Combination:

On October 25, 2019, the Company became Onto Innovation Inc. and accounted for the merger ("2019 Merger") as a reverse acquisition using the acquisition method of accounting in accordance with generally accepted accounting principles

(“GAAP”). GAAP requires that either Nanometrics Incorporated (“Nanometrics”) or Rudolph Technologies, Inc. (“Rudolph”) is designated as the acquirer for accounting and financial reporting purposes (“Accounting Acquirer”). Based on the evidence available, Rudolph was designated as the Accounting Acquirer while Nanometrics was the acquirer for legal purposes. Therefore, Rudolph’s historical results of operations replaced Nanometrics’ historical results of operations for all periods prior to the 2019 Merger.

The aggregate purchase price of $890,131 consisted of 25,060 shares of common stock valued at $884,801 and the fair value of assumed Nanometrics equity awards of $5,330. Under ASC 805, acquisition-related transaction costs (e.g., advisory, legal, investment banking and other professional fees) are not included as a component of consideration transferred but are accounted for as expenses in the periods in which such costs are incurred. Total transaction costs incurred by the Company were $9,907 during the year ended December 31, 2019 and are included in general and administrative expense in the Consolidated Statements of Operations.

During the quarter ended December 26, 2020, the Company finalized its fair value determination of the assets acquired and the liabilities assumed. The following table summarizes the final allocation of the total purchase consideration to the fair values of the assets acquired and liabilities assumed at the merger date.

Cash and cash equivalents	$43,882
Marketable securities	94,389
Account receivables	49,917
Inventories	98,478
Prepaid expenses and other current assets	6,659
Property, plant and equipment	77,451
Operating lease right-of-use assets	9,658
Identifiable intangible assets	374,900
Deferred income taxes	2,191
Other assets	850
Total assets acquired	758,375
Accounts payable	(23,361)
Payroll and related expenses	(20,290)
Deferred revenue	(5,931)
Other current liabilities	(10,679)
Income taxes payable	(2,007)
Other non-current liabilities	(90,113)
Net assets acquired	605,994
Goodwill	284,137
Total purchase consideration	$890,131

The inventory acquired consisted primarily of work in process, for which fair value was measured based on determining its net realizable value as such value represents an exit price in an orderly transaction between market participants, and raw materials. Factors that required judgment in determining the net realizable value for the inventory included determining estimated selling prices, cost to complete, costs to dispose, operating profit, and discount rates, among others. The Company recorded a $26,486 step-up of inventory to its fair value as of the 2019 Merger date.

The allocation of the intangible assets subject to amortization is as follows:

	Estimated Fair Value	**Weighted Average Useful Life (years)**
Developed technology	$260,500	6.6
In-process research and development	46,600	indefinite
Customer relationships	53,000	13.1
Backlog	6,700	1.1
Trademarks and trade names	8,100	7.5
Total intangible assets	$374,900	

Acquired intangible assets reported above are being amortized using the straight-line method over their estimated useful lives, which approximates the pattern of how the economic life is expected to be used. This includes amounts allocated to customer relationships because of anticipated high customer retention rates that are common in the semiconductor capital equipment industry.

Developed technology relates to Nanometrics' product family and was valued using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the developed technology less charges representing the contribution of other assets to those cash flows. The average estimated useful life of developed technologies was determined to be 6.6 years and was based on the technology cycle related to each developed technology, as well as the cash flows over the respective forecast period.

The fair value of the in-process research and development ("IPRD") was determined using the multi-period excess earnings method under the income approach. Such method reflects the present value of the projected cash flows that are expected to be generated by the IPRD, less costs to complete the development and charges representing the contribution of other assets to those cash flows. The Company has determined that the estimated useful life of the acquired in-process research and development is currently indeterminate; thus, it has been categorized as indefinite and will be reviewed annually for impairment, along with the Company's other long-lived assets with indefinite lives, unless its estimated useful life is known.

Customer relationships represent the fair value of future projected revenue that will be derived from sales of products to new and existing customers and was valued using the distributor method under the income approach. This method reflects the present value of projected distributor margins to be derived from sales to existing customers less charges representing the contribution of other assets to those cash flows. The estimated useful life of the customer relationships was determined to be 13.1 years and was based on historical customer turnover rates.

Order backlog represents the fair value of future projected revenue that will be derived from outstanding orders from customers that have not yet been shipped and was valued using the multi-period excess earnings method under the income approach, which reflects the present value of such outstanding orders less charges representing the contribution of other assets to those cash flows. The estimated useful life of the order backlog was determined to be 1.1 years and was based on historical order fulfilment rates.

Trademarks and trade names relate to the "Nanometrics" trademarks and trade names and were fair valued by applying the relief-from-royalty method under the income approach. This method is based on the application of a royalty rate to forecasted revenue under the trademarks and trade names. The estimated useful life of the trademarks and trade names was determined to be 7.5 years and was based on the expected life of the trademarks and trade names and the cash flows anticipated over the forecast period.

The results of operations of Nanometrics are reported in the Company's consolidated financial statements from the date of the 2019 Merger and included $66,261 of total net sales and an operating loss of $7,065 for the year ended December 31, 2019.

Unaudited Pro Forma Financial Information

The following unaudited pro forma financial information summarizes the combined results of operations of Rudolph and Nanometrics, on a pro forma basis, as if the companies had combined at the beginning of fiscal year 2018. The pro forma financial information is presented for informational purposes only and may not necessarily reflect the actual results of operations that would have been achieved if the 2019 Merger had taken place on January 1, 2018, nor are they necessarily reflective of future results of operations. The pro forma information for all periods presented also includes adjustments to amortization charges for acquired intangible assets, depreciation charges for stepped-up fair value of acquired fixed assets, related tax effects and other adjustments.

The reported financial information for the year ended December 31, 2019 includes the results of Rudolph for the year then-ended and the results of Nanometrics from the merger date through December 31, 2019. The reported financial information for the year ended December 31, 2018 is the historical results of Rudolph:

	Year Ended			
	December 31, 2019		December 31, 2018	
	Reported	Pro Forma	Reported	Pro Forma
Net revenue	$ 305,896	$ 525,455	$ 273,784	$ 598,307
Net income attributable to Onto Innovation	1,910	901	45,096	36,246

4. 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.

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 tables provide the assets and liabilities carried at fair value measured on a recurring basis at December 26, 2020 and December 31, 2019:

		Fair Value Measurements Using		
	Carrying Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
December 26, 2020				
Assets:				
Available-for-sale debt securities:				
Municipal notes and bonds	$ 124,640	$ —	$ 124,640	$ —
Asset-backed securities	11,708	—	11,708	—
Certificates of deposit	36,373	—	36,373	—
Commercial paper	32,699	—	32,699	—
Corporate bonds	31,582	—	31,582	—
Total assets	$ 237,002	$ —	$ 237,002	$ —
Liabilities:				
Foreign currency forward contracts	$ 36	$ —	$ 36	$ —
Total liabilities	$ 36	$ —	$ 36	$ —
December 31, 2019				
Assets:				
Available-for-sale debt securities:				
Municipal notes and bonds	$ 81,108	$ —	$ 81,108	$ —
Asset-backed securities	10,779	—	10,779	—
Certificates of deposit	30,507	—	30,507	—
Commercial paper	30,708	—	30,708	—
Corporate bonds	36,461	—	36,461	—
Foreign currency forward contracts	120	—	120	—
Total assets	$ 189,683	$ —	$ 189,683	$ —
Liabilities:				
Contingent consideration – acquisitions	$ 569	$ —	$ —	$ 569
Total liabilities	$ 569	$ —	$ —	$ 569

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.

Level 3 liabilities consisted of contingent consideration related to an acquisition for which the Company uses a discounted cash flow model to value these liabilities. The Level 3 assumptions used in the discounted cash flow model for the contingent consideration included projected revenue, timing of cash flows and estimates of discount rates.

See Note 5 for additional discussion regarding the fair value of the Company's marketable securities.

5. Marketable Securities:

At December 26, 2020 and December 31, 2019, marketable securities are categorized as follows:

	Amortized Cost	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Fair Value
December 26, 20120				
Municipal notes and bonds	$ 124,387	$ 257	$ 4	$ 124,640
Asset-backed securities	11,679	29	—	11,708
Certificates of deposit	36,349	24	—	36,373
Commercial paper	32,690	12	3	32,699
Corporate bonds	31,544	50	12	31,582
Total marketable securities	$ 236,649	$ 372	$ 19	$ 237,002
December 31, 2019				
Municipal notes and bonds	$ 80,926	$ 188	$ 6	$ 81,108
Asset-backed securities	10,767	12	—	10,779
Certificates of deposit	30,500	7	—	30,507
Commercial paper	30,707	1	—	30,708
Corporate bonds	36,409	52	—	36,461
Total marketable securities	$ 189,309	$ 260	$ 6	$ 189,563

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 26, 2020 and December 31, 2019:

	December 26, 2020		December 31, 2019	
	Amortized Cost	Fair Value	Amortized Cost	Fair Value
Due within one year	$ 170,099	$ 170,321	$ 152,649	$ 152,852
Due after one through five years	66,550	66,681	36,660	36,711
Due after five through ten years	—	—	—	—
Due after ten years	—	—	—	—
Total marketable securities	$ 236,649	$ 237,002	$ 189,309	$ 189,563

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 26, 2020 and December 31, 2019.

	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 26, 2020				
Municipal notes and bonds	$ 8,641	$ 4	$ —	$ —
Asset-backed securities	—	—	—	—
Certificates of deposit	—	—	—	—
Commercial paper	8,862	3	—	—
Corporate bonds	14,947	12	—	—
Total marketable securities	$ 32,450	$ 19	$ —	$ —
December 31, 2019				
Municipal notes and bonds	$ 14,166	$ 6	$ —	$ —
Total marketable securities	$ 14,166	$ 6	$ —	$ —

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

6. 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 2020 and concluded that no impairment charge was required.

Goodwill

The changes in the carrying amount of goodwill are as follows:

Balance at December 31, 2018	$ 22,495
Acquired goodwill (Note 3)	284,653
Balance at December 31, 2019	307,148
Goodwill adjustments (Note 3)	(516)
Balance at December 26, 2020	$ 306,632

Purchased Intangible Assets

Purchased intangible assets as of December 26, 2020 and December 31, 2019 are as follows:

	Gross Carrying Amount	Accumulated Amortization	Net
December 26, 2020			
Finite-lived intangible assets:			
Developed technology	$ 326,877	$ 110,851	$ 216,026
Customer and distributor relationships	69,261	20,654	48,607
Trademarks and trade names	12,461	5,337	7,124
Total finite-lived intangible assets	408,599	136,842	271,757
In-process research and development	46,600	—	46,600
Total identifiable intangible assets	$ 455,199	$ 136,842	$ 318,357
December 31, 2019			
Finite-lived intangible assets:			
Developed technology	$ 326,726	$ 67,861	$ 258,865
Customer and distributor relationships	69,261	11,078	58,183
Trademarks and trade names	12,461	4,156	8,305
Total finite-lived intangible assets	408,448	83,095	325,353
In-process research and development	46,600	—	46,600
Total identifiable intangible assets	$ 455,048	$ 83,095	$ 371,953

Intangible asset amortization expense amounted to $53,746, $10,445 and $1,534 for the years ended December 26, 2020, December 31, 2019 and December 31, 2018, respectively. Assuming no change in the gross carrying value of identifiable intangible assets and estimated lives, estimated amortization expenses are $48,024 for 2021, $47,625 for 2022, $47,150 for 2023, $41,465 for 2024, and $24,915 for 2025.

7. 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 $6,756 and $4,124 for the years ended December 26, 2020 and December 31, 2019, 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 26, 2020	Year Ended December 31, 2019
Cash paid for operating lease liabilities	$ 6,700	$ 3,872
Right-of-use assets obtained in exchange for operating lease liabilities	$ 725	$ 2,946

Operating Lease Information	December 26, 2020	December 31, 2019
Weighted average remaining lease term	6.0	6.7
Weighted average discount rate	4.7%	4.5%

As of December 26, 2020, 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 26, 2020 is as follows:

Fiscal Year	
2021	$ 5,186
2022	4,446
2023	3,460
2024	2,943
2025	2,912
Thereafter	5,295
Total undiscounted operating lease payments	24,242
Less: imputed interest	3,317
Present value of operating lease liabilities	$ 20,925

8. Balance Sheet Components:

Inventories

Inventories are comprised of the following:

	December 26, 2020	December 31, 2019
Materials	$ 124,926	$ 108,492
Work-in-process	44,829	42,694
Finished goods	21,462	24,948
Total inventories	$ 191,217	$ 176,134

Property, Plant and Equipment

Property, plant and equipment, net, is comprised of the following:

	December 26, 2020	December 31, 2019
Land and building	$ 47,544	$ 47,222
Machinery and equipment	52,833	56,504
Furniture and fixtures	4,013	3,968
Computer equipment and software	15,549	15,770
Leasehold improvements	12,927	13,069
	132,866	136,533
Accumulated depreciation	(44,916)	(38,113)
Total property, plant and equipment, net	$ 87,950	$ 98,420

Depreciation expense amounted to $13,832, $5,965 and $4,848 for the years ended December 26, 2020, December 31, 2019 and December 31, 2018, respectively.

Other assets

Other assets is comprised of the following:

	December 26, 2020	December 31, 2019
Convertible notes receivable, net of allowance of $2,000 at December 31, 2019	$ —	$ 3,000
Operating lease right-of-use assets	19,669	23,588
Other	1,668	1,351
Total other assets	$ 21,337	$ 27,939

Accrued liabilities

Accrued liabilities is comprised of the following:

	December 26, 2020	December 31, 2019
Payroll and related expenses	$ 30,270	$ 19,365
Warranty	6,062	6,348
Other	743	491
Total accrued liabilities	$ 37,075	$ 26,204

Other current liabilities

Other current liabilities is comprised of the following:

	December 26, 2020	December 31, 2019
Contingent consideration – acquisitions	$ —	$ 569
Income tax payable	4,109	2,783
Current operating lease obligations	4,470	4,906
Customer deposits	15,177	1,994
Accrued professional fees	1,184	1,520
Other	3,559	7,400
Total other current liabilities	$ 28,499	$ 19,172

Other non-current liabilities

Other non-current liabilities is comprised of the following:

	December 26, 2020	December 31, 2019
Unrecognized tax benefits (including interest)	$ 3,812	$ 6,384
Non-current operating lease obligations	16,455	19,970
Deferred revenue	1,292	2,464
Other	6,153	2,953
Total non-current liabilities	$ 27,712	$ 31,771

9. 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. These receivables were not included in the consolidated balance sheets as the criteria for sale treatment had been met. The Company sold $17,703 of receivables during the year ended December 26, 2020. 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 26, 2020.

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:

	Year Ended	
	December 26, 2020	December 31, 2019
Balance, beginning of the period	$ 6,348	$ 2,441
Accruals	7,707	4,265
Warranty liability assumed in Merger	—	4,227
Usage	(7,570)	(4,585)
Balance, end of the period	$ 6,485	$ 6,348

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 activities with regard to these matters.

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"), alleges claims arising from a purported exclusive purchase contract between OSI and Nanometrics pertaining to certain products. 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. 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 2019 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 for OSI to amend the Complaint. 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 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. This matter is currently in discovery which is stipulated to extend to September of 2021. Trial has been set for May 16, 2022. At this time, the loss contingency in this matter is remote and the Company does not anticipate the outcome of the matter to have a material impact on its financial position, results of operations, or cash flows.

Royalty Agreements

Under various licensing agreements, the Company is obligated to pay royalties based on net sales of products sold. There are no minimum annual royalty payments. Royalty expense amounted to $1,329, $1,429 and $1,904 for the years ended December 26, 2020, December 31, 2019 and December 31, 2018, respectively.

Open and Committed Purchase Orders

The Company has open and committed purchase orders of $137,819 as of December 26, 2020.

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 26, 2020 was approximately $78,366 with an available interest rate of 1.8%. 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.

10. Revenue

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

	Year Ended	
	December 26, 2020	December 31, 2019
Point-in-time	$ 527,677	$ 286,130
Over-time	28,819	19,766
Total revenue	$ 556,496	$ 305,896

See Note 15 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. These amounts are recorded as deferred revenue in the Consolidated Balance Sheets.

Changes in deferred revenue were as follows:

	Year Ended	
	December 26, 2020	December 31, 2019
Balance, beginning of the period	$ 15,093	$ 8,080
Deferred revenue assumed in Merger	—	5,931
Deferral of revenue	43,398	28,651
Recognition of deferred revenue	(42,864)	(27,569)
Balance, ending of the period	$ 15,627	$ 15,093

11. 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 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 3,613 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 granted to employees have time based or performance based vesting. As of December 26, 2020, there were 3,555 shares of common stock available for issuance pursuant to future grants under the 2020 Plan.

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

	Year Ended December 26, 2020	Year Ended December 31, 2019	Year Ended December 31, 2018
Share-based compensation expense:			
Restricted stock units, including all performance and market based awards	$ 15,780	$ 10,421	$ 6,062
Stock options and employee stock purchase options	1,882	164	—
Total share-based compensation	17,662	10,585	6,062
Tax effect on share-based compensation	3,849	2,283	1,362
Net effect on net income	$ 13,813	$ 8,302	$ 4,700
Effect on earnings per share:			
Basic	$ (0.28)	$ (0.28)	$ (0.18)
Diluted	$ (0.28)	$ (0.28)	$ (0.18)

Restricted Stock Unit Activity

A summary of the Company's restricted stock unit activity with respect to the years ended December 26, 2020, December 31, 2019 and December 31, 2018 follows:

	Number of Shares	Weighted Average Grant Date Fair Value
Nonvested at December 31, 2017	816	$ 18.50
Granted	228	$ 34.80
Vested	(325)	$ 17.73
Forfeited	(80)	$ 22.12
Nonvested at December 31, 2018	639	$ 24.26
Granted	271	$ 29.58
Assumed in Merger	598	$ 31.43
Vested	(366)	$ 25.69
Forfeited	(35)	$ 26.44
Nonvested at December 31, 2019	1,107	$ 28.89
Granted	498	$ 34.71
Vested	(498)	$ 29.46
Forfeited	(143)	$ 29.99
Nonvested at December 26, 2020	964	$ 31.37

As of December 26, 2020, there was $19,135 of total unrecognized compensation cost related to restricted stock units granted under the plans. That cost is expected to be recognized over a weighted average period of 1.7 years.

Stock Option Activity

A summary of the Company's stock option activity with respect to the years ended December 26, 2020, December 31, 2019 and December 31, 2018 follows:

	Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
Outstanding at December 31, 2017	59	$ 15.20		
Granted	—	—		
Exercised	(22)	15.20		
Expired	—	—		
Forfeited	—	—		
Outstanding at December 31, 2018	37	15.20		
Granted	—	—		
Assumed in Merger	12	16.27		
Exercised	(2)	14.96		
Expired	—	—		
Forfeited	—	—		
Outstanding at December 31, 2019	47	$ 15.49		
Granted	—	—		
Exercised	(19)	15.84		
Expired	—	—		
Forfeited	—	—		
Outstanding at December 26, 2020	28	$ 15.25	1.9	$ 915
Vested or expected to vest at December 26, 2020	28	$ 15.25	1.9	$ 915
Exercisable at December 26, 2020	28	$ 15.25	1.9	$ 915

The total intrinsic value of the stock options exercised during fiscal years 2020, 2019 and 2018 was $420, $51 and $384, respectively. As of December 26, 2020, there was no unrecognized compensation cost related to stock options granted under the plans.

The options outstanding and exercisable at December 26, 2020 were in the following exercise price ranges:

	Options Outstanding			Options Exercisable	
Range of Exercise Prices	Shares	Weighted Average Remaining Contractual Life (years)	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
$15.20 - $18.79	28	1.9	$ 15.25	28	$ 15.25

Employee Stock Purchase 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, 72 and 13 shares during the twelve months ended December 26, 2020, December 31, 2019 and December 31, 2018, respectively. As of December 26, 2020 and December 31, 2019, there were 1,500 and 236, shares available for issuance under the Company's employee stock purchase plans, respectively.

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 $2,315, $1,317 and $1,118 for the years ended December 26, 2020, December 31, 2019 and December 31, 2018, respectively.

12. Other Income (Expense), Net:

Other income (expense), net is comprised of the following:

	Year Ended December 26, 2020	Year Ended December 31, 2019	Year Ended December 31, 2018
Foreign currency exchange gains (losses), net	$ (3,070)	$ 676	$ (255)
Gain on casualty insurance claim	—	—	302
Other	362	104	9
Total other income (expense), net	$ (2,708)	$ 780	$ 56

13. Income Taxes:

The components of income tax expense are as follows:

	Year Ended December 26, 2020	Year Ended December 31, 2019	Year Ended December 31, 2018
Current:			
Federal	$ 1,466	$ (27)	$ 4,423
State	371	88	1,038
Foreign	5,637	1,548	626
	7,474	1,609	6,087
Deferred:			
Federal	(10,355)	(4,730)	1,961
State	(1,036)	506	(73)
Foreign	(240)	108	275
	(11,631)	(4,116)	2,163
Total income tax expense (benefit)	$ (4,157)	$ (2,507)	$ 8,250

The income before tax is comprised of the following:

	Year Ended December 26, 2020	Year Ended December 31, 2019	Year Ended December 31, 2018
Domestic operations	$ (120)	$ (7,087)	$ 49,089
Foreign operations	$ 26,988	$ 6,490	$ 4,257

The provision for income taxes differs from the amount of income tax determined by applying the applicable U.S. federal income tax rate of 21% for the years ended December 26, 2020, December 31, 2019 and December 31, 2018, to income before provision for income taxes as follows:

	Year Ended December 26, 2020	Year Ended December 31, 2019	2018
Federal income tax provision (benefit) at statutory rate	$ 5,642	$ (125)	$ 11,203
State taxes, net of federal effect	126	113	747
Foreign taxes, net of federal effect	596	(1,277)	17
Foreign Derived Intangible Income ("FDII") Deduction	(4,262)	(2,278)	(2,217)
Global Intangible Low-Taxes Income ("GILTI") inclusion	2,013	1,786	113
Non-deductible officer's compensation	213	826	526
Research & development tax credit	(4,858)	(2,126)	(2,298)
Tax impact of IRS audit closure	(2,905)	—	—
Impact of the Tax Act	—	—	105
Impact of the CARES Act	(1,141)	—	—
Other	419	574	54
Provision (benefit) for income taxes	$ (4,157)	$ (2,507)	$ 8,250
Effective tax rate	(16)%	(420)%	15%

Deferred tax assets and liabilities are comprised of the following:

	December 26, 2020	December 31, 2019
Deferred Tax Assets:		
Reserves and accruals	$ 13,874	$ 8,254
Deferred revenue	1,648	1,219
Share-based compensation	2,556	2,955
Tax credit carryforward	10,801	11,307
Net operating losses	4,849	6,008
Depreciation and amortization	687	946
Operating lease liabilities	4,261	4,965
Other	1,877	772
Gross deferred tax assets	40,553	36,426
Less: valuation allowance	(14,238)	(14,160)
Total deferred tax assets after valuation allowance	26,315	22,266
Deferred Tax Liabilities:		
Depreciation and amortization	(75,608)	(83,082)
Operating lease right of use assets	(3,960)	(4,709)
Other	(135)	(59)
Gross deferred tax liabilities	(79,703)	(87,850)
Net deferred tax liabilities	$ (53,388)	$ (65,584)

At December 26, 2020 and December 31, 2019, the Company had recorded valuation allowances of $14,238 and $14,160, 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 maintained a full valuation allowance against its Switzerland and United Kingdom deferred tax assets of $2,797 and $467, respectively. The Company also maintained a valuation allowance against a portion of its federal and California deferred tax assets of $3,150 and $7,824, respectively.

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 26, 2020, the Company relied primarily on the reversal of deferred tax liabilities as well as projected future taxable income.

At December 26, 2020, the Company had federal, state and foreign net operating loss carryforwards of $85, $1,892 and $2,873, respectively. The federal, state and foreign net operating loss carryforwards expire on various dates beginning in 2020 through 2035.

At December 26, 2020, the Company had federal and state research & development credits and foreign tax credit carryforwards of $5,731, $10,664 and $3,150, respectively. The state research & development credits are set to expire at various dates beginning in 2039. The foreign tax credit is set to expire at various dates through December 31, 2029.

As of December 26, 2020, the Company has 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. Accordingly, no additional foreign withholding taxes that may be required from certain jurisdictions in the event of a cash distribution have been provided for.

The total amount of unrecognized tax benefits are as follows:

	December 26, 2020	December 31, 2019	December 31, 2018
Balance, beginning of the period	$ 15,143	$ 5,528	$ 4,880
Gross increases—tax positions in prior period	347	9,989	496
Gross decreases—tax positions in prior period	—	(932)	(61)
Gross increases—current-period tax positions	1,048	558	213
Closure of audit/statute limitation	(3,052)	—	—
Balance, end of the period	$ 13,486	$ 15,143	$ 5,528

The unrecognized tax benefit at December 26, 2020 and December 31, 2019 were $13,486 and $15,143, respectively, of which $8,863 and $10,649, respectively, would be reflected as an adjustment to income tax expense if recognized. The year over year decrease from 2019 to 2020 is primarily due to the closure of IRS audit for tax years 2016 through 2018, offset by additional unrecognized tax benefits related to federal tax exposures. 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 26, 2020, December 31, 2019 and December 31, 2018, the Company recognized approximately $(193), $236 and $199, respectively, in interest and penalties (benefit) expense associated with uncertain tax positions. As of December 26, 2020 and December 31, 2019, the Company had accrued interest and penalties expense included in the table of unrecognized tax benefits of $1,487 and $1,681, 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 2003 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 2002 forward with respect to carryforward amounts. The Company is subject to examination for tax years 2010 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.

14. 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 loss (income)
Balance at December 31, 2018	$ 1,273	$ (10)	$ 1,263
Net current period other comprehensive (income) loss	(709)	44	(665)
Reclassifications	—	—	—
Balance at December 31, 2019	564	34	598
Net current period other comprehensive income	(5,043)	(123)	(5,166)
Reclassifications	—	—	—
Balance at December 26, 2020	$ (4,479)	$ (89)	$ (4,568)

15. 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:

	Year Ended December 26, 2020		Year Ended December 31, 2019		Year Ended December 31, 2018	
Systems and software	$450,459	80%	$255,723	84%	$234,241	86%
Parts	65,444	12%	34,892	11%	28,658	10%
Services	40,593	8%	15,281	5%	10,885	4%
Total revenue	$556,496	100%	$305,896	100%	$273,784	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:

	Year Ended December 26, 2020	Year Ended December 31, 2019	Year Ended December 31, 2018
Revenue from third parties:			
China	$ 125,023	$ 80,017	$ 63,243
Taiwan	120,959	66,601	45,312
South Korea	90,193	43,997	51,750
United States	81,708	46,717	43,944
Japan	59,295	29,816	22,361
Europe	49,697	23,023	27,173
Southeast Asia	29,621	15,725	20,001
Total revenue	$ 556,496	$ 305,896	$ 273,784

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

	2020	2019	2018
Samsung Semiconductor	15%	^	^
Taiwan Semiconductor Manufacturing Co. Ltd.	14%	13%	^
SK Hynix Inc.	^	13%	12%

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

At December 26, 2020, three customers, Samsung Semiconductor, Taiwan Semiconductor Manufacturing Co. Ltd., and SK Hynix Inc., accounted for more than 10% of net accounts receivable. At December 31, 2019, one customer, Taiwan Semiconductor Manufacturing Co. Ltd., 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.

16. 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 26, 2020	December 31, 2019	December 31, 2018
Numerator:			
Net income	$ 31,025	$ 1,910	$ 45,096
Denominator:			
Basic earnings per share - weighted average shares outstanding	49,136	29,729	25,470
Effect of potential dilutive securities:			
Restricted stock units, employee stock purchase grants and stock options - dilutive shares	339	278	426
Diluted earnings per share - weighted average shares outstanding	49,475	30,007	25,895
Earnings per share:			
Basic	$ 0.63	$ 0.06	$ 1.77
Diluted	$ 0.63	$ 0.06	$ 1.74

17. Share Repurchase Authorization:

In November 2020, the Onto Innovation Board of Directors approved a new share repurchase authorization, which allows the Company to repurchase up to $100,000 worth of shares of its common stock. This share repurchase authorization replaces the remaining balance of $28,000 from the prior share repurchase authorization. Repurchases may be made through both public market and private transactions from time to time. At December 26, 2020, there was $100,000 available for future share repurchases.

The following table summarizes the Company's stock repurchases:

	Year Ended December 26, 2020	Year Ended December 31, 2019	Year Ended December 31, 2018
Shares of common stock repurchased	1,882	37	1,061
Cost of stock repurchased	$ 52,000	$ 744	$ 21,069
Average price paid per share	$ 27.62	$ 19.85	$ 19.86

18. Subsequent Event

On December 31, 2020, the Company acquired Inspectrology, LLC, headquartered in Sudbury, Massachusetts. Inspectrology, LLC. is a leading supplier of overlay metrology for controlling lithography and etch processes in the compound semiconductor market. The impact of the acquisition is not expected to be material to the Company's consolidated financial position, results of operations and operating cash flows.

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 2020:					
Allowance for credit losses	$ 1,247	$ 327	$ —	$ 790	$ 784
Deferred tax valuation allowance................	14,160	78	—	—	14,238
Allowance for convertible notes receivable.......	2,000	—	—	2,000	—
Fiscal Year 2019:					
Allowance for doubtful accounts..................	$ 691	$ 363	$ —	$ (193)	$ 1,247
Deferred tax valuation allowance................	3,172	942	10,046	—	14,160
Allowance for convertible notes receivable.......	—	2,000	—	—	2,000
Fiscal Year 2018:					
Allowance for doubtful accounts..................	$ 460	$ 293	$ —	$ 62	$ 691
Deferred tax valuation allowance................	2,447	725	—	—	3,172

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 19, 2021

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 19, 2021
/s/ Steven R. Roth **Steven R. Roth**	Senior Vice President, Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	February 19, 2021
/s/ Jeffrey A. Aukerman **Jeffrey A. Aukerman**	Director	February 19, 2021
/s/ Leo Berlinghieri **Leo Berlinghieri**	Director	February 19, 2021
/s/ Edward J. Brown, Jr. **Edward J. Brown Jr.**	Director	February 19, 2021
/s/ Vita A Cassese **Vita A. Cassese**	Director	February 19, 2021
/s/ David B. Miller **David B. Miller**	Director	February 19, 2021
/s/ Bruce C. Rhine **Bruce C. Rhine**	Director	February 19, 2021
/s/ Christopher A. Seams **Christopher A. Seams**	Director	February 19, 2021
/s/ Christine A. Tsingos **Christine A. Tsingos**	Director	February 19, 2021

Exhibit 21.1

SUBSIDIARIES

Name	**Jurisdiction**
Rudolph Technologies, Inc.	U.S.A.
4D Technology Corporation	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
Accent Optical Technologies (Germany) GmbH	Germany
Rudolph Technologies Hong Kong Limited	Hong Kong
Onto Innovation Europe, B.V.	Netherlands
Nanometrics France S.A.S.	France
Nanometrics (Switzerland) GmbH	Switzerland
Nanometrics U.K. Ltd.	United Kingdom
Nanometrics Israel, Ltd.	Israel
Onto Innovation Korea Ltd.	Korea
Onto Innovation Southeast Asia Pte. Limited	Singapore
Onto Innovation Ireland Limited	Ireland

Exhibit 31.1

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 19, 2021

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

Exhibit 31.2

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

I, Steven R. Roth, 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 19, 2021

By: /s/ Steven R. Roth
Steven R. Roth
Senior Vice President and Chief Financial Officer

Exhibit 32.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

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 26, 2020 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 19, 2021

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

Exhibit 32.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Steven R. Roth, 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 26, 2020 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 19, 2021

By: /s/ Steven R. Roth
Steven R. Roth
Senior Vice President and Chief Financial Officer

Forward Looking Statements

This proxy statement contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 (the “Act”) which include those concerning Onto Innovation’s business momentum and future growth; acceptance of Onto Innovation’s products and services; Onto Innovation’s ability to both deliver products and services consistent with its customers’ demands and expectations and strengthen its market position; as well as other matters that are not purely historical data. Onto Innovation wishes to take advantage of the “safe harbor” provided for by the Act and cautions that actual results may differ materially from those projected as a result of various factors, including risks and uncertainties, many of which are beyond Onto Innovation’s control. Such factors include, but are not limited to, the following: variations in the level of orders, which can be affected by general economic conditions; seasonality and growth rates in the semiconductor manufacturing industry and in the markets served by Onto Innovation’s customers; the global economic and political climates; the impact on supply, production, sales and delivery of our products and services due to the global spread of the coronavirus (COVID-19); difficulties or delays in product functionality or performance; the delivery performance of sole source vendors; the timing of future product releases; failure to respond to changes in technology or customer preferences; changes in pricing by Onto Innovation or its competitors; Onto Innovation’s ability to leverage its resources to improve its position in its core markets, to weather difficult economic environments, to open new market opportunities and to target high-margin markets; the strength/weakness of the back-end and/or front-end semiconductor market segments; the imposition of tariffs or trade restrictions and costs, burdens and restrictions associated with other governmental actions; the ability to successfully complete the integration of the businesses of Rudolph and Nanometrics and to maintain the anticipated synergies and value-creation contemplated by the merger of Rudolph and Nanometrics within the expected time frame; unanticipated difficulties or expenditures relating to the completion of integration of the Rudolph and Nanometrics businesses; and the response of business partners and retention as a result of the merger. Additional information and considerations regarding the risks faced by Onto Innovation are available in the Company’s Annual Report on Form 10-K for the year ended December 26, 2020 and other filings with the Securities and Exchange Commission. As the forward-looking statements are based on Onto Innovation’s current expectations, the Company cannot guarantee any related future results, levels of activity, performance or achievements. Onto Innovation does not assume any obligation to update the forward-looking information contained in this proxy statement.

onto innovation™

NOTICE OF 2021 ANNUAL MEETING OF STOCKHOLDERS

Date:	Tuesday, May 11, 2021	
Time:	10:00 a.m., Eastern Time	
Place:	Company principal executive offices located at 16 Jonspin Road, Wilmington, Massachusetts, 01887*	
Record Date:	Only stockholders of record at the close of business on March 12, 2021 are entitled to vote at the meeting and any adjournment or postponement thereof for which no new record date is set.	
Items of Business:	1.	To elect the Board's seven nominees for director to serve until the next annual meeting and until their successors are duly elected and qualified;
	2.	To approve, on an advisory (non-binding) basis, the compensation of our named executive officers as disclosed in this proxy statement;
	3.	To ratify the appointment of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending January 1, 2022; and
	4.	To transact such other business as may properly come before the meeting and any adjournment or postponement thereof.

These items of business are described more fully in the accompanying proxy statement. This year we will be providing access to our proxy materials via the internet in accordance with the Securities and Exchange Commission's "Notice and Access" rules. On or about April 1, 2021, we will be mailing our Notice of Internet Availability of Proxy Materials to our stockholders, which contains instructions for accessing our 2021 proxy statement and 2020 annual report to stockholders and how to vote online. In addition, the Notice of Internet Availability of Proxy Materials contains instructions on how to request a paper copy of the 2021 proxy statement and 2020 annual report to stockholders.

Your vote is important. As always, but especially now given the uncertainties posed by the coronavirus (COVID-19) pandemic, we encourage you to vote your shares as soon as possible and prior to the Annual Meeting via the internet or by phone even if you plan to attend the Annual Meeting. Voting early will ensure your shares are represented at the Annual Meeting, regardless of whether you attend the Annual Meeting. You may cast your vote via the internet, by telephone, by mail or during the Annual Meeting. If you receive a paper copy of the proxy card by mail, you may also mark, sign, date, and return the proxy card promptly in the accompanying postage-prepaid envelope.

* We intend to hold our annual meeting in person. However, we are sensitive to the public health and travel concerns our stockholders may have and recommendations that public health officials have issued in light of the COVID-19 pandemic. As a result, we will require all attendees to comply with certain health and safety protocols, which are described in the proxy statement, and we may decide to hold the meeting in a different location or solely by means of remote communication (i.e., a virtual-only meeting). In such an event, we would announce any such updates in additional proxy materials filed with the Securities and Exchange Commission and in a press release that we would make available on our website at https://investors.ontoinnovation.com. We encourage you to check this website prior to the meeting if you plan to attend.

IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE ANNUAL MEETING OF STOCKHOLDERS TO BE HELD MAY 11, 2021:

This notice, the proxy statement, and the 2020 Annual Report to Stockholders are available at:

https://www.ontoinnovation.com/ar-proxy

FOR THE BOARD OF DIRECTORS

Robert A. Koch
Secretary

Wilmington, Massachusetts
April 1, 2021

PROXY SUMMARY

On October 25, 2019 (the “Merger Date”), Rudolph Technologies, Inc. merged with and into Nanometrics Incorporated, which was then renamed Onto Innovation Inc. (the “2019 Merger”). Unless otherwise indicated or context otherwise requires, as used herein “Nanometrics” refers to Nanometrics Incorporated and its subsidiaries prior to the 2019 Merger and “Rudolph” refers to Rudolph Technologies, Inc. and its subsidiaries prior to the 2019 Merger.

This summary highlights information contained elsewhere in the proxy statement. This summary does not contain all of the information that you should consider, and you should read the entire proxy statement carefully before voting.

Stockholder Voting Matters

Voting Matter		Board Vote Recommendation	Page Reference for more information
Proposal 1:	Election of Directors	FOR ALL	18
Proposal 2:	Advisory Vote on Named Executive Officer Compensation	FOR	28
Proposal 3:	Ratification of Appointment of Independent Registered Public Accounting Firm for the Fiscal Year Ending January 1, 2022	FOR	29

Corporate Governance Highlights

Snapshot Of Board Composition

The following table presents a snapshot of the expected composition of the Onto Innovation Board of Directors (the “Board”) immediately following the 2021 Annual Meeting, assuming the election of all nominees named in the proxy statement.

Board Characteristic	Onto Innovation
Total Number of Directors	7
Percentage of Independent Directors	85.7%
Average Age of Directors (years)	61.1
Average Tenure of Directors (years)	8.4
Separate Chairman and CEO roles	Yes
Independent Chairman	Yes
Audit Committee Qualified Financial Experts	1

Snapshot Of Board Governance And Compensation Policies

The following table presents a snapshot of the Onto Innovation Board Governance and Compensation Policies currently in effect.

Policy	Onto Innovation
Majority Voting for All Directors	Yes
Regular Executive Sessions of Independent Directors	Yes
Annual Board, Committee and Director Evaluations	Yes
Risk Oversight by Full Board and Committees	Yes
Independent Audit, Compensation and Nominating & Governance Committees	Yes
Code of Business Conduct and Ethics for Employees and Directors	Yes
Financial Information Integrity Policy	Yes
Stock Ownership Requirement for Directors	3x annual retainer
Stock Ownership Requirement for CEO	3x base salary
Stock Ownership Requirement for other NEOs	1x base salary
Anti-Hedging, Anti-Short Sale & Anti-Pledging Policy	Yes
Compensation Clawback Policy	Yes
No Future Tax Gross-Up Provisions	Yes
No Poison Pill	Yes
Stock Buyback Program	Yes
Double Trigger Change-in-Control Provisions for Executive Officers	Yes

Snapshot Of Board Governance And Compensation Policies Newly Implemented Or Adjusted In Past Year

The following presents a snapshot of the Onto Innovation Board Governance and Compensation Policies that were newly implemented or adjusted in the past year.

- After the 2020 Annual Meeting of Stockholders, the following actions were taken with regard to the composition and leadership structure of the Board and standing committees of the Board:
  - Board size of ten (10) Directors.
  - Board Chairman: Christopher A. Seams
  - Audit Committee:
    - Four (4) members
    - Chairperson: Christine A. Tsingos
  - Compensation Committee:
    - Four (4) members
    - Chairperson: Edward J. Brown, Jr.
  - Nominating & Governance Committee:
    - Four (4) members
    - Chairperson: Leo Berlinghieri
- At the 2020 Annual Meeting of Stockholders, the Onto Innovation Inc. 2020 Stock Plan and Onto Innovation 2020 Employee Stock Purchase Plan were approved by the stockholders.
- The annual review of the charters for the Audit, Compensation and Nominating & Governance Committees, the Code of Business Conduct and Ethics and the Financial Information Integrity Policy and the Summary of Corporate Governance Policies for the Company was performed and completed.
- Regrettably in January of 2021 one of our Directors, Robert G. Deuster, passed away. Mr. Deuster had served on the Nanometrics Board of Directors ("Nanometrics Board") since 2017 and continued his service to the Company following the 2019 Merger. His insights and contributions to the Board and the Company will be greatly missed.
- The Board determined that, effective as of the 2021 Annual Meeting of Stockholders, the size of the Board would be reduced to seven (7) members.

PROXY STATEMENT

The proxy detailed herein is solicited on behalf of the Board of Directors (the “Board” or “Board of Directors”) of Onto Innovation Inc. (“Onto Innovation,” the “Company,” “we,” “us” or “our”) for use at the 2021 Annual Meeting of Stockholders to be held May 11, 2021 at 10:00 a.m. Eastern Time (the “Annual Meeting”), or at any adjournment or postponement thereof, for the purposes set forth herein and in the accompanying Notice of Annual Meeting of Stockholders. The Annual Meeting will be held at the Company’s principal executive offices, located at 16 Jonspin Road, Wilmington, Massachusetts 01887. Directions to the annual meeting may be found on our website www.ontoinnovation.com by clicking on “Company,” “Locations,” “Massachusetts” and then accessing the interactive map. The Company’s telephone number is (978) 253-6200.

We intend to hold the Annual Meeting in person. However, we are sensitive to the public health and travel concerns our stockholders may have and recommendations that public health officials have issued in light of the coronavirus (COVID-19) pandemic. As a result, we will require all attendees to comply with certain health and safety protocols, which are described in this proxy statement under “Questions and Answers About the Annual Meeting – What Is Required To Be Admitted To The Annual Meeting?”, and we may decide to hold the meeting in a different location or solely by means of remote communication (i.e., a virtual-only meeting). In such an event, we would announce any such updates in additional proxy materials filed with the SEC and in a press release that would be available on our website at https://investors.ontoinnovation.com. We encourage you to check this website prior to the meeting if you plan to attend.

On or about Thursday, April 1, 2021, we will furnish a Notice of Internet Availability of Proxy Materials (“Notice”) to our stockholders containing instructions on how to access the proxy materials online at:

https://www.ontoinnovation.com/ar-proxy

Instructions on how to vote online and to request a printed copy of the proxy materials may be found in the Notice. If you received a Notice by mail, you will not receive a paper copy of the proxy materials, unless you request such materials by following the instructions contained in the Notice. Your vote is important, regardless of the extent of your holdings.

QUESTIONS AND ANSWERS ABOUT THE ANNUAL MEETING

What Is The Purpose Of The Annual Meeting?

At the Annual Meeting, stockholders will be asked to vote upon the matters set forth in the accompanying Notice of Annual Meeting, including:

- the election of seven (7) directors;
- an advisory resolution on named executive officer compensation; and
- the ratification of the appointment of our independent registered public accounting firm for fiscal 2021,

all of which are more fully described herein.

Will Other Matters Be Voted On At The Annual Meeting?

We are not currently aware of any other matters to be presented at the Annual Meeting other than those described in this proxy statement. If any other matters not described in the proxy statement are properly presented at the meeting, any proxies received by us will be voted in the discretion of the proxy holders.

Who Is Entitled To Vote?

If you were a stockholder of record as of the close of business on March 12, 2021, which is referred to in this proxy statement as the "record date," you are entitled to receive notice of the Annual Meeting and to vote the shares of common stock that you held as of the close of business on the record date. Each stockholder is entitled to one (1) vote for each share of common stock held by such stockholder on the record date.

May I Attend The Meeting?

All stockholders of record as of the record date may attend the Annual Meeting, which will be held at the Company's principal executive offices, located at 16 Jonspin Road, Wilmington, Massachusetts 01887. To obtain directions to attend the Annual Meeting and vote in person, please contact Investor Relations at 978-253-6200. We currently intend to hold the Annual Meeting in person. In the event it is not possible or advisable to hold the Annual Meeting in person, we will announce alternative arrangements for the meeting as promptly as practicable, which may include holding the meeting partially or solely by means of remote communication (i.e., a virtual-only meeting). Please monitor our website at https://investors.ontoinnovation.com for updated information. If you are planning to attend the Annual Meeting, please check the website prior to the Annual Meeting date. As always, we encourage you to vote your shares prior to the Annual Meeting.

What is Required To Be Admitted To The Annual Meeting?

If you are a stockholder of record, you will need valid picture identification and proof that you are a stockholder of record of the Company as of the record date to gain admission to the Annual Meeting.

If you are a beneficial holder, you will be required to present a valid picture identification and proof from your bank, broker or other record holder of your shares that you are the beneficial owner of such shares to gain admission to the Annual Meeting. If you are a beneficial holder and wish to vote your shares at the meeting, you will need a legal proxy from your bank, broker or other record holder of your shares.

All attendees will be expected to comply with important health and safety protocols, including wearing an appropriate face covering at all times, hand washing and/or applying hand sanitizer upon arrival, and practicing social distancing by maintaining at least a six-foot distance from other attendees. You should not attend if you feel unwell or if you have been exposed to COVID-19. Additionally, there will be a mandatory health screening and temperature check required for entry to the building. If you have a fever or other symptoms of COVID-19, you will not be permitted to attend the Annual Meeting in person. We reserve the right to take any additional precautionary measures, and may ask attendees to leave the Annual Meeting if they are not following our procedures.

What Constitutes A Quorum?

The required quorum for the transaction of business at the Annual Meeting is a majority of the issues and outstanding shares of Common Stock of the Company, $0.001 par value per share ("Common Stock"), present in person or by proxy and entitled to vote at the Annual Meeting. On the record date, 48,956,481 shares of the Company's Common Stock were issued and outstanding, each entitled to one vote on each matter to be acted upon at the Annual Meeting. Your shares will be counted towards the quorum only if you submit a valid proxy (or one is submitted on your behalf by your broker, bank or other nominee) or if you vote in person at the meeting. Abstentions and broker non-votes will be counted to determine whether there is a quorum present. If a quorum is not present, the Annual Meeting may be adjourned or postponed to a later date.

What Are "Broker Non-Votes"?

A broker non-vote occurs when a bank, broker or other registered holder of record holds shares for a beneficial owner but is not empowered to vote on a particular proposal on behalf of such beneficial owner because the proposal is considered "non-routine" and the beneficial owner has not provided voting instructions on that proposal. The election of directors and the advisory vote on named executive officer compensation are treated as "non-routine" proposals. This means that if a brokerage firm holds your shares on your behalf, those shares will not be voted with respect to any of these proposals unless you provide instructions to that firm by voting your proxy. See below under "What Is the Vote Required for Election of Directors?" and "What Is the Vote Required for the Approval of Proposals Other Than Director Elections?" for a discussion of the impact of broker non-votes on each of the proposals that will be presented at the Annual Meeting. **In order to ensure that any shares held on your behalf by a bank, broker or other registered holder of record are voted in accordance with your wishes,**

we encourage you to provide instructions to that firm or organization in accordance with the Notice of voting instruction form provided by the broker, bank or other registered holder or to contact your broker, bank or other registered holder to request a proxy form.

Who Bears The Cost Of Soliciting Proxies?

The Company will bear the cost of soliciting proxies. In addition, the Company may reimburse brokerage firms and other persons representing beneficial owners of shares for their expenses in forwarding solicitation material to such beneficial owners. Solicitation of proxies by mail may be supplemented by telephone, facsimile, e-mail or other electronic means or personal solicitation by directors, officers or regular employees of the Company. No additional compensation will be paid to such persons for such services. We have engaged The Proxy Advisory Group, LLC to assist in the solicitation of proxies and provide related advice and informational support, for a services fee and the reimbursement of customary disbursements, which are not expected to exceed $10,000 in total.

Why Did I Receive A “Notice Of Internet Availability Of Proxy Materials” But No Proxy Materials?

We are distributing the Company’s proxy materials to stockholders of record via the internet in accordance with the “Notice and Access” approach permitted by rules of the Securities and Exchange Commission (“SEC”). This approach benefits the environment, while providing a timely and convenient method of accessing the materials and voting. Accordingly, we have sent you a Notice because the Board of the Company is soliciting your proxy to vote at the 2021 Annual Meeting of Stockholders, including at any adjournments or postponements of the meeting. On or about April 1, 2021, the Company will begin mailing the Notice to all stockholders of record entitled to vote at the annual meeting. All stockholders will have the ability to access the proxy materials on the website referred to in the Notice or request to receive a printed set of the proxy materials. Instructions on how to access the proxy materials over the Internet or to request a printed copy of the proxy materials and the Company’s 2020 Annual Report may be found in the Notice.

What Does It Mean If I Received More Than One Notice?

If you receive more than one Notice, your shares may be registered in more than one name or in different accounts. Please follow the voting instructions on each of the Notices to ensure that all of your shares are voted.

How Do I Go About Voting?

You may either vote “For” all the nominees to the Board or you may “Withhold” your vote for any nominee you specify. For each of the other matters to be voted on, you may vote “For” or “Against” or “Abstain” from voting.

Voting For Shares Registered Directly In The Name Of The Stockholder

If you have a stock certificate or hold shares in an account with our transfer agent, you are considered the “stockholder of record” with respect to those shares. You can submit your proxy online by following the instructions on the Notice. You may opt to submit your proxy by requesting a full set of proxy materials be mailed to you and completing and returning the proxy in the postage-paid envelope provided. Stockholders of record may also vote in person at the Annual Meeting. Whether or not you plan to attend the meeting, we urge you to vote by proxy to ensure your vote is counted. You may still attend the meeting and vote in person even if you have already submitted a proxy.

If you are a stockholder of record with shares registered in your name, you can vote by one of the following methods:

- **In Person** - To vote in person, come to the annual meeting and you will receive a ballot when you arrive.
- **Via the Internet** - To submit your proxy by internet, go to www.investorvote.com/ONTO and follow the instructions on the secure website. The deadline for proxy submission via the internet is 11:59 p.m. (EDT) on May 10, 2021.
- **Via Telephone** – To submit your proxy by telephone, call toll free 1-800-652-VOTE (8683) within the United States, US territories and Canada.
- **By Mail** – Stockholders who receive a paper proxy card may complete, sign and date their proxy card and mail it in the pre-addressed postage-paid envelope that accompanies the proxy card. Proxy cards submitted by mail must be received by the Secretary of the Company at the Company’s principal executive offices prior to the time of the Annual Meeting in order for your shares to be voted.

Even if you plan to attend the meeting, we recommend that you submit your proxy in advance so that your shares are represented at the Annual Meeting in the event you are unable to attend the meeting. Each stockholder of record is entitled to one (1) vote for each share of Common Stock owned by such stockholder on all matters presented at the Annual Meeting. Stockholders do not have the right to cumulate their votes in the election of directors.

If you return a signed and dated proxy card but do not indicate how the shares are to be voted, those shares will be voted in accordance with Onto Innovation's Board's recommendations. A valid proxy card also authorizes the individuals named therein as proxies to vote your shares in their discretion on any other matters, which, although not described in the proxy statement, are properly presented for action at the Annual Meeting. If you indicate on your proxy card that you wish to "abstain" from voting on an item, your shares will not be voted on that item.

While internet proxy voting is being provided to allow you to submit your proxy online, with procedures designed to ensure the authenticity and correctness of your proxy vote instructions, please be aware that you must bear any costs associated with your internet access, such as usage charges from internet access providers and telephone companies.

Voting By Proxy For Shares Registered In Street Name

If your shares are held in a stock brokerage account or by a bank or other holder of record, you are considered the "beneficial owner" of shares held in "street name." In that case, you may receive a separate voting instruction form, or you may need to contact your broker, bank, or other stockholder of record to determine whether you will be able to provide voting instructions electronically via the internet. As the beneficial owner, you have the right to direct your broker, bank or other holder of record on how to vote your shares by submitting voting instructions to such person in accordance with the directions that the entity provides. In the event you are considered the "beneficial owner" of shares held in "street name" and you wish to vote in person at the annual meeting, you must obtain a legal proxy from your broker, bank or another agent. Follow the instructions from your broker or bank included with these proxy materials or contact your broker or bank to request a legal proxy.

May I Revoke My Proxy Or My Voting Instructions?

Any proxy given pursuant to this solicitation may be revoked by the person giving it at any time before it is voted at the Annual Meeting. If you are a stockholder of record, you may change your vote after submitting your proxy:

- If you submitted your proxy by mail – By delivering a written notice of revocation or a duly executed proxy card bearing a later date to the Secretary of the Company at the Company's principal executive offices prior to the Annual Meeting;
- If you submitted your proxy over the internet – By submitting a timely and valid later proxy online at www.investorvote.com/ONTO;
- By submitting a timely and valid later proxy by telephone call to 1-800-652-VOTE (8683) within the USA, US territories and Canada; or
- By attending the meeting and voting in person.

If you are a beneficial owner of shares, please contact your bank, broker or other holder of record for specific instructions on how to change or revoke your voting instructions.

What Happens If I Do Not Vote?

Stockholder Of Record: Shares Registered In Your Name

If you are a stockholder of record and do not submit a proxy by mailing your proxy card, by telephone, over the internet or by attending the Annual Meeting and voting in person, your shares will not be voted.

Beneficial Owner: Shares Registered In The Name Of Broker Or Bank

If you are a beneficial owner and do not instruct your broker, bank, or other agent how to vote your shares, the question of whether your broker or nominee will still be able to vote your shares depends on whether the New York Stock Exchange ("NYSE") deems the particular proposal to be a "routine" matter. Brokers and nominees can use their discretion to vote "uninstructed" shares with respect to matters that are considered to be "routine," but not with respect to "non-routine" matters. Under the rules and interpretations of the NYSE, "non-routine" matters are matters that may substantially affect the rights or privileges of stockholders, such as mergers, stockholder proposals, elections of directors (even if not contested), executive officer compensation (including any advisory stockholder votes on executive officer compensation and on the frequency of stockholder advisory votes on executive officer compensation), and certain corporate governance proposals, even if management supported. Accordingly, your broker or nominee may not vote your shares on the election of directors and the advisory proposal to approve the named executive officer compensation without your instructions, but may vote your shares on the proposal to ratify the appointment of Ernst & Young LLP as the Company's independent registered public accounting firm for the fiscal year ending January 1, 2022 even in the absence of your instruction.

What If I Return A Proxy Card Or Otherwise Submit a Proxy But Do Not Make Specific Choices?

If you return a signed and dated proxy card or otherwise submit a proxy without marking voting selections, your shares will be voted, as applicable, "For" the election of all seven (7) nominees for director, "For" the advisory approval of the named executive officer compensation and "For" the ratification of the appointment of Ernst & Young, LLP as the independent registered public accounting firm of the Company for its fiscal year ending January 1, 2022. If any other matter is properly presented at the meeting, your proxyholder (one of the individuals named on the proxy card) will vote your shares using his or her best judgment.

What Is The Vote Required For Election Of Directors?

For the election of directors, each director is elected by a majority of the votes cast (except that if the number of nominees exceeds the number of directors to be elected, directors will be elected by a plurality voting standard). This means that in order for a director nominee to be elected to our Board, the number of votes cast "for" a director's election must exceed the number of votes cast "against" that director's election (with "abstentions" and "broker non-votes" not counted as a vote cast either "for" or "against" that director's election, although abstentions and broker non-votes count for the purpose of determining a quorum). Our Amended and Restated Bylaws ("Bylaws") provide for election of directors by a majority of votes cast in uncontested elections, and our Summary of Corporate Governance Policies provides that any incumbent director nominee in an uncontested election who does not receive an affirmative majority of votes cast must promptly tender such director's resignation to our Board. Further information regarding the process that will be followed if such an event occurs can be located under the heading "Proposal 1 - Election of Directors."

What Is The Vote Required For The Approval Of Proposals Other Than Director Elections?

The proposal to approve, on an advisory basis, the compensation of our named executive officers and the proposal to ratify the appointment of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending January 1, 2022 each requires the affirmative vote, in person or by proxy, of a majority of the shares present in person or represented by proxy at the meeting and entitled to vote on the matter to be approved. For such proposals, abstentions in effect count as negative votes, because they are shares represented in person or by proxy that are entitled to vote on the matter and not voted in the affirmative. Broker non-votes are not counted as part of the vote total (because they are not considered "entitled to vote" on the matter) and have no effect on the outcome of those proposals.

What Is Householding?

The Company has adopted a procedure approved by the SEC called "householding." Under this procedure, when multiple stockholders of record share the same address, we may deliver only one (1) Notice to that address unless we have received contrary instructions from one or more of those stockholders. The same procedure may be followed by brokers and other nominees holding shares of our stock in "street name" for more than one (1) beneficial owner with the same address.

If a stockholder holds shares of stock in multiple accounts (e.g., with our transfer agent and/or banks, brokers or other registered stockholders), we may be unable to use the householding procedures and, therefore, that stockholder may receive multiple copies of the Notice. You should follow the instructions on each Notice that you receive in order to vote the shares you hold in different accounts.

A stockholder that shares an address with another stockholder if such household has received only one (1) Notice, may write or call us as specified below:

(i) To request a separate copy of such materials, which will be promptly mailed without charge; and
(ii) To request that separate copies of these materials be sent to his or her home for future meetings.

Conversely, a stockholder of record who shares the same address with another stockholder of record may write or call us as specified below to request that a single set of the proxy materials be delivered to that address. Such stockholder requests may be made to our Investor Relations Department either via phone at 978-253-6200 or by mail directed to:

Investor Relations Department
Onto Innovation Inc.
16 Jonspin Road
Wilmington, Massachusetts 01887

If you are a beneficial owner of shares held in street name, please contact your bank, broker or other holder of record regarding such requests.

How Can I Find Out the Results Of The Voting At The Annual Meeting?

Preliminary voting results will be announced at the Annual Meeting. In addition, final voting results will be published in a current report on Form 8-K that we expect to file within four (4) business days after the Annual Meeting. If final voting results are not available to us in time to file a Form 8-K within four (4) business days after the meeting, we intend to file a Form 8-K to publish preliminary results and, within four (4) business days after the final results are known to us, file an additional Form 8-K to publish the final results.

What Are The Deadlines For Submission Of Stockholder Proposals For The 2022 Annual Meeting?

Stockholders of the Company are entitled to present proposals for consideration at forthcoming stockholder meetings provided that they comply with the proxy rules promulgated by the SEC, if applicable, and the Bylaws of the Company. Stockholders wishing to present a proposal at the Company's 2022 Annual Meeting of Stockholders must submit such proposal in writing to the Company Secretary at Onto Innovation Inc., 16 Jonspin Road, Wilmington, Massachusetts 01887 no later than December 2, 2021 in accordance with Rule 14a-8 under the Securities Exchange Act of 1934, as amended ("Exchange Act"), if they wish for it to be eligible for inclusion in the proxy statement and form of proxy relating to that meeting. In addition, under the Company's Bylaws, a stockholder wishing to nominate a director or make a proposal at the 2022 Annual Meeting of Stockholders outside of Exchange Act Rule 14a-8 must submit such nomination or proposal in writing to the Company Secretary at the above address no earlier than January 11, 2022 and no later than February 10, 2022. The Nominating & Governance Committee will also consider qualified director nominees recommended by stockholders. Our process for receiving and evaluating Board member nominations from our stockholders is described below under the caption "Consideration Of Director Nominees."

You are also advised to review Company's Bylaws, which contain additional requirements about advance notice of stockholder proposals and director nominations.

CORPORATE GOVERNANCE PRINCIPLES AND PRACTICES

Onto Innovation is committed to sound and effective corporate governance practices. Having such principles is essential to running our business efficiently and to maintaining our integrity in the marketplace. The major components of our corporate governance practices are described below.

Board Leadership Structure

Our Company management is led by Michael P. Plisinski, who has served as our Chief Executive Officer ("CEO") and a director since the Merger Date and Christopher A. Seams, who is an independent director and has served as the Chairman of the Company's Board since the Merger Date.

Our Board is currently comprised of one (1) non-independent director, Mr. Plisinski, and eight (8) directors each of whom has been affirmatively determined by our Board to meet the criteria for independence established by the SEC and the NYSE. The independent directors meet periodically in executive session chaired by the Chairman without the CEO or other management present. Furthermore, each director is encouraged to suggest items for the Board agenda and to raise at any Board meeting subjects that are not on the agenda for that meeting.

In accordance with our sound and effective corporate governance practice, the roles of CEO and Chairman of the Board are held by separate individuals, with the independent Chairman of the Board being designated by the Board. The Board believes that, at the current time, the designation of an independent Chairman of the Board facilitates the functioning of the Board, while leaving the CEO responsible for setting the strategic direction for the Company and for the day-to-day leadership and performance of the Company. The independent Chairman of the Board:

- Presides at all meetings of the stockholders and the Board at which he or she is present;
- Establishes the agenda for each Board meeting;
- Sets the schedule and annual agenda, to the extent foreseeable;
- Calls and prepares the agenda for and presides over separate executive sessions of the independent directors;
- Acts as a liaison between the independent directors and the Company's management;
- Serves as a point of communications with stockholders; and
- Performs such other powers and duties as may from time to time be assigned by the Board or as may be prescribed by the Company's Bylaws.

Board Meetings

Each director nominee attended at least 75% of the aggregate of the total number of Board meetings and total number of meetings of Board committees on which such director served during the time such director served on the Board or committees. Timothy J. Stultz, Ph.D. attended 67% of the Board meetings held during 2020 until the Company's 2020 Annual Meeting date in which Dr. Stultz did not stand for reelection to the Board. While the Company does not currently have a formal policy regarding the attendance of directors at the annual meeting of stockholders, directors are encouraged to attend. All members of the Board attended the Company's 2020 Annual Meeting of Stockholders.

On five (5) occasions during 2020, the Company's Board met in executive session in which only the independent Board members were present.

Board Independence

The Board makes an annual determination as to the independence of each of our Board members under the current standards for "independence" established by the NYSE and the SEC. The Board has determined that the following nominees for election as directors to our Board are independent under the NYSE Corporate Governance Rules: Leo Berlinghieri, Edward J. Brown, Jr., David B. Miller, Bruce C. Rhine, Christopher A. Seams and Christine A. Tsingos. Michael P. Plisinski, due to his position as our CEO, is not considered to be independent. The two (2) directors not standing for re-election in 2021, Jeffrey A. Aukerman and Vita A. Cassese are both considered to be independent.

From July 2006 to February 2008, Mr. Rhine served as Nanometrics Chief Strategy Officer, and from March 2007 to August 2007, Mr. Rhine served as Nanometrics Chief Executive Officer. Prior to the 2019 Merger, the Nanometrics Board determined that Mr. Rhine became an independent member of the Board effective February 2011 under the Nasdaq Listing Rules due to the passage of time subsequent to his previous management role with Nanometrics and this designation was confirmed under the NYSE Listing Rules by the Company Board.

During 2020, none of the independent members of our Board was a party to any transactions, relationships or arrangements that were considered by the Board to impair his or her independence.

Oversight Of Risk

One of the Board's primary responsibilities is reviewing the Company's strategic plans and objectives, including oversight of the principal risk exposures of the Company. In particular, the Board is responsible for monitoring and assessing strategic risk exposure, including a determination of the nature and level of risk appropriate for the Company. The Board does not have a standing risk management committee, but rather administers this oversight function directly through the Board as a whole, as well as through various Board standing committees that address risks inherent in their respective areas of oversight. The Audit Committee assists the Board in oversight and monitoring of the legal and financial risks facing the Company, management's approach to addressing these risks and strategies for risk mitigation, and serves as the contact point for employees to report corporate compliance issues. On at least an annual basis, the Audit Committee reviews and discusses with management policies and systems pursuant to which management addresses risk, including risks associated with our audit, financial reporting, internal control, disclosure control, cybersecurity, legal and regulatory compliance, and investment policies. Our Audit Committee regularly reviews with our Board any issues that arise in connection with such topics and, in accordance with our Summary of Corporate Governance Guidelines, our full Board regularly engages in discussions of risk management to assess major risks facing our Company and review options for the mitigation of such risks. Our Compensation Committee periodically reviews our compensation programs to ensure that they do not encourage excessive risk-taking and our Nominating & Governance Committee oversees risks related to governance issues, such as succession planning. As a result of the foregoing, we believe that our CEO, together with the Chairman of our Audit Committee and our full Board, provides effective oversight of the Company's risk management function.

Board Committees

The Board has three standing committees with separate chairs - the Audit, Compensation, and Nominating & Governance Committees. Each of the Board committees is comprised solely of independent directors. The Audit Committee, Compensation Committee and Nominating & Governance Committee have each adopted a written charter that sets forth the specific responsibilities and qualifications for membership on the committee. The charters of each of these committees are available on our website at https://investors.ontoinnovation.com/governance/governance-documents/.

In 2020, the composition of and number of meetings held by the Company's Board committees were as follows:

Committee Chairperson	Committee Members	Number of Meetings Held in 2020
Audit Committee		
Christine A. Tsingos	Jeffrey A. Aukerman Vita A. Cassese Christopher A. Seams[1] John R. Whitten[1] Robert G. Deuster[2]	10
Nominating & Governance Committee		
Leo Berlinghieri	David B. Miller Bruce C. Rhine Christopher A. Seams Christine A. Tsingos[1]	9
Compensation Committee		
Edward J. Brown, Jr.	Jeffrey A. Aukerman Leo Berlinghieri[1] Robert G. Deuster David B. Miller	5

1 Committee member through the 2020 Annual Meeting
2 Committee member effective as of the conclusion of the 2020 Annual Meeting

Audit Committee

The Audit Committee assists the Board in fulfilling its responsibilities for general oversight of the integrity of our financial statements, our accounting policies and procedures and our compliance with legal and regulatory requirements. Among its functions, the Audit Committee is responsible for:

- The appointment, compensation, retention and oversight of the Company's independent registered public accounting firm;
- The approval of services performed by the Company's independent registered public accounting firm;
- Reviewing the responsibilities, functions and performance of the Company's internal audit function;
- Reviewing the scope and results of internal audits and ongoing assessments of the Company's risk management processes;
- Monitoring possible transactions between the Company and our officers and directors for any potential conflicts of interest; and
- Evaluating the Company's system of internal control over financial reporting and disclosure controls and procedures.

The report of our Audit Committee is found below under the caption "Audit Committee Report."

The Board has determined that each of the Audit Committee members meet the Audit Committee membership requirements set forth by the NYSE and the SEC, including that they be "independent." Furthermore, the Board has determined that Ms. Tsingos qualifies as an "Audit Committee Financial Expert" as that term is defined under SEC rules.

Compensation Committee

The Compensation Committee is responsible for the establishment of the policies upon which compensation of and incentives for the Company's executive officers will be based, the review and recommendation for approval by the independent members of the Board of the compensation of the Company's executive officers, and the administration of the Company's equity compensation plans.

In general, the Compensation Committee reviews and recommends for approval by the independent members of the Board the Company's compensation policies and practices, including executive officer salary levels and variable compensation programs, both cash-based and equity-based, benefits, severance and equity-based and other compensation plans, policies and programs. With respect to the compensation of the Company's CEO, the Compensation Committee reviews and recommends for approval by the independent members of the Board the various elements of the CEO's compensation. With respect to other executive officers, including each of our named executive officers ("NEOs"), the Compensation Committee reviews the recommendations for compensation for such individuals presented to the Compensation Committee by the CEO and the reasons therefor and, in its discretion, may modify the compensation packages for any such individuals. The Compensation Committee has delegated to the Company's CEO the authority, within certain parameters, to approve the grant of restricted stock units ("RSUs") to employees and consultants who are not executive officers for purposes of Section 16 of the Exchange Act and hold positions below the level of vice president. All such grants are thereafter reviewed and ratified by the Compensation Committee.

In accordance with its charter, the Compensation Committee may form and delegate its authority to subcommittees when appropriate. Further, the Compensation Committee has the authority to retain, and to terminate, any compensation consultants or other advisors to assist in the evaluation of director, CEO or executive officer compensation or other matters within the scope of the Compensation Committee's responsibilities and is directly responsible for the appointment, compensation and oversight of such consultants and other advisors, including their fees and other retention terms. From time to time, the Compensation Committee engages the services of such outside compensation consultants to provide advice on compensation plans and issues related to the Company's executive officer and non-executive officer employees. In 2020, the Compensation Committee engaged Compensia, Inc. ("Compensia") to provide such assistance to the Compensation Committee. The Compensation Committee also has authority to obtain advice and assistance from internal or external legal, accounting and other advisors.

Each current member of our Compensation Committee is an "outside" director as defined in Section 162(m) of the Internal Revenue Code of 1986, as amended ("IRC"), and a "non-employee" director within the meaning of Rule 16b-3 under the Exchange Act. The Board has determined that each of the Compensation Committee members meet the Compensation Committee membership requirements set forth by the NYSE and the SEC, including that they be "independent."

For further discussion of the Compensation Committee and its processes and procedures, please refer to the "Compensation Program Objectives, Design and Practices" section in the Compensation Discussion and Analysis below. The Compensation

Committee Report is included under the caption "Compensation Committee Report on Executive Officer Compensation" in this Proxy Statement.

Nominating & Governance Committee

The responsibilities of the Nominating & Governance Committee include:

- Identifying prospective director nominees and recommending to the Board director nominees for the next annual meeting of stockholders and replacements of a director in the event of a vacancy on the Board;
- Recommending to the Board the appointment of directors to Board committees;
- Developing and recommending to the Board, and monitoring compliance with, the corporate governance principles and standards applicable to the Company;
- Managing the CEO selection process; and
- Together with our CEO, overseeing our Company's management succession planning.

The Nominating & Governance Committee also oversees the annual evaluation of the Board, the committees of the Board and the individual directors. In 2020, the Nominating & Governance Committee engaged Spencer Stuart, a global executive search and leadership consulting firm, to provide assistance to the Nominating & Governance Committee in the evaluation of the Board. Typically, this evaluation is performed during the first quarter by each of the directors and reflects an assessment of the Board, the Committees of the Board and each individual director in the prior year. Among other topics, the evaluation in general assesses:

- For both the Board and the committees:
  - Their structure and composition;
  - The format and content of meetings; and
  - The effectiveness of the Board and the committees, as applicable.
- For each individual director:
  - Their performance and approach to their directorship;
  - Their understanding of their role as a director;
  - Their understanding of critical aspects of the Company's business, products and strategy; and
  - Their skills, experience and ongoing training.

In addition, the Board reviews the issues faced during the past year, assesses its response and makes determinations whether additional resources or approaches might be applied to further optimize the handling of the issues. The goal of the evaluation is to identify and address any performance issues at the Board, committee or individual level, should they exist, identify potential gaps in the boardroom and to assure the maintenance of an appropriate mix of director skills and qualifications. Upon completion of the evaluation, the Nominating & Governance Committee provides feedback to the Board, the committees and the individual directors regarding the results of the evaluation and raises any issues that have been identified which may need to be addressed.

The Nominating & Governance Committee utilizes a variety of methods for identifying and evaluating nominees and for 2021, utilized the services of Spencer Stuart to assist in this process. Its general policy is to assess the appropriate size and needs of the Board and whether any vacancies are expected due to retirement or otherwise. In addition, candidates for director nominees are typically reviewed in the context of the current composition of the Board, the operating requirements of the Company, the current needs of the Board, and the long-term interests of stockholders, with the goal of maintaining a balance of knowledge, experience and capability. In the event those vacancies are anticipated, or otherwise arise, the Nominating & Governance Committee will consider recommending various potential candidates to fill such vacancies. Candidates may come to the attention of the Nominating & Governance Committee through its current members, stockholders or other persons.

The Board has determined that each of the Nominating & Governance Committee members meets the Nominating & Governance Committee membership requirements, including the independence requirements of the NYSE.

Other Committees

Our Board may from time to time establish other special or standing committees to facilitate the management of the Company or to discharge specific duties delegated to the committee by the full Board.

Compensation Committee Interlocks And Insider Participation

In 2020, no member serving on the Compensation Committee (Edward J Brown, Jr., Jeffrey A. Aukerman, Leo Berlinghieri, Robert G. Deuster, David B. Miller) at any time during the year had any form of interlocking relationship as described in Item 407(e)(4) of Regulation S-K with the Company. Further, no member of the Compensation Committee as currently constituted in 2021 (Edward J Brown, Jr., Jeffrey A. Aukerman, David B. Miller) has any form of interlocking relationship as described in Item 407(e)(4) of Regulation S-K as of the date of this proxy statement.

Board Membership Criteria And Nominee Identification

The Nominating & Governance Committee of the Board determines the required selection criteria and qualifications of director nominees based upon the needs of the Company at the time nominees are considered. While the Nominating & Governance Committee has no specific minimum qualifications for director candidates, persons considered for nomination to the Board must demonstrate the following qualifications to be recommended by the Nominating & Governance Committee for election:

- The candidate must exhibit proven leadership capabilities, high integrity and experience with a high level of responsibilities within his or her chosen field;
- The candidate must possess the ability to apply good business judgment and be of sound mind and high moral character;
- The candidate must have no personal or financial interest that would conflict or appear to conflict with the interests of the Company;
- The candidate must be in a position to properly exercise his or her duties of loyalty and be willing and able to commit the necessary time for Board and committee service; and
- The candidate must have the ability to grasp complex principles of business, finance, international transactions and semiconductor inspection, metrology, lithography and related software technologies.

The Nominating & Governance Committee retains the right to modify these qualifications from time to time.

The Nominating & Governance Committee has not adopted a formal diversity policy with regard to the selection of director nominees. Diversity is one of the factors that the Nominating & Governance Committee considers in identifying nominees for director. In selecting director nominees, the Nominating & Governance Committee considers, among other factors:

- The competencies and skills that the candidate possesses and the candidate's areas of qualification and expertise that would enhance the composition of the Board and further its ability to offer advice and guidance to management;
- How the candidate would contribute to the Board's overall balance of expertise, perspectives, backgrounds and experiences in substantive matters pertaining to the Company's business; and
- The candidate's demonstrated excellence in his or her field and commitment to rigorously representing the long-term interests of the Company's stockholders.

In its identification of director nominees, the Nominating & Governance Committee will consider how the candidate would contribute to the Board's overall balance of diversity of expertise, perspectives, backgrounds and experiences in substantive matters pertaining to the Company's business. When current Board members are considered for nomination for reelection, the Nominating & Governance Committee also takes into consideration their prior contributions to and performance on the Board and their record of attendance.

The Nominating & Governance Committee will consider the above criteria for nominees identified by the Nominating & Governance Committee itself, by stockholders, or through some other source. The Nominating & Governance Committee uses the same process for evaluating all nominees, regardless of the original source of nomination. The Nominating & Governance Committee may use the services of a third-party search firm to assist in the identification or evaluation of Board member candidates.

Consideration Of Director Nominees

The Nominating & Governance Committee has a formal policy with regard to consideration of director candidates recommended by the Company's stockholders, the Director Candidate Policy, which may be found on our website at:

https://investors.ontoinnovation.com/governance/governance-documents/

In accordance with the policy, the Nominating & Governance Committee will consider recommendations for candidates to the Board from stockholders of the Company holding no less than 1% of the Company's securities for at least twelve (12) months prior to the date of the submission of the recommendation. Stockholders wishing to recommend persons for consideration by the Nominating & Governance Committee as nominees for election to the Company's Board can do so by writing to the Office of the General Counsel of the Company at its principal executive offices giving:

- Candidate's name, age, business address and residence address;
- Candidate's detailed biographical data and qualifications including his/her principal occupation and employment history;
- The class and number of shares of the Company which are beneficially owned by the candidate;
- The candidate's written consent to being named as a nominee and to serving as a director, if elected;
- Information regarding any relationship between the candidate and the Company in the last three (3) years;
- Any other information relating to the candidate that is required by law to be disclosed in solicitations of proxies for election of directors;
- The name and address of the recommending or nominating stockholder;
- The class and number of shares of the Company which are beneficially owned by the recommending or nominating stockholder;
- A description of all arrangements or understandings between such stockholder and each nominee and any other person or persons (naming such person or persons) relating to the nomination; and
- Any other information specified under Section 2.5 of the Company's Bylaws.

Corporate Governance Guidelines

Our Board adopted corporate governance guidelines, a copy of which is available on our website under "Corporate Governance Summary" at:

https://investors.ontoinnovation.com/governance/governance-documents/

Codes Of Ethics

We have adopted a Code of Business Conduct and Ethics (applicable to all employees, executive officers and directors) and a Financial Information Integrity Policy (applicable to our financial officers, including our CEO and Chief Financial Officer ("CFO")) that set forth principles to guide all employees, executive officers and directors and establish procedures for reporting any violations of these principles. Copies of the Code of Business Conduct and Ethics and the Financial Information Integrity Policy may be found on our website at:

https://investors.ontoinnovation.com/governance/governance-documents/

or may be requested by writing to:

Onto Innovation Inc.
Attention: Investor Relations
16 Jonspin Road
Wilmington, Massachusetts 01887

The Company will disclose any amendment to the Code of Business Conduct and Ethics and any waiver of a provision thereof applicable to its officers or directors, including the name of the officer or director to whom the waiver was granted, on our website at www.ontoinnovation.com, on the Investors page.

Corporate Social Responsibility

Our Company recognizes the importance of environmental and social responsibility programs in the advancement of our Company's corporate mission and the delivering of value to our stakeholders. Consistent with our established core values of Passion, Integrity, Collaboration and Results, we are committed to upholding the highest levels of integrity and are dedicated to working with our stockholders to drive and improve our environmental, social and governance ("ESG") initiatives and outcomes across our Company.

Environmental: Our Company strives to improve our operations and minimize our impact on the environment. Our commitment to sustainability requires a sound strategy and a broad portfolio of efforts. We realize that our strategy and efforts need to continuously improve in order for us to excel in an increasingly resource-constrained world. To this end, our Company has endeavored to monitor and manage our environmental impact across our business. We have established goals in order to minimize adverse effects on the community, protect natural resources and to manage our energy efficiency and impact on greenhouse gas emissions, water conservation and waste reduction. We also strive to protect the health and safety of our team members whether they are working at our offices, manufacturing facilities or in the field at our customer's locations.

Quality: Our Company demands excellence in our quality and environmental performance, as demonstrated through our product and process qualification commitments, which resulted in our ISO 9001 Quality Management certification. It is our intent that each of our employees be accountable for driving quality in all that they do and seek continual improvement in order to meet or exceed our customers' needs and expectations. In addition, our products and solutions are designed to meet or exceed safety requirements and reflect energy efficiency features in order to confer benefits to our customers and the environment. We also produce our systems responsibly and offer tool trade-ins, refurbishments and technology upgrade programs in order to help assure that our customers receive the optimal value from our products with a potentially lower environmental impact.

Social. It is our Company's goal to provide a work environment that encourages a diverse and motivated workforce in order that employees may achieve their full potential. Our commitment is to ensure that our work environment reflects fair treatment and equal opportunity and is free from unlawful discrimination. We seek the development of our talent, both from a personal and professional perspective, in order to assure that they are afforded the opportunity to advance their careers and personal well-being. And during the COVID-19 pandemic, we have implemented numerous practices and policies to help ensure the continued health, safety, and well-being of our employees.

We also believe in giving back to our community. Our Company engages in service projects in our communities globally, established a charitable giving program which includes corporate matching for employee donations to qualified nonprofit organizations as well as engaged in mentoring of students looking to pursue science, technology, engineering and math, or "STEM," careers. With the COVID-19 pandemic, we donated face masks and other items to our worldwide communities in order to help provide both short-term assistance and support the longer-term recovery. We believe that these efforts help to advance the involvement of our employees and our Company in the various communities in which we operate and hopefully make a difference.

Governance. Our Company is committed to ethical and sustainable business practices. Our Code of Busines Conduct and Ethics underpins and guides these efforts. As ESG goals and objectives are proposed, they are reviewed and set by the ESG management team, who then measures the progress made toward achieving such goals on a quarterly basis. In addition, our ESG management team meets periodically with the Board to appraise it of the ESG strategy, ensure alignment on plans and goals, and report on the ongoing progress toward these goals.

We encourage you to review our 2020 Interim Corporate Social Responsibility Report and 2020 Annual Corporate Social Responsibility Report (located on our website at https://ontoinnovation.com/company/corporate-social-responsibility) for more detailed information regarding our ESG initiatives. Nothing on our website, including our Corporate Social Responsibility Reports or sections thereof, is deemed incorporated by reference into this proxy statement or other filings with the SEC, and the information contained on our website is not part of this document.

Related Person Transactions Policy

There have been no "related person transactions" since the beginning of 2020 to present, nor are there any currently proposed "related person transactions," involving any director, director nominee or executive officer of the Company, any known 5% stockholder of the Company or any immediate family member of any of the foregoing persons (which are referred to together as "related persons"). A "related person transaction" generally means a transaction involving more than $120,000 in which the Company (including any of its subsidiaries) is a participant and in which a related person has a direct or indirect material interest.

The Board has adopted policies addressing the Company's procedures with respect to the review, approval and ratification of "related person transactions" that are required to be disclosed pursuant to Item 404(a) of Regulation S-K. Our related person practices and policies ensure that our directors, officers and employees are proactively screened from any conflicts of interests interfering with their obligations to the Company. Our policies are included in our corporate governance documents, including our Code of Business Conduct and Ethics, the Audit Committee Charter and Summary of Corporate Governance Policies, each of which is available on the Investors section of our website located at:

https://investors.ontoinnovation.com/governance/governance-documents/

- Pursuant to our Code of Business Conduct and Ethics, our directors, officers and employees are required to avoid any actual or apparent conflicts of interest (other than conflicts of interest that have received appropriate approval as described below), which includes taking actions or having interests that may interfere with the objective or efficient performance of such person's duties to the Company or that may result in such person receiving improper personal benefits as a result of their position with the Company.
- Pursuant to our Summary of Corporate Governance Policies, if a director becomes involved in any activity or interest that may result in an actual or potential conflict (or the appearance of a conflict) with the interests of the Company, that director is required to disclose such information promptly to the Board, which will determine an appropriate resolution on a case-by-case basis. This policy further reflects that all directors must recuse themselves from any discussion or decision affecting their personal, business or professional interests. Similarly, our Board will determine the appropriate resolution of any actual or potential conflict of interest involving our CEO and our CEO will determine the appropriate resolution of any conflict-of-interest issue involving any other officer of the Company. When necessary and appropriate, resolution of such issues may require consideration of the matter by the Audit Committee.

Pursuant to both the Board's Summary of Corporate Governance Policies and the Audit Committee Charter, the Audit Committee, which consists entirely of independent directors, will review any proposed transaction in which the Company or its subsidiaries are to participate if the amount involved in the transaction exceeds $120,000 and we are aware that any related person may have a direct or indirect material interest in the transaction. The Audit Committee will consider the facts and circumstances and will approve or ratify a proposed transaction if the Audit Committee considers it appropriate and believes that such transaction will serve the long-term interests of our stockholders. The Compensation Committee of the Board reviews and recommends to the Board for approval compensation decisions for Board members and our executive officers (and such other employees of the Company as directed by the Board) pursuant to the Compensation Committee Charter.

Communications With The Board Of Directors

We have a formal policy regarding communications with the Board, our Stockholder & Interested Party Communications Policy, which is found on our website at https://investors.ontoinnovation.com/governance/governance-documents/.

Stockholders may communicate with the Board, any of the Company's Board committees (Audit, Compensation or Nominating & Governance) or any of the Company's directors by writing to:

Onto Innovation Inc.
Office of the General Counsel
550 Clark Drive
Budd Lake, New Jersey 07828

and such communications will be forwarded to the intended recipient(s) to the extent appropriate. Prior to forwarding any communication, the General Counsel will review it and, in his or her discretion, will not forward a communication deemed to be of a commercial nature or otherwise inappropriate.

PROPOSAL 1

ELECTION OF DIRECTORS

Nominees

The Board currently has nine (9) members. Effective as of the conclusion of the 2021 Annual Meeting of Stockholders, the authorized number of directors for the Board shall be reduced to seven (7) members. All current directors are standing for election at the Annual Meeting with the exception of Jeffrey A. Aukerman and Vita A. Cassese.

The Company’s Amended and Restated Certificate of Incorporation provides that at each annual meeting of stockholders, each director of the Company shall be elected to hold office, and shall serve, until the expiration of the term for which he or she is elected and until his or her successor is duly elected and qualified or until his or her death, resignation, or removal; except that if any such election shall not be so held, such election shall take place at a stockholders' meeting called and held in accordance with the DGCL.

Based on the recommendation of the Nominating & Governance Committee, the seven (7) director nominees approved by the Board for inclusion in this proxy statement are:

Leo Berlinghieri   Edward J. Brown, Jr.   David B. Miller   Michael P. Plisinski
Bruce C. Rhine   Christopher A. Seams   Christine A. Tsingos

Each nominee is currently serving as a director of Onto Innovation. In making its recommendations, the Nominating & Governance Committee considered a number of factors, including its criteria for Board membership, which include the qualifications that must be possessed by a director candidate in order to be nominated for a position on our Board. Each nominee has indicated that he or she will serve if elected. Unless otherwise instructed, the proxy holders will vote the proxies received by them for the Company’s seven (7) nominees. In the event that any nominee of the Company becomes unable or unavailable to serve as a director at the time of the Annual Meeting (which we do not anticipate), the proxy holders will vote the proxies for any substitute nominee who is designated by the current Board to fill the vacancy. Alternatively, the Board, in its discretion, may elect to reduce the number of directors serving on the Board. We do not have any reason to believe that any of the nominees will be unable or will decline to serve as a director.

Board Composition And Refreshment

A priority of the Nominating & Governance Committee and the Board as a whole is making certain that the composition of the Board reflects the desired professional experience, skills and backgrounds in order to present an array of viewpoints and perspectives, help develop and execute strategy for the future and effectively represent the long-term interests of stockholders. Further, the Board recognizes the importance of Board refreshment in order to continue to achieve an appropriate balance of tenure, turnover, diversity and skills on the Board.

Vote Required

Pursuant to the Company’s Bylaws, our directors are elected by the affirmative vote of the majority of the votes cast (provided, however, that if the number of nominees exceeds the number of directors to be elected, directors will be elected by a plurality voting standard). In order for a director in an uncontested election to be elected, the number of votes cast “for” his/her election must exceed the number of votes cast “against” his/her election (with “abstentions” and “broker non-votes” not counted as a vote cast either “for” or “against” that director’s election). If a nominee who is an incumbent director in an uncontested election receives a greater number of “Withhold” votes for election than “For” votes in an uncontested election and is not elected, our Summary of Corporate Governance Policies provides that such director must promptly tender a resignation to the Board. Our Nominating & Governance Committee would then make a recommendation to the Board on whether to accept or reject the tendered resignation, or whether other action should be taken. Within ninety (90) days after the date of the certification of the election results, our Board will act on any such tendered resignation and publicly disclose (in a press release, a filing with the SEC or other broadly disseminated means of communication) its decision regarding the tendered resignation and the rationale behind the decision.

Information About The Nominees And Continuing Directors

Our Board and its Nominating & Governance Committee believe that all of the directors and nominees are highly qualified and have demonstrated leadership skills and have experience and judgment in areas that are relevant to our business. We believe that their ability to challenge and stimulate management and their dedication to the affairs of the Company collectively serve the interests of the Company and its stockholders.

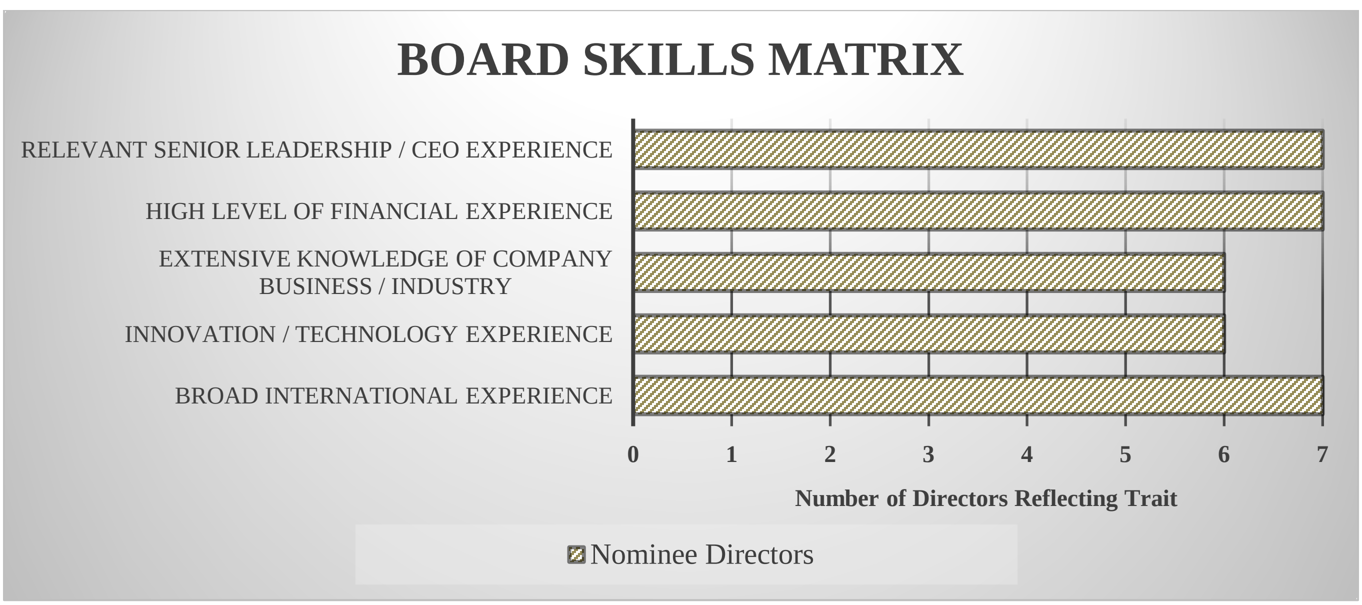
The seven (7) nominees for director are set forth below. All information is as of the record date.

Name	Position	Board Tenure[1]
Nominee Directors:		
Leo Berlinghieri	Former Chief Executive Officer and President, MKS Instruments, Inc.	12.50 years
Edward J. Brown, Jr.	Former CEO, Cymer Light Source	8.08 years
Michael P. Plisinski	Chief Executive Officer, Onto Innovation Inc.	5.33 years
David B. Miller	Former President, DuPont Electronics & Communications	5.67 years
Bruce C. Rhine	Former CEO, Nanometrics Incorporated	14.50 years
Christopher A. Seams	Former CEO, Deca Technologies	5.58 years
Christine A. Tsingos	Former Executive Vice President and CFO, Bio-Rad Laboratories	6.83 years

(1) Board Tenure includes time served on the Rudolph Board of Directors or the Nanometrics Board, as applicable, prior to the Merger Date.

Except as discussed below, each nominee and each incumbent director has been engaged in the principal occupation set forth above during the past five (5) years. There are no family relationships between any directors or executive officers of the Company. The Nominating & Governance Committee thereafter considered the professional experience, skills and backgrounds of the nominees and recommended the nominees to the full Board.

The following reflects additional information regarding the background and qualifications of our director nominees, including the experience and skills that support the Board's determination that each director should serve on our Board.



NOMINEES FOR DIRECTOR

Leo Berlinghieri

Director Since:	September 2008
Age:	67
Independent Status:	Independent Director
Board Committee(s):	Nominating & Governance (Chair)
Other Boards Served:	Unipower, LLC (2017-2019) MKS Instruments, Inc. (2005-2013) Massachusetts High Technology Council, Inc. (2006-2013)

From July 2005 to December 2013, Mr. Berlinghieri served as Chief Executive Officer and President of MKS Instruments, Inc., a critical subsystem and instrument provider to the semiconductor industry. From April 2004 to July 2005, Mr. Berlinghieri served as President and Chief Operating Officer and prior to that served as Vice President and Chief Operating Officer from July 2003 to April 2004 for MKS Instruments, Inc.

Specific Qualifications, Attributes, Skills and Experience

Relevant Senior Leadership / CEO Experience

- Served for over eight (8) years as Chief Executive Officer and President of MKS Instruments, Inc. Additional prior experience as Vice President and Chief Operating Officer of the company, among other senior management roles.

High Level of Financial Experience

- Substantial financial experience gained in roles as Chief Executive Officer, President and Vice President and Chief Operating Officer with MKS Instruments, Inc.

Broad International Exposure

- Gained extensive international experience in various roles with MKS Instruments, including Chief Executive Officer, Chief Operating Officer and Vice President of Global Sales and Service.

Extensive Knowledge of Company Business/Industry

- Over thirty-three (33) years of experience in the semiconductor industry, including eight (8) years at the helm of MKS Instruments, Inc. a public corporation. Also served on the SEMI North America Advisory Board (NAAB) including as its chairman in 2009.

Innovation/Technology Experience

- Broad array of technological experience with MKS Instruments, Inc., including roles in manufacturing, customer support, and sales all in addition to his roles as Chief Executive Officer and Chief Operating Officer.

Edward J. Brown, Jr.

Director Since:	February 2013
Age:	63
Independent Status:	Independent Director
Board Committee(s):	Compensation (Chair)
Other Boards Served:	Astrodyne TDI (2015-present)

From May 2013 until September 2015, Mr. Brown was the Chief Executive Officer of Cymer Light Source, following the merger of Cymer, Inc. with ASML Holding Ltd., prior to which Mr. Brown served as President and Chief Operating Officer of Cymer, Inc. from September 2005 until May 2013. From 1984 to 2005, Mr. Brown was employed at Applied Materials, Inc., where he held numerous high-level management positions including group vice president and senior advisor to the president, vice president and general manager of the Intel business unit, as well as managing director heading up their largest product division, Global Operations. Prior to Applied Materials Inc., Mr. Brown held key engineering positions at TRW Corporation and Burroughs Corporation. Mr. Brown received a master's degree in business administration from National University and a bachelor's degree in industrial studies from San Diego State University.

Specific Qualifications, Attributes, Skills and Experience

Relevant Senior Leadership / CEO Experience

- Served as Chief Executive Officer for Cymer Light Source. Further, he served for over seven (7) years as President and Chief Operating Officer of Cymer, Inc. as well as held various senior management positions with Applied Materials, Inc. and key engineering positions at TRW Corporation and Burroughs Corporation.

High Level of Financial Experience

- Substantial financial experience gained as Chief Executive Officer of Cymer Light Source, as President and Chief Operating Officer of Cymer, Inc. as well as high-level management positions with Applied Materials, Inc., among others.

Broad International Exposure

- Gained extensive international experience as Chief Executive Officer of Cymer Light Source, President and Chief Operating Officer of Cymer, Inc. and Global Vice President of Worldwide Business Operations as well as other roles including vice president of Applied Material, Inc.'s largest product division, Global Operations.

Extensive Knowledge of Company Business/Industry

- Over forty (40) years of employment experience within an array of fields in the semiconductor industry. Also served on the SEMI North America Advisory Board (NAAB).

Innovation/Technology Experience

- Expansive scope of technological and innovative experience from over forty (40) years of semiconductor industry employment in key management, operations, development and engineering positions.

David B. Miller

Director Since:	July 2015
Age:	64
Independent Status:	Independent Director
Board Committee(s):	Compensation, Nominating & Governance
Other Boards Served:	President, University of Virginia School of Engineering & Applied Science Foundation (since 2011) Merrimac Industries, Inc. (2002-2008) SEMI International (2011-2015) North Carolina Chamber of Commerce (2010-2015)

Mr. Miller served as the Rudolph non-executive Chairman from August 2018 through the Merger Date. From June 1981 to November 2015, Mr. Miller served in various positions, most recently as President, with DuPont Electronics & Communications, an electronic materials company. Mr. Miller holds a B.S. in Electrical Engineering from the University of Virginia.

Specific Qualifications, Attributes, Skills and Experience

Relevant Senior Leadership / CEO Experience

- Served as President of DuPont Electronics & Communications.

High Level of Financial Experience

- Substantial financial experience gained in roles with DuPont Electronics & Communications including as President of the company. Oversight of complex financial transactions, profit and loss responsibility and investor relations during prior operations and leadership roles with this company.

Broad International Exposure

- Served as President of DuPont Electronics & Communications, a global electronic materials company. Served on several joint venture boards in the U.S. and Asia while with DuPont Electronics & Communications as well as on the board of SEMI International. Resided in Tokyo, Japan for three (3) years.

Extensive Knowledge of Company Business/Industry

- Forty (40) years of experience within the electronics industry including six (6) years at the helm of DuPont Electronics & Communications, which in addition to other markets, served the semiconductor industry.

Innovation/Technology Experience

- Significant experience and leadership roles with DuPont Electronics & Communications, overseeing the company's technology advancement, breadth of process expertise and ongoing innovation.

Michael P. Plisinski

Director Since:	November 2015
Age:	51
Independent Status:	Non-Independent Director
Board Committee(s):	None
Other Boards Served:	None

Mr. Plisinski has served as the Company's Chief Executive Officer since the Merger Date and was previously Chief Executive Officer of Rudolph beginning in November 2015. Prior to his appointment as Rudolph's CEO, Mr. Plisinski served as Rudolph's Executive Vice President and Chief Operating Officer from October 2014 to November 2015 and as Vice President and General Manager, Data Analysis and Review Business Unit from February 2006 when Rudolph merged with August Technology Corporation ("August Technology") until October 2014. From February 2004 to February 2006, Mr. Plisinski served as August Technology's Vice President of Engineering and, from July 2003 to February 2004, as its Director of Strategic Marketing for review and analysis products. Mr. Plisinski joined August Technology as part of the acquisition of Counterpoint Solutions, a supplier of optical review and automated metrology equipment to the semiconductor industry, where he was both sole founder and President from June 1999 to July 2003. Mr. Plisinski has a B.S. in Computer Science from the University of Massachusetts and has completed the Advanced Management Program from Harvard Business School.

Specific Qualifications, Attributes, Skills and Experience

Relevant Senior Leadership / CEO Experience

- Serving as Chief Executive Officer of Onto Innovation with prior experience as Chief Executive Officer of Rudolph, Chief Operating Officer and Vice President of Rudolph, General Manager of the Rudolph's Data Analysis and Review Business Unit, among other senior management positions.

High Level of Financial Experience

- Substantial financial experience gained in roles as Chief Executive Officer of the Company and Rudolph and Chief Operating Officer and Vice President, General Manager of the Data Analysis and Review Business Unit of Rudolph.

Broad International Exposure

- Extensive experience working with the Asian and European customers of the Company through the various roles held with Rudolph, August Technology and the Company.

Extensive Knowledge of Company Business/Industry

- Over fifteen (15) years of dedicated experience with Rudolph and August Technology and an additional four (4) years as founder of an optical review and automated metrology start-up company, each serving the semiconductor industry.

Innovation/Technology Experience

- Technological and innovative experience includes leadership roles in both engineering and software development while with Rudolph and August Technology. Prior entrepreneurial experience in the founding of optical review and automated metrology equipment company, Counterpoint Solutions.

Bruce C. Rhine

Director Since:	July 2006
Age:	63
Independent Status:	Independent Director
Board Committee(s):	Nominating & Governance, Audit
Other Boards Served:	Snap2Insights (since 2018)
	Shape.io (since 2015)
	Columbia Nutritional LLC (since 2014)
	Phoseon Technology, Inc. (since 2012)
	Jama Software (2008-2018)
	NEXX Systems (2002-2012)
	Nor-Cal Products, Inc. (2010-2017)
	Accent Optical Technologies Inc. (2000-2006)

Mr. Rhine served as the Chairman of the Board of Nanometrics from August 2009 through the Merger Date. From July 2006 to February 2008, Mr. Rhine served as Nanometrics' Chief Strategy Officer and from March 2007 to August 2007, as Nanometrics Chief Executive Officer. From 2000 to 2006, Mr. Rhine served as Chairman and Chief Executive Officer of Accent Optical Technologies, Inc. (acquired by Nanometrics in July 2006) and as its President from January 2003 to April 2005 and from August 2000 to September 2001. Prior to 2000 Mr. Rhine was an executive at Applied Materials, Lam Research Corporation, Asyst Technologies and Air Products and Chemicals. Mr. Rhine holds a B.S. degree in Chemical Engineering and an M.B.A. in Finance from The Pennsylvania State University. Mr. Rhine is a member of the National Association of Corporate Directors ("NACD") and the American College of Corporate Directors ("ACCD").

Specific Qualifications, Attributes, Skills and Experience

Relevant Senior Leadership / CEO Experience

- Served as Chief Executive Officer of Nanometrics and of Accent Optical Technologies with additional prior senior leadership experience with Applied Materials, Lam Research Corporation, Asyst Technologies and Air Products and Chemicals.

High Level of Financial Experience

- Substantial financial experience gained in roles as Chief Executive Officer of Nanometrics and of Accent Optical Technologies as well as with executive roles held in several semiconductor industry companies.

Broad International Exposure

- Gained extensive international experience as Chief Executive Officer of Nanometrics and of Accent Optical Technology as well as through array of other executive roles within the semiconductor industry.

Extensive Knowledge of Company Business/Industry

- Over thirty-seven (37) years of dedicated experience within the semiconductor industry.

Innovation/Technology Experience

- Broad and comprehensive array of technological experience with multiple companies within the semiconductor space including serving as the Chief Strategy Officer of Nanometrics.

Christopher A. Seams

Director Since:	August 2015
Age:	58
Independent Status:	Independent Director
Board Committee(s):	Nominating & Governance
Other Boards Served:	Xperi Corporation (since 2016)
	Tessera Technologies, Inc. (2013-2016)

Mr. Seams served as Chief Executive Officer of Deca Technologies from June 2013 to August 2016. Prior to Deca Technologies, Mr. Seams served as Executive Vice President of sales and marketing at Cypress Semiconductor and held various technical and operational management positions in its manufacturing, development and operations. Prior to joining Cypress in 1990, Mr. Seams worked in process development for Advanced Micro Devices and Philips Research Laboratories. Mr. Seams earned his bachelor's degree in electrical engineering from Texas A&M University and his master's degree in electrical and computer engineering from the University of Texas at Austin. Mr. Seams has a Professional Certificate in Advanced Computer Security from Stanford University and is a senior member of the Institute of Electrical and Electronics Engineers. Mr. Seams is a member of the ACCD as well as a member and Certified Director of the NACD.

Specific Qualifications, Attributes, Skills and Experience

Relevant Senior Leadership / CEO Experience

- Served as Chief Executive Officer of Deca Technologies as well as in additional senior leadership roles within the semiconductor industry including with Cypress Semiconductor.

High Level of Financial Experience

- Substantial financial experience gained in roles as Chief Executive Officer of Deca Technologies as well as with executive roles held in the semiconductor industry.

Broad International Exposure

- Extensive international experience as Chief Executive Officer of Deca Technologies, Executive Vice President of sales and marketing at Cypress Semiconductor as well as through other management roles with both Cypress and other semiconductor companies with which he worked.

Extensive Knowledge of Company Business/Industry

- Over thirty (30) years of dedicated experience within the semiconductor industry.

Innovation/Technology Experience

- Technological and innovative experience gained through an array of technical and operational management positions in manufacturing, development and operations for Cypress Semiconductor as well as in process development for Advanced Micro Devices and Philips Research Laboratories.

Christine A. Tsingos

Director Since:	May 2014
Age:	62
Independent Status:	Independent Director
Board Committee(s):	Audit (Chair)
Other Boards Served:	Envista Holdings Corporation (since September 2019)
	Varex Imaging Corporation (since February 2017)

Ms. Tsingos served as the Executive Vice President and Chief Financial Officer of Bio-Rad Laboratories from December 2002 through May 2019. Prior to Bio-Rad, Ms. Tsingos held executive positions at Autodesk, The Cooper Companies, and Attest Systems. Ms. Tsingos earned her Bachelor of Arts in International Studies from the American University in Washington D.C. and an M.B.A in International Business from the George Washington University. In 2010, Ms. Tsingos was awarded the prestigious Bay Area CFO of the Year.

Specific Qualifications, Attributes, Skills and Experience

Relevant Senior Leadership / CEO Experience

- Served as Executive Vice President and Chief Financial Officer of Bio-Rad Laboratories.

High Level of Financial Experience

- Over thirty (30) years of financial and operational experience with a series of companies including sixteen (16) years of service as Chief Financial Officer of Bio-Rad Laboratories.

Broad International Exposure

- Comprehensive international experience through service as Chief Financial Officer of Bio-Rad Laboratories.

The Board unanimously recommends voting "FOR ALL" of the nominees set forth above.

Compensation Of Directors

Directors who are employees of the Company receive no compensation for their services as members of the Board. Director compensation for non-employee members of the Board is a mix of cash and equity-based compensation, which is largely comprised of the equity component to align the interests of our directors with the Company's long-term performance and stockholder interests. The components of the compensation for 2020 Board service of directors who are not employees of the Company are as follows:

Board Compensation Element	Amount/Value
Annual Retainer	$70,000 [1]
Annual Equity Grant (in RSUs)	$150,000 [2]
Committee Chair Stipend	
Audit	$20,000 [1]
Compensation	$15,000 [1]
Nominating & Governance	$10,000 [1]
Committee Member Stipend	
Audit	$10,000 [1]
Compensation	$7,500 [1]
Nominating & Governance	$5,000 [1]
Board Chair Stipend	$50,000 [1]
Initial Equity Grant (in RSUs)	$150,000 [3]

1 Paid subsequent to the director election results at the Annual Meeting of Stockholders.

2 Awarded at the second quarter Board meeting in a number of shares calculated by dividing the listed amount by the closing stock price per share of Company Common Stock on the date of grant, rounded to the nearest 100 shares.

3 Awarded as of the first Board meeting following election or appointment and calculated in the same manner as the annual equity grant above but prorated by the number of quarters between such first meeting and the date on which the next annual equity grant is scheduled to be awarded.

Any initial equity grants and/or annual equity grants typically vest on the first anniversary of the grant date. Equity awards granted to directors are granted under and subject to the terms of the Onto Innovation Inc. 2020 Stock Plan (the "2020 Stock Plan").

For the fiscal year ended December 26, 2020, the directors, excluding the directors who are employees, received total compensation indicated in the table below. There were no option awards, non-equity incentive plan compensation, or pension and nonqualified deferred compensation earnings granted to such directors. They did not earn any type of compensation during the year other than what is disclosed in the following table:

Name	Fees Earned or Paid in Cash	Stock Awards (1)	All Other Compensation	Total
Jeffrey A. Aukerman[2]	$113,750	$150,432	$0	$264,182
Leo Berlinghieri	$111,875	$150,432	$0	$262,307
Edward J. Brown, Jr.	$85,000	$150,432	$0	$235,432
Vita A. Cassese[2]	$106,250	$150,432	$0	$256,682
Robert G. Deuster	$87,500	$150,432	$0	$237,932
David B. Miller	$108,750	$150,432	$0	$259,182
Bruce C. Rhine	$75,000	$150,432	$0	$225,432
Christopher A. Seams	$125,000	$150,432	$0	$275,432
Timothy J. Stultz, Ph.D.[3]	$0	$0	$0	$0
Christine A. Tsingos	$90,000	$150,432	$0	$240,432
John R. Whitten[3]	$26,250	$0	$0	$26,250

(1) Represents the grant date fair value for each share-based compensation award granted during the year, calculated in accordance with FASB ASC Topic 718. The assumptions used in determining the grant date fair value of these awards are set forth in Note 9 to our consolidated financial statements, which are included in our Annual Report on Form 10-K for the fiscal year ended December 26, 2020 filed with the SEC. As of December 26, 2020, our directors had the following stock awards outstanding: Mr. Aukerman – 4,800 RSUs; Mr. Berlinghieri – 4,800 RSUs; Mr. Brown, Jr. – 4,800 RSUs, Ms. Cassese – 4,800 RSUs; Mr. Deuster – 4,800 RSUs; Mr. Miller – 4,800 RSUs; Mr. Rhine – 4,800 RSUs; Mr. Seams – 4,800 RSUs; and Ms. Tsingos – 4,800 RSUs.

(2) Mr. Aukerman and Ms. Cassese are not standing for re-election at the Annual Meeting.

(3) Mr. Stultz and Mr. Whitten did not stand for re-election to the Board on May 12, 2020.

Stock Ownership/Retention Guidelines For Directors

The Company has established guidelines related to stock ownership and retention for its non-employee directors. Currently, the guidelines require that each non-employee director of the Company own shares of Company Common Stock valued at a minimum of three (3) times the amount of the director’s annual cash retainer. For a new director, the stock holding requirement is to be attained within five (5) years of his or her initial election or appointment to the Board.

PROPOSAL 2

ADVISORY VOTE ON EXECUTIVE OFFICER COMPENSATION

The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, or the Dodd-Frank Act, enables our stockholders to vote to approve, on an advisory (non-binding) basis, the compensation of our named executive officers as disclosed in this proxy statement in accordance with SEC rules. Consistent with the recommendation of the Board and the preference of our stockholders as reflected in the non-binding advisory vote on the frequency of future advisory votes on named executive officer compensation held at the Nanometrics 2017 Annual Meeting of Stockholders, the Company currently holds an annual "say on pay" vote. In accordance with this policy, this year we are requesting our stockholders to approve an advisory resolution on the Company's executive officer compensation as reported in this Proxy Statement, and as required by Section 14A(a)(1) of the Exchange Act.

Our executive officer compensation arrangements are designed to enhance stockholder value on an annual and long-term basis. These arrangements are consistent with our compensation philosophy and pay-for-performance principles and, as such, have been designed to provide competitive compensation packages that enable the Company to attract and retain talented executive officer officers, motivate executive officers to achieve the Company's short- and long-term business strategies and objectives, align the interests of executive officers with those of stockholders, and are consistent with current market practices and good corporate governance principles. Please read the Compensation Discussion and Analysis beginning on page 34 of this proxy statement and the tabular and additional narrative disclosures on executive officer compensation beginning on page 55 of this proxy statement for additional details about our executive officer compensation arrangements, including information about the fiscal year 2020 compensation of our named executive officers.

We are asking our stockholders to indicate their support for our compensation arrangements as described in this proxy statement.

For the reasons discussed above, the Board recommends that stockholders vote in favor of the following resolution:

> "**RESOLVED,** that the Company's stockholders APPROVE, on an advisory basis, the compensation paid to the Company's named executive officers, as disclosed in the proxy statement for this meeting pursuant to Item 402 of Regulation S-K, including the Compensation Discussion and Analysis, compensation tables and narrative discussion and other related tables and disclosures."

Because your vote is advisory, it will not be binding upon or overrule any decisions of the Board, nor will it create any additional fiduciary duty on the part of the Board. This advisory vote is not intended to address any specific item of compensation, but rather the overall compensation of our named executive officers and our compensation philosophy, policies and practices described in this proxy statement, and does not seek to have the Board or Compensation Committee take any specific action. However, the Board and the Compensation Committee value the views expressed by our stockholders in their vote on this proposal and will take into account the outcome of the vote when considering executive officer compensation matters in the future.

Vote Required

The affirmative vote, in person or by proxy, of a majority of the shares present or represented at the meeting and entitled to vote will be required to approve, on an advisory (non-binding) basis, the compensation of our named executive officers as disclosed in this proxy statement.

The Board recommends a vote "FOR" the approval of the compensation of the named executive officers as disclosed in this proxy statement pursuant to Item 402 of Regulation S-K as required by Section 14A(a)(1) of the Exchange Act.

PROPOSAL 3

RATIFICATION OF APPOINTMENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Although ratification by stockholders is not required by law, the Board is submitting the Audit Committee's selection of Ernst & Young LLP ("E&Y") as the Company's independent registered public accounting firm for fiscal year 2021 for ratification as a matter of good corporate governance and recommends that the stockholders vote for ratification of such appointment. In the event of a negative vote on such ratification, the Board will reconsider its selection. Even if the selection is ratified, the Audit Committee may appoint a new independent registered public accounting firm at any time during the year if the Audit Committee believes that such a change would be in the best interests of the Company and its stockholders. E&Y has indicated that representatives of E&Y, the independent registered public accounting firm presented herein, will be in attendance at the Annual Meeting. Such representatives will have the opportunity to make a statement, if they desire to do so, and to respond to appropriate questions.

Change In Independent Registered Public Accounting Firm

Prior to the 2019 Merger, E&Y was the independent registered public accounting firm of Rudolph, and PricewaterhouseCoopers LLP ("PwC") was the independent registered accounting firm of Nanometrics.

As previously reported on our Current Report on Form 8-K filed with the SEC on November 13, 2019, PwC resigned on November 11, 2019, and E&Y was engaged by the Company as its independent registered public accounting firm for the year ending December 31, 2019. The decision to change the independent registered accounting firm was approved by the Audit Committee.

PwC's reports on Nanometrics' financial statements for the fiscal years ended December 29, 2018 and December 30, 2017 contained no adverse opinion or disclaimer of opinion, and were not qualified or modified as to uncertainty, audit scope or accounting principle.

During the fiscal years ended December 29, 2018 and December 30, 2017 and the subsequent interim period through November 11, 2019, there have been no disagreements (as defined in Item 304(a)(1)(iv) of Regulation S-K and the related instructions) with PwC on any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedure, which disagreements, if not resolved to the satisfaction of PwC, would have caused PwC to make reference thereto in their reports on the financial statements for such years.

During the fiscal years ended December 29, 2018 and December 30, 2017 and subsequent interim period through November 11, 2019, there have been no reportable events (as defined in S-K 304(a)(1)(v)), except that as disclosed in the Company's Quarterly Report on Form 10-Q for the quarterly periods ended April 1, 2017, July 1, 2017 and September 30, 2017 (the "2017 Form 10-Qs"), management concluded that a material weakness existed related to ineffective controls over the existence of inventories subject to the cycle count programs. The material weakness was remediated and described in Item 9A of the Company's annual report on Form 10-K for the year ended December 30, 2017.

The Company requested that PwC furnish it with a letter addressed to the SEC stating whether or not it agrees with the above statements. A copy of the letter from PwC, dated November 12, 2019, is filed as Exhibit 16.1 to such Form 8-K.

During the fiscal years ended December 29, 2018 and December 30, 2017, and the subsequent interim periods through November 11, 2019, neither Onto Innovation nor anyone on its behalf consulted with E&Y, regarding either: (i) the application of accounting principles to a specific transaction, completed or proposed, or the type of audit opinion that might be rendered on Onto Innovation's financial statements, and neither a written report nor oral advice was provided to Onto Innovation that EY concluded was an important factor considered by Onto Innovation in reaching a decision as to any accounting, auditing or financial reporting issue, or (ii) any matter that was either the subject of a disagreement (as defined in Item 304(a)(1)(iv) of Regulation S-K and the related instructions) or a reportable event (as described in Item 304(a)(1)(v) of Regulation S-K).

Independent Registered Public Accounting Firm Selection Process

E&Y served as Rudolph's independent registered public accounting firm since March 2008, was selected as the accounting firm for the Company after the Merger Date and served in this role during fiscal 2020. During this time, the firm has demonstrated:

- A high degree of independence and professionalism in their audit engagement with the Company;
- A solid record of partner and professional staff continuity;
- A knowledge of current and emerging accounting and auditing issues affecting the Company;
- A deep and ongoing understanding of the Company's business model and industry; and
- A readiness to assist the Company and its audit committee in keeping up to date with the latest accounting and auditing pronouncements and their application to the Company's business.

In making its selection of an independent registered public accounting firm, the Audit Committee assesses, among other factors:

- The performance of the independent registered public accounting firm in the prior year;
- The anticipated needs of the Company and ability of the accounting firm to address them in the coming year;
- The proposed fees for the coming year; and
- The potential impact of changing auditors for the coming year.

Ultimately, the selection of the independent registered public accounting firm is made with the best interest of the Company and its stockholders in mind.

Factors Used To Assess Independent Registered Public Accounting Firm Quality

Members of the Audit Committee have experience in dealing with audits of other public companies as well as experience with other accounting firms. After the Merger Date, the Audit Committee's basis for the selection of E&Y as the Company's independent registered public accounting firm included, among other considerations, familiarity of Rudolph's accounting practices as the accounting acquirer in the 2019 Merger, E&Y's breadth of services and international footprint as well as expense considerations. On an ongoing basis, E&Y has been responsive, reliable and professional in their dealings with the Audit Committee and has appropriately assisted the Audit Committee in its oversight of the Company's financial processes and financial statements. In addition, E&Y makes available to the Company specialists within their firm to assist in the audit when consultation on specific and unique issues arise. These processes appear to be effective in assisting E&Y with their audit engagement.

As a part of the Audit Committee's review of E&Y's qualifications, E&Y provides the Company with the firm-wide comments from the Public Company Accounting Oversight Board (PCAOB) regarding PCAOB's examinations of E&Y for the prior year. E&Y also updates the Company with the quality improvements that the firm has made as a result of the PCAOB comments as well as other changes to their quality and risk assessment processes.

Audit Committee's Involvement In The Lead Partner Selection

In keeping with their independence policy, E&Y employs a regular schedule of rotation of the both the lead engagement partner ("Lead Partner") and the support staff. This rotation provides for sufficient overlap of the new Lead Partner with the outgoing Lead Partner. This process allows for the members of the Audit Committee and the Company management to become familiar with the new Lead Partner and new staff and to introduce them to the Company's business. Prior to the new Lead Partner's full engagement, the Audit Committee and Company management meet with E&Y to review and offer feedback on the industry experience, financial acumen and anticipated fit of the new Lead Partner with the Company.

Policy On Audit Committee Pre-Approval Of Audit And Permissible Non-Audit Services Of Independent Registered Public Accounting Firm

Pursuant to our Audit Committee charter, our Audit Committee must pre-approve all audit and permissible non-audit services provided by the Company's independent registered public accounting firm. These services may include audit services, audit-related services, tax and other services. Pre-approval is generally provided for up to one (1) year, and any pre-approval is detailed as to the particular service or category of services and is generally subject to a specific budget. The independent registered public accounting firm and management are required to periodically report to the Audit Committee regarding the extent of services provided by the independent registered public accounting firm in accordance with this pre-approval and the fees for the services performed to date. The Audit Committee may also pre-approve particular services on a case-by-case basis. During 2020, all services provided by Ernst & Young LLP to the Company were pre-approved by the Audit Committee in accordance with this policy, and the Audit Committee has concluded that the provision of these services is compatible with the accountants' independence.

Audit and Non-Audit Fees

The following table sets forth the fees billed for the fiscal year ended December 26, 2020 and the fiscal year ended December 31, 2019 by the Company's independent registered public accounting firm, Ernst & Young LLP, for 2019, and Nanometrics' independent registered public accounting firm, PricewaterhouseCoopers LLP ("PwC"), prior to the 2019 Merger.

Fees	E&Y 2020	E&Y 2019	PwC 2019
Audit	$1,908,000	$1,006,202	$900,800
Audit Related	$39,000	-	$83,755
Tax	$44,000	$43,770	$114,000
All Other	$62,000	$2,000	$2,700
Total	**$2,053,000**	**$1,051,972**	**$1,101,255**

Audit Fees

Audit fees for the fiscal year ended December 26, 2020 were for the audit of the Company's annual financial statements including management's assessment of internal controls over financial reporting, the review of the Company's quarterly financial statements and statutory and regulatory audits, consents and other services. These fees may include services that are normally provided by the independent registered public accounting firm in connection with regulatory filings or engagements including any comfort letters and consents for financings and filings made with the SEC.

Audit fees for the year ended December 31, 2019 were for the aggregate fees billed for professional services rendered to the Company subsequent to the 2019 Merger and Nanometrics prior to the 2019 Merger for the audit of the annual financial statements and a review of financial statements included in the quarterly reports on Form 10-Q.

Audit Related Fees

Audit related fees for the fiscal year ended December 26, 2020 were for assurance and related services that are reasonably related to the performance of the audit or review of the Company's annual financial statements and are not reported under "Audit Fees," and consisted primarily of fees for employee benefit plan audits.

Audit related fees paid to PwC for the fiscal year ended December 31, 2019 were for professional services rendered to Nanometrics prior to the 2019 Merger that were reasonably related to the performance of the audit or review of Nanometrics' financial statements. Audit related fees paid to E&Y for the fiscal year ended December 31, 2019 were for professional services rendered to Rudolph prior to the 2019 Merger and to the Company after the 2019 Merger that were reasonably related to the performance of the audit or review of Nanometrics' financial statements. In both instances, this category includes fees related to assistance in financial due diligence related to the 2019 Merger and general assistance with implementation of SEC requirements.

Tax Fees

Tax fees may include fees for tax compliance, tax planning and tax advice. Tax fees for the fiscal years ended December 26, 2020 and December 31, 2019 were for tax advice.

All Other Fees

All other fees would consist of fees for products and services other than the services described above. For the fiscal year ended December 26, 2020, all other fees included payments for an assessment of key segregation of duties related considerations and risks in the SAP environment after the hyper care period post implementation, as well as payments for an accounting and auditing information tool.

For the fiscal year ended December 31, 2019, all other fees included payments for an accounting and auditing information tool.

Negotiation of the annual independent registered public accounting firm fees is the responsibility of the Audit Committee with the support of the Company's CFO. All of the Ernst & Young LLP fees listed in the chart above for 2020 were pre-approved by the Audit Committee of the Company, which concluded that the provision of such services by Ernst & Young LLP was compatible with the maintenance of that firm's independence in the conduct of its audit functions. All of the Ernst & Young LLP fees listed in the chart above for 2019 were pre-approved by the Audit Committee of Rudolph prior to the 2019 Merger and, after the Merger Date, the Company, each of which concluded that the provision of such services by Ernst & Young LLP was compatible with the maintenance of that firm's independence in the conduct of its audit functions. All of the PricewaterhouseCoopers LLP fees listed above were pre-approved by the Audit Committee of Nanometrics prior to the 2019 Merger, each of which concluded that the provision of such services by PricewaterhouseCoopers LLP was compatible with the maintenance of that firm's independence in the conduct of its audit functions.

Vote Required

The affirmative vote, in person or by proxy, of a majority of the shares present or represented at the meeting and entitled to vote will be required to ratify the appointment of Ernst & Young LLP as the Company's independent registered public accounting firm for the year ending January 1, 2022.

The Company's Board unanimously recommends voting "FOR" the ratification of the appointment of Ernst & Young LLP as the Company's independent registered public accounting firm for the year ending January 1, 2022.

AUDIT COMMITTEE REPORT

The following is the Audit Committee's report submitted to the Board for the fiscal year ended December 26, 2020.

As noted in the Audit Committee's charter, management is responsible for the Company's internal controls and the financial reporting process. The independent registered public accounting firm is responsible for performing an independent audit of the Company's consolidated financial statements in accordance with the standards of the Public Company Accounting Oversight Board (United States) and for issuing a report thereon. Additionally, the independent registered public accounting firm is responsible for performing an independent audit of the Company's internal controls over financial reporting and for issuing a report thereon. The Committee's responsibility is to monitor and oversee these processes.

In this context, the Audit Committee of the Board has:

- reviewed and discussed with management and with Ernst & Young LLP, the Company's independent registered public accounting firm, together and separately, the Company's audited consolidated financial statements contained in its Annual Report on Form 10-K for the fiscal year ended December 26, 2020;
- discussed with Ernst & Young LLP the matters required to be discussed by Statement on Auditing Standards No. 1301, Communications with Audit Committees;
- received the written disclosures and the letter from Ernst & Young LLP required by applicable requirements of the Public Company Accounting Oversight Board regarding the independent registered public accounting firm's communications with the Audit Committee concerning independence, and has discussed with Ernst & Young LLP its independence; and
- discussed and reviewed with the Company's manager - internal audit ("Mgr-IA") and Ernst & Young LLP, with and without management present, the Company's work in complying with the requirements of Section 404 under the Sarbanes-Oxley Act of 2002 regarding internal controls over financial reporting. In connection therewith, the Audit Committee also discussed with the Mgr-IA, with and without other members of management present, management's assessment of the effectiveness of internal controls over financial reporting as of December 26, 2020. The Audit Committee also discussed Ernst & Young LLP's audit report on internal controls over financial reporting as of December 26, 2020 with management and Ernst & Young LLP.

Based on the foregoing review and discussions, the Audit Committee recommended to the Board that the audited financial statements be included in the Company's Annual Report on Form 10-K for the fiscal year ended December 26, 2020.

THE AUDIT COMMITTEE

Christine A. Tsingos (Chairperson)
Jeffrey A. Aukerman
Vita A. Cassese
Bruce C. Rhine

EXECUTIVE OFFICER COMPENSATION

COMPENSATION DISCUSSION AND ANALYSIS

Introduction

This Compensation Discussion and Analysis describes our compensation philosophy, process, plans and practices for our executive officers and contains a discussion of the material elements of compensation awarded to, earned by, or paid to the Company's "Named Executive Officers" listed in the table below ("NEOs"), including:

- Our principal executive officer
- Our principal financial officer
- The next three (3) most highly compensated executive officers of the Company in 2020

Based on the foregoing, the Company's NEOs for 2020 are:

Onto Innovation's Named Executive Officers (NEOs)

NEO Name	Position
Michael P. Plisinski	CEO
Steven R. Roth	Sr. Vice President & CFO
Rollin Kocher	Sr. Vice President, Field Operations
Kevin Heidrich	Sr. Vice President, Marketing & Corporate Development
Robert A. Koch	Vice President & General Counsel

EXECUTIVE SUMMARY

Our Business

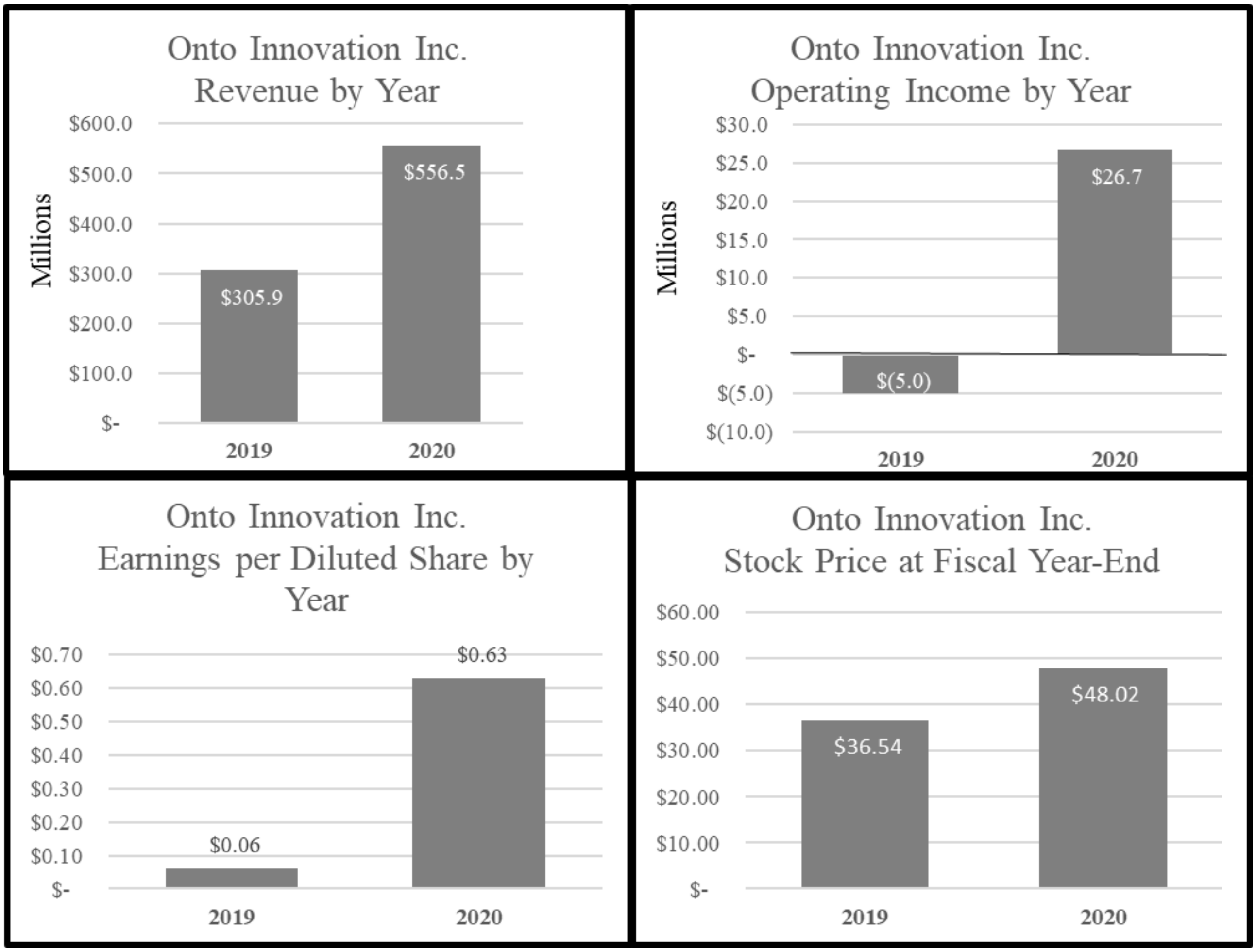
We are a global leader in process control, combining global scale with an expanded portfolio of leading-edge technologies that include unpatterned wafer quality, 3D metrology spanning the chip from nanometer-scale transistors to micron-level die-interconnects, macro defect inspection of wafers and packages, metal interconnect composition, factory analytics, and lithography for advanced semiconductor packaging. We also provide services relating to the maintenance and repair of our products, installation services and training. Semiconductor capital equipment is our primary served market.

2020 Financial Highlights

On October 25, 2019, Nanometrics Incorporated and Rudolph Technologies, Inc. merged to form Onto Innovation Inc. Onto Innovation accounts for the 2019 Merger as a reverse acquisition using the acquisition method of accounting in accordance with generally accepted accounting principles, with Rudolph being treated as the acquiring entity for accounting purposes. Because Rudolph is treated as the accounting acquirer in the 2019 Merger, the financial statements filed with the SEC in Onto Innovation's Form 10-K include the financial results of Rudolph for all periods presented and the financial results of the former

Nanometrics for the periods on or after October 26, 2019. Based on the foregoing, Onto Innovation reported revenue of $305.9 million as of year-end 2019 as reflected in the table below.

The following reflects some of our financial accomplishments in fiscal 2020 as compared to fiscal 2019:



Results Of The 2020 Stockholder Vote On Executive Officer Compensation

Our Board recognizes the fundamental interest our stockholders have in the compensation of our executive officers. At the 2020 Annual Meeting, 96.8% of stockholders present at the meeting voted in favor of the advisory vote on executive officer compensation.

COMPENSATION PROGRAM OBJECTIVES, DESIGN AND PRACTICES

Our Compensation Philosophy And Principles

Rewarding continuous improvement in financial and operating results and the creation of stockholder value are key attributes of our compensation philosophy, which serves as the framework for the Company's executive officer compensation program. The Compensation Committee of the Board of the Company (referred to as the "Compensation Committee"), acts on behalf of the Board and, by extension, on behalf of our stockholders, to establish, implement and continually monitor adherence to our compensation philosophy. Accordingly, the Compensation Committee has developed a set of core objectives and principles that it has used to develop the executive officer compensation program. The specific objectives of our executive officer compensation program are to:

- Attract, retain, and motivate executive officer talent;
- Align compensation with Company and individual performance; and
- Foster an ownership mentality that aligns our executive officers' interests with stockholder interests.

Consistent with the foregoing, the Compensation Committee believes that the most effective executive officer compensation program is one that is designed to reward the achievement of specific strategic and operating goals of the Company on both an annual and a long-term basis, and which aligns our executive officers' interests with those of our stockholders. The Compensation Committee evaluates both performance and compensation to ensure that the Company maintains its ability to attract and retain superior employees in key positions. Based on that evaluation, the Compensation Committee designs the compensation provided to key employees to remain competitive with the compensation paid to similarly situated executive officers at competitor companies. The Compensation Committee believes executive officer compensation packages provided by the Company to its executive officers, including the NEOs, should include base salary, annual cash incentive opportunities, select perquisites and stock-based compensation, including equity incentive opportunities which reward performance as measured against pre-established goals.

The following principles support the objectives and design of the compensation program:

- The compensation program is designed to be fair and competitive, from an internal and external perspective, taking into account the role, unique qualifications and distinct responsibilities of each executive officer;
- A substantial portion of an executive officer's compensation is designed to be at risk and linked to the achievement of both corporate and individual financial, management or other performance goals and changes in stockholder value;
- A retirement provision has been implemented which is designed to provide financial stability following employment but will not be the focal point of why executive officers choose to work for the Company;
- Select, limited perquisites and other executive officer benefits have been employed to serve a business purpose; and
- All compensation program elements taken as a whole are designed to help focus executive officers to achieve the Company's financial and strategic goals while supporting our culture and core values.

To underscore the importance of "pay-for-performance" in our compensation philosophy and our Company's culture, the Compensation Committee has developed incentive arrangements based on performance standards which the Compensation Committee believes, at target achievement, will incentivize our executive officers to meet or exceed industry performance. The incentive component of the Company's executive officer compensation program, also referred to as the "Tier I Incentive Compensation Plan" or the "Tier I Plan", rewards executive officers for achieving specific corporate, business unit and individual goals as well as strategic and operational measures depending on the executive officer involved.

Our long-term incentive program includes grants of performance-based stock units ("PSUs") which are earned based on the achievement of total shareholder return ("TSR") performance relative to the top 30 companies in the Philadelphia Stock Exchange Semiconductor Index over a two and three-year performance period. Our long-term incentive program also includes service-based RSUs, which vest in equal annual increments over time. All grants are currently made under Company's 2020 Stock Plan and shares earned and vested are subject to the Company's stock ownership and retention guidelines.

The Company strives to promote an ownership mentality among its key leadership, in part through the guidelines described below under the heading "Stock Ownership/Retention Guidelines for Executive Officers." The stock ownership guidelines applicable to our non-employee directors are discussed above under the heading "Stock Ownership/Retention Guidelines for Directors." To that end, the CEO is required to maintain ownership of the Company's Common Stock equal in value to at least three (3) times the CEO's year-end base salary. As for the other NEOs, the stock ownership requirement reflects a minimum share ownership equal to the NEO's current year-end base salary. In further support of this approach, our Board established an anti-pledging and anti-hedging policy to ensure that personal interests relating to the stock holdings of officers and directors do not conflict with their duties to the Company.

NEO Compensation Elements

Our executive officer compensation program is generally comprised of four parts, each intended to address different objectives: base salary, annual cash performance incentives, long-term equity incentives, which generally are in the form of both performance-based vesting and service-based vesting RSU grants, and limited perquisites.

The table below highlights the foregoing key elements of our executive officer compensation structure for 2020.

NEO Compensation Elements

Element	Form	Description
Base Salary	**Fixed Cash Compensation**	Competitive cash compensation that takes into consideration the scope and complexity of the role, individual qualifications, experience, and internal value to the Company.
Annual Cash Incentive Plan	**Annual Performance-Based Cash Compensation**	Annual cash incentive contingent on meeting performance criteria related to corporate, business unit/department, and individual performance objectives.
Long-Term Equity Incentive Program	**Performance- and Time-Based Restricted Stock Units**	A set percentage of PSUs that are earned based on TSR performance relative to a designated peer group, with remaining percentage of the RSUs vesting incrementally over a fixed period.
Executive Officer Perquisites	**Income tax preparation** **Airline club membership**	Limited perquisites, consistent with market practice, that promote efficient use of executive officers' time and attract and retain executive officer talent.

The Compensation Committee aligns the Company's Tier I Incentive Compensation Plan, which encompasses our annual cash incentive plan and long-term incentive equity program, with the Company's performance relative to pre-established performance goals based on the Company's stated financial objectives, historical performance, and anticipated market and economic conditions for the performance period.

In adopting this design, the Compensation Committee considered a number of parameters, including the advice of its independent compensation consultant, comparable practices within the industry and the desire to achieve the goals underlying the compensation program. The Compensation Committee believes that as a result of this program the Company has been able to attract, retain and motivate executive officers and reward the achievement of strategic, operational and financial goals, thereby enhancing stockholder value.

Our Compensation Practices

The Compensation Committee has adopted the following practices and policies with respect to the Company's executive officer compensation program:

What We Do	
Committee Independence	The Compensation Committee consists of independent directors and reserves time at each meeting to meet in executive session without management present.
Independent Compensation Consultant	The Compensation Committee has engaged its own independent compensation consultant and annually assesses the consultant's performance, independence, and whether any potential conflicts of interest exist.
Independent Legal Advisor	The Compensation Committee may engage its own independent legal advisor specializing in corporate compensation issues, as necessary.
CEO Goal Setting and Performance Evaluation	The Compensation Committee, with the input of the full Board, engages in formal goal setting and performance evaluation processes with the CEO.
Peer Group	The Compensation Committee has established formal criteria for the selection of peer groups used as a competitive reference point with respect to executive officer and director compensation, program design and practices, and financial and stock performance.
Stock Ownership Guidelines	The Company maintains rigorous stock ownership guidelines, which apply to executive officers and directors, and serve as a risk-mitigating feature within our compensation structure.
Double Trigger Change-in-Control	Employment agreements have been entered into with senior executive officers, including the CEO, that contain change-in-control severance protection. Executive officers are entitled to severance in the event of both a change-in-control of the Company and a qualifying termination of employment ("double trigger").
Clawback Policy	The Company has adopted a policy that provides for the recovery or adjustment of amounts previously awarded or paid to an executive officer in the event that financial results or other performance measures on which the award or payment were determined are restated or adjusted.
What We Do Not Do	
Hedging and Pledging	The Company's insider trading policy prohibits our directors, officers and employees from entering into hedging transactions related to our Common Stock. Additionally, under the Company's anti-pledging policy, non-employee directors and executive officers are prohibited from making any new pledges of Company securities as collateral for a loan, or otherwise making a new transfer of Company securities to a margin account.
Tax Gross-Ups on Perquisites or Severance	The Company does not provide any tax gross-up payments to cover personal income taxes on perquisites or severance benefits related to a change-in-control.

Role Of The Compensation Consultant

During 2020, the Compensation Committee engaged Compensia, an independent executive officer compensation consulting firm, to provide advice on the Company's executive officer compensation arrangements. Compensia does not provide any services other than those related to compensation consulting and does not provide any services to Company management. The Compensation Committee determined that Compensia is independent within the meaning of the Compensation Committee Charter and the NYSE listing standards, and the work performed by Compensia does not raise any conflicts of interest.

Compensia had advised the Compensation Committee of Nanometrics for several years prior to the 2019 Merger and is very familiar with the industry and geographies in which the Company operates. For 2020, the Compensation Committee requested that Compensia:

- evaluate the efficacy of the Company's existing compensation strategy and practices in supporting and reinforcing the Company's long-term strategic goals;
- assist in refining the Company's compensation strategy and in developing and implementing an executive officer compensation program to execute that strategy; and
- provide market information to assist the Compensation Committee in establishing 2020 executive officer compensation.

Similarly, for 2021, the Compensation Committee also engaged Compensia to provide further advice and insight on the Company's executive officer compensation arrangements consistent with what was established in 2020.

Role Of Executive Officers In Establishing Compensation

With regard to compensation for executive officers other than the CEO, the Compensation Committee seeks input from the CEO with the support of the human resources department. Each year, the CEO is responsible for establishing proposed personal and corporate objectives for the Company's other executive officers, including the other NEOs. These objectives, subject to the approval of the Compensation Committee, are reviewed and agreed upon by the CEO with the executive officer. In addition, as part of the annual performance review of the Company's executive officers, the CEO assesses the performance of his or her direct reports and recommends any merit increase to be proposed for each individual. These recommendations are compiled by the CEO into executive officer compensation plans which include any proposed merit increases, each executive officer's personal and corporate objectives, proposed annual incentive award opportunities (expressed as a percentage of their base salary) and equity grant proposals, and are submitted to the Compensation Committee for review and consideration for approval. At the Compensation Committee meeting during which the executive officer compensation plans are reviewed, the CEO attends the initial session to present the proposed plans and to answer questions. Thereafter, the Compensation Committee meets without the CEO present to review, discuss and recommend for approval all executive officer compensation plans, subject to any modifications made by the Compensation Committee. The Compensation Committee then recommends such compensation packages to the independent members of the Board for approval.

Role Of The Compensation Committee

The Compensation Committee is charged with making all determinations regarding executive officer compensation subject to approval by the independent members of the Board. On an annual basis, the Compensation Committee evaluates the CEO's performance in light of the goals and objectives established for measuring his or her performance at the beginning of the previous fiscal year. The results of this evaluation guide the Compensation Committee in setting the CEO's salary, cash incentive award opportunity and equity compensation. The CEO does not participate in the Compensation Committee's or Board's deliberations regarding his or her compensation.

During 2020, the Compensation Committee of the Company met five (5) times. In 2020, the Compensation Committee met regularly in executive session, without the presence of the CEO or any other Company executive officers, to review the relevant compensation matters.

In early 2020, the Company's CEO met with the Compensation Committee to present the proposed compensation plans for each of the Company's executive officers as well as the proposed incentive award opportunities under the Company's Tier I Incentive Compensation Plan. As a result of this and the Compensation Committee's own deliberations, the Compensation

Committee took a number of actions in 2020. These included reviewing and recommending for approval by the independent members of the Board:

- the annual compensation of the Company's CEO for 2020;
- the annual compensation for each of the Company's other executive officers for 2020;
- the Tier I Incentive Compensation Plan and cash incentive programs for non-executive officers 2020; and
- the service-based and performance-based equity incentive awards and related performance targets for the Company's executive officers for 2020.

In reviewing and setting the annual compensation for each executive officer, the Compensation Committee considered the amounts payable under each of the elements of their respective compensation plans, including base salary, annual cash incentive awards, equity grants and perquisites. The Compensation Committee took into consideration both the Company's internal pay equity as well as the competitive environment within which the Company operates. In each instance, the Compensation Committee determined that the base salary and annual and long-term incentive award opportunities for the individual executive officers were at an acceptable level for 2020 and that the perquisites were appropriate for the related positions.

In late 2020, the Compensation Committee reviewed the Company's annual and long-term incentive programs for 2020. At that time, measures were again selected that were determined to be consistent with advancing the interests of the Company's stockholders and aligning and supporting the Company's business strategy.

Based on this review, in early 2021, the Compensation Committee met and took a number of actions. These included the review and recommendation for approval by the independent members of the Board of:

- the annual compensation of the Company's CEO for 2021;
- the annual compensation for each of our other executive officers for 2021;
- the Tier I Incentive Compensation Plan and Employee Profit Sharing Plan for 2021; and
- the service-based and performance-based equity incentive awards and related performance targets for the Company's executive officers for 2021.

Peer Companies

In order to meet its objective of maintaining competitive executive compensation packages, the Compensation Committee has engaged independent compensation consultants to advise on the development and evaluation of the Company's compensation programs. For 2020 and 2021, the Compensation Committee engaged Compensia to provide peer group data and perform an assessment of compensation levels provided to executive officers. In addition, the Compensation Committee obtains and evaluates market compensation information using third-party and internal resources. The Compensation Committee reviews data related to compensation levels and programs of other similar companies prior to making its decisions, but only considers such information in a general manner in order to obtain a better understanding of the current compensation practices within our industry.

In the Compensation Committee's review of executive compensation for the 2020 fiscal year, the Compensation Committee considered publicly available market data from peer company proxy disclosures and industry compensation surveys for companies that typically include similarly sized semiconductor and semiconductor capital equipment or similar firms for each Company executive officer in a like or similar role.

In late 2019, for compensation decisions for the Company's 2020 fiscal year, Compensia recommended and the Compensation Committee approved the Company's compensation peer group which took into consideration the following factors:

- Semiconductor capital equipment and other electronics and hardware technology companies;
- Revenue between approximately 0.5x and 2x the Company's revenue run-rate; and
- Market cap between approximately 0.5x and 2x the Company's market cap.

The Company's compensation peer group for the 2020 review (which was used to make decisions regarding 2020 compensation) consisted of the following companies.

Companies Included In The Company's Compensation Peer Group For 2020		
Advanced Energy Industries Inc.	Inphi Corporation	Photronics, Inc.
Axcelis Technologies Inc.	Knowles Electronics, LLC.	Power Integrations, Inc.
Brooks Automation, Inc.	Lattice Semiconductor Corporation	Veeco Instruments, Inc.
Cabot Microelectronics Corporation	MACOM Technology Solutions Holdings, Inc.	Vishay Precision Group, Inc.
Cohu, Inc.	MaxLinear, Inc.	Xperi Corporation
FormFactor, Inc.	Novanta Inc.	

The pay practices of the foregoing Company peer group were analyzed for base salary and annual and long-term incentives. Periodically, peer groups are used to evaluate other programs such as executive officer retirement, perquisites and severance policies. Our peer group data is supplemented by broader technology industry data from compensation surveys to further facilitate the evaluation of compensation levels and design. Compensation levels are generally developed at the low (25^{th} percentile), middle (50^{th} percentile) and high (75^{th} percentile) end of the market for each pay element (base salary and short-term and long-term incentives) and for total compensation.

While the Compensation Committee considers market data for each pay element and in total, the Compensation Committee does not specifically target any particular market compensation level. Instead, the Compensation Committee uses its discretion in setting the compensation levels as appropriate.

Consistent with the foregoing approach, in late 2020, Compensia re-assessed the peer group based on the established criteria and recommended some minor adjustments to the companies included in the compensation peer group. Compensia proposed the removal of Cabot Microelectronics Corporation (now CMC Materials Inc.), Vishay Precision Group, Inc. and Xperi Corporation and the addition of Ambarella International LP, Ichor Holdings Ltd., Rambus Incorporated and Ultra Clean Holdings, Inc. The Compensation Committee reviewed these adjustments and approved the compensation peer group for the 2021 fiscal year, which consists of the following companies:

Companies Included In The Company's Compensation Peer Group For 2021		
Advanced Energy Industries Inc.	Ichor Holdings Ltd.	Novanta Inc.
Ambarella International LP	Inphi Corporation	Photronics, Inc.
Axcelis Technologies Inc.	Knowles Electronics, LLC	Power Integrations, Inc.
Brooks Automation, Inc.	Lattice Semiconductor Corporation	Rambus Incorporated
Cohu, Inc.	MACOM Technology Solutions Holdings, Inc.	Ultra Clean Holdings, Inc.
FormFactor, Inc.	MaxLinear, Inc.	Veeco Instruments, Inc.

ELEMENTS OF THE COMPANY’S 2020 AND 2021 COMPENSATION PLANS

Compensation Program Design

The Company’s executive officer compensation packages for the 2020 fiscal year were generally comprised of four parts, each intended to address different objectives: base salary, annual cash performance incentive awards, long-term incentives that generally are in the form of both performance-based stock units (“PSUs”) and service-vesting restricted stock units (“RSUs”), and limited perquisites. Executive officers are also entitled to participate in benefit programs available to all Company employees, such as the Onto Innovation Inc. 2020 Employee Stock Plan (“ESPP”), our 401(k) plan, including matching contributions, as well as health and welfare benefits. This design was adopted for executive officers by the Compensation Committee taking into consideration a number of parameters including the independent compensation consultant’s advice, comparable practices within the industry and the desire to achieve the goals underlying the compensation program. The Compensation Committee believes that as a result of this program the Company can attract, retain, and motivate employees and reward the achievement of strategic operational and financial goals, thereby enhancing stockholder value. The Compensation Committee and Board further believe that each of the elements as well as the entire compensation package for Company executive officers is appropriate for the Company given its performance, industry, current challenges and environment.

In developing this program, the Compensation Committee considered the four primary components, individually and in the aggregate, to assess their competitiveness and effectiveness in achieving the desired intent of the compensation program. The Compensation Committee chose these components because it believed that each supports the realization of one or more of the Company’s compensation objectives, and that together they would be effective in achieving the overall objectives. Additionally, these components are commonly used for executive officers at companies within the Company’s peer group and, therefore, the Compensation Committee found them to be appropriate in its talent retention strategy. The Compensation Committee’s determination varied for each executive officer depending on a number of factors, including but not limited to, the scope of his or her responsibilities, leadership skills and values, and individual performance. The Compensation Committee did not apply formulas or assign specific mathematical weights to any of these factors, but rather exercised its business judgment and discretion to make a subjective determination after considering all of these measures collectively.

For 2021, the compensation program provided to the Company’s executive officers retains the same structure and elements as the 2020 program based on the foregoing rationale.

Annually, the Compensation Committee will review the elements of the compensation package as well as the overall package afforded to the executive officers. At such time, the Compensation Committee, in its discretion, can recommend adjustments to the elements of the program to the independent members of the Board for review and approval. This review would typically be performed coincident with the evaluation of the individual executive officer’s performance in relation to their Tier I Incentive Compensation Plan goals, salary adjustment and equity grants, if any, as discussed below.

Based on the objectives discussed in the foregoing section, the Compensation Committee seeks to structure our equity and cash incentive compensation program to motivate executive officers to achieve the business goals set by the Company and reward the executive officers for achieving such goals, which we believe aligns the financial incentives of our executive officers with the interests of our stockholders. The Compensation Committee primarily uses salary, perquisites and other executive officer benefits as a means for providing base compensation to executive officers commensurate with their knowledge and experience and for fulfilling their basic job responsibilities.

In establishing these components of the executive officer compensation package, it is the Compensation Committee’s intention to set total executive officer compensation at a sufficient level to attract and retain a strong motivated leadership team, while remaining reasonable and in line with stockholder perception of overall fairness of executive officer compensation.

Base salaries serve as the foundation of the compensation programs detailed herein. The Compensation Committee derives other executive compensation elements, including annual cash incentives and long-term equity incentives by weighing them against base salary. Base salary levels for executive officers of the Company are generally established at or near the start of each year. The Company’s annual cash incentive bonuses are administered through its Tier I Incentive Compensation Plan. The plan provides guidelines for the calculation of annual cash incentive-based compensation, subject to the Compensation Committee’s oversight and the Company’s and executive’s achievement of corporate and individual goals. Generally, at its first meeting each year, the Compensation Committee determines final bonuses for executive officers earned in the preceding year based on each individual’s performance and the performance of the Company through its audited financial statements, and also reviews the incentive program to be established for the current year and approves the group of executives eligible to participate in the Tier I Incentive Compensation Plan for that year.

All full-time and part-time employees, including the Company's executive officers, are eligible participants in the 2020 Stock Plan. The Compensation Committee believes that through the Company's broad-based equity compensation plan, the economic interests of all employees, including the executive officers, are more closely aligned with those of our stockholders. It is also believed that this approach will allow the Company to use equity as an incentive in a balanced manner that supports the recruitment and retention of top talent.

The Compensation Committee generally recommends for approval by the independent members of the Board the grant of equity awards at the first regularly scheduled meeting of the Board or upon completion of the Compensation Committee's review and approval process. The Compensation Committee and the Board do not generally grant equity awards at other times during the year, other than in the case of a new hire, promotion or other exceptional circumstances.

Impact Of Performance On Compensation

The performance of the Company and of the executive officer has a direct impact on the compensation received by such executive officer from the Company. On an annual basis, the CEO reviews the performance and compensation for the Company's executive officers to determine any potential salary adjustment for each individual. This assessment takes into consideration a number of factors, including the Company's profitability; the performance of applicable business units; the executive officer's individual performance and measurable contribution to the Company's success; and pay levels of similar positions with comparable companies in the industry and within similar technology industries.

In addition, both Company and individual performance are assessed by the CEO when proposing to the Compensation Committee any annual cash incentive payout to the NEOs (other than the CEO) under the annual cash incentive component of their Tier I Incentive Compensation Plan. The Tier I Plan includes various incentive level opportunities based on the executive officer's accountability and impact on Company operations, with target award opportunities that are established as a percentage of base salary. For our NEOs, 2020 and 2021 target annual cash bonus opportunities were set as follows:

	Target Annual Cash Incentive Percentage	
Name	**2021**	**2020**
Michael P. Plisinski	100%	100%
Steven R. Roth	65%	65%
Rollin Kocher	60%	60%
Kevin Heidrich	50%	50%
Robert A. Koch	40%	40%

Under the annual cash incentive component of our Tier I Incentive Compensation Plan, payout is based upon achievement of corporate and personal objectives with no payout unless the Company meets the threshold level of at least one of the Board approved corporate financial targets established as part of the plan. Personal objectives are awarded only upon clear achievement of the associated goal. Failure to meet the personal objectives thereby has a negative impact on the ultimate bonus payout.

In addition to a review of the prior year's objectives, the CEO and each executive officer also confer to propose to the Compensation Committee new individual performance targets for the executive officers (including the NEOs, other than the CEO) for the current year, which are combined with the corporate targets into an annual cash incentive opportunity proposal. The personal targets that are established are designed to result in additional incremental value to the Company if they are achieved. These personal performance targets in 2020 included goals related to additional corporate and/or business unit financial measures, operational measures and activities, transactional activities, and marketing initiatives, depending on the executive officer involved. The target level of the corporate component to the bonus goals was set based on the Company's financial budget established by the Board at the beginning of the year. The determination of these goals is made annually to meet the changing nature of the Company's business.

Upon completion of the prior year's results and prior to implementation of the current year's proposed Tier I Incentive Compensation Plan, the results for each participating executive officer are submitted to, and reviewed by, the Compensation Committee, which considers the CEO's recommendations for executive officers other than the CEO and determines the final bonus earned by each executive officer based on Company and individual performance. The Compensation Committee then establishes the Company and individual metrics applicable to the current year's Tier I Incentive Compensation Plan. Thereafter, the Compensation Committee's recommendations are presented to the independent members of the Board for approval of the achieved incentive payment, if any, and of the new plan for the current year. If, during the year, there are changes to the Tier I Incentive Compensation Plan that are proposed, such changes are presented to the Compensation Committee for its consideration. The Compensation Committee may exercise discretion in relation to its recommendation to the independent members of the Board regarding an individual's award under the Tier I Incentive Compensation Plan based upon its review.

An executive officer's role, responsibilities, individual performance and contribution to the Company are factors considered in determining the size of any discretionary equity grant that may be recommended by the Compensation Committee to the independent members of the Board for approval as long-term incentive to the individual.

Based upon the foregoing, the compensation that an executive officer may realize in the course of a year can be impacted by the positive or negative performance of such individual as well as Company performance. We intend for an individual's compensation under the Tier I Incentive Compensation Plan to be proportionate to the Company's and his or her performance against established goals. Similarly, equity awards that are performance-based are intended to be proportionate to the Company's performance under goals established for the Company. This review and evaluation are more subjective when applied to salary adjustments. In this case, an executive officer's performance is evaluated by taking into consideration the executive officer's contribution to the Company, the significance of the individual's achievements in relation to the overall corporate goals and mission, and the executive officer's effectiveness in his or her role within the Company and then weighed against the performance of other executive officers. Industry norms and reference to comparative company data are considered to the extent appropriate. Thus, there is no precise, objective formula that is applied in determining salary adjustments.

Compensation Plan Design And Decisions For 2020 And 2021

For 2020, the Compensation Committee conducted a review of the compensation program and determined that the 2020 Tier I Compensation Plan would retain the same basic elements as the prior year's plan as these elements aligned the Company's program with its current business strategy and included the pay for performance aspect of its executive compensation program. Taking into account the Company's 2019 financial performance and outlook for 2020, each executive officer's performance and responsibilities, and current market compensation rates for each executive officer position, among other criteria, the Compensation Committee recommended, and the Board approved, the updated program and compensation plan structure for the executive officers in 2020 as detailed below.

For 2021, the Compensation Committee determined that the 2021 Tier I Compensation Plan would retain the basic elements reflected in the 2020 plan. Considering the Company's 2020 performance and the Company's outlook for 2021, each executive officer's performance and responsibilities, and current market compensation rates for each executive officer position, among other criteria, the Compensation Committee recommended, and the Board approved the program and compensation plan structure for our executive officers in 2021 also as detailed below.

Base Salary

The Company provides executive officers and other employees with base salary to compensate them for services rendered during the fiscal year. Base salaries for executive officers are established considering a number of factors, including the executive officer's:

- Individual performance;
- Unique qualifications;
- Role and responsibilities;
- Measurable contribution to the Company's profitability and success; and
- The base salary levels of similar positions with comparable companies in the industry.

The Compensation Committee supports the compensation philosophy of moderation for elements such as base salary and perquisites and other executive officer benefits. As noted above, under "Impact of Performance on Compensation," base salary decisions are made as part of the Company's formal annual review process and are influenced by the performance of the Company and the individual.

Salary levels are considered annually as part of the performance review process as well as upon a promotion or other change in job responsibility. The Compensation Committee reviews and determines salaries after reviewing salary data supplied by the compensation consultant, including data regarding the peer comparison group, as well as consideration of the compensation for the executive officers on a company-wide basis, based on their relative duties and responsibilities and the recommendations of the CEO (other than with respect to his or her compensation) as it relates to the executive officers who report to the CEO. The Compensation Committee also considers comparisons of peer group compensation to peer group performance as provided by the independent compensation consultant. The Compensation Committee did not apply formulas or assign specific mathematical weights to any of these factors, but rather exercised its business judgment and discretion to make a subjective determination regarding each executive officer's base salary for 2020 and 2021, as applicable, after considering all of these measures collectively.

The CEO’s recommendations for salary adjustments (other than his or her own) are reviewed and modified as deemed appropriate by the Compensation Committee and presented to the independent members of the Board for approval.

Base Salary For 2020

For 2020, the Compensation Committee approved a 10% increase to the CEO’s base salary and increases ranging from 3% to 10% to the base salaries of each of our other NEOs.

Base Salary For 2021

For 2021, the Compensation Committee approved a 3% increase to the CEO’s base salary and increases of 3% to the base salaries of each of our other NEOs.

Annual Cash Incentive Compensation

The Compensation Committee views cash bonuses as part of its performance-based compensation program designed to align the recipient’s interests with the Company’s annual goals and objectives and its stockholders’ interests. An executive officer’s annual cash incentive award under the Tier I Compensation Plan generally depends on the financial performance of the Company relative to profit, revenue and other financial targets and the executive officer’s individual performance. The incentive opportunity is generally set at a higher percentage for more senior officers, with the result that such officers have a higher percentage of their potential total cash compensation at risk. Executive officers reporting to the CEO, including all of our NEOs, participate in the Tier I Plan, which is designed to generate additional incentive for maximizing the employee’s performance in realizing the corporate strategic and financial goals and mission. The Compensation Committee may, but is not required to, establish a Tier I Plan for any given year.

Upon completion of the year, the individual’s and the Company’s results with respect to the performance targets are then assessed and presented to the Compensation Committee. The Compensation Committee reviews the proposed payouts and suggests changes to the extent it deems such action necessary. Tier I Plan awards are paid out following completion of the annual audit by the Company’s independent registered public accounting firm. This generally occurs in the first quarter of each year.

Annual Cash Incentive Plan For 2020

For 2020, the Compensation Committee adopted an annual cash incentive plan as part of the Tier I Plan that is structured such that each NEO’s potential cash award was subject to the achievement of 2020 corporate financial objectives consistent with the Board approved annual operating plan for 2020. These corporate financial objectives are established at levels in excess of the overall industry projections in order that the Company drive to outperform the industry.

The annual cash incentive portion of the Tier I Plan has up to three (3) components: Corporate Goals, Business Unit Goals (if applicable) and personal performance goals.

- The Corporate Goals of the Tier I Plan relate to corporate revenue and corporate non-GAAP operating income. The performance ranges for each metric included a payout level for threshold performance at 50% of target and an established target level to achieve the maximum payout by exceeding the corporate performance objectives for each of the corporate financial metrics. The cash bonus payout was contingent on meeting at least one of the 2020 corporate revenue or corporate non-GAAP operating income goals. Should the Company not have reached the threshold level for either the 2020 corporate revenue or corporate non-GAAP operating income goal, then no payout under the plan would have been made to executive officers.
- For those NEOs who were associated with a particular Company business unit or department, a portion of their cash bonus potential was allocated to business unit/department financial performance goals. In 2020, these goals were the achievement of fiscal 2020 business unit revenue and non-GAAP operating income objectives (“Business Unit Goals”). Earning of the potential cash award apportioned to the Business Unit Goals began upon achieving 80% of the business unit revenue target and/or 70% of the business unit non-GAAP operating income target.

- The final component of the Tier I Plan was the inclusion of personal performance goals that are specific to the individual NEO. The NEO personal performance goals in 2020 included targets related to senior management planning, additional corporate financial measures, operational measures and activities, product development measures or marketing initiatives, depending on the executive officer involved. Cash bonuses arising from the personal performance goals were drafted to be awarded on an "each or nothing" basis.

Provided that either of the Corporate Goal thresholds was met, the cash bonus potential of the Tier I Plan could be realized. The annual cash incentive component of the Tier I Plan was designed and administered as follows:

- Cash bonuses arising from the Corporate Goals and the Business Unit Goals are awarded starting at a 50% level at the respective goal threshold and increasing linearly up to the Tier I Plan target amounts.
- If the Tier I Plan target is exceeded in either or both Corporate Goal categories, then the cash payout increases as follows:
  - Corporate Revenue: From 100% to 120% of target, additional cash compensation is earned linearly up to 200% of this target.
  - Non-GAAP Operating Income: From 100% to 130% of target, additional cash compensation is earned linearly up to 200% of this target.
- Upon achieving either of the Corporate Goals, the Business Unit Goals, if applicable, and personal performance goals could be earned in full.
- Additional cash payout is realized if either of the Business Unit Goals is exceeded, similar to the Corporate goal parameters above.

The following table reflects the structure of the annual cash incentive components of the Tier I Plan.

Tier I Incentive Compensation Plan - Annual Cash Incentive Provisions	**2020**
Payout if both financial metric thresholds are not reached	0%
Corporate revenue threshold	80% of corporate revenue target
Corporate non-GAAP operating income threshold	70% of corporate non-GAAP operating income target
Payout upon attaining corporate financial metrics' threshold levels	50%
Payout upon attaining corporate financial metrics' target goals	100%
Payout upon attaining corporate financial metrics' maximum goals	200%
Corporate revenue metric upside performance range	100%-120% of corporate revenue target
Corporate non-GAAP operating income metric upside performance range	100%-130% of corporate non-GAAP operating income target
Business unit/department goal payout	Variable
Personal goal payout	Fixed

Actual amounts paid to the NEOs under their respective annual cash incentive plans are reported below in the Non-Equity Incentive Plan Compensation column of the Summary Compensation Table.

Annual Cash Incentive Plan For 2021

For 2021, the Compensation Committee has adopted the same Tier I Plan structure as implemented in 2020 and described above. Corporate and business unit financial goals were established consistent with the Board approved annual operating plan for 2021. In addition, personal performance goals specific to the individual NEO have been included for 2021 which include targets related to additional corporate financial measures, operational measures and activities, quality, product development measures or marketing initiatives and personnel development depending on the executive officer involved.

Long-Term Equity Incentive Plan

Our equity compensation plans are an essential tool to link the long-term interests of the Company's stockholders and our employees, particularly our executive officers, and serve to motivate executive officers to make decisions that will, in the long run, optimize returns to our stockholders. Equity compensation plans also enable us to provide an opportunity for increased equity ownership by executive officers, thereby increasing the link between the incentives of our executive officers and the interests of our stockholders and maintain competitive levels of total compensation.

Employees and members of management, including the Company's NEOs, generally receive annual equity grants issued under the Company's 2020 Stock Plan at or about the time of their performance reviews each year. The Company's long-term incentive compensation program seeks to align the executive officers' interests with the Company's stockholders by rewarding successes in stockholder returns. Additionally, the Compensation Committee desires to foster an ownership mentality among executive officers by providing stock-based incentives as a portion of compensation.

For the Company's long-term incentive compensation program, the Compensation Committee grants performance-based and service-based RSUs.

The number of Grants awarded to each executive officer is initially determined on a discretionary rather than formula basis by the Compensation Committee.

Long-Term Equity Incentive Program For 2020

The long-term equity incentive component of the Tier I Plan is divided between PSU grants and service-based RSU grants. The Compensation Committee determined for 2020 that the portion of our NEOs' long-term incentive awards granted in the form of PSUs and service-vesting RSUs shall be split at 50% each.

In 2020, the Compensation Committee granted equity awards to our NEOs with the dollar value allocated to each NEO. The structure of the long-term equity incentive component was determined by the CEO (except in connection with his own grants) and the Compensation Committee through the consideration of a number of subjective factors, including the executive officer's position and responsibilities at the Company, the executive officer's individual performance, the number of grants held (if any) and other factors that they may deem relevant. The 2020 performance-based long-term equity incentive of our NEO compensation program is based on the metric of TSR. The following parameters are included in the design of the long-term equity incentive program in 2020:

Performance-Based Stock Units: For 2020, fifty percent (50%) of each NEO's equity grant is comprised of PSUs. The relative TSR plan design includes the following features:

- Fifty percent (50%) of the PSU grant will be assessed at each of two (2) performance periods; at two years and at three years from the grant date (2020 through 2022 and 2023, for awards granted in early 2020).
- Performance will be assessed using TSR, which measures growth in stock price, plus any dividends paid, during the performance period.
- TSR performance will be compared to the Philadelphia Semiconductor Index (SOX).
- The performance and standards to earn the PSU equity awards in 2020 are as follows:

TSR Performance Relative to Peers	PSUs Earned as % of Target
Below 25^{th} Percentile	0%
25^{th} Percentile	50%
55^{th} Percentile	100%
80^{th} Percentile and above	200%

- The PSU award payout will be calculated on a straight-line basis between the 25th & 55th and the 55th & 80th percentile levels referenced above.
- A negative TSR cap has been instituted which limits any PSUs earned to target level if the Company's TSR is negative over the performance period and our TSR ranks above the target performance level.
- Earned PSUs are not subject to additional service-based vesting conditions.

Service-Vesting Restricted Stock Units: For 2020, fifty percent (50%) of each NEO's equity grant is comprised of service-based RSUs. The time required for the RSUs to fully vest is three (3) years from the date of grant. As a result, each service-based RSU award is subject solely to service-based vesting in equal annual increments over the three (3) year vesting period.

The following table reflects the long-term equity incentive components of the Tier I Plan.

Tier I Incentive Compensation Plan - Long-Term Equity Incentive Provisions	**2020**
Performance-based / Service-based grant breakout	50%-50%
Service-based grant vesting period	33.3% annually over 3 years
Performance-based grant evaluation period	50% of grant at 2 and 3 years
Performance-based grant metric(s)	TSR
Performance-based grant vesting period	100% upon earning
Performance threshold for earning grant	25^{th} TSR percentile
Percent of grant earned at threshold	50%
Measure at which 100% of grant is earned	55^{th} TSR percentile
Maximum grant upside	200%
Measure at which maximum upside of grant is earned	80^{th} TSR percentile

Actual number of PSUs and RSUs granted to the NEOs in 2020 and the related value are reported below in the Grants Of Plan-Based Awards In 2020 table.

Long-Term Equity Incentive Program For 2021

For 2021, the Compensation Committee has adopted the same structure for the long-term equity incentive component for the Tier I Plan as outlined above. No changes were effectuated in the PSU grant/service-based RSU grant split, earning thresholds or TSR comparison group from what was implemented in 2020. With regard to the PSU grant, fifty percent (50%) of the PSU grant performance will be assessed at each of two (2) performance periods; at two years and at three years from the grant date (2021 through 2023 and 2024, for awards granted in early 2021).

Personal Benefits And Perquisites

Benefits

All employees of the Company, including its executive officers, are eligible to participate in the following benefit plans and programs ("Benefit Package"):

- Health and dental insurance;
- Elective vision care program;
- Life insurance and accidental death and dismemberment coverage;
- 401(k) plan;
- Short- and long-term disability insurance with supplemental income continuation;
- Health care and dependent care flexible spending account programs;
- Employee assistance program (EAP);
- Employee stock purchase plan;
- Employee referral bonus program;
- IP recognition awards; and
- Length of service awards.

The Company, in its discretion, may offer to reimburse the expenses that an employee incurs as a result of the Company requiring the individual to relocate their primary residence for employment purposes. The Compensation Committee believes that these benefits are consistent with industry practice and are important in recruiting and retaining qualified employees.

Perquisites

The Compensation Committee reviewed the perquisites offered by both Nanometrics and Rudolph prior to the 2019 Merger and determined that executive officer perquisites would be limited to Company-paid tax preparation services and Company-paid membership in one (1) airline executive club. The Compensation Committee believes that these benefits are reasonable and consistent with the Company's overall compensation program and enable the Company to attract and retain superior employees for key positions.

The foregoing perquisites are determined and evaluated annually as part of the compensation review.

Executive Officer Perquisites For 2020

Consistent with the Compensation Committee's determination prior to the 2019 Merger, in 2020, each of the NEOs were provided with perquisites limited to tax preparation fee payment and an airline club membership.

Executive Officer Perquisites For 2021

As of the date of this proxy statement, the Compensation Committee has not approved any new or additional perquisites to provide to the NEOs in 2021.

Retirement Provision For Equity Awards

As part of its review of the overall compensation program for all Company employees, including the NEOs, the Compensation Committee determined that the implementation of a retirement provision related to equity awards would continue to incentivize individuals as they near the end of their employment with the Company. The alternative under the 2020 Stock Plan is that upon retirement of an employee any equity grants that had not vested would be forfeited. Thus, any incentive realized through the service-vesting schedule for Company equity grants was diminished. As a result, the Compensation Committee assessed retirement provision alternatives and recommended to the Board, and the Board approved, the following retirement provision:

- An employee is "retirement eligible" if they achieve 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 requirement of five years.
- Retirement under the provision then would occur when an employee 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 Compensation Committee.
- Upon such retirement by the employee, any equity awards granted by the Company shall vest based on:
    - The vesting schedule established for service-based equity awards; or
    - The actual performance results for performance-based equity awards.

Employee Stock Purchase Plan

The Company (as successor to Nanometrics) has maintained an Employee Stock Purchase Plan since 1986. The Company's 2020 Employee Stock Purchase Plan was approved by stockholders in 2020 and is currently administered by the Compensation Committee.

Under the terms of our current Employee Stock Purchase Plan, eligible employees may elect to have up to fifteen percent (15%) of eligible compensation deducted from their base salary and applied to the purchase of shares of Company Common Stock. The price the employee pays for each share of stock is eighty-five percent (85%) of the fair market value of the Company Common Stock at the end of the applicable six-month purchase period. The Employee Stock Purchase Plan qualifies as a non-compensatory plan under Code Section 423.

The Company does not offer a non-qualified deferred compensation plan.

CORPORATE AND GOVERNANCE POLICIES

Employment And Change-In-Control Agreements

While the Company utilizes employment agreements on a limited basis, we currently maintain employment agreements or arrangements with each of our NEOs.

In 2000, Rudolph entered into a management agreement with Mr. Roth, effective as of July 24, 2000, which was assumed by the Company in connection with the 2019 Merger. Mr. Roth previously had employment agreements with Rudolph when it was a private entity, and, at the time of Rudolph's initial public offering, his agreement was redrafted to reflect terms believed to be appropriate for such officer's service in his capacity with a publicly held corporation.

Upon the appointment of Mr. Plisinski to the position of CEO of Rudolph, he entered into a new employment agreement with Rudolph, which was assumed by the Company in connection with the 2019 Merger. This agreement superseded the executive officer employment agreement that Mr. Plisinski had entered into with August Technology Corporation which was assumed by Rudolph upon its merger with August Technology in 2006.

Mr. Plisinski's employment agreement provides for a term of two (2) years with automatic renewals for additional two-year terms and Mr. Roth's agreement provides for a term of one (1) year with automatic renewals for additional one-year terms unless the Company or the applicable executive officer delivers a notice of non-renewal to the other party. Mr. Plisinski's agreement prohibits him from competing with the Company in any way or soliciting its employees during his term of employment and for two (2) years after termination of his employment. Mr. Roth's agreement prohibits him from competing with the Company in any way or soliciting its employees during his term of employment and for one (1) year after termination of his employment.

Certain of our executive officers are also entitled to payments upon a qualifying termination of employment following a Change-in-Control event. The Compensation Committee believes that providing severance in a Change-in-Control situation is beneficial to stockholders so that executive officers may remain objectively neutral when evaluating a transaction that may be beneficial to stockholders yet could negatively impact the continued employment of the executive officer.

The Nanometrics Compensation Committee authorized Nanometrics to enter into a Change-in-Control Agreement with Mr. Heidrich in May 2015 and with Mr. Kocher in November 2016. Further, Mr. Plisinski's and Mr. Roth's employment agreements also contain Change-in-Control terms. Rudolph entered into a Change-in-Control Agreement with Mr. Koch in August 2009.

See "Potential Payments Upon Termination of Employment or Change-in-Control" below for a description of these arrangements and potential payments that the NEOs would have been entitled to receive upon applicable hypothetical termination scenarios as of December 31, 2020.

Other Elements Of Post-Termination Compensation

The Company does not have a practice of providing retirement benefits, including any supplemental executive officer retirement plans (SERP), to its executive officers, other than through its 401(k) plan and the retirement provision for equity grants awarded by the Company. The Company retains the discretion to utilize the offer of severance and/or change-in-control protection as an incentive in its hiring and retention of executive officers.

Non-Solicitation And Non-Competition Policy

The Company maintains a policy of entering into an agreement with each of its new executive officers, which contains both non-solicitation and non-competition provisions. The non-solicitation provisions apply for one (1) year after termination of the individual's employment while the non-competition provisions are in effect during the individual's employment and generally for one (1) year thereafter, except for Mr. Plisinski, whose non-solicitation and non-competition provisions are in place during and extend for two (2) years after the end of, his employment with the Company. Each of the Company's executive officers had previously entered into these covenants on the foregoing terms with either Nanometrics or Rudolph and these agreements were assumed by the Company in connection with the 2019 Merger. In all cases, these covenants have been implemented to protect the confidential information, goodwill and other assets of the Company. For those individuals with employment agreements, should a breach of the non-solicitation or non-competition terms of their agreements occur, this could give rise to the Company declaring a breach under the agreement and terminating all severance payments thereunder.

General Termination Benefits

Upon termination of an executive officer's employment with the Company, the individual is entitled to receive his or her base salary earned through the termination date, along with a payout for all accrued but unused vacation time earned though such date. Thereafter, further cash compensation to the executive officers is discontinued, except to the extent that severance or change-in-control payments are required to be made in accordance with individual or Company severance protection arrangements. Certain executive officers with the Company who have entered into employment agreements are entitled to elect to continue group health or other group benefits as allowed by COBRA with continued Company co-payments for agreed post-termination periods. The Company retains the right to offer severance and/or payment of COBRA benefits to any individual who is terminated from the Company at its discretion.

Stock Ownership/Retention Guidelines

The Company has established guidelines related to stock ownership and retention for its executive officers and its outside directors to further align the interest of the executive officers and non-employee directors with the interests of stockholders, to have a stake in the long-term financial future of the Company and to further promote the Company's commitment to sound corporate governance while allowing them to prudently manage their personal financial affairs.

To that end, the Board established the Company's stock ownership policy such that the stock ownership and retention levels currently in effect are the following:

Company Role	Company Common Stock Holding Requirement	Effective Date
Non-Employee Directors	3x value of the annual Board retainer	Within 5 years of initial election to Board
CEO	3x value of CEO's base annual salary	Within 5 years of hire/promotion
Executive Officers Subject to Section 16 Reporting Requirements	1x value of executive officer's base annual salary	Within 5 years of hire/promotion

In assessing compliance with the foregoing guidelines, the Company takes into consideration only the ownership of Common Stock in the Company. As a result, unearned PSUs, unvested service-based RSUs and vested or unvested stock options do not qualify as shares for purposes of compliance with the Company's stock ownership and retention guidelines.

Participants are expected to achieve their ownership guideline target within five (5) years of becoming subject to the policy. Existing participants were subject to this policy as of the date of the policy and any new participants will be subject to the policy on their hire, promotion, election or appointment date, as applicable.

Compliance with the Company's stock ownership and retention guidelines is reviewed annually by the Compensation Committee. At their last review on January 25, 2021, the Compensation Committee determined that all executive officers and directors who were with the Company and acting in their executive officer/director capacities for periods in excess of one (1) year were in compliance with the ownership requirements. Should any individual in the future not own the minimum number of required shares after notice by the Compensation Committee, additional action, including possible removal from the executive officer role or a determination to not nominate the director for election, would be considered by the Board.

The Compensation Committee has scheduled its review of the Company's stock ownership and retention guidelines for its January 2022 meeting and at this annual review will evaluate the appropriateness of the foregoing stock ownership levels for 2022 based in part on the average closing price of a share of the Company's stock during the thirty (30) consecutive trading days ending on and including the last day of the most recently completed fiscal year, as well as other considerations such as market conditions and comparable practices within the industry.

Prohibition On Hedging And Pledging Of Company Stock

In order to ensure that our executive officers, including our NEOs, and our directors bear the full risk of the Company's stock ownership, our insider trading policy prohibits directors and executive officers of the Company from engaging in hedging transactions related to our Common Stock. Additionally, under the Company's anti-pledging policy, non-employee directors and executive officers are prohibited from making any new pledges of Company securities as collateral for a loan, or otherwise making a new transfer of Company securities to a margin account, provided that non-employee directors may pledge their securities when obligated to do so to realize the consummation of potential mergers, acquisitions and similar transactions with which the Company may be involved from time to time.

Adjustments Or Recovery Of Prior Compensation

The Company adopted a policy which provides for the recovery or adjustment of amounts previously awarded or paid to a NEO in the event that financial results or other performance measures on which an award or payment was determined are materially restated or adjusted. In addition, if the Company is required to restate its financial results due to material noncompliance with any financial reporting requirements as a result of misconduct, the Sarbanes-Oxley Act of 2002 requires the CEO and CFO to disgorge:

- Any bonus or other incentive-based or equity-based compensation received from the Company during the 12-month period following the first public issuance of the non-compliant financial reporting document; and
- Any profits realized from the sale of Company stock during that 12-month period.

In addition, Section 954 of the Dodd-Frank Wall Street Reform and Consumer Protection Act requires the SEC to direct the national securities exchanges to prohibit the listing of any security of an issuer that does not develop and implement a clawback policy. The SEC has not finalized its rules related to these clawback policies. Once the final rules are in place, the Company will adjust its policy, as necessary, to comply with SEC regulations.

Compensation Program Risk Assessment

As part of the engagement with the Compensation Committee’s compensation consultant, in association with the development of and advice concerning our executive officer compensation program and practices, Compensia takes into consideration whether possible compensation design features may have the potential to incentivize the NEOs to take risks that are reasonably likely to have a material adverse effect on the Company. As part of the Compensation Committee’s compensation risk assessment, potential risks and risk mitigating features are addressed in the following areas: compensation philosophy and pay mix; performance measures used in incentive plans; goal setting and payout leverage and caps; calculation and verification of performance outcomes for incentive payments; and other features. Based on this framework and the input from Compensia, the Compensation Committee evaluated our current compensation policies, practices and programs and believes they do not create risks that are reasonably likely to have a material adverse effect on the Company.

IRS Limits On Deductibility Of Compensation

Prior to the 2018 tax year, Section 162(m) of the Internal Revenue Code of 1986, as amended (“IRC”), limited the tax deductibility of annual compensation paid to any publicly held corporation’s CEO and three other highest compensated officers excluding the CFO, to the extent that the officer’s compensation (other than qualified performance-based compensation) exceeded $1 million. Although the Compensation Committee considers deductibility issues when approving executive officer compensation elements, the Compensation Committee believes that the other compensation objectives, such as attracting, retaining and providing appropriate incentives to executive officers, are important and can supersede the goal of maintaining deductibility. Consequently, the Compensation Committee generally makes compensation decisions without regard to deductibility, as the Compensation Committee believes it has appropriately structured its compensation programs to provide incentives to our executive officers to increase Company return and stockholder value. Subsequent changes in the tax laws eliminated the “performance-based” exception, and the limitation on deductibility was expanded to include all named executive officers. As a result, the Company does not deduct compensation paid to our NEOs in excess of $1 million.

CONCLUSION

In reviewing its compensation programs, the Company has concluded that each element of compensation as well as the total compensation opportunities for its NEOs and its other executive officers are reasonable, appropriate and in the interests of the Company and its stockholders. The Company believes that this compensation program appropriately satisfies the Company's goals of establishing a compensation package that attracts and retains a strong motivated leadership team, aligns the financial incentives of the executive officers with the interests of the stockholders, and rewards the achievement of specific annual, long-term and strategic goals of the Company. The Company believes that the compensation program which has been established and is reflected herein has enabled it to recruit and secure a talented and motivated leadership team by which the Company drives toward the ultimate objective of improving stockholder value.

COMPENSATION COMMITTEE REPORT ON EXECUTIVE OFFICER COMPENSATION

We, the Compensation Committee of the Board, have reviewed and discussed the Compensation Discussion and Analysis (“CD&A”) within the Executive Officer Compensation section of this proxy statement with the management of the Company. Based on such review and discussions, we have recommended to the Board that the CD&A be included as part of this proxy statement.

THE COMPENSATION COMMITTEE

Edward J. Brown, Jr. (Chairman)
Jeffrey A. Aukerman
David B. Miller

Summary Compensation Table

The following table summarizes the compensation earned by our NEOs in the fiscal years noted.

Name and Principal Position	Year	Salary ($)	Bonus ($)	Stock Awards ($)(1)	Non-Equity Incentive Plan Compensation ($)(2)	All Other Compensation ($)(3)	Total ($)
Michael P. Plisinski (4) *Chief Executive Officer*	2020	$592,089	—	$2,672,777	$489,408	$9,414	$3,763,688
	2019	$83,192	—	—	$540,750	$1,752,211	$2,376,153
Steven R. Roth (5) *Senior Vice President, Finance & Administration and Chief Financial Officer*	2020	$400,975	—	$545,698	$215,489	$9,414	$1,171,576
	2019	$55,953	—	—	$218,216	$606,995	$881,164
Rollin Kocher *Senior Vice President, Field Operations*	2020	$330,327	—	$584,664	$171,793	$2,841	$1,089,625
	2019	$324,712	—	$492,022	$162,500	$5,000	$984,234
	2018	$309,615	—	$630,085	$357,120	$8,641	$1,305,461
Kevin Heidrich (6) *Senior Vice President, Marketing & Corporate Development Leadership*	2020	$305,173	—	$334,082	$127,583	$2,631	$769,468
	2019	$299,615	—	$292,872	$125,000	$3,800	$721,287
Robert A. Koch *Vice President & General Counsel*	2020	$312,224	—	$278,416	$108,544	$8,102	$707,286

(1) Amounts reflect the grant date fair value for each share-based compensation award granted to the executive officer during the covered year, calculated in accordance with FASB ASC Topic 718. The assumptions used in determining the grant date fair values of awards are set forth in Note 2 to our consolidated financial statements, which are included in our Annual Report on Form 10-K filed with the SEC on February 19, 2021. For 2020, the amount reported for each NEO includes the grant date fair value attributable to the 2020 awards of (i) time-based RSUs and (ii) PSUs, assuming that the performance conditions were satisfied at target at the time of grant. The grant date fair value attributable to the 2020 PSUs assuming maximum performance achievement is as follows: Mr. Plisinski, $2,945,505; Mr. Roth, $601,389; Mr. Kocher, $644,332; Mr. Heidrich, $368,176; and Mr. Koch, $306,829. The actual amounts earned will be determined following the end of the two (2) year performance period (February 7, 2020 – February 7, 2022) and the three (3) year performance period (February 7, 2020 – February 7, 2023).

(2) Reflects the amounts for a given year represent the amount earned in respect of that year under the Company's annual cash performance incentive plan, as applicable, notwithstanding the year in which it was paid. See "Compensation Discussion and Analysis – Annual Cash Incentive Compensation" for further information.

(3) Refer to the All Other Compensation table for more detailed information about the 2020 compensation reported in this column. 2019 amounts for Mr. Plisinski and Mr. Roth reflect the value of equity awards that vested upon the change in control on the Merger Date.

(4) The total compensation earned by Mr. Plisinski during 2019 while serving as Rudolph's CEO, when added to the amount reported in the Summary Compensation Table, results in total compensation for the full calendar year of $3,391,035. This adjustment included (i) increasing his salary ($455,741), (ii) including the grant date fair value of a time-based equity award Mr. Plisinski received for Rudolph prior to the 2019 Merger ($550,021), (iii) including 401(k) matching contributions earned prior to the 2019 Merger ($8,400) and including insurance coverage paid by Rudolph prior to the 2019 Merger ($720).

(5) The total compensation earned by Mr. Roth during 2019 while serving as Rudolph's CFO, when added to the amount reported in the Summary Compensation Table, results in total compensation for the full calendar year of $1,391,819. This adjustment included (i) increasing his salary ($306,518), (ii) including the grant date fair value of a time-based equity award Mr. Roth received for Rudolph prior to the 2019 Merger ($195,017), (iii) including 401(k) matching contributions earned prior to the 2019 Merger ($8,400) and including insurance coverage paid by Rudolph prior to the 2019 Merger ($720).

(6) Although employed by Nanometrics prior to 2019, Mr. Heidrich was not an NEO prior to 2019.

All Other Compensation

Name	Year	Matching Contribution to 401(k) ($)	Insurance ($)(1)	Perquisites and Other Personal Benefits ($)(2)	Severance Compensation ($)	Total ($)
Michael P. Plisinski	2020	$8,550	$864	—	—	$9,414
Steven R. Roth	2020	$8,550	$864	—	—	$9,414
Rollin Kocher	2020	$1,703	$1,138	—	—	$2,841
Kevin Heidrich	2020	$1,579	$1,058	—	—	$2,631
Robert A. Koch	2020	$7,238	$864	—	—	$8,102

(1) Insurance is the premium associated with coverage under the group term life insurance and accidental death and dismemberment insurance plans. Coverage is equal to the lesser of two (2) times salary or $450,000 for former Rudolph employees. Coverage is equal to the lesser of two (2) times salary or $1,000,000 for former Nanometrics employees.

(2) Value of aggregate perquisites and benefits for each NEO is less than $10,000, and therefore, perquisites for these individuals are not required to be disclosed in accordance with SEC rules.

Grants Of Plan-Based Awards In 2020

The following table sets forth information with respect to non-equity and equity incentive plan awards that were granted during 2020 to the NEOs. No stock option awards were granted to any NEO in 2020.

Name	Grant Date	Estimated Future Payouts Under Non-Equity Incentive Plan Awards ($) (1)			Estimated Future Payouts Under Equity Incentive Plan Awards (#) (2)			All Other Stock Awards: Number of Shares of Stocks or Units (#) (3)	Grant Date Fair Value of Stock and Option Awards ($)
		Threshold	Target	Maximum	Threshold	Target	Maximum		
Michael P. Plisinski	2/7/2020	$105,058	$600,332	$1,200,664					
	2/7/2020				15,605	31,209	62,418		$1,472,753
	2/7/2020							31,210	$1,200,024
Steven R. Roth	2/7/2020	$46,258	$264,330	$528,661					
	2/7/2020				3,186	6,372	12,744		$300,695
	2/7/2020							6,372	$245,003
Rollin Kocher	2/7/2020	$35,569	$203,250	$406,500					
	2/7/2020				3,414	6,827	13,654		$322,166
	2/7/2020							6,827	$262,498
Kevin Heidrich	2/7/2020	$27,388	$156,500	$313,000					
	2/7/2020				1,951	3,901	7,802		$184,088
	2/7/2020							3,901	$149,994
Robert A. Koch	2/7/2020	$21,954	$125,452	$250,903					
	2/7/2020				1,626	3,251	6,502		$153,415
	2/7/2020							3,251	$125,001

(3) The amounts reported in these columns represent the annual cash incentive opportunities under the Company's Tier I Incentive Compensation Plan for each of our NEOs for the 2020 performance period. The metrics against which performance was measured under this plan, as well as other details regarding the plan, are discussed above in the Compensation Discussion and Analysis under "Annual Cash Incentive Compensation." The amounts actually earned by our NEOs under the plan are reflected in the "Non-Equity Incentive Plan Compensation" column of the Summary Compensation Table above.

(4) The amounts reported in these columns represent the award opportunities under the Company's PSU program. The metrics against which performance was measured under this program, as well as other details regarding the plan, are discussed above in the Compensation Discussion and Analysis under the heading "Long-Term Equity Incentive Plan." The performance periods for these awards is two years and three years with the final determinations of the award ultimately earned being made in 2022 and 2023.

(5) The amounts reported in this column represent the awards of RSUs which are subject to service-based vesting conditions, as discussed above in the Compensation Discussion and Analysis under the heading "Long-Term Equity Incentive Plan." These RSUs vest in 33.3% increments on each of the first three (3) anniversaries of the grant date.

Outstanding Equity Awards At 2020 Year-End

The following table sets forth information with respect to outstanding equity awards held by the NEOs as of December 26, 2020. No stock option awards were outstanding as of December 26, 2020.

	Stock Awards				
Name	Grant Date (1)	Number of Shares or Units of Stock That Have Not Vested (#)(2)	Market Value of Units of Stock That Have Not Vested ($)(3)	Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights That Have Not Vested (#)(4)	Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights That Have Not Vested (#)(3)
Michael P. Plisinski	1/27/2016	8,506	$408,458		
	2/8/2018	6,156	$295,611		
	2/6/2019	13,123	$630,166		
	2/7/2020	31,210	$1,498,704	31,209	$1,498,656
Steven R. Roth	1/27/2016	2,616	$125,620		
	2/8/2018	2,182	$104,780		
	2/6/2019	4,653	$223,437		
	2/7/2020	6,372	$305,983	6,372	$305,983
Rollin Kocher	2/23/2018	8,079	$387,954		
	3/11/2019	11,318	$543,490		
	2/7/2020	6,827	$327,833	6,827	$327,833
Kevin Heidrich	2/23/2018	4,201	$201,732		
	3/11/2019	6,737	$323,511		
	2/7/2020	3,901	$187,326	3,901	$187,326
Robert A. Koch	1/27/2016	2,681	$128,742		
	2/8/2018	2,047	$98,297		
	2/6/2019	3,276	$157,314		
	2/7/2020	3,251	$156,113	3,251	$156,113

(1) For better understanding of this table, we have included an additional column showing the grant date of each stock award.

(2) Amount includes (i) service-based RSU awards and (ii) PSU awards that have been earned and remain subject to service-based vesting requirements. PSUs and RSUs vest in accordance with the schedule below:

Grant Date	Grant Type	Vesting
1/27/2016	Service-based RSU	1/5th per year on the anniversary of the grant date
1/27/2016	Earned PSU	1/5th on February 16, 2017 and 1/5th per year on the anniversary of the grant date
2/8/2018 to 2/7/2020	Service-based RSU	1/3rd per year on the anniversary of the grant date

(3) Based on the Company's common stock closing price of $48.02 per share on December 26, 2020.

(4) PSUs granted in 2020 are reported in this table at target. The actual number of PSUs earned will be determined based on performance achievement measured over a two (2) two and three (3) year performance period, and any earned PSUs will vest on February 7, 2022 and February 7, 2023, respectively.

Stock Vested In 2020

The following table sets forth information with respect to the value realized by the NEOs upon vesting of PSUs and RSUs during 2020, and such values reflect the total pre-tax value realized by each NEO. There were no stock option exercises by any of the NEOs during 2020.

Name	Stock Awards	
	Number of Shares Acquired on Vesting (#)	Value Realized on Vesting ($)(1)
Michael P. Plisinski	34,527	$1,363,796
Steven R. Roth	11,760	$464,529
Rollin Kocher	18,972	$655,312
Kevin Heidrich	10,840	$373,427
Robert A. Koch	6,161	$242,754

(1) The aggregate dollar amount realized is based on the fair market value of the shares upon vesting.

Pension And Nonqualified Deferred Compensation

The Company does not have a defined benefit pension program, nor does it offer non-qualified deferred compensation.

Potential Payments Upon Termination Of Employment Or Change-In-Control

This section (including the following tables) summarizes each NEO's estimated payments and other benefits that would be received by the NEO or the NEO's estate if his or her employment had terminated on December 26, 2020, under the hypothetical circumstances set forth below.

Each of our NEOs would be entitled to certain termination payments upon his or her death or Disability, his or her involuntary termination without Cause, or his or her voluntary termination with Good Reason as described below. Although the definitions of each of these terms is specific to the NEO's employment agreement or change-in-control agreement with the Company, the terms generally have the following meanings:

- "Disability" generally means that the executive officer, due to physical or mental impairment, is unable to perform his or her duties to the Company for a specified period of time.
- "Cause" generally means that the executive officer engaged in a crime, willful gross misconduct or other serious act involving moral turpitude; materially breached an agreement between him or her and the Company; or otherwise materially breached his or her obligations to the Company.
- A voluntary termination for "Good Reason" generally means, depending on the particular executive officer's agreement, that the executive officer's duties, responsibilities or status with the Company or its successor are materially reduced; his or her primary place of work is moved to a location outside a predetermined radius; in particular cases, certain reduction in compensation; or the Company materially breaches the terms of his or her agreement with the Company or any successor fails to assume the executive officer's change-in-control agreement.

NEO Employment Agreements

Mr. Plisinski

Mr. Plisinski's employment agreement provides for the following:

- In the event of any termination of Mr. Plisinski's employment, he is entitled to payment of all base salary due and owing through the termination date and an amount equal to all earned but unused vacation through the termination date.
- In the event Mr. Plisinski's employment is terminated due to his death, his estate would be entitled to:
  - Payment of his then-current base salary as if his employment had continued for three (3) months following his death;
  - Continued co-payment for a period of six (6) months following his death of amounts due under COBRA for continuation of Company's group health and other group benefits for his covered dependents, if the covered dependents so elect;
  - Payment of his annual incentive cash bonus based on actual performance achievement, prorated for the time employed preceding his death, to be paid out with the Company's annual incentive plan payouts; and
  - Immediate vesting of stock options and SARs, and immediate vesting of RSU awards granted after his appointment as CEO which by their terms would vest within twelve (12) months after death and, if a performance award, based on actual performance achievement for such performance period completed within twelve (12) months after death.
- In the event Mr. Plisinski's employment is terminated due to his Disability, he would be entitled to:
  - Payment of his then-current base salary through the end of the month of such termination;
  - Continued co-payment for a maximum period of six (6) months following his Disability of amounts due under COBRA for continuation of Company's group health and other group benefits, if he or his covered dependents, as appropriate, so elects;
  - Payment of his annual incentive cash bonus based on actual performance achievement, prorated for the time employed preceding his termination, to be paid out with the Company's annual incentive plan payouts; and
  - Immediate vesting of stock options and SARs, and immediate vesting of RSU awards granted after his appointment as CEO which by their terms would vest within twelve (12) months after termination for disability and, if a performance award, based on actual performance achievement for such performance period completed within twelve (12) months after termination.
- In the event Mr. Plisinski's employment is terminated by the Company without Cause or Mr. Plisinski terminates his employment for Good Reason, he would be entitled to:
  - Payment of two (2) times his then-current base salary for a period of twenty-four (24) months;
  - Continued co-payment for a period of up to eighteen (18) months of amounts due under COBRA for continuation of Company's group health and other group benefits, if he so elects; and
  - Vesting of any equity incentive awards outstanding as of the termination date that, by their terms:

    (1) represent either unvested shares which were earned based on a completed performance period under a performance-based award granted on or after the employment agreement effective date and which as of the termination date are then subject to time-based vesting only, or shares under such an equity incentive award granted on or after the employment agreement effective date which will be earned under a performance-based award based on actual achievement under a performance period which has been completed on or prior to the termination date but as to which performance period the actual number of shares earned against the award performance goals has not yet been determined by the Company; and

    (2) would have become vested based solely on the passage of time within the twelve (12) month period immediately following the termination date had Mr. Plisinski continued in employment with the Company.

- If, within eighteen (18) months following the occurrence of a Change-in-Control[1], Mr. Plisinski's employment is terminated for any reason other than for Cause or Mr. Plisinski terminates his employment for Good Reason, he would be entitled to:
  - Payment of two (2) times the sum of his then-current base salary and target annual cash bonus for a period of twenty-four (24) months;
  - Continued co-payment by Company for a period of up to eighteen (18) months of amounts due under COBRA for continuation of Company's group health and other group benefits, if he so elects; and
  - Immediate vesting of all unvested stock options, SARs and all unvested and outstanding performance-based (at target) and service-based RSUs and other equity awards.

  - To the extent that change-in-control termination payments made to Mr. Plisinski under his agreement are subject to the excise tax imposed by Section 4999 of the IRC, Mr. Plisinski would either have to pay the excise tax or have his benefits reduced so that no portion of his termination payments were subject to the excise tax.
  - In order to receive these termination or change-in-control termination payments, Mr. Plisinski would be required to sign a general release of all known and unknown claims that he may have against the Company.
  - As part of his employment agreement, Mr. Plisinski is subject to non-solicitation and non-competition restrictions that limit his ability to compete with the Company during the term of the agreement and for a period of two (2) years following his resignation or termination for any reason.

The following table reflects the potential payments to Mr. Plisinski in the event of his termination or his termination following a change-in-control:

Potential Payments To Mr. Plisinski Upon Termination Or Change-In-Control

	Cash Severance		Value of Accelerated Unvested Equity	Benefits Continuation
Termination Circumstance as of 12/26/2020	**Base Salary**	**Management Incentive Bonus**		
By the Company without Cause	$1,200,664 (2x salary)	$ -	$4,331,596	$54,393
Executive officer resignation for Good Reason	$1,200,664 (2x salary)	$ -	$4,331,596	$54,393
Death	$150,083 (3 mos. salary)	$489,408 (1x bonus)	$4,331,596	$18,131
Disability	$ -	$489,408 (1x bonus)	$4,331,596	$18,131
Within 18 months following Change-in-Control:				
By the Company without Cause	$1,200,664 (2x salary)	$978,816 (2x bonus)	$4,331,596	$54,393
By the executive officer with Good Reason	$1,200,664 (2x salary)	$978,816 (2x bonus)	$4,331,596	$54,393

[1] For Mr. Plisinski, a "Change-in-Control" would generally be considered to have occurred if:

- a merger or consolidation of the Company or an acquisition by the Company involving the issuance of its securities as consideration for the acquired business results in the stockholders of the Company following such transactions having less than fifty percent (50%) of combined voting power of the surviving entity;
- any person or persons becomes the beneficial owner of thirty percent (30%) or more of our outstanding shares;
- all or substantially all assets of the Company are disposed of pursuant to a plan of liquidation of the Company;
- all or substantially all of our assets are sold; or
- during any twelve (12) month consecutive period the individuals who presently make up our Board or who become members of our Board with the approval of at least a majority of our existing Board cease to constitute at least a majority of the Board; provided any transaction or event described above will not constitute a change-in-control under the agreement unless it qualifies as a "change-in-control" under Section 409A of the IRC.

Mr. Roth

Mr. Roth's employment agreement provides for the following:

- In the event Mr. Roth's employment is terminated as a result of his death or Disability, he or his estate would be entitled to:
  - Payment of all base salary due and owing through the termination date and amount equal to all earned but unused vacation through the termination date;
  - Payment of an amount equal to Mr. Roth's bonus as was paid or payable for the most recent completed bonus period; and
  - Accelerated vesting of all outstanding and unvested stock options, performance-based and service-based RSUs or other equity awards.
- In the event Mr. Roth's employment is terminated without Cause or Mr. Roth terminates his employment for Good Reason, he would be entitled to:
  - Payment of all base salary due and owing through the termination date and an amount equal to all earned but unused vacation through the termination date;
  - Payment for over a period of one (1) year of one (1) times Mr. Roth's:
    - * Then-current base salary; and
    - * Bonus as was paid or payable for the most recent completed bonus period;
  - Accelerated vesting of all unvested stock options and all unvested and outstanding performance-based and service-based RSUs and other equity awards.
- If, within one (1) year following the occurrence of a change-in-control[2], Mr. Roth's employment is terminated for any reason other than for Cause or Mr. Roth terminates his employment for Good Reason, he would be entitled to:
  - Payment of all base salary due and owing through the termination date and including an amount equal to all earned but unused vacation through the termination date;
  - Payment over a period of one (1) year of one (1) times Mr. Roth's:
    - * Then-current base salary; and
    - * Bonus as was paid for the most recent completed bonus period;
  - Accelerated vesting of all unvested stock options and all unvested and outstanding performance-based and service-based RSUs and other equity awards; and
  - Maintenance of Mr. Roth's and his dependents' health care benefit coverage to the same extent provided for by and with the same Company/Executive officer payment contribution percentages under Company's group plans

[2] For Mr. Roth, a "Change-in-Control" would generally be considered to have occurred if:

- any person or persons becomes the beneficial owner of twenty-five percent (25) or more of our outstanding voting shares;
- during any two (2) consecutive year period individuals who presently make up our Board or who become members of our Board with the approval of at least two-thirds of our existing Board (other than a new director who assumes office in connection with an actual or threatened election contest) cease to be at least a majority of the Board;
- a merger or consolidation of the Company is consummated with another entity (unless outstanding voting securities of the Company immediately prior to the termination would continue to represent more than fifty-one percent (51%) of the combined voting power of the surviving entity and had the power to elect as least a majority of the board of the surviving entity);
- our stockholders approve a plan of liquidation of the company or an agreement for the sale of all or substantially all of our assets; or
- any other event occurs of a nature that would be required to be reported as a "change-in-control" under Schedule 14A of the Exchange Act, provided any transaction or event described above will not constitute a change-in-control under the agreement unless it qualifies as a "change-in-control" under Section 409A of the IRC.

at the time of termination. Such coverage shall extend for a term of one (1) year from the Termination Date unless he becomes covered as an insured under another employer's or spousal health care plan.

- To the extent that termination or change-in-control payments made to Mr. Roth under his agreement are subject to the excise tax imposed by Section 4999 of the IRC, Mr. Roth would either have to pay the excise tax or have his benefits reduced so that no portion of his termination payments were subject to the excise tax.
- In order to receive these termination or change-in-control payments, Mr. Roth would be required to sign a general release of all known and unknown claims that he may have against the Company.
- As part of his employment agreement, Mr. Roth is subject to non-competition and non-solicitation restrictions that limit his ability to compete with the Company during the term of the Agreement and for a period of one (1) year following his resignation or termination for any reason.

The following table reflects the potential payments to Mr. Roth in the event of his termination or his termination following a change-in-control:

Potential Payments To Mr. Roth Upon Termination Or Change-In-Control				
	Cash Severance		Value of	
Termination Circumstance as of 12/26/2020	**Base Salary**	**Management Incentive Bonus**	**Accelerated Unvested Equity**	**Benefits Continuation**
By the Company without Cause	$406,662 (1x salary)	$215,489 (1x bonus)	$1,065,804	$ -
Executive officer resignation for Good Reason	$406,662 (1x salary)	$215,489 (1x bonus)	$1,065,804	$ -
Death	$ -	$215,489 (1x bonus)	$1,065,804	$ -
Disability	$ -	$215,489 (1x bonus)	$1,065,804	$ -
Within 12 months following Change-in-Control:				
By the Company without cause	$406,662 (1x salary)	$215,489 (1x bonus)	$1,065,804	$36,262
By the executive officer with good reason	$406,662 (1x salary)	$215,489 (1x bonus)	$1,065,804	$36,262

Messrs. Kocher and Heidrich

The executive officer general severance and change-in-control agreements for Messrs. Kocher and Heidrich provide for the following:

- In the event Mr. Kocher's and Mr. Heidrich's employment is terminated as a result of a "Covered Termination"[3], the executive officer or his estate would be entitled to:
  - Payment of all base salary due and owing through the termination date, any unreimbursed business expenses and an amount equal to all earned but unused vacation through the termination date;
  - Payment of his then-current base salary for a period of six (6) months (paid over a period of six (6) months); and
  - Provided that the executive officer is eligible and has made the necessary elections for continuation coverage pursuant to COBRA under a health, dental, or vision plan sponsored by the Company, payment of his and his dependent's applicable premiums for such continued benefits. Such coverage shall extend for a term of six (6) months from the termination date.

[3] For Messrs. Kocher and Heidrich, a "Covered Termination" would generally be considered to have occurred in the event of the executive's:

- dismissal or discharge by the Company for reasons other than Cause and other than as a result of death or disability; or
- resignation for Good Reason within ninety (90) days of the occurrence of the Good Reason action, which occurs outside of twelve (12) months of a Change-in-Control event.

- If, within one (1) year following the occurrence of a Change-in-Control[4], Mr. Kocher's and Mr. Heidrich's employment is terminated for any reason other than for Cause or Mr. Kocher and Mr. Heidrich terminates his employment for Good Reason, the executive officer would be entitled to:
    - Payment of all base salary due and owing through the termination date, any unreimbursed business expenses and an amount equal to all earned but unused vacation through the termination date;
    - Payment in a single lump sum following the effective date for his Release of his:
        - Then-current annual base salary; and
        - 100% of his target annual bonus in effect for the fiscal year in which the termination date occurs;
    - Accelerated vesting of all unvested stock options and all unvested and outstanding performance-based and service-based RSUs and other equity awards; and
    - Provided that executive officer is eligible and has made the necessary elections for continuation coverage pursuant to COBRA under a health, dental, or vision plan sponsored by the Company, payment of his and his dependent's applicable premiums for such continued benefits. Such coverage shall extend for a term of twelve (12) months from the termination date.
- To the extent that change-in-control termination payments made to Mr. Kocher and Mr. Heidrich are subject to the excise tax imposed by Section 4999 of the IRC, Mr. Kocher or Mr. Heidrich would either have to pay the excise tax or have his benefits reduced so that no portion of his termination payments were subject to the excise tax.
- In order to receive these change-in-control termination payments, Mr. Kocher and Mr. Heidrich would be required to sign a general release of all known and unknown claims that he may have against the Company.

Each of Mr. Kocher and Mr. Heidrich have entered into a separate agreement upon employment with the Company that subjects the executive officer to non-competition and non-solicitation restrictions, which limit his ability to compete with the Company during his employment and for a period of one (1) year following his resignation or termination for any reason.

The following table reflects the potential payments to Mr. Kocher in the event of his termination or his termination following a change-in-control:

Potential Payments To Mr. Kocher Upon Termination Or Change-In-Control				
	Cash Severance		**Value of**	
Termination Circumstance as of 12/26/2020	**Base Salary**	**Management Incentive Bonus**	**Accelerated Unvested Equity**	**Benefits Continuation**
By the Company without Cause	$169,375 (6 months' salary)	n/a	n/a	$17,664
Within 12 months following Change-in-Control:				
By the Company without Cause	$338,750 (1x salary)	$203,250 (1x bonus)	$1,587,109	$35,328
By the executive officer with Good Reason	$338,750 (1x salary)	$203,250 (1x bonus)	$1,587,109	$35,328

[4] For Messrs. Kocher and Heidrich, a "Change-in-Control" would generally be considered to have occurred upon any of the following:

- any person or persons becomes the beneficial owner of fifty percent (50%) or more of the total voting power represented by the Company's then outstanding voting securities;
- during any two (2) year, any action or event occurs in which less than a majority of the directors who are either (A) directors of the Company as of the date of the executive's agreement, or (B) elected, or nominated for election, to the Board with the affirmative votes of a majority of the incumbent directors at the time of such election or nomination (but does not include an individual whose election or nomination is in connection with an actual or threatened proxy contest relating to the election of directors to the Company);
- the consummation of a merger or consolidation of the Company with any other corporation, other than a merger or consolidation which would result in the outstanding voting securities of the Company immediately prior thereto continuing to represent at least fifty percent (50%) of the outstanding voting securities of the Company or such surviving or resulting entity immediately after such merger or consolidation; or
- the consummation of the sale, lease or other disposition by the Company of all or substantially all the Company's assets.

To the extent required for compliance with Code Section 409A, in no event will a change-in-control be deemed to have occurred if such transaction is not also a "change in the ownership or effective control of" the Company or a "change in the ownership of a substantial portion of the assets of" the Company, as determined under Treasury Regulations Section 1.409A-3(i)(5)

The following table reflects the potential payments to Mr. Heidrich in the event of his termination or his termination following a change-in-control:

Potential Payments To Mr. Heidrich Upon Termination Or Change-In-Control				
	Cash Severance		Value of Accelerated Unvested Equity	
Termination Circumstance as of 12/26/2020	**Base Salary**	**Management Incentive Bonus**		**Benefits Continuation**
By the Company without Cause	$156,500 (6 months' salary)	n/a	n/a	$17,664
Within 12 months following Change-in-Control:				
By the Company without Cause	$313,000 (1x salary)	$156,500 (1x bonus)	$899,895	$35,328
By the executive officer with Good Reason	$313,000 (1x salary)	$156,500 (1x bonus)	$899,895	$35,328

Mr. Koch

The executive officer change-in-control agreement for Mr. Koch provides for the following:

- In the event Mr. Koch's employment is terminated as a result of his death or "Disability", the executive officer or his estate would be entitled to:
  - Payment of all base salary due and owing through the termination date and an amount equal to all earned but unused vacation through the termination date; and
  - Accelerated vesting of all unvested stock options and all unvested and outstanding performance-based and service-based RSUs and other equity awards.
- If, within one (1) year following the occurrence of a change-in-control[5], Mr. Koch's employment is terminated for any reason other than for Good Cause or Mr. Koch terminates his employment for Good Reason, the executive officer would be entitled to:
  - Payment of all base salary due and owing through the termination date and an amount equal to all earned but unused vacation through the termination date;
  - Payment of his then-current base salary for a period of twelve (12) months (paid over a period of twelve (12) months);
  - Accelerated vesting of all unvested stock options and all unvested and outstanding performance-based and service-based RSUs and other equity awards; and
  - Maintenance of his and his dependent's health care benefit coverage to the same extent provided for by and with the same Company/Executive officer payment contribution percentages under Company's group plans at the time of termination. Such coverage shall extend for a term of one (1) year from the termination date unless he becomes covered as an insured under another employer's or spousal health care plan.
- To the extent that change-in-control termination payments made to Mr. Koch are subject to the excise tax imposed by Section 4999 of the IRC, Mr. Koch would either have to pay the excise tax or have his benefits reduced so that no portion of his termination payments were subject to the excise tax.

[5] For Mr. Koch, a "Change-in-Control" would generally be considered to have occurred if:

- any person or persons becomes the beneficial owner of fifty percent (50%) or more of our outstanding voting shares;
- during any twelve (12) month period a majority of the Board is replaced by directors whose appointment or election is not endorsed by a majority of the members of the Board prior to the date of the appointment or election; or
- there is a change in the ownership of Company assets that occurs with a person or group over a twelve (12) month period if the subject assets have a total gross fair market value equal to or more than forty percent (40%) of the total gross fair market value of all of the assets of Company immediately prior to such acquisition or acquisitions (subject to certain exceptions), provided any transaction or event described above will not constitute a change-in-control under the agreement unless it qualifies as a "change-in-control" under Section 409A of the IRC.

- In order to receive these change-in-control termination payments, Mr. Koch would be required to sign a general release of all known and unknown claims that he may have against the Company.

Mr. Koch has entered into a separate agreement upon employment with the Company that subjects him to non-competition and non-solicitation restrictions, which limit his ability to compete with the Company during his employment and for a period of one (1) year following his resignation or termination for any reason.

The following table reflects the potential payments to Mr. Koch in the event of his termination or his termination following a change-in-control:

Potential Payments To Mr. Koch Upon Termination Or Change-In-Control			
Termination Circumstance as of 12/26/2020	**Cash Severance (Base Salary)**	**Value of Accelerated Unvested Equity**	**Benefits Continuation**
Death	$ -	$530,573	$ -
Disability	$ -	$530,573	$ -
Within 12 months following sale or change-in-control:			
By the Company without cause	$313,629 (1x salary)	$530,573	$30,504
By the executive officer with good reason	$313,629 (1x salary)	$530,573	$30,504

Retention Bonus Agreements

No NEO entered into a Retention Bonus Agreement with the Company.

Executive Officers

Set forth below is certain information regarding the executive officers of the Company and their ages as of March 31, 2021. Information relating to Michael P. Plisinski is set forth above under the caption "PROPOSAL 1 - ELECTION OF DIRECTORS". The Company is unaware of any arrangements or understandings between the executive officers of the Company and other person(s) pursuant to which an executive officer was or is to be selected, except that Mr. Plisinski was appointed as CEO of the Company pursuant to the Merger Agreement for the 2019 Merger.

Named Executive Officers (NEOs)

Steven R. Roth Senior Vice President, Finance and Administration and Chief Financial Officer Age: 60

- Mr. Roth has served the Company in his current role since the Merger Date and previously served in the same role at Rudolph since February 2002.
- Prior Experience:
  - September 1996 to February 2002: Vice President, Finance and Administration and Chief Financial Officer, Rudolph Technologies, Inc.
  - August 1991 to August 1996: Director of Corporate Finance, Bell Communications Research.
- Mr. Roth is a C.P.A. and holds a B.S. in Accounting from Villanova University.

Rollin Kocher Senior Vice President, Field Operations Age: 55

- Mr. Kocher has served the Company in his current role since the Merger Date and previously with Nanometrics as Senior Vice President, Sales and Marketing since January 2018.
- Prior Experience:
  - September 2016 to January 2018: Senior Vice President, Commercial Operations, Nanometrics
  - March 2013 to September 2016: Vice President, Global Sales, Nanometrics
  - Prior to joining Nanometrics in 2013, Mr. Kocher spent thirteen (13) years at KLA Tencor Corporation in a variety of senior management roles including Director of Business Development for Films and Optical Critical Dimension

Business Unit, Senior Account Manager for Texas Instruments Business Unit, his last position being General Manager of the Samsung Business Unit.

- Mr. Kocher holds a B.S. degree in Electrical and Electronic Engineering from the University of North Texas and an A.S. degree in Laser Electro Optics Technology from Texas State Technical College, holds a Finance for Senior Executives Certification from Harvard Business School and served in the U.S Army from 1983 to 1986.

Kevin Heidrich Senior Vice President, Marketing & Corporate Development Age: 50

- Mr. Heidrich has served the Company in his current role since the Merger Date and previously with Nanometrics as Senior Vice President, Corporate Development since January 2018.
- Prior Experience:
  - September 2012 to January 2018: Senior Vice President, Strategic Marketing & Business Development, Nanometrics
  - May 2009 to September 2012: Vice President, Business Development & Marketing, Nanometrics
  - May 2007 to May 2009: Sr. Director, Business Development, Nanometrics
  - April 2006 to May 2007: Director, New Product Development, Nanometrics
  - Prior to joining Nanometrics in 2006, Mr. Heidrich spent a decade at Intel Corporation in a variety of roles including in process research and development at Intel's Technology Development facility.
- Mr. Heidrich holds a B.S. and M.S. degree from the Colorado School of Mines in Chemical Engineering.

Robert A. Koch Vice President & General Counsel Age: 59

- Mr. Koch has served the Company in his current role since the Merger Date and previously with Rudolph since May 2003.
- Prior Experience:
  - April 1986 to May 2003: In-house counsel, last serving as Director of Legal Affairs, Howmedica Osteonics Corp., the subsidiary of Stryker Corporation.
- Mr. Koch holds a B.S. in Chemical Engineering and a M.S. in Biomedical Engineering, both from Rutgers University. Mr. Koch earned his J.D. from Rutgers School of Law - Newark in 1991 and is admitted to practice in New Jersey and New York.

Other Executive Officers

Elvino da Silveira Vice President & General Manager, Lithography Business Unit Age: 61

- Mr. da Silveira has served the Company in his current role since the Merger Date and previously served in the same role at Rudolph since June 2019.
- Prior Experience:
  - August 2017 to June 2019: Vice President, Business Development, Rudolph Technologies, Inc.
  - November 2015 to July 2017: Vice President, Marketing and Product Management, Rudolph Technologies, Inc.
  - December 2012 to October 2015: Vice President and General Manager of the Display Products Lithography Business Unit and Chief Technical Officer of the Lithography Systems Group, Rudolph Technologies, Inc.
  - March 1999 to December 2012: President and Chief Executive Officer, Azores Corporation.
  - Other prior roles included various senior management roles with the latest being Vice President of Operations and Worldwide Customer Support for MRS Technology, Inc., a former manufacturer of capital equipment for the flat panel display industry.
- Mr. da Silveira holds a B.S. in Mechanical Engineering from Northeastern University.

Robert Fiordalice Vice President & General Manager, Wafer Business Unit Age: 59

- Mr. Fiordalice has served the Company in his current role since the Merger Date and previously with Nanometrics as General Manager, Materials Characterization Group since August 2017.
- Prior Experience:
  - October 2013 to July 2017: General Manager, Advanced Packaging, Nanometrics
  - August 2006 to August 2013: Vice President, Account Technology, Intermolecular, Inc.
  - Prior to 2006, Mr. Fiordalice held technology management roles with both KLA Tencor Corporation and Motorola Inc.
- Mr. Fiordalice holds a B.S. in Genetics from University of California at Berkley and a M.S. in Physics from Syracuse University.

Barry Hartunian Global Vice President Human Resources Age: 58

- Mr. Hartunian has served the Company in his current role since joining the Company in December 2019.
- Prior Experience:
  - October 2016 to May 2018: Vice President, People & Culture, Toast, Inc.
  - December 2013 to April 2016: Chief People Officer, Veson Nautical Corporation
  - February 2010 to January 2014: Chief Talent Officer/Advisor, Communispace Corporation
  - Prior roles since 1989 have included various director and vice-presidential roles in Human Resources for an array of companies including GenRad, Inc., Art Technology Group (ATG), Digimarc Corporation, Spotfire, Inc. and Vanue, Inc.
- Mr. Hartunian holds a B.A. in Psychology from Boston College and has received a Graduate Business Certification from Harvard University and an Executive Program Certification from the Tuck School of Business, Dartmouth College.

Dean Iacopetti Senior Vice President, Manufacturing Operations Age: 65

- Mr. Iacopetti has served the Company in his current role since March 2021.
- Prior Experience:
  - October 2019 to March 2021: Vice President, Manufacturing Operations, Onto Innovation Inc.
  - September 2018 to October 2019: Vice President, Supply Chain, Nanometrics
  - May 2013 to October 2015: Vice President, EUV Operations, Cymer Inc., a subsidiary of ASML Holding N.V.
  - June 2011 to May 2013: Vice President, Supply Chain, Cymer Inc.
  - May 2009 to May 2011: President, Paragon Prime Consulting
  - Prior roles since 1979 have included various vice-presidential and senior vice-presidential roles in Operations and in Finance with Ingersoll Rand, Honeywell Aerospace and Mattel as well as other positions in Finance with Mattel.
- Mr. Iacopetti holds a B.S. in Business Administration (Finance/Accounting) from California University at Long Branch.

Ju Jin, Ph.D. Senior Vice President & General Manager, Inspection Business Unit Age: 56

- Dr. Jin has served the Company in his current role since March 2021.
- Prior Experience:
  - October 2019 to March 2021: Vice President and General Manager, Onto Innovation Inc.
  - July 2019 to October 2019: Vice President and General Manager, Rudolph Technologies, Inc.August 2016 to July 2019: Sr. Director of Marketing & Business Development, Orbotech Ltd., a subsidiary of KLA Corporation.
  - April 2009 to August 2016: President and CEO, Applied Electro-Optics Inc.
  - March 2004 to April 2009: Director and General Manager, Accretech USA
- Dr. Jin holds a B.S. from Xian Jiatong University in China, a M.S. from Nagaoka University of Technology in Japan and a Ph.D. from the University of Tokyo in Japan, all in Mechanical Engineering.

Danielle Baptiste Vice President and General Manager, Enterprise Business Unit Age: 48

- Ms. Baptiste has served the Company in her current role since joining the Company in August 2020.
- Prior Experience:
  - July 2019 – August 2020: Associate Vice President, Product Management, HCL – Digital Solutions
  - June 2016 – June 2019: Executive Director, Product Management, IBM – Collaboration Solutions
  - March 2015 – May 2016: Principal Consultant, Ceatro Group
  - September 2002 – June 2013: Various management and senior management roles with the last being Executive Director, Market/Segment Management, IBM
  - Ms. Baptiste also previously held positions with several other corporations including JP Morgan & Chase & Company, State Street Bank, Pfizer, Inc., PCS Revenue Control Systems, Inc. and McAfee, Inc.

Rodney Smedt Senior Vice President & General Manager, Metrology Business Unit Age: 58

- Mr. Smedt has served the Company in his current role since the Merger Date and previously with Nanometrics as Senior Vice President, R&D since March 2018.
- Prior Experience:
  - November 2014 to March 2018: Vice President, R&D, Nanometrics
  - April 2005 to November 2014: Vice President, Engineering, ReVera Incorporated
  - Prior to 2005, Mr. Smedt served as Vice President, Engineering for both Therma-Wave Corporation and Sensys Instrument as well as held several senior management and engineering roles with several companies including KLA Tencor Corporation and Trigon-Adcotech Industries.
- Mr. Smedt attended San Jose State University and studied mechanical engineering.

CEO Pay Ratio

As required by Section 953(b) of the Dodd-Frank Wall Street Reform and Consumer Protection Act, and Item 402(u) of Regulation S-K, we have elected to identify our median employee every three years unless a significant change in employee population or employee compensation arrangements has occurred. Because there has been no change in our employee population or employee compensation arrangements in 2020 that we reasonably believe would result in a significant change to our pay ratio disclosure for 2020, we are using the same median employee identified in 2019 to calculate our 2020 CEO pay ratio. For information regarding the process utilized to identify our median employee, please refer to our proxy statement for the 2020 Annual Meeting of Stockholders.

For 2020, our last completed year, we determined that:

- The annual total compensation of the median employee was $108,513;
- The annual total compensation of our CEO, Michael P. Plisinski, as reported in the Summary Compensation Table included in this proxy statement, was $3,763,688; and

The ratio of the annual total compensation of our CEO to the median employee's annual total compensation is 35 to 1.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS

The following table sets forth certain information with respect to beneficial ownership of the Company's Common Stock as of March 12, 2021 (except as otherwise indicated), by (i) each individual or group known by the Company to own beneficially more than five percent (5%) of the Common Stock; (ii) each of the NEOs; (iii) each of the Company's directors and director nominees; and (iv) all directors, director nominees and executive officers as a group. Except as indicated in the footnotes to this table, the persons named in the table have sole voting and investment power with respect to all shares of Common Stock shown as beneficially owned by them, subject to community property laws where applicable.

Name and Address of Beneficial Owner	**Amount and Nature of Beneficial Ownership**	**Percent of Class**[(2)]
BlackRock, Inc. [(3)] *55 East 52nd Street, New York, NY 10055*	7,533,940	15.4%
The Vanguard Group [(4)] *100 Vanguard Boulevard, Malvern, PA 19355*	3,116,062	6.4%
Michael P. Plisinski	205,440	*
Steven R. Roth	31,850	*
Rollin Kocher	35,527	*
Kevin Heidrich	31,365	*
Robert A. Koch	30,360	*
Jeffrey A. Aukerman [(5)]	23,760	*
Leo Berlinghieri	18,576	*
Edward J. Brown, Jr.	37,439	*
Vita A. Cassese	6,433	*
David B. Miller	10,708	*
Bruce C. Rhine	275,988	*
Christopher A. Seams	23,229	*
Christine A. Tsingos	30,509	*
All directors and executive officers as a group (seventeen (17) persons)	788,519[(1)]	1.6%

* Less than 1%

(1) Includes 9,028 shares subject to restricted stock units vesting within 60 days of March 12, 2021 for all directors and executive officers as a group.

(2) Applicable percentage ownership is based on 48,956,481 shares of Common Stock outstanding as of March 12, 2021. Beneficial ownership of shares is determined in accordance with the rules of the SEC and generally includes shares as to which a person holds sole or shared voting or investment power. Shares of Common Stock subject to RSUs which will vest within sixty (60) days of March 12, 2021 are deemed to be beneficially owned by the person holding such RSUs for the purpose of computing the percentage ownership of such person but are not treated as outstanding for the purpose of computing the percentage ownership of any other person. Unless otherwise noted, the address for the executive officers and directors named in this table is c/o Onto Innovation Inc., 16 Jonspin Road, Wilmington, Massachusetts 01887.

(3) Information provided herein is based on the Schedule 13G/A that was filed by BlackRock, Inc. on January 25, 2021.

(4) Information provided herein is based on the Schedule 13G/A that was filed by The Vanguard Group on February 10, 2021.

(5) Includes shares held by Aukerman Investments LLC.

EQUITY COMPENSATION PLAN INFORMATION

The following table sets forth, as of December 26, 2020, certain information related to our equity compensation plans.

Plan Category	(a) Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights (1)	(b) Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights	(c) Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (a)) (2)
Equity compensation plans approved by security holders	992,537	$0.43	5,054,355
Equity compensation plans not approved by security holders	n/a	n/a	n/a
Total	992,537	$0.43	5,054,355

(1) Includes 964,621 shares issuable upon vesting of outstanding restricted stock units under the Onto Innovation Inc. 2020 Stock Plan, the Rudolph Technologies, Inc. 2018 Stock Plan and the Nanometrics Incorporated 2005 Equity Incentive Plan.

(2) As of December 26, 2020, 3,554,355 shares were available under the 2020 Stock Plan and 1,500,000 shares were available under the ESPP.

DELINQUENT SECTION 16(A) REPORTS

Section 16(a) of the Exchange Act requires the Company's executive officers, directors and persons who own more than ten percent (10%) of a registered class of the Company's equity securities to file an initial report of ownership on Form 3 and changes in ownership on Form 4 or Form 5 with the SEC. Based solely on its review of Section 16 filings made with the SEC, or written representations from certain reporting persons that no Section 16 filings were required, the Company believes that, during the fiscal year ended December 26, 2020, all officers, directors and greater than ten percent (10%) beneficial owners complied with all Section 16(a) filing requirements, except that Ju Jin filed one Form 4 on June 10, 2020 with respect to one share purchase transaction on February 28, 2020, Steven R. Roth filed one Form 4 on November 12, 2020 with respect to one 10b5-1 sale transaction on November 9, 2020 and Rodney Smedt filed one Form 4 on June 10, 2020 with respect to withholding of shares upon the vesting of equity grants on June 2, 2020.

OTHER MATTERS

The Company knows of no other matters to be submitted to the Annual Meeting. If any other matters properly come before the Annual Meeting, it is the intention of the persons named in the enclosed proxy to vote the shares they represent as the Board may recommend.

ADDITIONAL INFORMATION

Stockholders may obtain a copy of the Company's Annual Report on Form 10-K for the fiscal year ended December 26, 2020, including financial statements and schedules included in the Annual Report on Form 10-K, without charge, by visiting the Company's website at https://investors.ontoinnovation.com/ or by writing to:

Michael Sheaffer
Sr. Director, Investor Relations & Market Research
16 Jonspin Road
Wilmington, Massachusetts 01887

Upon written request to the Company, at the above address for Investor Relations, the exhibits set forth on the exhibit index of the Company's Annual Report on Form 10-K will be made available at reasonable charge (which will be limited to our reasonable expenses in furnishing such exhibits).

BY ORDER OF THE BOARD OF DIRECTORS

Robert A. Koch
Secretary

Dated: April 1, 2021

SHAREHOLDER INFORMATION

LOCATIONS

HEADQUARTERS
Onto Innovation
16 Jonspin Road
Wilmington, Massachusetts 01887
Phone 978.253.6200
ontoinnovation.com

OTHER LOCATIONS
View all locations on our website:
https://ontoinnovation.com/company/locations

INVESTOR INFORMATION

General Shareholder and Investor Questions may be directed to:
Mike Sheaffer
Investor Relations,
Corporate Communications
Onto Innovation
16 Jonspin Road
Wilmington, Massachusetts
01887
investors@ontoinnovation.com

Independent Registered Public Accounting Firm
Ernst & Young, LLP
Iselin, New Jersey

Registrar and Transfer Agent
Computershare Trust
Company, N.A.
P.O. Box 505000
Louisville, Kentucky 40233
Phone 800.368.5948
www.computershare.com

Stock Symbol
Common stock is traded on the New York Stock Exchange under the symbol, ONTO

Annual Meeting
Stockholders are invited to attend the Annual Meeting at 10:00 am on Tuesday, May 11, 2021 at our corporate headquarters, located at
16 Jonspin Road
Wilmington, Massachusetts
01887

Form 10-K
The Annual Report on Form 10-K filed with the Securities and Exchange Commission is available without charge upon written request to Investor Relations at our corporate headquarters address.

BOARD OF DIRECTORS

Christopher A. Seams
Chairman of the Board
Former Chief Executive Officer
Deca Technologies

Jeffery A. Aukerman
Former Partner
Deloitte & Touche, LLP

Leo Berlinghieri
Former Chief Executive Officer and President
MKS Instruments, Inc.

Edward J. Brown, Jr.
Former Chief Executive Officer
Cymer Light Source

Vita A. Cassese
Chief Executive Officer
Mardon Management Advisors

David B. Miller
Former President
DuPont Electronics & Communications

Michael P. Plisinski
Chief Executive Officer

Bruce C. Rhine
Former Chief Strategy Officer
Nanometrics Incorporated

Christine A. Tsingos
Former Executive Vice President and Chief Financial Officer
Bio-Rad Laboratories

EXECUTIVE OFFICERS

Michael P. Plisinski
Chief Executive Officer

Steven R. Roth
Senior Vice President, Finance and Administration and Chief Financial Officer

Robert A. Koch
Vice President and General Counsel

Innovation

NYSE
ONTO

Onto Innovation Inc.
16 Jonspin Road
Wilmington MA 01887
978.253.6200

ontoinnovation.com

MADE FROM 70% RECYCLED CONTENT