

The background of the cover is a satellite view of Earth at night, showing city lights and cloud patterns. A network of white lines connects various points across the globe, with some points highlighted as glowing white circles. The overall theme is technology and global connectivity.

RUDOLPH
TECHNOLOGIES

ANNUAL REPORT 2017

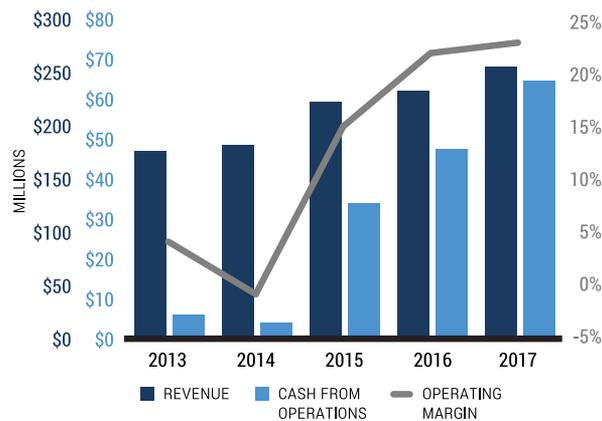
2018 PROXY

DEAR FELLOW SHAREHOLDERS



Rudolph Technologies delivered another year of growth in 2017 and set a number of records for the company. Total revenue grew 10% over 2016, marking our third consecutive year of record revenue. Operating income was 23% of revenue, reaching \$59 million for the year and setting another record for the company. Foreseeing additional secular growth ahead, we continued to invest in our future with record levels of R&D spending while generating \$64 million in cash from operations, representing 25% of revenue.

RECORD GROWTH



Our announcement in January of (over) \$100 million in orders resulted in a backlog of \$88 million, which set a third record for the company. Our backlog contained nearly equal amounts of orders from customers in advanced memory, advanced packaging, and specialty devices such as RF and MEMS. The strength and breadth of this backlog underscores the broad health of the industry and Rudolph's position serving multiple key industry segments.

While our core business is achieving record levels of performance, we are also dramatically expanding our served markets. We recently announced a roadmap for our lithography products to enter the growing market for high resolution mobile displays after two leading display manufacturers selected Rudolph's Gen 4.5 display stepper for R&D and pilot applications. IHS Markit recently forecasted the demand for high resolution mobile displays to increase by 20% CAGR over the next five years. Successful adoption of our product will increase our served market by an estimated \$400-\$500 million annually.

Our cover image illustrates the rapidly-expanding digital footprint across the globe. Consumer devices—from smartphones, wearables, and automobiles to smart homes that are connected to smart cities—are generating massive amounts of data and new applications. The semiconductor industry is enabling this evolution with advances in memory, computing, communication, and system-level packaging. Our team is playing an important role in nearly all of these inflections and we see Rudolph's position expanding as we look to the opportunities ahead.

We see Rudolph's position expanding as we look to the opportunities ahead.

In closing, I want to thank our customers for their continued support of Rudolph. Our core values start with "Customer" and end with "Results." The Rudolph team is committed to embodying these values and delivering the results our customers require to be successful. Finally, I want to thank our loyal shareholders, dedicated employees, and valued suppliers for their commitment to Rudolph in 2018, and beyond.

Sincerely,

Michael Plisinski
CHIEF EXECUTIVE OFFICER & DIRECTOR

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

FORM 10-K

(Mark One)

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

For the Fiscal Year Ended December 31, 2017

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. 001-36226

RUDOLPH TECHNOLOGIES, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

22-3531208
(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 | Name of Exchange on Which Registered |
|--|--------------------------------------|
| Common Stock, \$0.001 par value per share (including attached Series A Junior Participating Preferred Stock Purchase Rights) | 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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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. (Check one):

| | | | |
|-------------------------|---|---------------------------|-------------------------------------|
| Large accelerated filer | <input type="checkbox"/> | Accelerated filer | <input checked="" type="checkbox"/> |
| Non-accelerated filer | <input type="checkbox"/> | Smaller reporting company | <input type="checkbox"/> |
| | (Do not check if a smaller reporting company) | Emerging growth company | <input type="checkbox"/> |

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

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

The aggregate market value of the voting stock held by non-affiliates of the registrant based on the closing price of the registrant's stock price on June 30, 2017 of \$22.85 was approximately \$708,367,640.

The registrant had 31,608,158 shares of Common Stock outstanding as of January 24, 2018.

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 16, 2018.

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FORWARD LOOKING STATEMENTS

Certain statements in this Annual Report on Form 10-K of Rudolph Technologies, Inc. (the “Company” or “Rudolph”) are forward-looking statements, including those concerning 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 revenues, 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. The statements contained in this Annual Report on Form 10-K that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and 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,” “expect,” “intend,” “plan,” “should,” “may,” “could,” “will” 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: 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, our ability to weather difficult economic environments, our ability to open new market opportunities and target high-margin markets, the strength/weakness of the back-end and/or front-end semiconductor market segments, our ability to successfully integrate acquired businesses into our business and fully realize, or realize within the expected time frame, the expected combination benefits from the acquisitions, and the “Risk Factors” set forth in Item 1A. You should carefully review the cautionary statements and “Risk Factors” contained in this Annual Report on 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

Rudolph Technologies, Inc. (“Rudolph” or the “Company”) is a worldwide leader in the design, development, manufacture and support of process control tools that perform macro defect inspections and metrology, lithography systems, and process control analytical software used by semiconductor and advanced packaging device manufacturers. Rudolph’s proprietary products offer comprehensive solutions for all phases/segments of the semiconductor fabrication process. Our products that provide critical yield-enhancing information, which information microelectronic device manufacturers then use to drive down costs and to decrease the 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 device packaging and test facilities, or “back-end” manufacturing, through a portfolio of standalone systems for macro-defect inspection, lithography, probe card test and analysis, as well as transparent and opaque thin film measurements. All Rudolph 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, or factory-wide suites to enhance productivity and achieve significant cost savings. Rudolph’s systems are backed by worldwide customer service and applications support.

Rudolph continues to drive the technological innovation of its inspection and metrology products to deliver solutions that address the demanding needs across the front-end and back-end processes of semiconductor manufacturing. In 2017, Rudolph began shipments of two newly configured inspection tools the Firefly™ series and the Dragonfly™ series. The Firefly series uses high-resolution, two-dimensional (2D) inspection technology for front-end and back-end applications and features onboard Clearfind™ Technology, a patented technique for enhancing the detection of defects that often escape conventional illumination techniques by revealing organic materials, thereby reducing a source of yield-robbing interconnect failures that can occur within advanced packages that utilize vertical connectivity between devices and interposers and/or redistribution layers (“RDLs”). The Dragonfly system is a high-speed multi-dimensional tool that features Truebump™ technology to accurately measure the height of millions of micro bumps that may be deposited on a wafer in order to make electrical connections. This critical dimension must be accurately controlled to assure that eventual connections are reliably created.

These newly released products supplement Rudolph’s established product portfolio of extensive process control solutions for a variety of device types, such as DRAM and 3D NAND memory, advanced packaging, RF modules, CMOS image sensors, MEMs, etc. that are used in smartphones, wearable devices, tablets and PCs, automotive, IoT and others. The need for more process monitoring and control continues to increase for semiconductor and related industries as the required levels of quality and reliability continue to rise. Predictive analytics can lower maintenance costs, rate of scrap wafers, unscheduled tool downtime and material costs. Rudolph’s established fault detection and classification software, which is also incorporated into tools manufactured by others companies, allows customers to seamlessly turn equipment data into actionable operational information. This collaboration is designed to enhance etch and deposition tool performance.

Industry Trends

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 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 a wide variety of 2D, 2.5D, and 3D integration techniques and are considered the next disruptive technology for several reasons. First, fan-out wafer level packages significantly reduces 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 a 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 PC board. Using thin redistribution layers 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 system in package, 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 to meet these requirements. These technology shifts encompass multiple high-value process steps that are creating opportunities for Rudolph 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, Rudolph 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 S Series, designed for high resolution inspection, can provide location information to the JetStep S tool for each die, which greatly improves lithography throughput. 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 engineering and our continued investment in research and development 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, thin film metrology and defect detection and classification technologies allow yield enhancement for critical processes such as photolithography, diffusion, etch, CMP and outgoing quality control. Within the final manufacturing (back-end) processes, 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, 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 ("COGS") and improve their margins.

Process Control Business

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™ and NSX® 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. In addition to wafer frontside inspection, Rudolph's innovative Explorer® Platform allows wafer edge and backside inspection in one integrated platform to enhance productivity and continuously improve fab yield. 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.

All-Surface Inspection. All-surface refers to inspection of the wafer frontside, edge, and backside as well as back-end die. 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 photolithography 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 photolithography process to prevent focus and exposure problems on the wafer frontside.

Residue Detection. Residue is difficult or impossible to see with conventional bright field or dark field imaging techniques using white light. Residue contaminants, such as residual photo resist, are often the root cause of field failures, which occur after the material has been exposed to normal operating conditions for extended periods. Rudolph's new Clearfind™ technology highlights residue on bumps and bond pads or RDL vias so that they are easy to detect. On metals, it eliminates the high-contrast graininess seen under conventional illumination, resulting in an obvious defect signal against a featureless background. This same graininess in conventional imaging can also cause false positives, which are especially costly at this stage of the process where secondary inspections must be initiated to verify real defects and allow the false defects to continue through packaging. Finally, Clearfind technology readily detects shorts and opens in metal lines when inspected with an underlying organic layer.

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.

Optical Acoustic Metrology. Optical acoustic metrology involves the use of ultra-fast laser induced sonar for metal and opaque thin film measurement. This technology sends ultrasonic waves into multi-layer opaque films and then analyzes the resulting reflected acoustic waves (echoes) to simultaneously determine the thickness of each individual layer in complex multi-layer metal film stacks. The reflected signal's amplitude and phase can be used to detect film properties, missing layers and interlayer problems. Since different phenomena affect amplitude and phase uniquely, a variety of process critical interlayer problems can be detected in a single measurement. The use of optical acoustics to measure multi-layer metal and opaque films was pioneered by scientists at Brown University ("Brown") in collaboration with engineers at Rudolph. The proprietary optical acoustic technology in our PULSE™ Technology systems measures the thickness of single or multi-layer opaque films, with a huge range of less than 40 Angstroms to greater than five microns. It provides these measurements at a rate of up to 70 wafers per hour within one to two percent accuracy and typically greater than 99 percent repeatability. This range of thicknesses covers the majority of thick and thin metal films projected by the International Roadmap for Semiconductors to be used through the end of this decade. Our non-contact, non-destructive optical acoustic technology and small spot size enable our PULSE Technology™ systems to measure film properties directly on product wafers.

Opaque Film Metrology. The MetaPULSE® System allows 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, 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 System, used initially for fast and accurate measurements of metal interconnect in front-end wafer fabs, has 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.

Ellipsometry. Ellipsometry is a non-contact, non-destructive optical technique for transparent thin film measurement. We have been an industry leader in ellipsometry technology for the last three decades. We hold patents on several ellipsometry technologies, including our proprietary technique that uses four lasers for multiple-angle of incidence, multiple wavelength ellipsometry. Laser ellipsometry technology enables our transparent film systems to provide the increasingly higher level of accuracy needed as thinner films and newer materials are introduced for future generations of semiconductor devices. We extended this same optical technology to characterize the scatterometry signal from patterned surfaces, allowing measurement of critical dimensions.

Reflectometry. For applications requiring broader spectral coverage, some of our ellipsometry tools are also equipped with a reflectometer. Reflectometry uses a white or ultraviolet light source to determine the properties of transparent thin films by analyzing the wavelength and intensity of light reflected from the surface of a wafer. This optical information is processed with software algorithms to determine film thickness and other material properties. By combining data from both the laser ellipsometer and broad spectrum reflectometer, it is possible to characterize films and film stacks that cannot be adequately analyzed by either method individually.

Transparent Film Metrology. Rudolph's patented transparent film technology uses up to four lasers operating simultaneously at multiple angles and multiple wavelengths, providing powerful analysis and measurement capabilities. Unlike the white-light sources used in spectroscopic ellipsometers, laser light sources make our metrology tools inherently stable, increase measurement speed and accuracy, and reduce maintenance costs by minimizing the time required to re-qualify a light source when it is replaced. Rudolph's S3000SX™ System is targeted for transparent films in advanced semiconductor fabrication applications at the 28nm node and below. The S3000 product family uses Rudolph's proprietary Focused Beam Ellipsometry ("FBE") and newly-designed Small Site Measurement Optics ("SSMO") to measure the thickness of single layer and multi-layer films on product wafers, including device area at site sizes as small as 30x30 nanometers.

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.

Lithography Business

Step and Repeat Technology. Rudolph 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.

Advanced Packaging Lithography Systems. 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. Rudolph's JetStep Systems have been specifically designed to meet these challenges head on. The JetStep W Series is designed for wafers and other round substrates while the JetStep S Series is designed for rectangular substrates (panels). Both systems boast a large printable field, 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

transistor backplane, which is what 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, Rudolph's 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.

Integrated Software Solutions

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. Rudolph is 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. Rudolph's fully-integrated YMS are designed to analyze data from disparate sources and multiple sites to maximize productivity across the entire value chain.

Products

Rudolph markets and sells products to major analog, logic, memory, RF, CMOS Image Sensors, MEMs, and flat panel display manufacturers. These customers are IDMs, OSAT manufacturers, and foundries that are producing wafers and packages for fabless design companies. Our customers rely on us for versatile inspection, lithography and metrology systems as well as process control software solutions. These products are designed for high-volume production facilities and offer automated wafer handling for 200mm and 300mm configurations and panel handling up to 720 x 930mm. Our systems operate at high throughput in an ultra-clean operating mode with high reliability.

| PROCESS CONTROL SYSTEMS | | | | |
|-------------------------------|------------------|--|---------------------|----------|
| Product | First Introduced | Functionality | Location of Process | |
| | | | Front-end | Back-end |
| Dragonfly™ Inspection System | 2016 | — 2D/3D inspection and metrology | X | X |
| Firefly™ Inspection Series | 2016 | — Sub-micron defect and residue inspection | X | X |
| AWX™ Series | 2011 | — Unpatterned wafer inspection and process monitoring system | X | X |
| F30™ Inspection Module | 2011 | — Front-side macro defect inspection system | X | |
| Explorer® Inspection Platform | 2009 | — Handling platform that supports a family of multi surface inspection tools, using one or more inspection modules | X | |
| B30™ Inspection Module | 2003 | — Defect inspection module for the wafer's backside | X | X |
| E30™ Inspection Module | 2003 | — Defect inspection module for the wafer's edge | X | X |
| PrecisionWoRx® System | 2008 | — Probe card test and analysis system | | X |
| S3000™ System | 2006 | — Transparent thin film metrology system | X | |
| MetaPULSE® System | 1997 | — Opaque (metal) thin film metrology system | X | X |
| NSX® Inspection System | 1997 | — 2D/3D wafer, die and bump inspection system | | X |

| LITHOGRAPHY SYSTEMS | | | | |
|-------------------------------------|-------------------------|---|----------------------------|-----------------|
| Product | First Introduced | Functionality | Location of Process | |
| | | | Front-end | Back-end |
| JetStep® S Lithography System | 2013 | 2x reduction step and repeat system for advanced packaging lithography on square or rectangular substrates up to Gen 3.5 size | | X |
| JetStep® W Lithography System | 2012 | 2x reduction step and repeat system for advanced packaging applications on wafers or round substrates | | X |
| JetStep® G45 FPD Lithography System | 2007 | Step and repeat lithography printer for Gen 4.5 substrates | X | |
| JetStep® G35 FPD Lithography System | 2006 | Step and repeat lithography printer for Gen 3.5 substrates | X | |

| INTEGRATED SOFTWARE SOLUTIONS | | | | |
|--------------------------------------|-------------------------|--|----------------------------|-----------------|
| Product | First Introduced | Functionality | Location of Process | |
| | | | Front-end | Back-end |
| Equipment Sentinel™ Software | 2015 | Fault detection and classification software | X | X |
| Discover® Software | 2007 | Tool-centric yield management system | X | X |
| TrueADC® Enterprise Software | 2007 | Automatic defect classification software | X | X |
| Process Sentinel® Software | 2006 | Fab-wide spatial process control system | X | |
| Yield Optimizer™ Software | 2006 | Yield enhancement model software | X | |
| Discover® Enterprise Software | 2005 | Fabwide yield management system | X | X |
| GateWay™ Software | 2003 | Data collection and facilitation to FDC software | X | X |

| INTEGRATED SOFTWARE SOLUTIONS | | | | |
|--------------------------------------|-------------------------|--|----------------------------|-----------------|
| Product | First Introduced | Functionality | Location of Process | |
| | | | Front-end | Back-end |
| ProcessWORKS® Software | 1998 | — Run-to-run process control software | X | |
| RecipeWORKS™ Software | 1998 | — Factory-level client-server based recipe management system | X | X |
| AutoShell® Software | 1998 | — Equipment and factory automation software | X | X |
| Genesis® Software | 1997 | — Off-line yield management system | X | |
| ControlWORKS® Software | 1994 | — Advanced equipment control software | X | |

Customers

Over 100 microelectronic device manufacturers have purchased Rudolph 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 20 countries. See Note 13 to our consolidated financial statements in this Annual Report on Form 10-K for information concerning our geographic information.

We depend on a relatively small number of customers and end users for a large percentage of our revenues. In the years 2017, 2016 and 2015, aggregate sales to end user customers that individually represented at least five percent of our revenues accounted for 27.2%, 34.5% and 23.3% of our revenues, respectively.

No individual end user customer accounted for more than 10% of our revenue in 2017, 2016 and 2015. We do not have purchase contracts with any of our customers that obligate them to continue to purchase our products.

Research and Development

The markets for equipment and systems for manufacturing semiconductor devices and for performing 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. As of December 31, 2017, we employed 187 engineering personnel.

Our research and development expenditures in 2017, 2016 and 2015 were \$47.0 million, \$45.0 million and \$41.2 million, respectively. We expect to continue our strong commitment to new product development and will continue to allocate significant resources to these efforts in the future.

Sales, Customer Service and Application Support

We maintain an extensive network of direct sales, customer service and application support offices in the United States, Europe and Asia.

We provide our customers with comprehensive support before, during and after the delivery of our products. For example, in order to facilitate the smooth integration of our tools into our customers' operations, we often assign dedicated, site-specific field service and applications engineers to provide long-term support at selected customer sites. We also provide comprehensive service and applications training for customers at our training facilities in Bloomington, Minnesota and Budd Lake, New Jersey and at customer locations. In addition, we maintain a group of highly skilled applications scientists at strategically located facilities throughout the world and at selected customer locations. As of December 31, 2017, we employed 258 sales and marketing, service and applications support personnel.

Manufacturing

Our principal manufacturing activities include assembly, final test and calibration. These activities are conducted in our manufacturing facilities in Bloomington, Minnesota and Wilmington, Massachusetts. Our core manufacturing competencies include electrical, optical and mechanical assembly and testing, as well as the management of new product transitions. While we use standard components and subassemblies wherever possible, most mechanical parts, metal fabrications and critical components used in our products are engineered and manufactured to our specifications. We continue to rely on subcontractors and turnkey suppliers to fabricate components, build assemblies and perform other non-core activities in a cost-effective manner. As of December 31, 2017, we employed 82 manufacturing personnel.

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.

Intellectual Property

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 31, 2017, we have been granted, or hold exclusive licenses to, 262 U.S. and foreign patents. The patents we own, jointly own or exclusively license have expiration dates ranging from 2018 to 2035. We also have 72 pending regular and provisional applications in the U.S. and other countries. Our patents and applications principally cover various aspects of macro-defect detection and classification, transparent thin film measurement, altered material characterization, lithography techniques and automation.

We have been granted patent licenses by organizations such as Brown University Research Foundation and the University of Colorado. These licenses are subject to rights retained by these organizations and, where applicable the United States government, for their own non-commercial uses. These patents relate to opto-acoustic metrology technology that underlies our opaque film products such as the MetaPULSE product family. The terms of these licenses are equal to the lives of the patents. We pay royalties to Brown and the University of Colorado based upon a percentage of our revenues from the sale of systems that incorporate the licensed technology. We continue to work with Brown and the University of Colorado on the development of advancements in relevant technical areas. We also continue to pursue intellectual property protection, including exclusive licenses to this technology. Note that third party licensees may terminate a license if we fail to pay royalties or if we materially breach our license agreements with those third parties.

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. 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.

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.

Competition

The market for semiconductor capital equipment is highly competitive. We face substantial competition from established companies in each of the markets that we serve. We principally compete with KLA-Tencor, Camtek and Veeco Instruments. We compete to a lesser extent with companies such as Nanometrics, Nova Measuring Instruments and Nikon. Each of our products also competes with products that use different metrology and inspection 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.

Significant competitive factors in the market for inspection and metrology systems include system performance, ease of use, reliability, cost of ownership, technical support and customer relationships. We believe that, while price and delivery are important competitive factors, the customers' overriding requirement is for a product that meets their technical capabilities. To remain competitive, we believe we will need to maintain a high level of investment in research and development and process applications. No assurances can be given that we will continue to be competitive in the future.

Backlog

We schedule production of our systems based upon order backlog and informal customer forecasts. We use the term "backlog" to refer to only those orders to which the customer has assigned a purchase order number and for which delivery is anticipated within 12 months. Because shipment dates may be changed and customers may cancel or delay orders with little or no penalty, our backlog as of any particular date may not be a reliable indicator of actual sales for any succeeding period. At December 31, 2017, we had a backlog of approximately \$87.8 million compared with a backlog of approximately \$41.6 million at December 31, 2016.

Employees

As of December 31, 2017, we had 592 employees. Our employees are not represented by any collective bargaining agreements, and we have never experienced a work stoppage. We believe our employee relations are good.

Available Information

We were incorporated in Delaware in 1999. The Internet website address of Rudolph Technologies, Inc. is <http://www.rudolphtech.com>. The information on our website is not incorporated into this Annual Report. The Company's Annual Reports 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>.

We also make available, free of charge, through the investors page on our corporate website, Rudolph Technologies' corporate summary, Code of Business Conduct and Ethics and Financial Code of Ethics, charters of the committees of our Board of Directors, as well as other information and materials, including information about how to contact our Board of Directors, its committees and their members. To find this information and obtain copies, visit our website at <http://www.rudolphtech.com>.

Item 1A. Risk Factors.

Risks Related to Rudolph

Our operating results have varied, and will likely continue to vary significantly from quarter to quarter in the future, causing volatility in our stock price.

Our quarterly operating results have varied in the past and will likely continue to vary significantly from quarter to quarter in the future, causing volatility in our stock price. Some of the factors that may influence our operating results and subject our stock to extreme price and volume fluctuations include:

- changes in customer demand for our systems, which is influenced by economic conditions in the semiconductor device industry, demand for products that use semiconductors, market acceptance of our systems and products of our customers and changes in our product offerings;
- seasonal variations in customer demand, including the tendency of European sales to slow significantly in the third quarter of each year;
- the timing, cancellation or delay of customer orders, shipments and acceptance;
- a significant portion of our revenue may be derived from the sale of a relatively small number of systems; accordingly, a small change in the number of systems we sell may cause significant changes in our operating results;
- product development costs, including increased research, development, engineering and marketing expenses associated with our introduction of new products and product enhancements; and
- the levels of our fixed expenses, including research and development costs associated with product development, relative to our revenue levels.

In light of these factors and the cyclical nature of the semiconductor industry, we expect to continue to experience significant fluctuations in quarterly and annual operating results. Moreover, many of our expenses are fixed in the short-term which, together with the need for continued investment in research and development, marketing and customer support, limits our ability to reduce expenses quickly. As a result, declines in net sales could harm our business and the price of our common stock could substantially decline.

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

Sales to end user customers that individually represent at least five percent of our revenues typically account for, in the aggregate, a considerable amount of our revenues. We operate in the highly concentrated, capital-intensive semiconductor device manufacturing industry. Historically, a substantial portion of our revenues 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 revenues 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 revenues. 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 revenues 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 six to twenty-four months. Sometimes our sales cycles can be much longer, particularly with customers in Japan. 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 six 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.

Most of our revenues have 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, 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 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 or other restrictions imposed by their governments on trade with United States companies such as ourselves. Any restrictions of these types could result in a reduction in our sales to customers in these countries.

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 revenues and cash flows could be material because we derive substantial revenues 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, and from semiconductor device manufacturers in Japan such as Toshiba.

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 ourselves 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.

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 \$20.0 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.

If new products developed by us do not gain general market acceptance, we will be unable to generate revenues 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 revenues

and cash flows 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.

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.

Our ability to reduce costs is limited by our ongoing need to invest in research and development and to provide customer support activities.

Our industry is characterized by the need for continual investment in research and development as well as customer service and support. As a result, our operating results could be materially affected if operating costs associated with our research and development as well as customer support activities increase in the future or we are unable to reduce those activities.

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.

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 may 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 revenues. 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. For additional information regarding recent patent litigation, see Item 3 ("Legal Proceedings").

Our efforts to protect our intellectual property may be less effective in certain foreign countries where intellectual property rights are not as well protected as in the United States.

The laws of some foreign countries 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, Taiwan is not a signatory of the Patent Cooperation Treaty, which is designed to specify rules and methods for defending intellectual property internationally. The publication of a patent in Taiwan prior to the filing of a patent in Taiwan would invalidate the ability of a company to obtain a patent in Taiwan. Similarly, in contrast to the United States where the contents of patents remain confidential during the patent application process, in Taiwan the contents of a patent are published upon filing which provides competitors an advance view of the contents of a patent application prior to the establishment of patent rights. 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.

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-Tencor, Camtek and Veeco Instruments. We compete to a lesser extent with companies such as Nanometrics, Nova Measuring Instruments and 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 revenues 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 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 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.

We obtain some of the components and subassemblies included in our systems from a limited group of suppliers, and the partial or complete loss of one of these suppliers could cause production delays and a substantial loss of revenues.

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 exposes 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.

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

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 facility, whether due to technical or labor difficulties, or destruction of or damage as a result of a fire or any other reason, 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.

Our business is subject to cybersecurity risks.

Information technology systems are increasingly threatened by cybersecurity risks and cyber incidents or attacks. Cybersecurity attacks could include, but are not limited to, malicious software, viruses, attempts to gain unauthorized access, whether through malfeasance or error, either from within or outside of our organization, to our data or that of our customers or our customers' customers which may be in our possession, and the unauthorized release, corruption or loss of the data, loss of the intellectual property, theft of the proprietary or licensed technology, whether ours, that of our customers or their customers, loss or damage to our data delivery systems, other electronic security breaches that could lead to disruptions in our critical systems, and increased costs to prevent, respond to or mitigate cybersecurity events. It is possible that our business, financial and other systems could be compromised, which might not be noticed for some period of time. Although we utilize various

procedures and controls to mitigate our exposure to such risk, cybersecurity attacks are evolving and unpredictable and we cannot guarantee that any risk prevention measures implemented will be successful. The occurrence of such an attack could lead to financial losses and have a material adverse effect on our reputation, business, financial condition and results of operations.

Failure to adjust our orders for parts and subcomponents in an accurate and timely manner in response to changing market conditions or customer acceptance of our products could adversely affect our financial position and results of operations.

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 should 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 revenues.

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 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.

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.

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, or OECD, released guidance covering various topics, including country-by-country reporting, definitional changes to permanent establishment and Base Erosion and Profit Shifting, or 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.

Turmoil or fluctuations in the credit markets and the financial services industry may negatively impact our business, results of operations, financial condition or liquidity.

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 were to be 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.

Risks Related to the 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 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.

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 is no assurance that manufacturers will undertake these actions at the rate we expect.

Risks Related to our Stock

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;
- 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. Such a stockholder rights plan was adopted by the Board of Directors on June 27, 2005 and expired on June 28, 2015.

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. From the beginning of 2013 through the end of 2017, our stock price fluctuated between a high of \$28.10 per share and a low of \$8.10 per share. 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;
- 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.

There are various risks related to the legal and regulatory environments in which we perform our operations and conduct our business that may expose us to risk.

We are faced with various risks which 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. Should 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 that may adversely affect our operating results, financial condition, customer relations and ability to conduct our business.

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 and lease facilities for corporate, engineering, manufacturing, sales and service related purposes in the United States and six other countries - China, Japan, South Korea, Singapore, Taiwan and Scotland. The following table indicates the location, the general purpose and the square footage of our principal facilities. The expiration years of the leases covering the leased facilities are also indicated.

| Location | Facility Purpose | Approximate Square Footage | Lease Expiration Year, Unless Owned |
|------------------------------|---|-----------------------------------|--|
| Wilmington, Massachusetts... | Corporate, Engineering, Manufacturing and Service.... | 50,000 | 2027 |
| Budd Lake, New Jersey..... | Corporate, Engineering and Service..... | 49,000 | 2023 |
| Bloomington, Minnesota..... | Engineering, Manufacturing and Service..... | 98,500 | 2019 |
| Richardson, Texas..... | Engineering..... | 21,000 | Owned |
| Bohemia, New York..... | Engineering..... | 6,000 | 2019 |
| Snoqualmie, Washington..... | Engineering and Service..... | 27,000 | 2020 |
| Tianjin, China..... | Engineering..... | 5,000 | 2019 |
| Hsin-Chu, Taiwan..... | Sales and Service..... | 10,500 | 2018 |
| Takatsu, Japan..... | Sales and Service..... | 4,000 | 2019 |
| Sungnam-si, South Korea..... | Sales and Service..... | 9,000 | 2021 |
| Shanghai, China..... | Sales and Service..... | 2,500 | 2019 |
| Singapore..... | Sales and Service..... | 2,500 | 2019 |
| Scotland, United Kingdom... | Sales and Service..... | 1,000 | 2018 |

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.

From time to time, we are subject to legal proceedings and claims in the ordinary course of business. As of December 31, 2017, there are no legal proceedings pending or threatened against us that management believes are likely to have a material adverse effect on our consolidated financial position or otherwise.

Regarding litigation that was ongoing during 2017, on July 28, 2017, Rudolph and Camtek Ltd. (“Camtek”) entered into a Settlement Agreement (the “Agreement”) resolving each of the three litigations referenced below (the “Litigations”).

- August Technology Corporation and Rudolph Technologies, Inc. v. Camtek, Ltd., No. 11-CV-03707 (MJD/TNL): A lawsuit against Camtek, of Migdal Hamek, Israel, was filed by us on June 1, 2011 alleging infringement of our U.S. Patent No. 7,729,528 related to our proprietary continuous scan wafer inspection technology. The relief sought in the lawsuit included the payment of damages and a permanent injunction against any products found to be infringing.
- Rudolph Technologies, Inc. v. Camtek, Ltd., No. 15-CV-1246 (ADM/BRT): On March 12, 2015, we filed and served on Camtek a complaint asserting infringement of our U.S. Patent No. 6,826,298 by Camtek’s Eagle product with the U.S. District Court in Minnesota. The ‘6,298 patent is also related to our proprietary continuous scan wafer inspection technology and was the subject of our prior litigation against the Camtek Falcon system (the “Falcon Litigation”) in which we prevailed with a final judgment of infringement and damages of \$14.6 million assessed against Camtek. The relief sought in the lawsuit included the payment of damages and a permanent injunction against any products found to be infringing.
- Camtek, Ltd. v. Rudolph Technologies, Inc., No.: 1:17-CV-11127-PBS: On June 19, 2017, Camtek filed with the U.S. District Court in Massachusetts and served on us a complaint alleging infringement by our NSX product of Camtek’s U.S. Patent No. 6,192,289 related to kerf inspection. The relief sought in the lawsuit included the payment of damages and a permanent injunction against any products found to be infringing.

Pursuant to the Agreement, in exchange for a \$13.0 million cash payment from Camtek to be paid to us, the parties each agreed to dismiss with prejudice and release the other party from all claims, damages and expenses incurred or raised in the Litigations. The parties also mutually agreed not to pursue further legal actions on any of the claims reflected in the patents which were the subject of the Litigations. Further, subject to limited exceptions, Rudolph and Camtek have agreed not to bring suit against each other for a three year period from the date of the Agreement. Each party expressly denies any liability to the other party with respect to any of the Litigations. The payment was made in October of 2017 and these matters are now closed.

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.

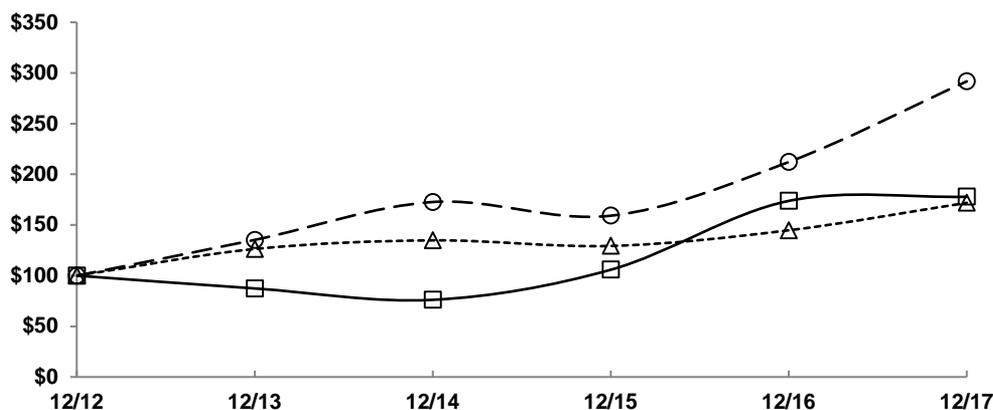
Our common stock is traded on the New York Stock Exchange (“NYSE”) under the symbol “RTEC.” Set forth below is a line graph comparing the annual percentage change in the cumulative return to the stockholders of the Company’s common stock with the cumulative return of the NYSE Composite Index and the Research Data Group (“RDG”) Semiconductor Components Composite Index for the period commencing on December 31, 2012 and ending on December 31, 2017.

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, 2012 in the Company’s common stock in each index, and that all dividends were reinvested. 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.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*

Among Rudolph Technologies, Inc., the NYSE Composite Index
and the RDG Semiconductor Composite Index



—■— Rudolph Technologies, Inc. ---△--- NYSE Composite —○— RDG Semiconductor Composite

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

| | 12/12 | 12/13 | 12/14 | 12/15 | 12/16 | 12/17 |
|-----------------------------|-------|-------|-------|-------|-------|-------|
| RTEC | 100.0 | 87.4 | 76.1 | 105.8 | 173.7 | 177.8 |
| NYSE Composite | 100.0 | 126.3 | 134.8 | 129.3 | 144.7 | 171.8 |
| RDG Semiconductor Composite | 100.0 | 135.3 | 172.7 | 159.1 | 212.1 | 291.7 |

The following table sets forth, for the periods indicated, the high and low sale prices per share of our common stock as reported on the NYSE.

| | Price Range of Common Stock | |
|------------------------------|-----------------------------|----------|
| | High | Low |
| Year Ended December 31, 2017 | | |
| Fourth Quarter..... | \$ 28.10 | \$ 23.05 |
| Third Quarter..... | \$ 26.40 | \$ 21.10 |
| Second Quarter..... | \$ 27.30 | \$ 21.00 |
| First Quarter..... | \$ 24.90 | \$ 21.13 |
| Year Ended December 31, 2016 | | |
| Fourth Quarter..... | \$ 24.45 | \$ 16.80 |
| Third Quarter..... | \$ 18.00 | \$ 15.04 |
| Second Quarter..... | \$ 15.69 | \$ 12.84 |
| First Quarter..... | \$ 14.01 | \$ 11.17 |

As of January 24, 2018, there were 60 stockholders of record of our common stock and approximately 6,884 beneficial stockholders. The closing market value of our common stock on January 24, 2018 was \$27.20 per share.

We have never declared or paid a cash dividend on our common stock and currently do not anticipate paying any cash dividends in the foreseeable future. We currently intend to retain our earnings, if any, for the development of our business and the share repurchase of our common stock. 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 January 2015, the Board of Directors authorized the Company to repurchase up to 3.0 million shares of the Company's common stock with no established end date. The authorization allows for repurchases to be made in the open market or through negotiated transactions from time to time. During the twelve months ended December 31, 2017, we repurchased no shares of common stock. At December 31, 2017, there were 711 thousand shares available for future stock repurchases under this repurchase authorization. Shares of common stock purchased under the share repurchase authorization are retired. For further information, see Note 15 in the accompanying consolidated financial statements.

In addition to the 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 31, 2017, we withheld 1 thousand and 37 thousand shares through net share settlements, respectively. For the three and twelve month periods ended December 31, 2017, net share settlements cost \$24 thousand and \$0.9 million, respectively. Please refer to Note 9 of the Notes to Consolidated Financial Statements for further discussion regarding our equity incentive plan.

The following table provides details of common stock purchased during the three month period ended December 31, 2017 (in thousands, except per share data):

| Period | Total Number of Shares Purchased | Average Price Paid per Share | Total Number of Shares Purchased as Part of Publicly Announced Program | Maximum Number of Shares that May Yet Be Purchased Under the Program |
|--|----------------------------------|------------------------------|--|--|
| October 1, 2017 to October 31, 2017..... | 1 ¹ | \$ 26.51 | — | 711 |
| November 1, 2017 to November 30, 2017..... | — | \$ — | — | 711 |
| December 1, 2017 to December 31, 2017..... | 0 | \$ 23.60 | — | 711 |
| Three Months Ended December 31, 2017..... | 1 ¹ | \$ 26.09 | — | |

¹ Represents shares withheld through net share settlements.

Item 6. Selected Financial Data.

The following selected financial data should be read in conjunction with our Consolidated Financial Statements and the related Notes thereto appearing elsewhere in this Annual Report on Form 10-K, and under Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations.” The balance sheet data as of December 31, 2017 and 2016 and the statement of operations data for the years ended December 31, 2017, 2016 and 2015 set forth below were derived from our audited consolidated financial statements included elsewhere in this Form 10-K. The balance sheet data as of 2015, 2014 and 2013, and the statement of operations data for the years ended December 31, 2014 and 2013 were derived from our audited consolidated financial statements not included herein.

| | Year Ended December 31, | | | | |
|--|---------------------------------------|------------------|------------------|-------------------|-------------------|
| | 2017 | 2016 | 2015 | 2014 | 2013 |
| | (In thousands, except per share data) | | | | |
| Statement of Operations Data: | | | | | |
| Revenues..... | \$ 255,098 | \$ 232,780 | \$ 221,690 | \$ 181,218 | \$ 176,238 |
| Cost of revenues..... | 120,503 | 109,229 | 102,284 | 85,730 | 85,506 |
| Gross profit..... | 134,595 | 123,551 | 119,406 | 95,488 | 90,732 |
| Operating expenses: | | | | | |
| Research and development..... | 46,986 | 44,964 | 41,233 | 40,576 | 39,994 |
| Selling, general and administrative..... | 39,381 | 38,562 | 43,235 | 53,799 | 41,542 |
| Amortization..... | 1,940 | 2,320 | 2,145 | 2,422 | 2,592 |
| Patent litigation income..... | (13,000) | (14,643) | — | — | — |
| Total operating expenses..... | 75,307 | 71,203 | 86,613 | 96,797 | 84,128 |
| Operating income (loss)..... | 59,288 | 52,348 | 32,793 | (1,309) | 6,604 |
| Interest (income) expense..... | (971) | 2,834 | 5,688 | 5,317 | 5,079 |
| Other (income) expense..... | 457 | (354) | 293 | 65 | (8) |
| Income (loss) before provision (benefit) for income taxes..... | 59,802 | 49,868 | 26,812 | (6,691) | 1,533 |
| Provision (benefit) for income taxes..... | 26,893 | 12,916 | 8,856 | (2,051) | (1,925) |
| Net income (loss)..... | <u>\$ 32,909</u> | <u>\$ 36,952</u> | <u>\$ 17,956</u> | <u>\$ (4,640)</u> | <u>\$ 3,458</u> |
| Earnings (loss) per share: | | | | | |
| Basic..... | \$ 1.05 | \$ 1.19 | \$ 0.57 | \$ (0.14) | \$ 0.11 |
| Diluted..... | \$ 1.02 | \$ 1.16 | \$ 0.56 | \$ (0.14) | \$ 0.10 |
| Weighted average shares outstanding: | | | | | |
| Basic..... | 31,491 | 31,128 | 31,408 | 33,124 | 32,783 |
| Diluted..... | 32,162 | 31,790 | 32,166 | 33,124 | 33,388 |
| | | | December 31, | | |
| | 2017 | 2016 | 2015 (1) | 2014 (1)(2)(3) | 2013 (1)(2)(3) |
| Balance Sheet Data: | | | | | |
| Cash and cash equivalents..... | \$ 67,770 | \$ 37,859 | \$ 44,554 | \$ 43,114 | \$ 80,790 |
| Marketable securities..... | 109,589 | 87,872 | 116,924 | 113,871 | 86,582 |
| Working capital..... | 279,775 | 226,668 | 197,266 | 245,707 | 257,536 |
| Total assets..... | 385,922 | 338,699 | 379,563 | 365,944 | 370,306 |
| Convertible senior notes..... | — | — | 57,846 | 54,080 | 50,695 |
| Accumulated deficit..... | (51,869) | (84,706) | (121,658) | (139,614) | (134,974) |
| Total stockholders’ equity..... | 333,154 | 293,735 | 270,678 | 267,328 | 279,003 |

(1) Effective in the first quarter of 2016, the Company adopted Accounting Standards Update (ASU) No. 2015-03, “Interest - Imputation of Interest (Subtopic 835-30), Simplifying the Presentation of Debt Issuance Costs,” which requires entities to present debt issuance costs related to a debt liability as a direct deduction from the carrying amount of that debt liability on the balance sheet as opposed to being presented as a deferred charge. Prior to adoption, the Company reported the unamortized debt issuance costs in “Other Assets” on the Consolidated Balance Sheets.

(2) Effective December 31, 2015, we early adopted provisions prescribed by the Financial Account Standards Board (FASB) in Accounting Standards Update (ASU) No. 2015-17, “Income Taxes (Topic 740), Balance Sheet Classification of Deferred

Taxes.” Consequently, we reclassified net current deferred income tax assets to net long term deferred income tax assets for each period presented.

(3) Working capital data for 2013 and 2014 reflects reclassifications of a portion of deferred revenue to other non-current liabilities.

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

Overview

Rudolph is a worldwide leader in the design, development, manufacture and support of process control tools that perform macro defect inspections and metrology, lithography systems, and process control analytical software used by semiconductor and advanced packaging device manufacturers. Rudolph delivers comprehensive solutions throughout the semiconductor fabrication process with its 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 device packaging and test facilities, or “back-end” manufacturing, through a portfolio of standalone systems for macro-defect inspection, lithography, probe card test and analysis, as well as transparent and opaque thin film measurements. All Rudolph 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, or factory-wide suites to enhance productivity and achieve significant cost savings. Rudolph systems are backed by worldwide customer service and applications support.

Rudolph’s 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 computer, tablet, cell phone, wearable devices, other personal electronic devices and automotive sales. Current forecasts by industry analysts for the semiconductor device manufacturing industry project capital equipment spending to be flat to down 1% for 2018. Our revenues and profitability tend to follow the trends of certain segments within the semiconductor market.

Historically, a significant portion of our revenues 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 31, 2017, 2016 and 2015, aggregate sales to customers that individually represented at least five percent of our revenues accounted for 27.2%, 34.5%, and 23.3% of our revenues, respectively.

We do not have purchase contracts with any of our customers that obligate them to continue to purchase our products, and they could cease purchasing products from us at any time. A delay in purchase or cancellation by any of our large customers could cause quarterly revenues to vary significantly. In addition, during a given quarter, a significant portion of our revenues may be derived from the sale of a relatively small number of systems. The following table presents the average selling price range for our systems in 2017.

| <u>System</u> | <u>Average Selling Price Per System</u> |
|---------------------------|---|
| Process Control..... | \$250,000 to \$1.8 million |
| Lithography steppers..... | \$3.0 million to \$8.5 million |

A significant portion of our revenues is derived from customers outside of the United States. A substantial portion of our international sales are denominated in U.S dollars. We expect that revenues generated from customers outside of the United States will continue to account for a significant percentage of our revenues.

The sales cycle for our systems typically ranges from six to twenty-four months and can be longer when our customers are evaluating new technology. Due to the length of these cycles, we invest significantly in research and development and sales and marketing in advance of generating revenues related to these investments.

Results of Operations

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

| | Year Ended December 31, | | |
|---|-------------------------|--------|--------|
| | 2017 | 2016 | 2015 |
| Revenues..... | 100.0% | 100.0% | 100.0% |
| Cost of revenues..... | 47.2% | 46.9% | 46.1% |
| Gross profit..... | 52.8% | 53.1% | 53.9% |
| Operating expenses: | | | |
| Research and development..... | 18.4% | 19.3% | 18.6% |
| Selling, general and administrative..... | 15.4% | 16.6% | 19.5% |
| Amortization..... | 0.8% | 1.0% | 1.0% |
| Patent litigation income..... | (5.1)% | (6.3)% | —% |
| Total operating expenses..... | 29.5% | 30.6% | 39.1% |
| Operating Income..... | 23.3% | 22.5% | 14.8% |
| Interest (income) expense, net..... | (0.4)% | 1.2% | 2.6% |
| Other expense (income)..... | 0.2% | (0.2)% | 0.1% |
| Income before provision for income taxes..... | 23.5% | 21.5% | 12.1% |
| Provision for income taxes..... | 10.6% | 5.6% | 4.0% |
| Net income..... | 12.9% | 15.9% | 8.1% |

Results of Operations for 2017, 2016 and 2015

Revenues. Our revenues are derived from the sale of our systems, services, spare parts and software licensing. Our revenues were \$255.1 million, \$232.8 million and \$221.7 million for the years ended December 31, 2017, 2016 and 2015, respectively. This represents an increase of 9.6% from 2016 to 2017 and an increase of 5.0% from 2015 to 2016. The increase in revenues from 2016 to 2017 was due to a significant increase in capital spending by front-end memory manufacturers, as well as continued strength in capital spending by back-end foundry and Advanced Packaging customers in the OSAT markets. The increase in revenues from 2015 to 2016 was primarily due to increased capital spending by both the front-end and back-end semiconductor manufacturers, principally by our advanced packaging customers in the OSAT market.

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

| | Year Ended December 31, | | | | | |
|-----------------------|-------------------------|-------------|-------------------|-------------|-------------------|-------------|
| | 2017 | | 2016 | | 2015 | |
| Systems and Software: | | | | | | |
| Process control..... | \$ 177,177 | 70% | \$ 146,652 | 63% | \$ 144,858 | 66% |
| Lithography..... | 14,234 | 5% | 18,949 | 8% | 14,519 | 6% |
| Software..... | 25,473 | 10% | 29,795 | 13% | 27,291 | 12% |
| Parts..... | 27,143 | 11% | 25,343 | 11% | 24,072 | 11% |
| Services..... | 11,071 | 4% | 12,041 | 5% | 10,950 | 5% |
| Total revenues..... | <u>\$ 255,098</u> | <u>100%</u> | <u>\$ 232,780</u> | <u>100%</u> | <u>\$ 221,690</u> | <u>100%</u> |

Total systems and software revenues increased for the year ended December 31, 2017 as compared to the year ended December 31, 2016 due to increased demand for our products in both front-end and back-end process control systems. The year-over-year increases in process control systems totaled \$30.5 million, which was partially offset by decreases in lithography systems and software revenues of \$4.7 million and \$4.3 million, respectively. The increase in systems revenues was attributed to a greater number of process control units sold, which was partially offset by fewer lithography units sold. Licensing revenues from software decreased \$4.3 million primarily due to a decrease in revenues from our process control software. The average selling price of similarly configured systems has been consistent and, therefore, did not have a material impact on our revenues for the same period. Systems revenues generated by our latest product releases and major enhancements in each of our product families amounted to 70% of total revenues for 2017 compared to 72% of total revenues for 2016. The year-over-year increase in parts and services revenues in absolute dollars from 2016 to 2017 was primarily due to increased spending by our customers

on repairs of existing systems. Parts and services revenues are generated from part sales, maintenance service contracts, system upgrades, as well as time and material billable service calls.

Total systems and software revenues increased for the year ended December 31, 2016 as compared to the year ended December 31, 2015 due to increased demand for our products in both front-end and back-end systems. The year-over-year increases in process control, lithography and software systems revenues totaled \$1.8 million, \$4.4 million and \$2.5 million, respectively. The increase in systems revenues was attributed to a greater number of process control and lithography units sold. The average selling price of similarly configured systems has been consistent and, therefore, did not materially impact our revenues for the same period. Systems revenues generated by our latest product releases and major enhancements in each of our product families amounted to 72% of total revenues for 2016 compared to 66% of total revenues for 2015. The year-over-year increase in parts and services revenues in absolute dollars from 2015 to 2016 was primarily due to increased spending by our customers on repairs of existing systems. Parts and services revenues are generated from part sales, maintenance service contracts, system upgrades, as well as time and material billable service calls.

Deferred revenues of \$6.2 million were recorded in Current liabilities and \$1.0 million were recorded in Other non-current liabilities at December 31, 2017. Deferred revenues primarily consisted of \$4.7 million for deferred maintenance agreements and \$2.5 million for outstanding deliverables. At December 31, 2016, deferred revenues of \$7.3 million were recorded in Current liabilities and \$1.1 million were recorded in Other non-current liabilities. Deferred maintenance agreements of \$6.1 million and outstanding deliverables of \$2.3 million were the two main components of deferred revenues at December 31, 2016.

Gross Profit. Our gross profit has been and will continue to be affected by a variety of factors, including manufacturing efficiencies, provision for excess and obsolete inventory, pricing by competitors or suppliers, new product introductions, production volume, customization and reconfiguration of systems, international and domestic sales mix, system and software product mix, and parts and services margins. Our gross profit was \$134.6 million, \$123.6 million and \$119.4 million for the years ended December 31, 2017, 2016 and 2015, respectively. The decrease in gross profit as a percentage of revenues from 2016 to 2017 was primarily due to a change in our systems and software product sales mix. The decrease in gross profit as a percentage of revenues from 2015 to 2016 was primarily due to product mix.

Operating Expenses

Our operating expenses consist of:

- *Research and Development.* The process control defect inspection and metrology, advanced packaging lithography, and data analysis systems and software market is characterized by continuous technological development and product innovations. We believe that the rapid and ongoing development of new products and enhancements of existing products, including the transition to copper and low-k dielectrics, wafer level packaging, the continuous shrinkage in critical dimensions, and the evolution of ultra-thin gate process control is critical to our success. 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 expense was \$47.0 million, \$45.0 million and \$41.2 million in 2017, 2016 and 2015, respectively. The year-over-year dollar increases from 2016 to 2017 as well as from 2015 to 2016 were primarily due to increased compensation and project costs. We continue to maintain our commitment to investing in new product development and enhancement to existing products.
- *Selling, General and Administrative.* Selling, general and administrative expense is primarily comprised of salaries and related costs for sales, marketing, and general administrative personnel, as well as commissions and other non-personnel related expenses. Our selling, general and administrative expense was \$39.4 million, \$38.6 million and \$43.2 million in 2017, 2016 and 2015, respectively. The year-over-year dollar increase from 2016 to 2017 was primarily due to an increase in compensation costs. The year-over-year dollar decrease from 2015 to 2016 was primarily due to a decrease in share-based compensation costs.
- *Amortization of Identifiable Intangible Assets.* Amortization of identifiable intangible assets was \$1.9 million, \$2.3 million and \$2.1 million in 2017, 2016 and 2015, respectively. The year-over-year decrease in amortization expense from 2016 to 2017 was due to certain intangible assets becoming fully amortized during these periods. The year-over-year increase in amortization expense from 2015 to 2016 was due primarily to a full year of amortization of intangibles for the acquisition of Stella Alliance, LLC, a Massachusetts-based semiconductor inspection technology intellectual property portfolio company, that occurred in the fourth quarter of 2015.

- *Patent litigation income.* During the twelve months ended December 31, 2017, we recorded income and received cash of \$13.0 million from a comprehensive settlement regarding ongoing patent infringement Litigations with Camtek. We received \$13.0 million in the fourth quarter of 2017 and subsequently remitted \$2.3 million of withholding tax to the Israel Tax Authority associated with the settlement and the prior year patent litigation judgment. During the twelve months ended December 31, 2016, we recorded income and received cash from a patent litigation judgment of \$14.6 million in conjunction with the final court ruling in the patent infringement litigation case against Camtek with the expiration of all opportunities to appeal.

Interest income (expense), net. In 2017, net interest income was \$1.0 million. In 2016 and 2015, net interest expense was \$2.8 million and \$5.7 million, respectively. The change in interest income (expense), net from 2015 to 2017, was primarily due to the redemption of the Senior Convertible Notes in July 2016.

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

| | Year Ended December 31, | | |
|---------------------------------|-------------------------|---------|---------|
| | 2017 | 2016 | 2015 |
| Income before income taxes..... | \$ 59.8 | \$ 49.9 | \$ 26.8 |
| Provision for income taxes..... | \$ 26.9 | \$ 12.9 | \$ 8.9 |
| Effective tax rate..... | 45.0% | 25.9% | 33.0% |

The income tax provision differs from the federal statutory income tax rate of 35% for 2017 primarily due to new regulations resulting from the Tax Cuts and Jobs Act (“Tax Act”) of \$9.5 million, offset by research and development credits of \$1.6 million, section 199 manufacturing deduction of \$1.6 million and excess tax benefits on vesting of restricted stock of \$1.6 million.

On December 22, 2017, the U.S. federal government enacted the Tax Act, which significantly revises the U.S. corporate income tax law by, among other things, lowering the U.S. federal corporate income tax rate from 35% to 21%, implementing a territorial tax system and imposing a one-time transition tax on foreign unremitted earnings. The lower U.S. corporate income tax rate is effective January 1, 2018, however the U.S. deferred tax assets and liabilities were re-measured in 2017 when the new tax law was enacted. Additionally, in 2017, as part of the transition to the new territorial tax system, the Tax Act imposes a one-time tax on deemed repatriation of foreign subsidiaries’ earnings. At December 31, 2017, we have not completed our accounting for the tax effects of enactment of the Tax Act, however, we have made reasonable estimates of the effects. The provisional impact of the Tax Act summarized below, which is included as a component of the provision from income taxes is further described in Note 11 in the accompanying Notes to the Consolidated Financial Statements (dollars in millions).

| | Year Ended December 31, 2017 |
|--|---------------------------------|
| Re-measurement of U.S. deferred tax assets and liabilities..... | \$ 8.0 |
| Transition tax on non-U.S. subsidiaries’ earnings..... | 1.5 |
| Foreign tax credits applied against transition tax..... | (1.5) |
| Valuation allowance for unused foreign tax credits..... | 1.5 |
| Total impact of the Tax Act on the provision for income taxes..... | <u>\$ 9.5</u> |

We are continuing to assess the impact from the Tax Act and may record adjustments in 2018 as additional analysis is completed and as we gain a more thorough understanding of the tax law.

The income tax provision differs from the federal statutory income tax rate of 35% for 2016, primarily due to research and development credits of \$0.7 million, section 199 manufacturing deduction of \$1.2 million, the foreign taxes net of federal benefit of \$1.6 million and deferred tax true-ups of \$1.7 million from prior periods.

The income tax provision differs from the federal statutory income tax rate of 35% for 2015, primarily due to research and development credits, section 199 manufacturing deduction and a decrease in our valuation allowance, partially offset by taxes accrued in foreign jurisdictions.

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

Liquidity and Capital Resources

At December 31, 2017, we had \$177.4 million of cash, cash equivalents and marketable securities and \$279.8 million in working capital. At December 31, 2016, our cash, cash equivalents and marketable securities totaled \$125.7 million, while working capital amounted to \$226.7 million.

Typically, during periods of revenue growth, changes in accounts receivable and inventories represent a use of cash as we incur costs and expend cash in advance of receiving cash from our customers. Similarly, during periods of declining revenues, changes in accounts receivable and inventories represent a source of cash as inventory purchases decline and revenues from prior periods are collected.

Net cash and cash equivalents provided by operating activities for the years ended December 31, 2017, 2016 and 2015 totaled \$64.4 million, \$47.4 million and \$33.8 million, respectively. During the year ended December 31, 2017, cash provided by operating activities was primarily due to net income, adjusted to exclude the effect of non-cash charges, of \$65.9 million, an increase in other liabilities of \$6.6 million, an increase in accounts payable of \$3.2 million and a decrease in account receivable of \$0.4 million, which were partially offset by an increase in income taxes of \$4.7 million, an increase in inventory of \$4.2 million, an increase in prepaid expenses and other assets of \$1.7 million and a decrease in deferred revenue of \$1.1 million.

During the year ended December 31, 2016, cash provided by operating activities was primarily due to net income, adjusted to exclude the effect of non-cash charges, of \$57.7 million, a decrease in inventories of \$4.0 million, a decrease in prepaid expenses and other assets of \$2.0 million, an increase in accounts payable of \$1.2 million and an increase in deferred revenue of \$0.9 million, which were partially offset by an increase in accounts receivable of \$9.3 million, a net increase in income tax receivable of \$3.0 million and a decrease in other liabilities of \$6.1 million.

During the year ended December 31, 2015, cash provided by operating activities was primarily due to net income, adjusted to exclude the effect of non-cash charges, of \$42.9 million, an increase in accounts payable of \$2.3 million, an increase in income tax payable of \$2.6 million, an increase in other liabilities of \$3.5 million and a decrease in prepaid expenses and other assets of \$1.0 million, which were partially offset by an increase in inventories of \$12.5 million, an increase in accounts receivable of \$4.3 million, and a decrease in deferred revenue of \$1.5 million.

Net cash and cash equivalents used in investing activities for the years ended December 31, 2017 and 2015 totaled \$32.5 million and \$9.1 million, respectively. Net cash and cash equivalents provided by investing activities for the year ended December 31, 2016 was \$24.5 million. During the year ended December 31, 2017, net cash used in investing activities included purchases of marketable securities of \$164.7 million, purchases of property, plant and equipment of \$10.2 million, and purchase of intangible assets of \$1.0 million, which were partially offset by proceeds from sales of marketable securities of \$143.3 million. During the year ended December 31, 2016, net cash provided by investing activities included proceeds from sales of marketable securities of \$175.5 million and proceeds from sale of property, plant and equipment of \$1.2 million, which were partially offset by purchases of marketable securities of \$146.9 million, purchases of property, plant and equipment of \$3.3 million, and purchase of intangible assets of \$2.0 million. During the year ended December 31, 2015, net cash used in investing activities included purchases of marketable securities of \$237.1 million, purchases of property, plant and equipment of \$3.4 million, and purchase of intangible assets of \$2.7 million, which were partially offset by proceeds from sales of marketable securities of \$234.1 million. For 2018, purchases of property, plant and equipment are expected to be approximately \$7.0 million to \$9.0 million, which includes several large projects and an update to our IT infrastructure.

Net cash used in financing activities was \$2.8 million, \$78.9 million and \$23.0 million in 2017, 2016 and 2015, respectively. During the year ended December 31, 2017, financing activities included the redemption of stock warrants of \$1.0 million, tax payments related to shares withheld for share-based compensation plans of \$1.4 million and payment of contingent consideration for acquired businesses of \$1.0 million, which were partially offset by proceeds from sales of shares through employee stock plans of \$0.6 million. During the year ended December 31, 2016, financing activities included the redemption of senior convertible debt of \$60.0 million, redemption of stock warrants of \$9.5 million, purchase of shares under the share repurchase authorization of \$8.0 million, tax payments related to shares withheld for share based compensation plans of \$1.6 million and payment of contingent consideration for acquired business of \$0.6 million, which were partially offset by proceeds from sales of shares through employee stock plans of \$0.9 million. During the year ended December 31, 2015, financing activities primarily included the purchase of shares under the share repurchase authorization of \$20.7 million and tax payments related to shares withheld for share based compensation plans.

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

In January 2015, the Board of Directors authorized the Company to repurchase up to 3.0 million shares of the Company's common stock with no established end date. The authorization allows for repurchases to be made in the open market or through negotiated transactions from time to time. During the twelve months ended December 31, 2017, we did not repurchase any shares of common stock. At December 31, 2017, there were 0.7 million shares available for future stock repurchases under this repurchase authorization. Shares of common stock purchased under the share repurchase authorization are retired. For further information, see Note 15 in the accompanying consolidated financial statements.

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 31, 2017, the available line of credit was approximately \$87.6 million with an available interest rate of 3.0%. The credit agreement is available to us until such time that either party terminates the arrangement at their 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 revenues and our investment decisions, which will affect our ability to generate additional cash. We expect that our existing cash, cash equivalents, marketable securities and availability under our line of credit will be sufficient to meet our anticipated cash requirements for working capital, capital expenditures and other cash needs for the next twelve months. Thereafter, if cash requirements 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. 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 31, 2017, 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 \$4.9 million at December 31, 2017. We are currently unable to provide a reasonably reliable estimate of the amount or periods when cash settlement of this liability may occur.

| | Payments due by period | | | | |
|---|------------------------|------------------|-----------------|-----------------|-------------------|
| | Total | Less than 1 year | 1-3 years | 3-5 years | More than 5 years |
| Operating lease obligations..... | \$ 15,592 | \$ 3,510 | \$ 5,750 | \$ 2,811 | \$ 3,521 |
| Open and committed purchase orders..... | 60,107 | 59,857 | 250 | — | — |
| Total..... | <u>\$ 75,699</u> | <u>\$ 63,367</u> | <u>\$ 6,000</u> | <u>\$ 2,811</u> | <u>\$ 3,521</u> |

Off-Balance Sheet Arrangements

The Company does not have any significant off-balance sheet arrangements that have or are reasonably likely to have a material effect on our financial condition, results of operations or liquidity and 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, 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, revenues 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. Revenues are recognized, provided that there is persuasive evidence of an arrangement, delivery has occurred or services have been rendered, the sales price is fixed or determinable, and collection of the related receivable is

reasonably assured. Revenue recognition generally results at the following points: (1) for all transactions where legal title passes to the customer upon shipment, revenues are recognized upon shipment for all products that have been demonstrated to meet product specifications prior to shipment; the portion of revenues associated with certain installation-related tasks is deferred, and more revenues are recognized upon completion of the installation-related tasks; (2) for products that have not been demonstrated to meet product specifications prior to shipment, revenues are recognized at customer technical acceptance; (3) for transactions with multiple elements, such as sales of products that include software and services, the revenues relating to the undelivered elements are deferred using the relative selling price method utilizing vendor-specific objective evidence (“VSOE”) or estimated sales prices (“ESP”) until delivery of the deferred elements. Third-party evidence is not typically used to determine selling prices as to limited availability of reliable competitor products’ selling prices. The ESP is established considering multiple factors including, but not limited to, gross margin objectives, internal costs and competitor pricing strategies.

Revenues from parts sales are recognized at the time of shipment. Revenues from training and service contracts are recognized ratably over the training period and contract period. A provision for the estimated cost of fulfilling warranty obligations is recorded at the time the related revenues are recognized.

Revenues from software license fees are recognized upon shipment or customer acknowledgment if collection of the resulting receivable is probable, the fee is fixed or determinable, and VSOE exists to allocate a portion of the total fee to any undelivered elements of the arrangement. License support and maintenance revenues are recognized ratably over the contract period.

Deferred revenue represents undelivered items, prepaid service contract revenues and prepaid license support and maintenance revenues. Deferred revenue is recognized in accordance with our revenue recognition policies described above.

Allowance for Doubtful Accounts. We maintain allowances for doubtful accounts for estimated losses resulting from the inability of our customers to make required payments. We specifically analyze accounts receivable and analyze historical bad debts, customer concentrations, customer credit-worthiness, current economic trends and changes in our customer payment terms when evaluating the adequacy of the allowance for doubtful accounts. If the financial condition of our customers were to deteriorate, resulting in an impairment of their ability to make payments, or if our assumptions are otherwise incorrect, additional allowances may be required.

Excess and Obsolete Inventory. 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 life-cycles, product demand and market conditions. If actual product life-cycles, product demand and market conditions are less favorable than those originally projected by management, additional inventory write-downs may be required.

Business Acquisitions. We account for acquired or merged businesses using the purchase method of accounting, which requires that the assets acquired and liabilities assumed be recorded at the date of acquisition or merger at their respective fair values. The judgments made in determining the estimated fair value assigned to each class of assets acquired and liabilities assumed, as well as asset lives, can materially impact our consolidated financial position and results of operations. Accordingly, for significant acquisitions, we typically obtain assistance from independent valuation specialists.

There are several methods that can be used to determine the fair value of assets acquired and liabilities assumed. For intangible assets, we typically utilize the “income method.” This method starts with a forecast of all of the expected future net cash flows. These cash flows are then adjusted to present value by applying an appropriate discount rate that reflects the risk factors associated with the cash flow streams. Some of the more significant estimates and assumptions inherent in the income method or other methods include the projected future cash flows (including timing) and the discount rate reflecting the risks inherent in the future cash flows. Determining the useful life of an intangible asset also requires judgment. For example, different types of intangible assets will have different useful lives and certain assets may even be considered to have indefinite useful lives. All of these judgments and estimates can significantly impact our consolidated financial position and results of operations.

Goodwill. Our formal annual impairment testing date for goodwill is October 31st or prior to the next annual testing date if an event occurs or circumstances change that would make it more likely than not that the fair value of a reporting unit is below its carrying amount. We have the option to first assess qualitative factors to determine whether the existence of events or circumstances leads to a determination that it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If we elect this option and, after assessing the totality of events or circumstances, we determine that it is not likely that the fair value of a reporting unit is less than its carrying amount, then performing the two-step impairment test is

unnecessary. We have not elected this option to date. The goodwill impairment test is a two-step process that requires us to make judgmental assumptions regarding fair value. The first step consists of estimating the fair value of our aggregated reporting unit using the market value of our common stock at October 31st, multiplied by the number of outstanding common shares (market capitalization) and an implied control premium as if it were to be acquired by a single stockholder. We obtain information on completed sales of similar companies in a comparable industry to estimate an implied control premium for us. We compare the estimated fair value of the reporting unit to its carrying value, which includes goodwill. If the results of the initial market capitalization test produce results that are below the reporting unit carrying value, we will also consider if the market capitalization is temporarily low and, if so, we may also perform a discounted cash flow test. If the estimated fair value is less than the carrying value, then the second step, calculating the goodwill impairment amount, must be performed. The goodwill impairment amount is calculated by determining the “implied fair value” of goodwill. This determination requires the allocation of the estimated fair value of the reporting unit to the assets and liabilities of the reporting unit. Any remaining unallocated fair value represents the “implied fair value” of goodwill, which is compared to the corresponding carrying value to calculate the goodwill impairment amount. We are not required to perform the second step during our annual impairment test.

Long-Lived Assets and 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. No such indicators were noted in 2017.

Warranties. We provide for the estimated cost of product warranties at the time revenue is recognized. While we engage in product quality programs and processes, our warranty obligation is affected by product failure rates, material usage and service delivery costs incurred in correcting a product failure. Should actual product failure rates, material usage or service delivery costs differ from our estimates, revisions to the estimated warranty liability would be required.

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. Significant 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 31, 2017 and 2016, we had valuation allowances of \$2.4 million and \$1.9 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 from 2015 through 2017 as well as the projected earnings in future years and believe it is more likely than not that the 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.

Impact of Recent Accounting Pronouncements

Recently Adopted

Effective January 1, 2017, we adopted FASB Accounting Standard Update (ASU) No. 2016-09, “Improvements to Employee Share-Based Payment Accounting.” The standard update simplifies several aspects of the accounting for employee share-based payment transactions, including accounting for income taxes, forfeitures, and statutory withholding requirements, as well as the classification in the Condensed Consolidated Statement of Cash Flows. As a result of the adoption, on a prospective basis, we recognized \$1.6 million of excess tax benefits from stock-based compensation as a benefit in our income tax provision for the twelve months ended December 31, 2017. Historically, these amounts were recorded as additional paid-in capital. Upon adoption, we elected to present excess tax benefits to operating cash flows retrospectively to our Condensed Consolidated Statement of Cash Flows for the twelve months ended December 31, 2016, which resulted in a reclassification of excess tax benefits from stock-based compensation of \$0.8 million from cash flows from financing activities to cash flows from operating activities. We elected to change our policy on accounting for forfeitures and account for forfeitures as they occur. As a result of the forfeiture rate policy change, we recorded a reduction to retained earnings of \$72 thousand under the modified retrospective approach. Additional amendments to the accounting for income taxes and minimum statutory withholding requirements had no impact on our results of operations.

Effective January 1, 2017, we adopted ASU No. 2015-11, “Inventory (Topic 330): Simplifying the Measurement of Inventory.” This simplifies subsequent measurement of inventory by having an entity measure inventory at the lower of cost and net realizable value. Net realizable value is the estimated selling price in the ordinary course of business, less reasonably predictable cost of completion, disposal, and transportation. The adoption of ASU 2015-11 did not have any impact on our consolidated financial position, results of operations, and cash flows.

Recently Issued

In May 2017, the FASB issued 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 ASC 718. This ASU is effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. We are currently evaluating the effect that the adoption of ASU No. 2017-09 will have on our consolidated financial position, results of operations, and cash flows.

In January 2017, the FASB issued ASU No. 2017-04, “Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment.” This ASU eliminates Step 2 from the goodwill impairment test. Accordingly, if the carrying amount of a reporting unit exceeds its fair value, an impairment loss will be recognized in an amount equal to the excess, limited to the total amount of goodwill allocated to the reporting unit. This ASU is effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. We are currently evaluating the effect that the adoption of ASU No. 2017-04 will have on our consolidated financial position, results of operations, and cash flows.

In October 2016, the FASB issued ASU No. 2016-16, “Income Tax (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory.” This ASU, which is part of the Board’s simplification initiative, is intended to reduce the complexity of U.S. GAAP and diversity in practice related to the tax consequences of certain types of intra-entity asset transfers, particularly those involving intellectual property. This ASU is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. We are currently evaluating the effect that the adoption of ASU No. 2016-16 will have on our consolidated financial position, results of operations, and cash flows.

In August 2016, the FASB issued ASU No. 2016-15, “Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments.” This ASU provides guidance on statement of cash flows presentation for eight specific cash flow issues where diversity in practice exists. This ASU is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. We are currently evaluating the effect the adoption of ASU No. 2016-15 will have on our consolidated financial position, results of operations, and cash flows.

In June 2016, the FASB issued ASU No. 2016-13, “Financial Instruments – Credit Losses (Topic 326),” which introduces new guidance for the accounting for credit losses on instruments within its scope. Given the breadth of that scope, the new ASU will impact both financial services and non-financial services entities. The standard is effective for fiscal years beginning after December 15, 2020. We are currently evaluating the effect that the adoption of ASU No. 2016-13 will have on our consolidated financial position, results of operations, and cash flows.

In February 2016, the FASB issued ASU No. 2016-02, “Leases (Topic 842).” This ASU requires that lessees will be required to recognize assets and liabilities on the balance sheet for the rights and obligations created by all leases with terms of more than 12 months. ASU No. 2016-02 also will require disclosures designed to give financial statement users information on the amount, timing, and uncertainty of cash flows arising from leases. These disclosures include qualitative and quantitative information. This ASU is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2018 with earlier adoption permitted. We are in the process of evaluating the effects that the adoption of ASU No. 2016-02 will have on our consolidated financial position, results of operations, and cash flows.

In May 2014, the FASB issued ASU No. 2014-09, “Revenue from Contracts with Customers (Topic 606)”, which supersedes nearly all existing revenue recognition guidance. The core principle of Topic 606 is that revenues should be recognized to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. In July 2015, the FASB deferred the effective date of the standard by one year. Consequently, Topic 606 became effective at the beginning of the first quarter of fiscal year 2018. In addition, the FASB issued subsequent guidance on certain items such as reporting revenue as a principal versus agent, identifying performance obligations, accounting for intellectual property licenses, assessing collectability, presentation of sales taxes, impairment testing for contract costs, disclosure of performance obligations, and provided additional implementation guidance.

We adopted the new standard on January 1, 2018 using the modified retrospective method. We are substantially complete with our initial assessment of the effect of adoption and believe the impact of the new standard on the amount and timing of revenue recognition will not be material to our financial position or results of operations. The new standard will require additional disclosure about the nature, amount, timing and uncertainty of revenues and cash flows from customer contracts, including judgments and changes in judgments and assets recognized from costs incurred to obtain or fulfill a contract. We will update certain disclosures, as applicable, included in our financial statements to meet the requirements of the new guidance.

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 (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 31, 2017, an immediate adverse change of 10% in interest rates (e.g. 3.00% to 3.30%) would result in an immaterial decrease in the fair value of our available-for-sale 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 sales are denominated in U.S. dollars with the exception of Japan. Consequently, we have relatively little exposure to foreign currency exchange risk with respect to these sales. Substantially all of our sales in Japan are denominated in Japanese yen. From time to time, we may enter into forward exchange contracts to economically hedge a portion of, but not all, existing and anticipated foreign currency denominated transactions expected to occur within 12 months. The change in fair value of the forward contracts is recognized in "Other (income) expense" in the Condensed Consolidated Statements of Operations for each reporting period. As of December 31, 2017 and 2016, we had thirty-one and nineteen outstanding forward contracts with a total notional contract value of \$8.4 million and \$3.8 million, respectively. We do not use derivative financial instruments for trading or speculative purposes.

We have branch operations in Taiwan, Singapore and South Korea and wholly-owned subsidiaries in Europe, Japan and China. Our international subsidiaries and branches operate primarily using local functional currencies. Our exposure to foreign currency exchange rate fluctuations arise from intercompany balances between our U.S. headquarters and that of our foreign owned entities. Our intercompany balances are denominated in U.S. dollars. 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 31, 2017 was approximately \$39.9 million. A hypothetical change of 10% in the relative value of the U.S. dollar versus local functional currencies could result in approximately \$1.4 million in foreign currency exchange losses / (gains) which would be recorded as non-operating expense in other expense (income) in our Condensed Consolidated Statements of Operations. We cannot accurately predict future exchange rates or the overall impact of future exchange rate fluctuations on our business, results of operations and consolidated financial position.

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 Annual Report on 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 Securities Exchange Act of 1934, as amended (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 and principal financial officers, 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 and principal financial officers, to assess the effectiveness of the design and operation of our disclosure controls and procedures under the Exchange Act as of December 31, 2017. Based on that evaluation, our management, including our principal executive and principal financial officers, concluded that our disclosure controls and procedures were effective as of December 31, 2017 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 31, 2017.

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.

Attestation Report of the Registered Public Accounting Firm

Our consolidated financial statements as of and for the year ended December 31, 2017 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 31, 2017, as stated in its attestation report included elsewhere in this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

There have been no 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 quarter ended December 31, 2017 that have materially affected, or are reasonably likely to materially affect, its internal control over financial reporting.

Item 9B. Other Information.

None.

PART III

Certain information required by Part III is omitted from this Annual Report on 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 16, 2018, 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 Securities Exchange Act is incorporated by reference to the information under the heading "Section 16(a) Beneficial Ownership Reporting Compliance" in the Proxy Statement.

Code of Ethics. We have adopted a code of ethics that applies to our principal executive officer, principal financial officer and controller. This code of ethics is posted on our internet website address at <http://www.rudolphtech.com>. We will post on our website any amendment to or waiver from a provision of our code of 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" 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 Accounting 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 Annual Report on 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-8 of this report. The Reports of Independent Registered Public Accounting Firm appear on pages F-2 through F-3 of this report.

2. Financial Statement Schedule

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

3. Exhibits

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

| <u>Exhibit No.</u> | <u>Description</u> |
|--------------------|--|
| 3.1 | Restated Certificate of Incorporation of Registrant, as amended (Conformed Version) (incorporated by reference to Exhibit 3.1 to the Registrant’s Quarterly Report on Form 10-Q(SEC File No. 000-27965) filed on August 2, 2013). |
| 3.2 | Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant’s Current Report on Form 8-K (SEC File No. 000-27965) filed on August 1, 2007). |
| 3.3 | Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant’s Current Report on Form 8-K (SEC File No. 000-27965) filed on February 2, 2009). |
| 10.1+ | License Agreement, dated June 28, 1995, between the Registrant and Brown University Research Foundation (incorporated by reference to Exhibit 10.1 to the Registrant’s Registration Statement on Form S-1, as amended (SEC File No. 333-86821), filed on September 9, 1999). |
| 10.2* | Form of Indemnification Agreement (incorporated by reference to Exhibit 10.3 to the Registrant’s Registration Statement on Form S-1/A, as amended (SEC File No. 333-86821), filed on October 14, 1999). |
| 10.3* | Form of 1999 Stock Plan (incorporated by reference to Exhibit 10.5 to the Registrant’s Registration Statement on Form S-1, (SEC File No. 333-86821) filed on September 9, 1999). |
| 10.4* | 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 (incorporated by reference to Exhibit 10.2 to the Registrant’s Quarterly Report on Form 10-Q filed on August 6, 2014). |
| 10.5* | Employment Agreement, dated as of November 9, 2015, by and between Rudolph Technologies, Inc. and Michael Plisinski (incorporated by reference to Exhibit 10.1 to the Registrant’s Current Report on Form 8-K filed on November 9, 2015). * |
| 10.6* | Executive Change of Control Agreement, dated February 7, 2014, by and between Rudolph Technologies, Inc. and Richard Rogoff (incorporated by reference to Exhibit 10.10 to the Registrant’s Annual Report on Form 10-K filed on February 20, 2015). |

+ Confidential treatment has been granted with respect to portions of this exhibit.

* Management contract, compensatory plan or arrangement.

| Exhibit No. | Description |
|-------------|--|
| 10.7* | Executive Change of Control Agreement, dated August 20, 2009, by and between Rudolph Technologies, Inc. and Robert A. Koch (incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q filed on November 06, 2009). |
| 10.8 | Form of option agreement under 1999 Stock Plan (incorporated by reference to Exhibit 10.12 to the Registrant's Quarterly Report on Form 10-Q (SEC File No. 000-27965) filed on November 5, 2004). |
| 10.9* | Form of Restricted Stock Award pursuant to the Rudolph Technologies, Inc. 1999 Stock Plan (incorporated by reference to the Registrant's Current Report on Form 8-K (SEC File No. 000-27965), filed on June 21, 2005). |
| 10.10* | Rudolph Technologies, Inc. 2009 Stock Plan (incorporated by reference to Appendix A of the Registrant's revised Proxy Statement on Form DEFR14A, filed on May 8, 2009). |
| 10.11* | Rudolph Technologies, Inc. 2009 Employee Stock Purchase Plan, as amended (incorporated by reference to Appendix B of the Registrant's revised Proxy Statement on Form DEFR14A, filed on May 8, 2009). |
| 10.12* | Amended form of Employee Restricted Stock Unit Purchase Agreement pursuant to the Rudolph Technologies, Inc. 2009 Stock Plan (incorporated by reference to Exhibit 10.12 to the Registrant's Current Report on Form 10-Q (SEC File No. 001-36226), filed on August 3, 2017). |
| 10.13 | Confirmation of Issuer Warrant Transaction dated July 19, 2011, by and between Rudolph Technologies, Inc. and Credit Suisse International (incorporated by reference to Exhibit 10.4 to the Registrant's Current Report on Form 8-K (SEC File No. 000-27965) filed on July 25, 2011). |
| 10.14 | Amendment dated July 22, 2011 to Confirmation of Issuer Warrant Transaction dated July 19, 2011, by and between Rudolph Technologies, Inc. and Credit Suisse International (incorporated by reference to Exhibit 10.5 to the Registrant's Current Report on Form 8-K (SEC File No. 000-27965) filed on July 25, 2011). |
| 21.1 | Subsidiaries. |
| 23.1 | Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm. |
| 31.1 | Certification of Michael P. Plisinski, Chief Executive Officer, pursuant to Securities Exchange Act Rule 13a-14(a). |
| 31.2 | Certification of Steven R. Roth, Chief Financial Officer, pursuant to Securities Exchange Act Rule 13a-14(a). |
| 32.1 | Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Michael P. Plisinski, Chief Executive Officer of Rudolph Technologies, Inc. |
| 32.2 | Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Steven R. Roth, Chief Financial Officer of Rudolph Technologies, Inc. |
| 101.INS | XBRL Instance Document |
| 101.SCH | XBRL Taxonomy Extension Schema Document |
| 101.CAL | XBRL Taxonomy Extension Calculation Linkbase Document |
| 101.DEF | XBRL Taxonomy Extension Definition Linkbase Document |
| 101.LAB | XBRL Taxonomy Extension Label Linkbase Document |
| 101.PRE | XBRL Taxonomy Extension Presentation Linkbase Document |

* Management contract, compensatory plan or arrangement.

RUDOLPH TECHNOLOGIES, INC.
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS AND
FINANCIAL STATEMENT SCHEDULE

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Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Rudolph Technologies, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Rudolph Technologies, Inc. (the Company) as of December 31, 2017 and 2016, the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2017, 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 31, 2017 and 2016, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2017, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2017, 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 16, 2018 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.

/s/ Ernst & Young LLP

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

Iselin, New Jersey
February 16, 2018

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Rudolph Technologies, Inc.

Opinion on Internal Control over Financial Reporting

We have audited Rudolph Technologies, Inc. internal control over financial reporting as of December 31, 2017, 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, Rudolph Technologies, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, 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 31, 2017 and 2016, the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2017, and the related notes and financial statement schedule listed in the Index at Item 15(a) and our report dated February 16, 2018 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 16, 2018

RUDOLPH TECHNOLOGIES, INC.
CONSOLIDATED BALANCE SHEETS
(In thousands, except per share data)

| | December 31, 2017 | December 31, 2016 |
|---|------------------------------|------------------------------|
| ASSETS | | |
| Current Assets: | | |
| Cash and cash equivalents..... | \$ 67,770 | \$ 37,859 |
| Marketable securities..... | 109,589 | 87,872 |
| Accounts receivable, less allowance of \$460 in 2017 and \$680 in 2016..... | 65,283 | 64,912 |
| Inventories..... | 67,521 | 65,485 |
| Income taxes receivable..... | 7,220 | 2,389 |
| Prepaid expenses and other current assets..... | 4,699 | 4,113 |
| Total current assets..... | 322,082 | 262,630 |
| Property, plant and equipment, net..... | 17,342 | 11,858 |
| Goodwill..... | 22,495 | 22,495 |
| Identifiable intangible assets, net..... | 8,632 | 10,273 |
| Deferred income taxes..... | 14,879 | 30,850 |
| Other assets..... | 492 | 593 |
| Total assets..... | <u>\$ 385,922</u> | <u>\$ 338,699</u> |
| LIABILITIES AND STOCKHOLDERS' EQUITY | | |
| Current liabilities: | | |
| Accounts payable..... | \$ 13,471 | \$ 10,245 |
| Accrued liabilities: | | |
| Payroll and related expenses..... | 10,408 | 8,968 |
| Royalties..... | 494 | 493 |
| Warranty..... | 2,427 | 1,788 |
| Deferred revenue..... | 6,223 | 7,329 |
| Other current liabilities..... | 9,284 | 7,139 |
| Total current liabilities..... | 42,307 | 35,962 |
| Other non-current liabilities..... | 10,461 | 9,002 |
| Total liabilities..... | <u>52,768</u> | <u>44,964</u> |
| Commitments and contingencies (Note 8)..... | | |
| Stockholders' equity: | | |
| Preferred stock, \$0.001 par value, 5,000 shares authorized, no shares issued and outstanding at December 31, 2017 and 2016..... | — | — |
| Common stock, \$0.001 par value, 100,000 shares authorized, 31,604 and 31,127 issued and outstanding at December 31, 2017 and 2016, respectively..... | 32 | 31 |
| Additional paid-in capital..... | 386,196 | 381,189 |
| Accumulated other comprehensive loss..... | (1,205) | (2,779) |
| Accumulated deficit..... | (51,869) | (84,706) |
| Total stockholders' equity..... | <u>333,154</u> | <u>293,735</u> |
| Total liabilities and stockholders' equity..... | <u>\$ 385,922</u> | <u>\$ 338,699</u> |

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

RUDOLPH TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share data)

| | Year Ended December 31 | | |
|--|------------------------|------------------|------------------|
| | 2017 | 2016 | 2015 |
| Revenues..... | \$ 255,098 | \$ 232,780 | \$ 221,690 |
| Cost of revenues..... | 120,503 | 109,229 | 102,284 |
| Gross profit..... | 134,595 | 123,551 | 119,406 |
| Operating expenses: | | | |
| Research and development..... | 46,986 | 44,964 | 41,233 |
| Selling, general and administrative..... | 39,381 | 38,562 | 43,235 |
| Amortization..... | 1,940 | 2,320 | 2,145 |
| Patent litigation ncome..... | (13,000) | (14,643) | — |
| Total operating expenses..... | 75,307 | 71,203 | 86,613 |
| Operating Income..... | 59,288 | 52,348 | 32,793 |
| Interest (income) expense, net..... | (971) | 2,834 | 5,688 |
| Other expense (income)..... | 457 | (354) | 293 |
| Income before provision for income taxes..... | 59,802 | 49,868 | 26,812 |
| Provision for income taxes..... | 26,893 | 12,916 | 8,856 |
| Net income..... | <u>\$ 32,909</u> | <u>\$ 36,952</u> | <u>\$ 17,956</u> |
| Earnings per share: | | | |
| Basic..... | \$ 1.05 | \$ 1.19 | \$ 0.57 |
| Diluted..... | \$ 1.02 | \$ 1.16 | \$ 0.56 |
| Weighted average number of shares outstanding: | | | |
| Basic..... | 31,491 | 31,128 | 31,408 |
| Diluted..... | 32,162 | 31,790 | 32,166 |

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

RUDOLPH TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In thousands)

| | Year Ended December 31, | | |
|--|-------------------------|-----------|-----------|
| | 2017 | 2016 | 2015 |
| Net income..... | \$ 32,909 | \$ 36,952 | \$ 17,956 |
| Other comprehensive income (loss): | | | |
| Change in net unrealized losses on investments, net of tax..... | (89) | (37) | (33) |
| Change in currency translation adjustments..... | 1,663 | (119) | 62 |
| Total comprehensive income..... | \$ 34,483 | \$ 36,796 | \$ 17,985 |

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

RUDOLPH TECHNOLOGIES, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

For the years ended December 31, 2017, 2016 and 2015

(In thousands)

| | Common Stock | | Additional Paid-in Capital | Accumulated Other Comprehensive Loss | Accumulated Deficit | Total |
|---|---------------|--------------|----------------------------------|---|------------------------|-------------------|
| | Shares | Amount | | | | |
| Balance at December 31, 2014..... | 32,093 | \$ 32 | \$ 409,562 | \$ (2,652) | \$ (139,614) | \$ 267,328 |
| Issuance of shares through share-based compensation plans, net..... | 530 | — | 330 | — | — | 330 |
| Repurchase of common stock..... | (1,674) | (1) | (20,667) | — | — | (20,668) |
| Net income..... | — | — | — | — | 17,956 | 17,956 |
| Share-based compensation..... | — | — | 7,603 | — | — | 7,603 |
| Tax benefit for share-based compensation plans..... | — | — | 16 | — | — | 16 |
| Share-based compensation plan withholdings..... | — | — | (1,916) | — | — | (1,916) |
| Currency translation..... | — | — | — | 62 | — | 62 |
| Unrealized loss on investments..... | — | — | — | (33) | — | (33) |
| Balance at December 31, 2015..... | 30,949 | \$ 31 | \$ 394,928 | \$ (2,623) | \$ (121,658) | \$ 270,678 |
| Issuance of shares through share-based compensation plans, net..... | 713 | — | 850 | — | — | 850 |
| Repurchase of common stock..... | (615) | — | (8,044) | — | — | (8,044) |
| Net income..... | — | — | — | — | 36,952 | 36,952 |
| Share-based compensation..... | — | — | 4,775 | — | — | 4,775 |
| Tax benefit for share-based compensation plans..... | — | — | 792 | — | — | 792 |
| Share-based compensation plan withholdings..... | — | — | (1,587) | — | — | (1,587) |
| Redemption of stock warrants..... | 80 | — | (10,525) | — | — | (10,525) |
| Currency translation..... | — | — | — | (119) | — | (119) |
| Unrealized loss on investments..... | — | — | — | (37) | — | (37) |
| Balance at December 31, 2016..... | 31,127 | 31 | 381,189 | (2,779) | (84,706) | 293,735 |
| Issuance of shares through share-based compensation plans, net..... | 375 | 1 | 623 | — | — | 624 |
| Net income..... | — | — | — | — | 32,909 | 32,909 |
| Share-based compensation..... | — | — | 5,670 | — | — | 5,670 |
| Cumulative effect of a change in accounting for share-based compensation (Note 2)..... | — | — | 72 | — | (72) | — |
| Share-based compensation plan withholdings..... | — | — | (1,358) | — | — | (1,358) |
| Redemption of stock warrants..... | 102 | — | — | — | — | — |
| Currency translation..... | — | — | — | 1,663 | — | 1,663 |
| Unrealized loss on investments..... | — | — | — | (89) | — | (89) |
| Balance at December 31, 2017..... | <u>31,604</u> | <u>\$ 32</u> | <u>\$ 386,196</u> | <u>\$ (1,205)</u> | <u>\$ (51,869)</u> | <u>\$ 333,154</u> |

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

RUDOLPH TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

| | Year Ended December 31, | | |
|--|--------------------------------|-------------|-------------|
| | 2017 | 2016 | 2015 |
| Cash flows from operating activities: | | | |
| Net income..... | \$ 32,909 | \$ 36,952 | \$ 17,956 |
| Adjustments to reconcile net income to net cash and cash equivalents provided by operating activities: | | | |
| Depreciation..... | 3,990 | 3,677 | 3,951 |
| Amortization of convertible note discount and issuance costs..... | — | 2,154 | 3,766 |
| Amortization of intangibles and other..... | 1,940 | 2,320 | 2,145 |
| Foreign currency exchange loss..... | 457 | 592 | 293 |
| Gain on disposal of property, plant and equipment..... | — | (946) | — |
| Change in fair value of contingent consideration..... | 133 | 170 | (630) |
| Share-based compensation..... | 5,670 | 4,775 | 7,603 |
| Provision for doubtful accounts and inventory valuation..... | 3,608 | 2,971 | 3,826 |
| Deferred income taxes..... | 17,207 | 5,011 | 3,980 |
| Change in operating assets and liabilities, excluding effects of business combinations: | | | |
| Accounts receivable..... | 430 | (9,279) | (4,336) |
| Income taxes..... | (4,727) | (3,021) | 2,626 |
| Inventories..... | (4,218) | 4,003 | (12,529) |
| Prepaid expenses and other assets..... | (1,686) | 2,038 | 953 |
| Accounts payable..... | 3,198 | 1,169 | 2,254 |
| Deferred revenue..... | (1,122) | 896 | (1,535) |
| Other liabilities..... | 6,582 | (6,057) | 3,486 |
| Net cash and cash equivalents provided by operating activities..... | 64,371 | 47,425 | 33,809 |
| Cash flows from investing activities: | | | |
| Purchases of marketable securities..... | (164,661) | (146,865) | (237,127) |
| Proceeds from sales of marketable securities..... | 143,349 | 175,460 | 234,105 |
| Purchases of property, plant and equipment..... | (10,210) | (3,291) | (3,359) |
| Purchase of intangible assets..... | (1,000) | (2,000) | (2,696) |
| Proceeds from sale of property, plant & equipment..... | — | 1,165 | — |
| Net cash and cash equivalents (used in) provided by investing activities..... | (32,522) | 24,469 | (9,077) |
| Cash flows from financing activities: | | | |
| Payment of senior convertible debt..... | — | (60,000) | — |
| Redemption of stock warrants..... | (1,025) | (9,500) | — |
| Purchases of common stock..... | — | (8,044) | (20,668) |
| Tax payments related to shares withheld for share-based compensation plans..... | (1,358) | (1,587) | (1,916) |
| Payment of contingent consideration for acquired business..... | (992) | (622) | (731) |
| Issuance of shares through share-based compensation plans..... | 623 | 850 | 330 |
| Net cash and cash equivalents used in financing activities..... | (2,752) | (78,903) | (22,985) |
| Effect of exchange rate changes on cash and cash equivalents..... | 814 | 314 | (307) |
| Net increase (decrease) in cash and cash equivalents..... | 29,911 | (6,695) | 1,440 |
| Cash and cash equivalents at beginning of year..... | 37,859 | 44,554 | 43,114 |
| Cash and cash equivalents at end of year..... | \$ 67,770 | \$ 37,859 | \$ 44,554 |
| Supplemental disclosure of cash flow information: | | | |
| Income taxes paid, net..... | \$ 14,605 | \$ 10,980 | \$ 2,013 |
| Interest paid..... | \$ — | \$ 2,250 | \$ 2,250 |
| Litigation settlement received..... | \$ 13,000 | \$ 14,643 | \$ — |
| Non-cash financing and investing activities: | | | |
| Purchase of intangible assets..... | \$ — | \$ — | \$ 3,000 |

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

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

1. Organization and Nature of Operations:

Rudolph Technologies, Inc. (“Rudolph” or the “Company”) is a worldwide leader in the design, development, manufacture and support of process control tools that perform macro defect inspections and metrology, lithography systems, and process control analytical software used by semiconductor and Advanced Packaging device manufacturers. The Company has branch sales and service offices in South Korea, Taiwan and Singapore and wholly-owned sales and service subsidiaries in the United States, Europe, Japan and China. The Company operates in a single segment and is a provider of process characterization equipment and software for wafer fabs and advanced packaging facilities.

2. Summary of Significant Accounting Policies:

A. Consolidation:

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

B. Revenue Recognition:

Revenues are recognized provided that there is persuasive evidence of an arrangement, delivery has occurred or services have been rendered, the sales price is fixed or determinable, and collection of the related receivable is reasonably assured. Revenue recognition generally results at the following points: (1) for all transactions where legal title passes to the customer upon shipment, revenues are recognized upon shipment for all products that have been demonstrated to meet product specifications prior to shipment; the portion of revenues associated with certain installation-related tasks is deferred, and those revenues are recognized upon completion of the installation-related tasks; (2) for products that have not been demonstrated to meet product specifications prior to shipment, revenues are recognized at customer technical acceptance; (3) for transactions with arrangements with multiple elements, such as sales of products that include software and services, the revenues relating to the undelivered elements are deferred using the relative selling price method utilizing vendor-specific objective evidence (“VSOE”) or estimated sales prices (“ESP”) until delivery of the deferred elements. Third-party evidence is not typically used to determine selling prices as to limited availability of reliable competitor products’ selling prices. The ESP is established considering multiple factors including, but not limited to, gross margin objectives, internal costs and competitor pricing strategies.

Revenues from parts sales are recognized at the time of shipment. Revenues from training and service contracts are recognized ratably over the training period and contract period. A provision for the estimated cost of fulfilling warranty obligations is recorded at the time the related revenue is recognized.

Revenues from software license fees are recognized upon shipment or customer acknowledgment if collection of the resulting receivable is probable, the fee is fixed or determinable, and VSOE exists to allocate a portion of the total fee to any undelivered elements of the arrangement. License support and maintenance revenues are recognized ratably over the contract period.

Deferred revenue represents undelivered items, prepaid service contract revenue and prepaid license support and maintenance revenues. Deferred revenue is recognized in accordance with the Company’s revenue recognition policies described above.

C. 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 revenues and expenses during the reporting period. Significant estimates made by management include allowance for doubtful accounts, inventory obsolescence, fair value of assets acquired and liabilities assumed in a business combination (including contingent consideration), recoverability and useful lives of property, plant and equipment and identifiable intangible assets, recoverability

RUDOLPH TECHNOLOGIES, INC.

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

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.

D. 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.

E. Marketable Securities:

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

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

F. Allowance for Doubtful Accounts:

The Company evaluates the collectability of accounts receivable based on a combination of factors. Where the Company is aware of circumstances that may impair a specific customer's ability to meet its financial obligation, the Company records a specific allowance against amounts due, thereby reducing the net recognized receivable to the amount management reasonably believes will be collected. For all other customers, the Company recognizes allowances for doubtful accounts based on the length of time the receivables are outstanding, industry and geographic concentrations, the current business environment and historical experience.

G. 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.

H. 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 fifteen years for buildings, four to seven years for machinery and equipment, seven years for furniture and fixtures, and three years for computer equipment. Leasehold

RUDOLPH TECHNOLOGIES, INC.

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

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.

I. Impairment of Long-Lived Assets:

Long-lived assets, such as property, plant, and equipment, and identifiable acquired intangible assets with definite 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.

J. Goodwill and Intangible Assets:

Intangible assets with finite useful lives are amortized using the straight-line method over their estimated useful lives. Goodwill and intangible assets with indefinite useful lives are not amortized but are tested for impairment at least annually and when there are indications of impairment. Goodwill impairment is deemed to exist if the net book value of a reporting unit exceeds its estimated fair value. The Company has the option to first assess qualitative factors to determine whether the existence of events or circumstances leads to a determination that it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If, the Company elects this option and after assessing the totality of events or circumstances, the Company determines that it is not likely that the fair value of its reporting unit is less than its carrying amount, then performing the two-step impairment test is unnecessary. The Company has not elected this option to date. The Company estimates the fair value of its reporting unit using the market value of its common stock at October 31st multiplied by the number of outstanding common shares (market capitalization) and an implied control premium as if it were to be acquired by a single stockholder. The Company also obtains information on completed sales of similar companies in the related industry to estimate the implied control premium for the Company. If the results of the initial market capitalization test produce results that are below the reporting unit carrying value, the Company will also consider if the market capitalization is temporarily low and, if so, we may also perform a discounted cash flow test. The Company tested for goodwill impairment on October 31, 2017. No impairments were noted.

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

K. 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 performs ongoing credit evaluations of its customers and generally does not require collateral for sales on credit. The Company maintains allowances for potential credit losses. 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.

L. Warranties:

The Company generally provides a warranty on its products for a period of twelve to fifteen months against defects in material and workmanship. The Company provides for the estimated cost of product warranties at the time revenue is recognized.

M. 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. The Company does not provide for foreign withholding taxes

RUDOLPH TECHNOLOGIES, INC.

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

on the undistributed earnings of its foreign operations as it is the Company's intention to permanently re-invest undistributed earnings.

The impact of an uncertain income tax position is recognized as the largest amount that is more-likely-than-not to be sustained upon audit by the relevant taxing authority and includes consideration of interest and penalties. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained. The liability for unrecognized tax benefits is classified as non-current as the Company early adopted Financial Accounting Standards Board (FASB) Accounting Standards Update (ASU) No. 2015-17, "Income Taxes (Topic 740), Balance Sheet Classification of Deferred Taxes" to classify all deferred tax assets and liabilities as non-current.

For additional information on the Company's income taxes, see Note 11 of Notes to the Consolidated Financial Statements.

N. Translation of Foreign Currencies:

The Company has branch operations in Taiwan, Singapore and South Korea and wholly-owned subsidiaries in the United States (U.S.), Europe, Japan and China. Its international subsidiaries and branches operate primarily through the use of local functional currencies. A substantial portion of the Company's international systems sales are denominated in U.S. dollars with the exception of Japan. Consequently, we have relatively little exposure to foreign currency exchange risk with respect to these sales.

Assets and liabilities are translated at exchange rates in effect at the balance sheet date, and income and expense accounts and cash flow items are translated at average monthly exchange rates during the period. Net exchange gains or losses resulting from the translation of foreign financial statements and the effect of exchange rates on intercompany transactions of a long-term investment nature are recorded directly as a separate component of stockholders' equity under the caption, "Accumulated other comprehensive loss." Any foreign currency gains or losses related to transactions are included in operating results. The Company had accumulated exchange losses resulting from the translation of foreign operation financial statements of \$1,079 and \$2,742 as of December 31, 2017 and 2016, respectively.

O. Share-based Compensation:

Share-based awards are measured based on the grant-date fair value of the award and recognized over the period from the service inception date through the date the employee is no longer required to provide service to earn the award. Effective upon the Company's adoption of ASU No. 2016-09, "Improvements to Employee Share-Based Payment Accounting" on January 1, 2017, forfeitures are accounted for as they occur. Prior to the adoption of ASU No. 2016-09, expected forfeitures were included in determining share-based compensation expense. For further information on the adoption of ASU 2016-09, see discussion in this Note below under Recent Accounting Pronouncements.

For additional information on the Company's share-based compensation plans, see Note 9 of Notes to the Consolidated Financial Statements.

P. Research and Development and Software Development Costs:

Expenditures for research and development are expensed as incurred. Certain software product development costs incurred after technological feasibility has been established are capitalized and amortized, commencing upon the general release of the software product to the Company's customers, over the economic life of the software product. Annual amortization of capitalized costs is computed using the greater of: (i) the ratio of current gross revenues for the software product over the total of current and anticipated future gross revenues for the software product or (ii) the straight-line basis, typically over seven years. Software product development costs incurred prior to the product reaching technological feasibility are expensed as incurred and included in research and development costs. At December 31, 2017 and 2016, the Company did not have any capitalized software development costs.

RUDOLPH TECHNOLOGIES, INC.

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

Q. Shipping and Handling Costs:

Shipping and handling cost are included as a component of cost of revenues.

R. Fair Value of Financial Instruments:

The carrying amounts of the Company’s financial instruments, including cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities, approximate fair value due to their short maturities. The estimated fair value of these obligations is based, primarily, on a market approach, comparing the Company’s interest rates to those rates the Company believes it would reasonably receive upon re-entry into the market. Judgment is required to estimate the fair value using available market information and appropriate valuation methods.

For additional information on the Company’s fair value of financial instruments, see Note 3 of Notes to the Consolidated Financial Statements.

S. Derivative Instruments and Hedging Activities:

The Company, when it considers it to be appropriate, enters into forward contracts to hedge the economic exposures arising from foreign currency denominated transactions. At December 31, 2017 and 2016, these contracts included the future sale of Japanese Yen to purchase U.S. dollars. The foreign currency forward contracts were entered into by the Company’s Japanese subsidiary to hedge a portion of certain intercompany obligations. The forward contracts are not designated as hedges for accounting purposes and therefore, the change in fair value is recorded in selling, general and administrative expenses in the Consolidated Statements of Operations. The Company records its forward contracts at fair value in either prepaid expenses and other current assets or other current liabilities in the Consolidated Balance Sheets.

The dollar equivalent of the U.S. dollar forward contracts and related fair values as of December 31, 2017 and 2016 were as follows:

| | December 31, | |
|--------------------------|---------------------|-------------|
| | 2017 | 2016 |
| Notional amount..... | 8,417 | 3,827 |
| Fair value of asset..... | 45 | 312 |

In 2017, 2016 and 2015, the Company recognized gains of \$105, \$417 and \$221, respectively, with respect to forward contracts that matured, respectively. The aggregate notional amount of matured contracts was \$9,582, \$6,641 and \$2,484 for 2017, 2016 and 2015, respectively.

T. Contingencies and Litigation

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

U. Recent Accounting Pronouncements:

Recently Adopted

Effective January 1, 2017, the Company adopted ASU No. 2016-09, “Improvements to Employee Share-Based Payment Accounting.” The standard update simplifies several aspects of the accounting for employee share-based payment transactions,

RUDOLPH TECHNOLOGIES, INC.

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

including accounting for income taxes, forfeitures, and statutory withholding requirements, as well as the classification in the Condensed Consolidated Statement of Cash Flows. As a result of the adoption, on a prospective basis, the Company recognized \$1,603 of excess tax benefits from stock-based compensation as a benefit in our income tax provision for the twelve months ended December 31, 2017. Historically, these amounts were recorded as additional paid-in capital. Upon adoption, the Company elected to present excess tax benefits to operating cash flows retrospectively to its Condensed Consolidated Statement of Cash Flows for the twelve months ended December 31, 2016 and 2015, which resulted in a reclassification of excess tax benefits from stock-based compensation of \$792 and \$16, respectively, from cash flows from financing activities to cash flows from operating activities. The Company elected to change its policy on accounting for forfeitures and account for forfeitures as they occur. As a result of the forfeiture rate policy change, the Company recorded a reduction to retained earnings of \$72 under the modified retrospective approach. Additional amendments to the accounting for income taxes and minimum statutory withholding requirements had no impact on its results of operations.

Effective January 1, 2017, the Company adopted ASU No. 2015-11, “Inventory (Topic 330): Simplifying the Measurement of Inventory.” This simplifies subsequent measurement of inventory by having an entity measure inventory at the lower of cost and net realizable value. Net realizable value is the estimated selling price in the ordinary course of business, less reasonably predictable cost of completion, disposal, and transportation. The adoption of ASU 2015-11 did not have any impact on the Company’s consolidated financial position, results of operations, and cash flows.

Recently Issued

In May 2017, the FASB issued 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 ASC 718. This ASU is effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. The Company is currently evaluating the effect that the adoption of ASU No. 2017-09 will have on its consolidated financial position, results of operations, and cash flows.

In January 2017, the FASB issued ASU No. 2017-04, “Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment.” This ASU eliminates Step 2 from the goodwill impairment test. Accordingly, if the carrying amount of a reporting unit exceeds its fair value, an impairment loss will be recognized in an amount equal to the excess, limited to the total amount of goodwill allocated to the reporting unit. The ASU is effective for the fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. The Company is currently evaluating the effect that the adoption of ASU No. 2017-04 will have on its consolidated financial position, results of operations, and cash flows.

In October 2016, the FASB issued ASU No. 2016-16, “Income Tax (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory.” This ASU, which is part of the Board’s simplification initiative, is intended to reduce the complexity of U.S. GAAP and diversity in practice related to the tax consequences of certain types of intra-entity asset transfers, particularly those involving intellectual property. This ASU is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. The Company is currently evaluating the effect that the adoption of ASU No. 2016-16 will have on its consolidated financial position, results of operations, and cash flows.

In August 2016, the FASB issued ASU No. 2016-15, “Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments.” This ASU provides guidance on statement of cash flows presentation for eight specific cash flow issues where diversity in practice exists. This ASU is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. The Company is currently evaluating the effect that the adoption of ASU No. 2016-15 will have on its consolidated financial position, results of operations, and cash flows.

In June 2016, the FASB issued ASU No. 2016-13, “Financial Instruments – Credit Losses (Topic 326),” which introduces new guidance for the accounting for credit losses on instruments within its scope. Given the breadth of that scope, the new ASU will impact both financial services and non-financial services entities. The standard is effective for fiscal years beginning after December 15, 2020. The Company is currently evaluating the effect that the adoption of ASU No. 2016-13 will have on its consolidated financial position, results of operations, and cash flows.

RUDOLPH TECHNOLOGIES, INC.

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

In February 2016, the FASB issued ASU No. 2016-02, “Leases (Topic 842).” This ASU requires that lessees will be required to recognize assets and liabilities on the balance sheet for the rights and obligations created by all leases with terms of more than 12 months. ASU No. 2016-02 also will require disclosures designed to give financial statement users information on the amount, timing, and uncertainty of cash flows arising from leases. These disclosures include qualitative and quantitative information. This ASU is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2018 with earlier adoption permitted. The Company is in the process of evaluating the effect that the adoption of ASU No. 2016-02 will have on its consolidated financial position, results of operations, and cash flows.

In May 2014, the FASB issued ASU No. 2014-09, “Revenue from Contracts with Customers (Topic 606)”, which supersedes nearly all existing revenue recognition guidance. The core principle of Topic 606 is that revenue should be recognized to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. In July 2015, the FASB deferred the effective date of the standard by one year. Consequently, Topic 606 became effective at the beginning of the first quarter of fiscal year 2018. In addition, the FASB issued subsequent guidance on certain items such as reporting revenue as a principal versus agent, identifying performance obligations, accounting for intellectual property licenses, assessing collectability, presentation of sales taxes, impairment testing for contract costs, disclosure of performance obligations, and provided additional implementation guidance.

The Company will adopt the new standard on January 1, 2018 using the modified retrospective method. The Company is substantially complete with its initial assessment of the effect of adoption and believes the impact of the new standard on the amount and timing of revenue recognition will not be material to its financial position or result of operations. The new standard will require additional disclosure about the nature, amount, timing and uncertainty of revenues and cash flows from customer contracts, including judgments and changes in judgments and assets recognized from costs incurred to obtain or fulfill a contract. The Company will update certain disclosures, as applicable, included in its financial statements to meet the requirements of the new guidance.

3. Fair Value Measurements:

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.

RUDOLPH TECHNOLOGIES, INC.

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

The following tables provide the assets and liabilities carried at fair value measured on a recurring basis at December 31, 2017 and December 31, 2016:

| | 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 31, 2017 | | | | |
| Assets: | | | | |
| Available-for-sale debt securities: | | | | |
| Municipal notes and bonds..... | \$ 109,589 | \$ — | \$ 109,589 | \$ — |
| Foreign currency forward contracts..... | 45 | — | 45 | — |
| Total assets..... | <u>\$ 109,634</u> | <u>\$ —</u> | <u>\$ 109,634</u> | <u>\$ —</u> |
| Liabilities: | | | | |
| Contingent consideration - acquisitions..... | \$ 2,593 | \$ — | \$ — | \$ 2,593 |
| Total liabilities..... | <u>\$ 2,593</u> | <u>\$ —</u> | <u>\$ —</u> | <u>\$ 2,593</u> |
| December 31, 2016 | | | | |
| Assets: | | | | |
| Available-for-sale debt securities: | | | | |
| Municipal notes and bonds..... | \$ 87,029 | \$ — | \$ 87,029 | \$ — |
| Corporate bonds..... | 843 | — | 843 | — |
| Foreign currency forward contracts..... | 312 | — | 312 | — |
| Total assets..... | <u>\$ 88,184</u> | <u>\$ —</u> | <u>\$ 88,184</u> | <u>\$ —</u> |
| Liabilities: | | | | |
| Contingent consideration - acquisitions..... | \$ 3,251 | \$ — | \$ — | \$ 3,251 |
| Total liabilities..... | <u>\$ 3,251</u> | <u>\$ —</u> | <u>\$ —</u> | <u>\$ 3,251</u> |

The Company's investments classified as Level 1 are based on quoted market prices that are available in active markets.

The Company's investments classified as Level 2 are valued using observable inputs to quoted market prices, benchmark yields, reported trades, broker/dealer quotes or alternative pricing sources with reasonable levels of price transparency. 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 investments consisted of contingent consideration related to an acquisition for which the Company uses a discounted cash flow model to value these investments. The Level 3 assumptions used in the discounted cash flow model for the contingent consideration included projected revenues, timing of cash flows and estimates of discount rates of 8.6% and 9.1% for the years ended December 31, 2017 and 2016, respectively. A significant decrease in the projected revenues or increase in discount rates could result in a significantly lower fair value measurement for the contingent consideration.

RUDOLPH TECHNOLOGIES, INC.

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

This table presents a reconciliation of all liabilities measured at fair value on a recurring basis using significant unobservable inputs (Level 3) for the year ended December 31, 2017:

| | | Fair Value Measurements Using Significant Unobservable Inputs (Level 3) |
|---|-----------|--|
| Liabilities: | | |
| Balance at December 31, 2016..... | \$ | 3,251 |
| Total loss due to remeasurement included in selling, general and administrative expense..... | | 133 |
| Additions..... | | — |
| Payments..... | | (791) |
| Transfer into (out of) Level 3..... | | — |
| Balance at December 31, 2017..... | <u>\$</u> | <u>2,593</u> |

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

Fair Value of Other Financial Instruments

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. The estimated fair value of these obligations is based, primarily, on a market approach, comparing the Company’s interest rates to those rates the Company believes it would reasonably receive upon re-entry into the market. Judgment is required to estimate the fair value using available market information and appropriate valuation methods.

4. Marketable Securities:

The Company has evaluated its investment policies and determined that all of its investment securities are to be classified as available-for-sale. Available-for-sale 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 on available-for-sale securities are included in “Other expense (income).” The Company records other-than-temporary impairment charges for its available-for-sale investments when it intends to sell the securities, it is more-likely-than not that it will be required to sell the securities before a recovery, or when it does not expect to recover the entire amortized cost basis of the securities. The cost of securities sold is based on the specific identification method.

The Company has determined that the gross unrealized losses on its marketable securities at December 31, 2017 and 2016 are temporary in nature. 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.

RUDOLPH TECHNOLOGIES, INC.

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

At December 31, 2017 and 2016, marketable securities are categorized as follows:

| | <u>Amortized Cost</u> | <u>Gross Unrealized Holding Gains</u> | <u>Gross Unrealized Holding Losses</u> | <u>Fair Value</u> |
|----------------------------------|---------------------------|---|--|-----------------------|
| December 31, 2017 | | | | |
| Municipal notes and bonds..... | \$ 109,750 | \$ — | \$ 161 | \$ 109,589 |
| Total marketable securities..... | <u>\$ 109,750</u> | <u>\$ —</u> | <u>\$ 161</u> | <u>\$ 109,589</u> |
| December 31, 2016 | | | | |
| Municipal notes and bonds..... | \$ 87,088 | \$ 6 | \$ 65 | \$ 87,029 |
| Corporate bonds..... | 842 | 1 | — | 843 |
| Total marketable securities..... | <u>\$ 87,930</u> | <u>\$ 7</u> | <u>\$ 65</u> | <u>\$ 87,872</u> |

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 31, 2017 and 2016:

| | <u>December 31, 2017</u> | | <u>December 31, 2016</u> | |
|---------------------------------------|---------------------------|-----------------------|---------------------------|-----------------------|
| | <u>Amortized Cost</u> | <u>Fair Value</u> | <u>Amortized Cost</u> | <u>Fair Value</u> |
| Due within one year..... | \$ 104,742 | \$ 104,605 | \$ 82,499 | \$ 82,445 |
| Due after one through five years..... | 5,008 | 4,984 | 5,431 | 5,427 |
| Due after five through ten years..... | — | — | — | — |
| Due after ten years..... | — | — | — | — |
| Total marketable securities..... | <u>\$ 109,750</u> | <u>\$ 109,589</u> | <u>\$ 87,930</u> | <u>\$ 87,872</u> |

The following table summarizes the estimated fair value and gross unrealized holding losses of marketable securities, aggregated by investment instrument and period of time in an unrealized loss position, at December 31, 2017 and 2016.

| | <u>In Unrealized Loss Position For Less Than 12 Months</u> | | <u>In Unrealized Loss Position For Greater Than 12 Months</u> | |
|----------------------------------|--|--|---|--|
| | <u>Fair Value</u> | <u>Gross Unrealized Losses</u> | <u>Fair Value</u> | <u>Gross Unrealized Losses</u> |
| December 31, 2017 | | | | |
| Municipal notes and bonds..... | \$ 98,805 | \$ 161 | \$ — | \$ — |
| Total marketable securities..... | <u>\$ 98,805</u> | <u>\$ 161</u> | <u>\$ —</u> | <u>\$ —</u> |
| December 31, 2016 | | | | |
| Municipal notes and bonds..... | \$ 64,918 | \$ 65 | \$ — | \$ — |
| Total marketable securities..... | <u>\$ 64,918</u> | <u>\$ 65</u> | <u>\$ —</u> | <u>\$ —</u> |

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

5. Goodwill and Purchased Intangible Assets:

Goodwill

The gross amount of goodwill at both December 31, 2017 and 2016 was \$215,367. Reflecting an impairment charge of \$192,872 in 2008, the carrying amount of goodwill totaled \$22,495 and remained unchanged over both the years ended December 31, 2017 and 2016.

RUDOLPH TECHNOLOGIES, INC.

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

Purchased Intangible Assets

Purchased intangible assets as of December 31, 2017 and 2016 are as follows:

| | Gross Carrying Amount | Accumulated Amortization | Net |
|---|--------------------------|-----------------------------|------------------|
| December 31, 2017 | | | |
| Finite-lived intangibles: | | | |
| Developed technology..... | \$ 65,827 | \$ 58,522 | \$ 7,305 |
| Customer and distributor relationships..... | 9,560 | 8,818 | 742 |
| Trade names..... | 4,361 | 3,776 | 585 |
| Total identifiable intangible assets..... | <u>\$ 79,748</u> | <u>\$ 71,116</u> | <u>\$ 8,632</u> |
| December 31, 2016 | | | |
| Finite-lived intangibles: | | | |
| Developed technology..... | \$ 65,527 | \$ 56,986 | \$ 8,541 |
| Customer and distributor relationships..... | 9,560 | 8,514 | 1,046 |
| Trade names..... | 4,361 | 3,675 | 686 |
| Total identifiable intangible assets..... | <u>\$ 79,448</u> | <u>\$ 69,175</u> | <u>\$ 10,273</u> |

Intangible asset amortization expense amounted to \$1,940, \$2,320 and \$2,145 for the years ended December 31, 2017, 2016 and 2015, respectively. Assuming no change in the gross carrying value of identifiable intangible assets and estimated lives, estimated amortization expense will be \$1,519 for 2018, \$1,519 for 2019, \$1,317 for 2020, \$569 for 2021, and \$503 for 2022.

6. Balance Sheet Details:

Inventories

Inventories are comprised of the following:

| | December 31, | |
|------------------------|------------------|------------------|
| | 2017 | 2016 |
| Materials..... | \$ 39,765 | \$ 32,993 |
| Work-in-process..... | 20,923 | 18,764 |
| Finished goods..... | 6,833 | 13,728 |
| Total inventories..... | <u>\$ 67,521</u> | <u>\$ 65,485</u> |

The Company has established reserves of \$13,035 and \$10,545 at December 31, 2017 and 2016, respectively, for slow moving and obsolete inventory. During 2017, the Company recorded a net charge in cost of revenues of \$3,833 for the write-down of inventory for excess parts, for older product lines and for parts that were rendered obsolete by design and engineering advancements. In 2017, the Company disposed of \$1,343 of inventory. During 2016, the Company recorded a net charge in cost of revenues of \$2,953 for the write-down of inventory for excess parts, for older product lines and for parts that were rendered obsolete by design and engineering advancements. In 2016, the Company disposed of \$1,304 of inventory.

RUDOLPH TECHNOLOGIES, INC.

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

Property, Plant and Equipment

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

| | December 31, | |
|---|------------------|------------------|
| | 2017 | 2016 |
| Land and building..... | \$ 2,584 | \$ 2,584 |
| Machinery and equipment..... | 29,870 | 23,493 |
| Furniture and fixtures..... | 3,201 | 2,699 |
| Computer equipment and software..... | 5,444 | 5,204 |
| Leasehold improvements..... | 9,472 | 8,116 |
| | <u>50,571</u> | <u>42,096</u> |
| Accumulated depreciation..... | (33,229) | (30,238) |
| Total property, plant and equipment, net..... | <u>\$ 17,342</u> | <u>\$ 11,858</u> |

Depreciation expense amounted to \$3,990, \$3,677 and \$3,951 for the years ended December 31, 2017, 2016 and 2015, respectively.

Other current liabilities

Other current liabilities is comprised of the following:

| | December 31, | |
|---|-----------------|-----------------|
| | 2017 | 2016 |
| Intangible asset acquisition - Stella Alliance..... | \$ 100 | \$ 1,000 |
| Contingent consideration - acquisitions..... | 634 | 855 |
| Warrant settlement payable..... | — | 1,025 |
| Customer deposits..... | 5,561 | 996 |
| Other..... | 2,989 | 3,263 |
| Total other current liabilities..... | <u>\$ 9,284</u> | <u>\$ 7,139</u> |

Other non-current liabilities

Other non-current liabilities is comprised of the following:

| | December 31, | |
|---|------------------|-----------------|
| | 2017 | 2016 |
| Unrecognized tax benefits (including interest)..... | \$ 4,660 | \$ 3,386 |
| Contingent consideration - acquisitions..... | 1,959 | 2,396 |
| Deferred revenue..... | 983 | 1,132 |
| Other..... | 2,859 | 2,088 |
| Total non-current liabilities..... | <u>\$ 10,461</u> | <u>\$ 9,002</u> |

7. Debt Obligations:

On July 25, 2011, the Company issued \$60,000 aggregate principal amount of 3.75% Convertible Senior Notes due 2016 (the “Notes”) at par. The Notes were issued pursuant to an indenture, dated as of July 25, 2011, between the Company and Bank of New York Mellon Trust Company, N.A., as Trustee, which included a form of Note. The Notes provided for the payment of interest semi-annually in arrears on January 15 and July 15 of each year, beginning January 15, 2012, at an annual rate of 3.75%. Concurrently with the issuance of the Notes, the Company purchased a convertible note hedge and sold a warrant. Each of the convertible note hedge and warrant transactions were entered into with an affiliate of the initial purchaser of the Notes.

RUDOLPH TECHNOLOGIES, INC.

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

On July 15, 2016, the Company redeemed all of its outstanding 3.75% Convertible Senior Notes with an aggregate principle amount of \$60,000. Under the terms of the indenture, holders of the Notes were paid cash up to the aggregate principal amount of the notes and were issued shares of common stock for the remainder of the conversion, with any fractional shares paid in cash. The conversion resulted in the issuance of 540 shares of common stock of the Company to the bondholders, but resulted in no dilution to Rudolph shareholders as these shares were covered by the convertible note hedge that was entered into by the Company in 2011 at the time of issuance of the Notes.

The sale of the warrant gave the holder the right to purchase 4,634 shares of the Company's common stock at a strike price of \$17.00 per share. The warrant has a series of daily expiration dates beginning in October 2016 and ending in January 2017. From October 13, 2016 to December 31, 2016, the holder exercised 4,248 warrants, which settled for 80 shares of the Company's common stock and \$10,525 payable in cash, of which \$9,500 was paid as of December 31, 2016 and \$1,025 was paid in January 2017, at a weighted average stock price of \$19.82 per share. The remaining 386 warrants were exercised in January 2017 by the holder for 102 shares of the Company's common stock at a weighted average stock price of \$23.13 per share.

The following table presents the amount of interest cost recognized relating to the Notes during the years ended December 31, 2017, 2016 and 2015.

| | December 31, | | |
|--|--------------|----------|----------|
| | 2017 | 2016 | 2015 |
| Contractual interest coupon..... | \$ — | \$ 1,186 | \$ 2,250 |
| Amortization of interest discount..... | — | 1,893 | 3,334 |
| Amortization of debt issuance costs..... | — | 261 | 432 |
| Total interest cost recognized..... | \$ — | \$ 3,340 | \$ 6,016 |

8. Commitments and Contingencies:

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 twelve to fifteen 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 15 months prior to the year-end and warranty accruals are related to sales during the year.

RUDOLPH TECHNOLOGIES, INC.

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

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

| | Year Ended December 31, | | |
|-------------------------------------|-------------------------|----------|----------|
| | 2017 | 2016 | 2015 |
| Balance, beginning of the year..... | \$ 1,788 | \$ 1,894 | \$ 1,574 |
| Accruals..... | 3,464 | 2,405 | 2,640 |
| Usage..... | (2,825) | (2,511) | (2,320) |
| Balance, end of the year..... | \$ 2,427 | \$ 1,788 | \$ 1,894 |

Legal Matters

From time to time, the Company is subject to legal proceedings and claims in the ordinary course of business. As of December 31, 2017, there are no legal proceedings pending or threatened against the Company that management believes are likely to have a material adverse effect on the Company’s consolidated financial position or otherwise.

With respect to the litigations that were ongoing during 2017, on July 28, 2017, Rudolph and Camtek, Ltd. (“Camtek”) entered into a Settlement Agreement (the “Agreement”) resolving each of the three litigations referenced below (the “Litigations”).

- August Technology Corporation and Rudolph Technologies, Inc. v. Camtek, Ltd., No. 11-CV-03707 (MJD/TNL): A lawsuit against Camtek, located in Migdal Haemek, Israel, was filed by the Company on June 1, 2011 alleging infringement of its U.S. Patent No. 7,729,528 related to its proprietary continuous scan wafer inspection technology. The relief sought in the lawsuit included the payment of damages and a permanent injunction against any products found to be infringing.
- Rudolph Technologies, Inc. v. Camtek, Ltd., No. 15-CV-1246 (ADM/BRT): On March 12, 2015, the Company filed and served on Camtek a complaint asserting infringement of Rudolph’s U.S. Patent No. 6,826,298 by Camtek’s Eagle product with the U.S. District Court in Minnesota. The ‘6,298 patent is also related to its proprietary continuous scan wafer inspection technology and was the subject of Rudolph’s prior litigation against the Camtek Falcon system (the “Falcon Litigation”) in which Rudolph prevailed with a final judgment of infringement and damages of \$14.6 million assessed against Camtek. The relief sought in the lawsuit included the payment of damages and a permanent injunction against any products found to be infringing.
- Camtek, Ltd. v. Rudolph Technologies, Inc., No.: 1:17-CV-11127-PBS: On June 19, 2017, Camtek filed with the U.S. District Court in Massachusetts and served on Rudolph a complaint alleging infringement by Rudolph’s NSX product of Camtek’s U.S. Patent No. 6,192,289 related to kerf inspection. The relief sought in the lawsuit included the payment of damages and a permanent injunction against any products found to be infringing.

Pursuant to the Agreement, in exchange for a \$13.0 million cash payment from Camtek to Rudolph, the parties each agreed to dismiss with prejudice, and to release the other party from, all claims, damages and expenses incurred or raised in the Litigations. The parties also mutually agreed not to pursue further legal actions on any of the claims reflected in the patents that were the subject of the Litigations. Further, subject to limited exceptions, Rudolph and Camtek have agreed not to bring suit against each other for a three year period from the date of the Agreement. Each party expressly denies any liability to the other party with respect to any of the Litigations. The payment was made in October of 2017 and these matters are now closed.

Lease Agreements

The Company rents space for its corporate headquarters, manufacturing and service operations and sales offices, which expire through 2027. Total rent expense for these facilities amounted to \$3,292, \$3,296 and \$3,525 for the years ended December 31, 2017, 2016 and 2015, respectively.

RUDOLPH TECHNOLOGIES, INC.

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

The Company also leases certain equipment pursuant to operating leases, which expire through 2022. Rent expense related to these leases amounted to \$111, \$99 and \$105 for the years ended December 31, 2017, 2016 and 2015, respectively.

Total future minimum lease payments under noncancelable operating leases as of December 31, 2017 amounted to \$3,292 for 2018, \$2,458 for 2019, \$1,706 for 2020, \$1,105 for 2021, \$1,044 for 2022 and \$2,477 for all periods thereafter.

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 \$1,117, \$586 and \$813 for the years ended December 31, 2017, 2016 and 2015, respectively.

Open and Committed Purchase Orders

The Company has open and committed purchase orders of \$60,107 as of December 31, 2017.

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 31, 2017 was approximately \$87,583 with an available interest rate of 3.0%. The credit agreement is available to the Company until such time that either party terminates the arrangement at their discretion. The Company has not utilized the line of credit to date.

9. 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 stock option exercises and restricted stock unit awards with newly issued common shares.

RUDOLPH TECHNOLOGIES, INC.

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

The Company established the 2009 Stock Plan (the “2009 Plan”) effective November 1, 2009. The 2009 Plan provides for the grant of 3,300 stock options and other stock awards to employees, directors and consultants at an exercise price equal to or greater than the fair market value of the common stock on the date of grant. Shares of common stock available for future grants from a previous stock plan totaled 2,558 and were carried forward into the allocated balance of the 2009 Plan. Options granted under the 2009 Plan typically grade vest over a five-year period and expire ten years from the date of grant. Restricted stock units granted under the 2009 Plan typically vest over a three to five-year period for employees and one year for directors; however, other vesting periods are allowable under the 2009 Plan. Restricted stock units granted to employees have time based or performance based vesting. As of December 31, 2017 and 2016, there were shares of common stock available for issuance pursuant to future grants under the 2009 Plan totaling 2,049 and 2,247, respectively.

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

| | <u>Year Ended December 31,</u> | | |
|--|--------------------------------|-----------------|-----------------|
| | <u>2017</u> | <u>2016</u> | <u>2015</u> |
| Share-based compensation expense: | | | |
| Stock options..... | \$ 237 | \$ 318 | \$ 287 |
| Restricted stock units, including all performance and market based awards..... | <u>5,433</u> | <u>4,457</u> | <u>7,316</u> |
| Total share-based compensation..... | <u>5,670</u> | <u>4,775</u> | <u>7,603</u> |
| Tax effect on share-based compensation..... | <u>2,052</u> | <u>1,743</u> | <u>2,767</u> |
| Net effect on net income..... | <u>\$ 3,618</u> | <u>\$ 3,032</u> | <u>\$ 4,836</u> |
| Effect on earnings per share: | | | |
| Basic..... | \$ (0.11) | \$ (0.10) | \$ (0.15) |
| Diluted..... | \$ (0.11) | \$ (0.10) | \$ (0.15) |

RUDOLPH TECHNOLOGIES, INC.

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

Stock Option Activity

A summary of the Company's stock option activity with respect to the years ended December 31, 2015, 2016 and 2017 follows:

| | <u>Shares</u> | <u>Weighted Average Exercise Price Per Share</u> | <u>Weighted Average Remaining Contractual Term (years)</u> | <u>Aggregate Intrinsic Value</u> |
|--|---------------|--|--|--------------------------------------|
| Outstanding at December 31, 2014..... | 615 | \$ 10.39 | | |
| Granted..... | — | — | | |
| Exercised..... | (25) | 8.19 | | |
| Expired..... | (100) | 15.56 | | |
| Forfeited..... | — | — | | |
| Outstanding at December 31, 2015..... | 490 | 9.46 | | |
| Granted..... | — | — | | |
| Exercised..... | (231) | 7.76 | | |
| Expired..... | (44) | 14.74 | | |
| Forfeited..... | — | — | | |
| Outstanding at December 31, 2016..... | 215 | \$ 10.19 | | |
| Granted..... | — | — | | |
| Exercised..... | (142) | 9.14 | | |
| Expired..... | — | — | | |
| Forfeited..... | — | — | | |
| Outstanding at December 31, 2017..... | <u>73</u> | <u>\$ 12.22</u> | 5.0 | \$ 853 |
| Vested or expected to vest at December 31, 2017..... | 73 | \$ 12.22 | 5.0 | \$ 853 |
| Exercisable at December 31, 2017..... | 73 | \$ 12.22 | 5.0 | \$ 853 |

The total intrinsic value of the stock options exercised during 2017, 2016 and 2015 was \$853, \$1,312 and \$108, respectively.

The options outstanding and exercisable at December 31, 2017 were in the following exercise price ranges:

| <u>Range of Exercise Prices</u> | <u>Options Outstanding</u> | | | <u>Options Exercisable</u> | |
|---------------------------------|----------------------------|--|--|----------------------------|--|
| | <u>Shares</u> | <u>Weighted Average Remaining Contractual Life (years)</u> | <u>Weighted Average Exercise Price</u> | <u>Shares</u> | <u>Weighted Average Exercise Price</u> |
| 12.22 - 12.22 | 73 | 5.0 | \$ 12.22 | 73 | \$ 12.22 |

As of December 31, 2017, there was no unrecognized compensation cost related to stock options granted under the plans.

Non-Employee Stock Options

At December 31, 2017 and 2016, the fair value of stock options to non-employees was \$268 and \$270, respectively.

RUDOLPH TECHNOLOGIES, INC.

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

Restricted Stock Unit Activity

A summary of the Company’s restricted stock unit activity with respect to the years ended December 31, 2015, 2016 and 2017 follows:

| | Number of Shares | Weighted Average Grant Date Fair Value |
|-------------------------------------|---------------------|---|
| Nonvested at December 31, 2014..... | 805 | \$ 11.07 |
| Granted..... | 967 | \$ 10.99 |
| Vested..... | (563) | \$ 10.25 |
| Forfeited..... | (40) | \$ 11.05 |
| Nonvested at December 31, 2015..... | 1,169 | \$ 11.40 |
| Granted..... | 429 | \$ 13.20 |
| Vested..... | (413) | \$ 10.80 |
| Forfeited..... | (49) | \$ 11.14 |
| Nonvested at December 31, 2016..... | 1,136 | \$ 12.30 |
| Granted..... | 280 | \$ 22.70 |
| Vested..... | (321) | \$ 11.90 |
| Forfeited..... | (81) | \$ 13.78 |
| Nonvested at December 31, 2017..... | <u>1,014</u> | \$ 14.88 |

Included in the number of shares granted in the table directly above are 38 market performance-based restricted stock units (“MPRSUs”) granted to executives in the first quarter of 2017. Vesting of these MPRSUs is contingent upon the Company meeting certain total shareholder return (“TSR”) levels as compared to a select peer group over the next three years. The MPRSUs cliff vest at the end of the three-year period and have a maximum potential to vest at 200% (76 shares) based on TSR performance. The related share-based compensation expense is determined based on the estimated fair value of the underlying shares on the date of grant and is recognized straight-line over the vesting term. The estimated fair value per share of the MPRSUs was \$25.30 and was calculated using a Monte Carlo simulation model.

As of December 31, 2017, there was \$9,420 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 2.2 years.

Employee Stock Purchase Plan

The Company established an Employee Stock Purchase Plan (the “ESPP”) effective November 1, 2009. Under the terms of the ESPP, eligible employees may have up to 15% of eligible compensation deducted from their pay and applied to the purchase of shares of Company common stock. The price the employee must pay for each share of stock will be 95% of the fair market value of Company common stock at the end of the applicable six-month purchase period. The ESPP is intended to qualify under Section 423 of the Internal Revenue Code and is a non-compensatory plan as defined by FASB ASC 718, Stock Compensation. No stock-based compensation expense for the ESPP was recorded for the years ended December 31, 2017, 2016 and 2015. Employees purchased 11, 15 and 16 shares during the twelve months ended December 31, 2017, 2016 and 2015, respectively, under the ESPP. As of December 31, 2017 and 2016, there were 2,251 and 1,962 shares available, respectively, for issuance under the ESPP.

RUDOLPH TECHNOLOGIES, INC.

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

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. Company matching contributions to the plan totaled \$1,047, \$1,017 and \$963 for the years ended December 31, 2017, 2016 and 2015, respectively.

Profit Sharing Program

The Company has a profit sharing program, wherein a percentage of pre-tax profits, at the discretion of the Board of Directors, is provided to all employees who have completed a stipulated employment period. The Company did not make contributions to this program for the years ended December 31, 2017, 2016 and 2015.

10. Other Expense (Income):

Other expense (income) is comprised of the following:

| | Year Ended December 31, | | |
|--|-------------------------|----------|--------|
| | 2017 | 2016 | 2015 |
| Foreign currency exchange losses (gains), net..... | \$ 457 | \$ 592 | \$ 293 |
| Gain on sale of property, plant and equipment..... | — | (946) | — |
| Total other expense (income)..... | \$ 457 | \$ (354) | \$ 293 |

11. Income Taxes:

The components of income tax expense are as follows:

| | Year Ended December 31, | | |
|-------------------------------|-------------------------|-----------|----------|
| | 2017 | 2016 | 2015 |
| Current: | | | |
| Federal..... | \$ 6,020 | \$ 6,084 | \$ 1,012 |
| State..... | 507 | 983 | 439 |
| Foreign..... | 3,159 | 838 | 3,425 |
| | 9,686 | 7,905 | 4,876 |
| Deferred: | | | |
| Federal..... | 17,034 | 4,765 | 3,881 |
| State..... | 643 | 184 | 71 |
| Foreign..... | (470) | 62 | 28 |
| | 17,207 | 5,011 | 3,980 |
| Total income tax expense..... | \$ 26,893 | \$ 12,916 | \$ 8,856 |

The income before tax is comprised of the following:

| | Year Ended December 31, | | |
|--------------------------|-------------------------|-----------|-----------|
| | 2017 | 2016 | 2015 |
| Domestic operations..... | \$ 57,079 | \$ 47,599 | \$ 10,596 |
| Foreign operations..... | 2,723 | 2,269 | 16,216 |

RUDOLPH TECHNOLOGIES, INC.

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

The provision for income taxes differs from the amount of income tax determined by applying the applicable U.S. federal income tax rate of 35% for the years ended December 31, 2017, 2016 and 2015 to income before provision for income taxes as follows:

| | Year Ended December 31, | | |
|---|-------------------------|------------------|-----------------|
| | 2017 | 2016 | 2015 |
| Federal income tax provision at statutory rate..... | \$ 20,931 | \$ 17,454 | \$ 9,384 |
| State taxes, net of federal effect..... | 573 | 822 | 370 |
| Foreign taxes net of federal effect..... | (238) | (1,613) | 754 |
| Domestic manufacturing benefit..... | (1,569) | (1,244) | (553) |
| Change in valuation allowance for deferred tax assets, including \$1.5 million related to the Tax Act..... | (523) | — | (653) |
| Research tax credit..... | (1,559) | (692) | (694) |
| Deferred tax true-up..... | 41 | (1,644) | (23) |
| Remeasurement of deferred tax balances related to the Tax Act..... | 8,020 | — | — |
| Transition tax on foreign earnings related to the Tax Act..... | (106) | — | — |
| Other..... | 1,323 | (167) | 271 |
| Provision for income taxes..... | <u>\$ 26,893</u> | <u>\$ 12,916</u> | <u>\$ 8,856</u> |
| Effective tax rate..... | 45% | 26% | 33% |

On December 22, 2017, the U.S. government enacted the Tax Cuts and Jobs Act (“Tax Act”). The Tax Act makes broad and complex changes to the U.S. tax code that affected 2017, including, but not limited to, (1) requiring a one-time transition tax on certain unrepatriated earnings of foreign subsidiaries that is payable over eight years and (2) bonus depreciation that will allow for full expensing of qualified property. The Tax Act also establishes new tax laws that will affect 2018, including, but not limited to, (1) reduction of the U.S. federal corporate tax rate; (2) the creation of the Base Erosion and Anti-Abuse (“BEAT”), a new minimum tax; (3) a general elimination of U.S. federal income taxes on dividends from foreign subsidiaries; (4) a new provision designed to tax Global Intangible Low-Taxed Income (“GILTI”), which allows for the possibility of using FTCs and a deduction of up to 50 percent to offset the income tax liability (subject to some limitations); (5) the repeal of the domestic production activity deduction; (6) limitations on the deductibility of certain executive compensation; and (7) limitations on the use of FTCs to reduce the U.S. income tax liability. Given the complexity of the 2018 Tax Act provisions identified above, we are still evaluating the effects and have not yet determined what, if any, accounting policies will need to change, nor have we calculated the impact of the above provisions.

At December 31, 2017 the Company has not completed its accounting for the tax effects of enactment of the Tax Act, however, the Company was able to make reasonable estimates of certain effects and, therefore, recorded provisional adjustments as follows:

- Reduction of U.S. federal corporate tax rate: The Tax Act reduces the corporate tax rate to 21 percent, effective January 1, 2018. For certain of its deferred tax assets and deferred tax liabilities, the Company has recorded a provisional decrease of \$8.0 million, respectively, with a corresponding net adjustment to deferred income tax expense of \$8.0 million for the year ended December 31, 2017. While the Company is able to make a reasonable estimate of the impact of the reduction in corporate rate, it may be affected by other analyses related to the Tax Act, including, but not limited to, its calculation of deemed repatriation of deferred foreign income and the state tax effect of adjustments made to federal temporary differences.
- Transition tax: The transition tax is a tax on previously deferred earnings and profits (“E&P”) of certain of its foreign subsidiaries. To determine the amount of the transition tax, the Company must determine, in addition to other factors, the amount of post-1986 E&P of the relevant subsidiaries, as well as the amount of non-U.S. income taxes paid on such earnings. The Company is able to make a reasonable estimate of the transition tax and recorded a provisional transition tax obligation of \$1.5 million with a corresponding adjustment to current income tax expense. The company also computed a Section 78 foreign tax credit from the post-1986 E&P of the relevant subsidiaries that resulted in a current income tax

RUDOLPH TECHNOLOGIES, INC.

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

benefit of \$1.5 million. However, the Company is continuing to gather additional information to more precisely compute the amount of the transition tax and foreign tax credit.

- Valuation allowances: The Company must assess whether its valuation allowance analyses are affected by various aspects of the Tax Act. Since, as discussed herein, the Company has recorded provisional amounts related to certain portions of the Tax Act, any corresponding determination of the need for or change in a valuation allowance is also provisional. The Company concluded that with all the facts that are available at this point in time that that a full valuation allowance on all carry forward foreign tax credits were needed. The Company recorded the valuation allowance as of December 31, 2017 in the amount of \$1.5 million with a corresponding adjustment to current income tax expense.

Deferred tax assets and liabilities are comprised of the following:

| | December 31, | |
|--|------------------|------------------|
| | 2017 | 2016 |
| Research and development credit carryforward..... | \$ 216 | \$ 3,784 |
| Reserves and accruals not currently deductible..... | 1,883 | 2,932 |
| Deferred revenue..... | 1,075 | 2,286 |
| Domestic net operating loss carryforwards..... | 892 | 1,049 |
| Foreign net operating loss and credit carryforwards..... | 2,551 | 4,362 |
| Intangibles..... | 5,388 | 11,002 |
| Share-based compensation..... | 1,500 | 2,249 |
| Inventory obsolescence reserve..... | 3,260 | 4,454 |
| Depreciation..... | — | 206 |
| Other..... | 1,135 | 832 |
| Gross deferred tax assets..... | <u>17,900</u> | <u>33,156</u> |
| Valuation allowance for deferred tax assets..... | <u>(2,447)</u> | <u>(1,924)</u> |
| Deferred tax assets after valuation allowance..... | <u>15,453</u> | <u>31,232</u> |
| Gross deferred tax liabilities..... | <u>(574)</u> | <u>(382)</u> |
| Net deferred tax assets..... | <u>\$ 14,879</u> | <u>\$ 30,850</u> |

At December 31, 2017 and 2016, the Company had valuation allowances of \$2,447 and \$1,924, respectively, on certain 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 recorded a full valuation allowance on all foreign tax credits as of December 31, 2017 in the amount of \$1,542, offset by reversal of valuation allowance against expired state research and developments credits in the amount of \$741 and the reversal of a prior valuation allowance based on current year utilization in the amount of \$278.

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 31, 2017, the Company relied primarily on projected future taxable income.

At December 31, 2017, the Company had federal, state and foreign net operating loss carryforwards of \$591, \$171 and \$1,134, respectively. The federal, state and foreign net operating loss carryforwards expire on various dates through December 31, 2032, December 31, 2032 and December 31, 2026, respectively. At December 31, 2017, the Company had federal and state research & development credits and foreign tax credit carryforwards of \$118, \$318 and \$1,542, respectively. The federal research & development credits are set to expire at December 31, 2037. The state research & development credits are set to expire at various dates through December 21, 2024. The foreign tax credit is set to expire at various dates through December 31, 2027.

RUDOLPH TECHNOLOGIES, INC.

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

A provision has not been made at December 31, 2017 for U.S. or additional foreign withholding taxes on approximately \$7,663 of undistributed earnings not subject to the transition tax of the Company's foreign subsidiaries in Europe and Japan nor on any additional outside basis differences inherent in these entities because it is the present intention of management to permanently reinvest these undistributed earnings. It is not practical to estimate the amount of tax that might be payable if some or all of such earnings were to be repatriated.

The total amount of unrecognized tax benefits are as follows:

| | December 31, | | |
|--|-----------------|-----------------|-----------------|
| | 2017 | 2016 | 2015 |
| Unrecognized tax benefits, opening balance..... | \$ 4,827 | \$ 5,236 | \$ 5,292 |
| Gross increases—tax positions in prior period..... | 171 | 118 | 136 |
| Gross decreases—tax positions in prior period..... | (362) | (735) | (755) |
| Gross increases—current-period tax positions..... | 244 | 208 | 563 |
| Lapse of statute of limitations..... | — | — | — |
| Unrecognized tax benefits, ending balance..... | <u>\$ 4,880</u> | <u>\$ 4,827</u> | <u>\$ 5,236</u> |

Included in the ending balance at December 31, 2017 and 2016 are unrecognized tax benefits of \$4,403 and \$4,275, respectively, which would be reflected as an adjustment to income tax expense if recognized. The year over year increase from 2016 to 2017 is primarily due to 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 31, 2017, 2016 and 2015, the Company recognized approximately \$246, \$76 and \$71, respectively, in interest and penalties expense associated with uncertain tax positions. As of December 31, 2017 and 2016, the Company had accrued interest and penalties expense related to unrecognized tax benefits of \$1,190 and \$1,019, respectively.

The Company is subject to U.S. federal income tax as well as income tax in multiple state and foreign jurisdictions. The Company files U.S. federal, U.S. state and foreign tax returns. For U.S. federal tax purposes, the Company is generally no longer subject to tax examinations for years prior to 2013. For U.S. state tax returns, the Company is generally no longer subject to tax examinations for years prior to 2012. For foreign tax purposes, the Company is generally no longer subject to examination for tax periods 2012 and prior. Certain carryforward tax attributes generated in prior years remain subject to examination and adjustment. 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.

12. Accumulated Other Comprehensive Loss:

Comprehensive income includes net income, foreign currency translation adjustments, and net unrealized gains and losses on available-for-sale investments. See the Consolidated Statements of Comprehensive Income for the effect of the components of comprehensive income to our net income.

RUDOLPH TECHNOLOGIES, INC.

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

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

| | Foreign currency translation adjustments | Net unrealized losses on available-for- sale investments | Accumulated other comprehensive loss |
|--|--|---|---|
| Beginning Balance, December 31, 2015..... | \$ 2,623 | \$ — | \$ 2,623 |
| Net current period other comprehensive loss..... | 119 | 37 | 156 |
| Reclassifications..... | — | — | — |
| Ending balance, December 31, 2016..... | 2,742 | 37 | 2,779 |
| Net current period other comprehensive loss..... | (1,663) | 89 | (1,574) |
| Reclassifications..... | — | — | — |
| Ending balance, December 31, 2017..... | <u>\$ 1,079</u> | <u>\$ 126</u> | <u>\$ 1,205</u> |

13. Segment Reporting and Geographic Information:

The Company is engaged in the design, development, manufacture and support of process control defect inspection and metrology, advanced packaging lithography and data analysis systems and software used by microelectronics device manufacturers. The Company and its subsidiaries currently operate in a single operating segment: the design, development, manufacture and support of process control defect inspection and metrology, advanced packaging lithography, and data analysis systems and software used by microelectronics device manufacturers and, therefore, have one reportable segment. The Company's chief operating decision maker is the Chief Executive Officer. The chief operating decision maker allocates resources and assesses performance of the business and other activities at the reportable segment level.

The following table lists the different sources of revenues:

| | Year Ended December 31, | | | | | |
|-----------------------|-------------------------|-------------|-------------------|-------------|-------------------|-------------|
| | 2017 | | 2016 | | 2015 | |
| Systems and Software: | | | | | | |
| Process control..... | \$ 177,177 | 70% | \$ 146,652 | 63% | \$ 144,858 | 66% |
| Lithography..... | 14,234 | 5% | 18,949 | 8% | 14,519 | 6% |
| Software..... | 25,473 | 10% | 29,795 | 13% | 27,291 | 12% |
| Parts..... | 27,143 | 11% | 25,343 | 11% | 24,072 | 11% |
| Services..... | 11,071 | 4% | 12,041 | 5% | 10,950 | 5% |
| Total revenues..... | <u>\$ 255,098</u> | <u>100%</u> | <u>\$ 232,780</u> | <u>100%</u> | <u>\$ 221,690</u> | <u>100%</u> |

RUDOLPH TECHNOLOGIES, INC.

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

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

| | Year Ended December 31, | | |
|------------------------------|-------------------------|-------------------|-------------------|
| | 2017 | 2016 | 2015 |
| Revenues from third parties: | | | |
| United States..... | \$ 36,104 | \$ 30,876 | \$ 46,778 |
| Taiwan..... | 63,079 | 68,211 | 55,548 |
| South Korea..... | 44,180 | 15,556 | 14,221 |
| Singapore..... | 12,775 | 35,517 | 27,310 |
| Austria..... | 2,601 | 2,049 | 3,557 |
| Japan..... | 18,943 | 11,875 | 13,216 |
| Germany..... | 15,580 | 9,759 | 29,378 |
| China..... | 35,925 | 33,720 | 17,152 |
| Other Europe..... | 21,167 | 18,720 | 11,403 |
| Other Asia..... | 4,744 | 6,497 | 3,127 |
| Total revenues..... | <u>\$ 255,098</u> | <u>\$ 232,780</u> | <u>\$ 221,690</u> |

No individual end user customer accounted for more than 10% of the Company's revenues in 2017, 2016 and 2015. The Company does not have purchase contracts with any of its customers that obligate them to continue to purchase its products.

At December 31, 2017, no individual customer accounted for more than 10% of net accounts receivable. At December 31, 2016, 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.

14. Earnings Per Share:

Basic earnings per share is calculated using the weighted average number of shares of common stock outstanding during the period. Diluted earnings per share is computed in the same manner and also gives effect to all dilutive common stock equivalent shares outstanding during the period. Potential common shares that would have the effect of increasing diluted earnings per share are considered to be antidilutive. In accordance with U.S. GAAP, these shares were not included in calculating diluted earnings per share.

For the year ended December 31, 2017, the weighted average number of stock options and restricted stock units excluded from the computation of diluted earnings per share were 0 and 8, respectively. For the year ended December 31, 2016, the weighted average number of stock options and restricted stock units excluded from the computation of diluted earnings per share were 39 and 0, respectively. For the year ended December 31, 2015, the weighted average number of stock options and restricted stock units excluded from the computation of diluted earnings per share were 15 and 190, respectively.

For the years ended December 31, 2017, 2016 and 2015, diluted earnings per share-weighted average shares outstanding included the effect resulting from assumed conversion of the Notes and warrants.

RUDOLPH TECHNOLOGIES, INC.

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

The computations of basic and diluted income per share for the years ended December 31, 2017, 2016, and 2015 are as follows:

| | December 31, | | |
|--|---------------|---------------|---------------|
| | 2017 | 2016 | 2015 |
| Numerator: | | | |
| Net income..... | \$ 32,909 | \$ 36,952 | \$ 17,956 |
| Denominator: | | | |
| Basic earnings per share - weighted average shares outstanding..... | 31,491 | 31,128 | 31,408 |
| Effect of potential diluted securities: | | | |
| Employee stock options and restricted stock units – dilutive shares..... | 670 | 467 | 692 |
| Convertible senior notes - dilutive shares..... | — | 103 | 66 |
| Warrants - dilutive shares..... | 1 | 92 | — |
| Diluted earnings per share - weighted average shares outstanding..... | <u>32,162</u> | <u>31,790</u> | <u>32,166</u> |
| Earnings per share: | | | |
| Basic..... | \$ 1.05 | \$ 1.19 | \$ 0.57 |
| Diluted..... | \$ 1.02 | \$ 1.16 | \$ 0.56 |

15. Shares Repurchase Authorization:

In January 2015, the Board of Directors authorized the Company to repurchase up to 3,000 shares of the Company's common stock with no established end date. The authorization allows for repurchases to be made in the open market or through negotiated transactions from time to time. At December 31, 2017, there were 711 shares available for future stock repurchases under this repurchase authorization. Shares of common stock purchased under the share repurchase authorization are retired.

The following table summarizes the Company's stock repurchases for December 31, 2017, 2016 and 2015:

| | Year Ended December 31, | | |
|---|-------------------------|----------|-----------|
| | 2017 | 2016 | 2015 |
| Shares of common stock repurchased..... | — | 615 | 1,674 |
| Cost of stock repurchased..... | \$ - | \$ 8,044 | \$ 20,668 |
| Average price paid per share..... | \$ - | \$ 13.07 | \$ 12.35 |

16. Quarterly Consolidated Financial Data (unaudited):

The following tables present certain unaudited consolidated quarterly financial information for the years ended December 31, 2017 and December 31, 2016. In the opinion of the Company's management, this quarterly information has been prepared on the same basis as the consolidated financial statements and includes all adjustments (consisting only of normal recurring adjustments) necessary to present fairly the information for the periods presented. The results of operations for any quarter are not necessarily indicative of results for the full year or for any future period.

RUDOLPH TECHNOLOGIES, INC.

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

Year-over-year quarterly comparisons of the Company's results of operations may not be meaningful, as the sequential quarterly comparisons set forth below tend to reflect the cyclical activity of the semiconductor industry as a whole. Other quarterly fluctuations in expenses are related directly to sales activity and volume and may also reflect the timing of operating expenses incurred throughout the year and the purchase accounting effects of business combinations.

| | Quarters Ended | | | | Total |
|--|-------------------|------------------|-----------------------|----------------------|------------|
| | March 31, 2017 | June 30, 2017 | September 30, 2017 | December 31, 2017 | |
| Revenues..... | \$ 60,679 | \$ 67,418 | \$ 66,920 | \$ 60,081 | \$ 255,098 |
| Gross profit..... | 31,868 | 35,456 | 35,145 | 32,126 | 134,595 |
| Income before income taxes..... | 9,607 | 12,752 | 25,663 | 11,780 | 59,802 |
| Net income (loss)..... | 7,151 | 9,193 | 17,369 | (804) | 32,909 |
| Income (loss) per share: | | | | | |
| Basic..... | \$ 0.23 | \$ 0.29 | \$ 0.55 | \$ (0.03) | \$ 1.05 |
| Diluted..... | \$ 0.22 | \$ 0.29 | \$ 0.54 | \$ (0.03) | \$ 1.02 |
| Weighted average number of shares outstanding: | | | | | |
| Basic..... | 31,290 | 31,501 | 31,571 | 31,597 | 31,491 |
| Diluted..... | 32,058 | 32,146 | 32,170 | 31,597 | 32,162 |

| | Quarters Ended | | | | Total |
|--|-------------------|------------------|-----------------------|----------------------|------------|
| | March 31, 2016 | June 30, 2016 | September 30, 2016 | December 31, 2016 | |
| Revenues..... | \$ 54,362 | \$ 62,701 | \$ 61,641 | \$ 54,076 | \$ 232,780 |
| Gross profit..... | 29,045 | 34,193 | 32,449 | 27,864 | 123,551 |
| Income before income taxes..... | 19,561 | 10,593 | 12,970 | 6,744 | 49,868 |
| Net income..... | 13,939 | 7,601 | 9,286 | 6,126 | 36,952 |
| Income per share: | | | | | |
| Basic..... | \$ 0.45 | \$ 0.25 | \$ 0.30 | \$ 0.20 | \$ 1.19 |
| Diluted..... | \$ 0.44 | \$ 0.24 | \$ 0.30 | \$ 0.19 | \$ 1.16 |
| Weighted average number of shares outstanding: | | | | | |
| Basic..... | 30,957 | 30,779 | 30,988 | 31,085 | 31,128 |
| Diluted..... | 31,654 | 31,754 | 31,459 | 32,018 | 31,790 |

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

SCHEDULE OF VALUATION AND QUALIFYING ACCOUNTS
(In thousands)

| <u>Column A</u> | <u>Column B</u> | <u>Column C</u> | | <u>Column D</u> | <u>Column E</u> |
|---------------------------------------|---------------------------------------|---|--|-------------------|---------------------------------|
| <u>Description</u> | <u>Balance at Beginning of Period</u> | <u>Charged to (Recovery of) Costs and Expense</u> | <u>Charged to Other Accounts (net)</u> | <u>Deductions</u> | <u>Balance at End of Period</u> |
| Year 2017: | | | | | |
| Allowance for doubtful accounts..... | \$ 680 | \$ (222) | \$ — | \$ (2) | \$ 460 |
| Deferred tax valuation allowance..... | 1,924 | 626 | (103) | — | 2,447 |
| Year 2016: | | | | | |
| Allowance for doubtful accounts..... | \$ 713 | \$ 5 | \$ — | \$ 38 | \$ 680 |
| Deferred tax valuation allowance..... | 2,205 | 71 | (352) | — | 1,924 |
| Year 2015: | | | | | |
| Allowance for doubtful accounts..... | \$ 1,279 | \$ 124 | \$ — | \$ 690 | \$ 713 |
| Deferred tax valuation allowance..... | 2,445 | (128) | (112) | — | 2,205 |

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.

Rudolph Technologies, Inc.

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

Date: February 15, 2018

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.

| <u>Signature</u> | <u>Title</u> | <u>Date</u> |
|--|---|-------------------|
| <u> /s/ Michael P. Plisinski </u> Michael P. Plisinski | Chief Executive Officer | February 15, 2018 |
| <u> /s/ Steven R. Roth </u> Steven R. Roth | Senior Vice President, Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer) | February 15, 2018 |
| <u> /s/ Jeffrey A. Aukerman </u> Jeffrey A. Aukerman | Director | February 15, 2018 |
| <u> /s/ Leo Berlinghieri </u> Leo Berlinghieri | Director | February 15, 2018 |
| <u> /s/ Daniel H. Berry </u> Daniel H. Berry | Director | February 15, 2018 |
| <u> /s/ Thomas G. Greig </u> Thomas G. Greig | Director | February 15, 2018 |
| <u> /s/ David B. Miller </u> David B. Miller | Director | February 15, 2018 |
| <u> /s/ John R. Whitten </u> John R. Whitten | Director | February 15, 2018 |

SUBSIDIARIES

Name

Rudolph Technologies Europe, B.V.
Rudolph Technologies Japan KK
Rudolph Technologies (Shanghai) Trading Co., Ltd.
Rudolph Technologies Germany GmbH
Azores Corp.
Azores Asia Limited

Jurisdiction

Netherlands
Japan
China
Germany
Delaware
Hong Kong

**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 Rudolph Technologies, 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(s) 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(s) 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 15, 2018

By:

/s/ MICHAEL P. PLISINSKI

Michael P. Plisinski
Chief Executive Officer

**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 Rudolph Technologies, 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(s) 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(s) 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 15, 2018

By:

/s/ STEVEN R. ROTH

Steven R. Roth
Senior Vice President and Chief Financial Officer

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

I, 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 Rudolph Technologies, Inc. on Form 10-K for the year ended December 31, 2017 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of Rudolph Technologies, Inc.

Date: February 15, 2018

By:

/s/ STEVEN R. ROTH

Steven R. Roth
Senior Vice President and Chief Financial Officer

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April 18, 2018

From the Chairman's Desk,

Rudolph Technologies' Board of Directors is committed to increasing stockholder value while positioning the Company for sustainable growth. The Company's focus is to deliver high value solutions to high growth markets. We seek to strengthen our offerings by investing in research and development for our existing markets, while exploring potential adjacent markets and acquisition opportunities for new technologies.

Growth in revenue and profitability are directly linked to increasing stockholder value. We believe we can achieve this growth through continued execution of process innovation and quality of our products and services that drive higher yields and lower manufacturing costs for our customers. We believe our customers see our innovation and execution excellence as indicators that we are the best partner to help them reach their continuously higher yield targets.

Our employees are the core strength of Rudolph Technologies, providing inspiration for new solutions and product innovation, while working to ensure the quality of products and services that are provided every day. Furthermore, our customer-facing organization interacts with Rudolph Technologies' customer base and exemplifies the core values of our Company. As Rudolph Technologies continues to grow, there will be increasing demands on our people and we look forward to enhancing and strengthening our existing organization with capable and talented employees who will help us develop new technologies, new markets and better serve our customers in order to realize this growth. Through our Company culture of quality, excellence and success, the people of Rudolph Technologies have made us what we are and will drive us to even greater success.

The Board of Directors takes our role as stewards of our stockholders' investments seriously. Our position requires constant review of our governance practices. We research governance practices and evaluate possible improvements with respect to governing the enterprise. We review the performance of the Board annually and are always on the lookout for qualified and experienced individuals to serve on the Board of Directors. We are dedicated to making Rudolph Technologies the best that it can be.

We thank you for being our investors.

Sincerely,

Thomas G. Greig
Chairman of the Board

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 Rudolph Technologies’ business momentum and future growth; the benefit to customers of Rudolph Technologies’ products and customer service; Rudolph Technologies’ ability to both deliver products and services consistent with our customers’ demands and expectations and strengthen its market position; as well as other matters that are not purely historical data. Rudolph Technologies 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 Rudolph Technologies’ control. Such factors include, but are not limited to, the Company’s ability to leverage its resources to improve its position in its core markets; its ability to weather difficult economic environments; its ability to open new market opportunities and target high-margin markets; the strength/weakness of the back-end and/or front-end semiconductor market segments; and fluctuations in customer capital spending. Additional information and considerations regarding the risks faced by Rudolph Technologies are available in the Company’s Form 10-K report for the year ended December 31, 2017 and other filings with the Securities and Exchange Commission. As the forward-looking statements are based on Rudolph Technologies’ current expectations, the Company cannot guarantee any related future results, levels of activity, performance or achievements. Rudolph Technologies does not assume any obligation to update the forward-looking information contained in this proxy statement.



NOTICE OF 2018 ANNUAL MEETING OF STOCKHOLDERS

- Date:** Wednesday, May 16, 2018
- 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 29, 2018 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 two Class I directors named herein to serve for three-year terms expiring upon the 2021 Annual Meeting of Stockholders or 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 approve the Rudolph Technologies, Inc. 2018 Stock Plan;
 4. To approve the Rudolph Technologies, Inc. 2018 Employee Stock Purchase Plan;
 5. To ratify the appointment of Ernst & Young LLP as our independent registered public accounting firm for the year ending December 31, 2018; and
 6. To transact such other business as may properly come before the meeting and any adjournment or postponement thereof.

All stockholders as of the record date are cordially invited to attend the meeting in person. However, to ensure your representation at the meeting, you are urged to mark, sign, date and return the enclosed proxy card as promptly as possible in the postage-prepaid envelope enclosed for that purpose.

Included in the mailing of this proxy statement is a copy of our 2017 Annual Report to Stockholders.

IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE ANNUAL MEETING OF STOCKHOLDERS TO BE HELD MAY 16, 2018:

The enclosed proxy statement and 2017 Annual Report to Stockholders are available at:

http://www.rudolphtech.com/assets/uploads/2017_annual_report.pdf.

FOR THE BOARD OF DIRECTORS

Steven R. Roth

Secretary

Wilmington, Massachusetts

April 18, 2018

PROXY SUMMARY

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 each nominee | 15 |
| Proposal 2: Advisory Vote on Named Executive Officer Compensation | FOR | 24 |
| Proposal 3: Approval of the Rudolph Technologies, Inc. 2018 Stock Plan | FOR | 25 |
| Proposal 4: Approval of the Rudolph Technologies, Inc. 2018 Employee Stock Purchase Plan | FOR | 35 |
| Proposal 5: Ratification of Appointment of Independent Registered Public Accounting Firm | FOR | 38 |

Corporate Governance Highlights

Snapshot of Board Composition

The following table presents a snapshot of the expected composition of the Rudolph Technologies Board of Directors immediately following the 2018 Annual Meeting, assuming the election of all nominees named in the proxy statement.

| Board Characteristic | Rudolph Technologies |
|-------------------------------------|----------------------|
| Total Number of Directors | 7 |
| Percentage of Independent Directors | 85.7% |
| Average Age of Directors (years) | 62.6 |
| Average Tenure of Directors (years) | 9.5 |
| Separate Chairman and CEO roles | Yes |
| Independent Chairman | Yes |
| Audit Committee Financial Experts | 2 |

Snapshot of Board Governance and Compensation Policies

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

| Policy | Rudolph Technologies |
|--|----------------------------|
| 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 Code of Ethics | Yes |
| Stock Ownership Requirements for CEO & Directors | 3x annual compensation |
| Stock Ownership Requirements for other NEOs | 1x base salary |
| Stock Ownership Requirements for other executives | Specified number of shares |
| 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 Executives | Yes |
| Retirement Age of 75 Years for Director Nomination/Appointment | Yes |

Snapshot of Board Governance and Compensation Policies Newly Implemented or Adjusted In Past Year

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

- The Company’s “Say on Frequency” proposal was placed before stockholders at its 2017 Annual Meeting and our stockholders expressed their preference for holding an annual “say on pay” vote on our named executive officers’ compensation.
- An retirement age for Directors was implemented such that no Director shall be appointed to the Board or nominated for election to the Board in the year in which said Director attains the age of 75 years or older.
- Further refinement and enhancement to the Board’s assessment process in the ongoing effort to improve Board performance and stockholder return.
- In January 2018:
 - Daniel H. Berry resigned his position as Chairman of the Compensation Committee;
 - David B. Miller was elected as the new Chairman of the Compensation Committee;
 - Compensation Committee membership was revised to include David B. Miller, Jeffery A. Aukerman and Thomas G. Greig; and
 - Nominating & Governance Committee membership was revised to include Leo Berlinghieri, John R. Whitten and Daniel H. Berry.
- The Company’s peer group for executive compensation for 2018 was revised as follows:
 - Ultratech, Inc. was removed due to its being acquired by another company;
 - MKS Instruments, Inc. was removed as a result of it no longer meeting the Company’s peer group criteria; and
 - Five (5) companies were added (Amtech Systems, Inc., DSP Group, Inc., EMCORE Corporation, Maxwell Technologies, Inc. and Sigma Designs, Inc.) to broaden the peer group in order to more accurately assess the median level of compensation for executives.

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PROXY STATEMENT

The proxy detailed herein is solicited on behalf of the Board of Directors of Rudolph Technologies, Inc. (“Rudolph Technologies” or the “Company”) for use at the 2018 Annual Meeting of Stockholders to be held May 16, 2018 at 10:00 a.m. local 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. The Company’s telephone number is (978) 253-6200.

These proxy solicitation materials and the Company’s Annual Report to Stockholders for the year ended December 31, 2017, including financial statements, were mailed on or about April 18, 2018 to stockholders entitled to vote at the Annual Meeting.

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 directors;
- an advisory resolution on named executive officer compensation;
- approval of the Rudolph Technologies, Inc. 2018 Stock Plan;
- approval of the Rudolph Technologies, Inc. 2018 Employee Stock Purchase Plan; and
- the ratification of the appointment of our independent registered public accounting firm,

all of which is 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 29, 2018, 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.

To gain admission, you will need valid picture identification and proof that you are a stockholder of record of the Company as of the record date, or if you are a beneficial holder, proof from your bank, broker or other record holder of your shares that you are the beneficial owner of such shares. To obtain directions to attend the Annual Meeting and vote in person, please contact Investor Relations at 978-253-6200.

What Constitutes A Quorum?

The required quorum for the transaction of business at the Annual Meeting is a majority of the 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, 31,741,645 shares of the Company’s Common Stock were issued and outstanding. 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, the advisory vote on named executive officer compensation, the proposal to approve the Rudolph Technologies, Inc. 2018 Stock Plan, and the proposal to approve the Rudolph Technologies, Inc. 2018 Employee Stock Purchase Plan 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 by voting your proxy.**

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 do not currently plan to hire a proxy solicitor to help us solicit proxies from stockholders, brokers, bank nominees or other institutions, although we reserve the right to do so.

How Do I Go About Voting?

Whether you hold your shares directly as a stockholder of record, or beneficially in street name, you may vote your shares without attending the meeting. Even if you plan to attend the meeting, we recommend that you vote your shares in advance so that your vote will be counted if you later decide not 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 but do not indicate how the shares are to be voted, those shares will be voted in accordance with Rudolph Technologies’ Board of Director’s recommendations. A valid proxy also authorizes the individuals named 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 our Annual Meeting. If you indicate on your proxy that you wish to “abstain” from voting on an item, your shares will not be voted on that item.

Voting For Shares Registered Directly In The Name Of The Stockholder

If you hold shares in your name as a holder of record, you are considered the “stockholder of record” with respect to those shares. You can vote your shares by completing and returning the enclosed proxy that has been mailed to you, along with a postage-paid envelope. Stockholders of record may also vote in person at the Annual Meeting.

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, this proxy statement has been forwarded to you by your broker, bank or other holder of record who is considered, with respect to those shares, the “stockholder of record.” 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 outlined in your proxy. To be clear, beneficial owners must obtain a legal proxy from the broker, bank or other holder of record authorizing the beneficial holder to vote such shares at the meeting.

May I Revoke My Proxy Instructions?

Any proxy given pursuant to this solicitation may be revoked by the person giving it at any time before it is voted. If you are a stockholder of record, you may change your vote after submitting your proxy by delivering to the Secretary of the Company at the Company’s principal executive offices, prior to the meeting, a written notice of revocation or a duly executed proxy bearing a later date 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 vote.

What Is The Vote Required For Election Of Directors?

Each director is elected by the vote of the majority of the votes cast. This means that in order for a director nominee to be elected to our Board of Directors, 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 quorum purposes). Our Bylaws provide for a majority-voting standard for uncontested elections and provide 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 of Directors. 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, the proposal to approve the Rudolph Technologies, Inc. 2018 Stock Plan, the proposal to approve the Rudolph Technologies, Inc. 2018 Employee Stock Purchase Plan and the proposal to ratify the appointment of Ernst & Young LLP as our independent registered public accounting firm for the year ending December 31, 2018 require the affirmative vote, in person or by proxy, of a majority of the shares present or represented by proxy at the meeting and entitled to vote on the matter to constitute approval of these proposals. For such proposals, abstentions are counted for quorum purposes, but in effect count as negative votes because they are shares represented in person or by proxy that are not voted in the affirmative. Broker non-votes are counted for quorum purposes, but are not counted as part of the vote total and have no effect on the outcome of those proposals.

What Is Householding?

The Company has adopted a procedure approved by the Securities and Exchange Commission (the “SEC”) called “householding.” Under this procedure, when multiple stockholders of record share the same address, we may deliver only one (1) set of proxy materials to that address unless we have received contrary instructions from one or more of those stockholders. The same procedure applies to 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 stockholder), we may be unable to use the householding procedures and, therefore, that stockholder may receive multiple copies of the proxy and proxy statement. You should follow the instructions on each proxy that you receive in order to vote the shares you hold in different accounts.

A stockholder that shares an address with another stockholder, who has received only one (1) set of the proxy materials 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 and proxy statement 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
Rudolph Technologies, 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.

What Are The Deadlines For Submission Of Stockholder Proposals For 2019 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 2019 Annual Stockholder Meeting must submit such proposal in writing to the Company no later than December 19, 2018 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 2019 Annual Stockholder Meeting outside of Exchange Act Rule 14a-8 must submit such nomination or proposal in writing to the Company no earlier than January 16, 2019 and no later than February 15, 2019. 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 "Nominating & Governance Committee."

CORPORATE GOVERNANCE PRINCIPLES AND PRACTICES

Rudolph Technologies 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 CEO since November 2015, and Thomas G. Greig, who has served as an independent director and as Chairman of the Rudolph Technologies Board of Directors (the “Board of Directors” or the “Board”) since April 2016. Prior to that, Mr. Greig served as Lead Director of the Board of Directors from January 2013 to March 2016. Our Board of Directors is comprised of Mr. Plisinski, our only non-independent director, and six (6) directors each of whom has been affirmatively determined by our Board of Directors to meet the criteria for independence established by the SEC and the New York Stock Exchange (“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.

While previously the roles of CEO and Chairman of the Board for the Company were combined, upon the appointment of our new CEO in late 2015, the Board of Directors separated the roles of CEO and Chairman of the Board. In accordance with our sound and effective corporate governance practice, the independent Chairman of the Board is designated by the Board of Directors.

The Board of Directors believes that at the current time the designation of an independent Chairman of the Board facilitates the functioning of the Board of Directors 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 of Directors at which he or she is present;
- Establishes the agenda for each Board of Directors 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 of Directors or as may be prescribed by the Company’s Bylaws.

Board Meetings

The Board of Directors of the Company held a total of twenty (20) meetings during 2017. None of our incumbent directors attended fewer than 84% of the meetings of the Board of Directors and the standing committees upon which such directors served during 2017. 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 of Directors serving at the time attended the 2017 Annual Meeting of Stockholders.

Board Independence

The Board of Directors 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 members of the Board, consisting of a majority of the Board, and representing all of the current members of our Board other than Mr. Plisinski, satisfy these independence standards: Jeffrey A. Aukerman, Daniel H. Berry, Leo Berlinghieri, David B. Miller, Thomas G. Greig and John R. Whitten. None of the independent members of our Board were a party to any transactions, relationships or arrangements that were considered by the Board to impair his independence. On four (4) occasions during 2017, our Board met in executive sessions in which the independent Board members were solely present.

Oversight Of Risk

Our Audit Committee is responsible for overseeing risk management and, on at least an annual basis, 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, 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. Each of our Board committees also considers the risk within its area of responsibilities. For example, our Compensation Committee periodically reviews enterprise risks to ensure that our compensation programs do not encourage excessive risk-taking and our Nominating & Governance Committee oversees risks related to governance issues, such as succession planning, and serves as the contact point for employees to report corporate compliance issues. As a result of the foregoing, we believe that our CEO, together with the Chairman of our Audit Committee and our full Board of Directors provide 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 to the respective committees. The charters of each of these committees is available on our website at www.rudolphtech.com on the Investor page.

In 2017, the composition of and number of meetings held by the Company's Board Committees were as follows:

| Rudolph Technologies Board Committee | Committee Chairman | Committee Members | # of Meetings held in 2017¹ |
|---|------------------------------|---|---|
| Audit Committee | John R. Whitten ² | Jeffrey A. Aukerman ² David B. Miller | 8 |
| Nominating & Governance Committee | Leo Berlinghieri | Thomas G. Greig John R. Whitten | 5 |
| Compensation Committee | Daniel H. Berry | Jeffrey A. Aukerman David B. Miller | 4 |

¹ Each member of the respective committees attended all of the committee's meetings held in 2017.

² Our Board has determined that both Mr. Whitten and Mr. Aukerman qualify as an "Audit Committee Financial Expert" as that term is defined under SEC rules.

In January 2018, Mr. Berry resigned as Chairman of the Compensation Committee. In light thereof, a change to the membership of the Board Committees was implemented. Mr. Berry moved from the Compensation Committee to the Nominating & Governance Committee and Mr. Greig moved from the Nominating & Governance Committee to the Compensation Committee. Thereafter, Mr. Miller was elected and appointed as Chairman of the Compensation Committee.

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; 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.”

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 is responsible for reviewing and recommending for approval by the independent members of the Board of Directors the Company’s executive salary levels and variable compensation programs, both cash-based and equity-based. 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, the Compensation Committee reviews the recommendations for compensation for such individuals presented to the Compensation Committee by the CEO and the reasons thereof. Each year, the CEO is responsible for proposing and establishing personal and corporate objectives for each of the Company executives other than himself. These proposed objectives are reviewed and agreed upon by the CEO and the executive subject to the approval of the Compensation Committee. In addition, as part of the annual performance review of the Company’s executives, the CEO assesses the performance of his direct reports and determines the merit increase, if any, that would be proposed for each individual. These merit increase proposals, along with each executive’s personal and corporate objectives and their bonus target levels (based on a percentage of their base salary), are then compiled by the CEO and submitted to the Compensation Committee for their review. At the Compensation Committee meeting during which the executive compensation plans (bonuses and merit increases) are to be reviewed, the CEO attends the initial session to present the proposed plans and to answer questions. Thereafter, the Compensation Committee meets without the CEO being present to review, discuss and recommend for approval by the independent members of the Board all executive compensation plans subject to any modifications made by the Compensation Committee. The CEO does not participate in decisions regarding his own compensation.

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 consultant or other advisors to assist in the evaluation of director, CEO or executive 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 and non-executive employees. In 2017, the Compensation Committee engaged Pay Governance LLC to review the Company’s executive compensation plans, including those for incentive compensation, and provide other ad hoc 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.

The Board has determined that each of the Compensation Committee members meets 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 “Introduction/Corporate Governance” section in the Compensation Discussion and Analysis below.

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. The Nominating & Governance Committee also recommends to the Board the

appointment of directors to Board Committees and is charged with developing and recommending to the Board the governance principles applicable to the Company. Further, the Nominating & Governance Committee, together with our CEO, is responsible for 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. 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 for each individual director in the prior year. Among other topics, the evaluation in general assesses:

- For the Board:
 - Its structure and composition;
 - The format and content of meetings; and
 - The effectiveness of the Board.
- For the Committees of the Board:
 - Their structure and composition;
 - The format and content of meetings; and
 - The effectiveness of the Committees.
- 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 also 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 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 of Directors 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 of Directors.

Compensation Committee Interlocks And Insider Participation

In 2017, no member of the Compensation Committee (Daniel H. Berry, Jeffrey A. Aukerman and David B. Miller) had any form of interlocking relationship as described in Item 407(e)(4) of Regulation S-K. Further, no member of the Compensation Committee as constituted in 2018 (David B. Miller, Jeffrey A. Aukerman and Thomas G. Greig) has any form of interlocking relationship as described in Item 407(e)(4) of Regulation S-K.

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. These criteria include the following specific, minimum qualifications that the Nominating & Governance Committee believes must be met by a nominee to be recommended by the Committee for a position on the Board:

- The candidate must possess the ability to apply good business judgment;
- The candidate must be in a position to properly exercise his or her duties of loyalty and care;

- The candidate must exhibit proven leadership capabilities, high integrity and experience with a high level of responsibilities within his or her chosen field; 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 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
- 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.

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 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, which may be found on our website at:

<http://www.rudolphtech.com/investors/governance/policies-procedures>

In accordance with the policy, the Nominating & Governance Committee will consider recommendations for candidates to the Board of Directors 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 of Directors 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 regarding advance notice.

Corporate Governance Guidelines

Our Board of Directors adopted Corporate Governance Guidelines, a copy of which is available on our website at <http://www.rudolphtech.com> under the heading “Governance” on the Investors page.

Codes Of Ethics

We have adopted a Code of Business Conduct and Ethics (applicable to all employees, executive officers and directors) and a Financial Code of Ethics (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 these codes may be found on our website at:

<http://www.rudolphtech.com/investors/governance/code-of-ethics>

or may be requested by writing to:

Rudolph Technologies, Inc.
Attention: Investor Relations
16 Jonspin Road
Wilmington, Massachusetts 01887

The Company will disclose any amendment to its codes of ethics or waiver of a provision of its codes of ethics 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.rudolphtech.com, on the Investors page.

Related Persons Transactions Policy

There have been no “related person transactions” since the beginning of 2017 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. Our related person practices and policies are included in our corporate governance documents, including our Code of Business Conduct and Ethics, Audit Committee Charter and Summary of Corporate Governance Policies, each of which is available at the Investors section of our website located at <http://www.rudolphtech.com/investors>.

- 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 approves 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 of Directors, which is found on our website at:

<http://www.rudolphtech.com/investors/governance/stockholder-communications-policy>

Stockholders and other interested parties may communicate with the Chairman of the Nominating & Governance Committee by writing to:

Chairman of the Nominating & Governance Committee
c/o Rudolph Technologies, Inc.
Office of the General Counsel
550 Clark Drive
P.O. Box 860
Budd Lake, New Jersey 07828

and such communications will be forwarded to the Board of Directors to the extent appropriate. Prior to forwarding any communication, the Chairman of the Nominating & Governance Committee will review it and, in his discretion, will not forward a communication deemed to be of a commercial nature or otherwise inappropriate for review by the Board of Directors. Stockholders and other interested parties who would like their submission directed to a member or members of the Board of Directors, including the independent members of the Board, may so specify, and the communication will be forwarded to such specific directors, as appropriate.

PROPOSAL 1

ELECTION OF DIRECTORS

Nominees

The authorized number of directors is currently established at seven (7). The Company's Certificate of Incorporation provides that the directors be divided into three classes, with the classes serving for staggered, three-year terms. Currently, there are two (2) directors in each of Class I and Class II and three (3) directors in Class III. The status of the respective terms for the classes are as follows:

| Class of Director | Election Status | End of Term |
|-------------------|--------------------------------|-------------|
| Class I | Nominated for Election in 2018 | 2021* |
| Class II | Elected in 2016 | 2019* |
| Class III | Elected in 2017 | 2020* |

* or until their successors have been duly elected and qualified

At the Annual Meeting, directors will be elected to hold office for a three (3) year term expiring at the 2021 Annual Meeting of stockholders or until their respective successor is duly elected and qualified or until the director's earlier death, resignation or removal. Based on the recommendation of the Nominating & Governance Committee, the two (2) Class I director nominees approved by the Board for inclusion in this proxy statement are:

Leo Berlinghieri Michael P. Plisinski

Each nominee is currently serving as a director of Rudolph Technologies. In making its recommendations, the Nominating & Governance Committee considered a number of factors, including its criteria for Board membership, which include the minimum 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 will serve if elected. Unless otherwise instructed, the proxy holders will vote the proxies received by them for the Company's two (2) 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 of Directors to fill the vacancy. Alternatively, the Board of Directors, in its discretion, may elect to reduce the number of directors serving on the Board.

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 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. To this end, in the past two and a half years, two (2) directors who retired (Dr. Spanier and Mr. McLaughlin) have been replaced by two (2) new directors (Mr. Miller and Mr. Plisinski), with Mr. Plisinski being a candidate for election this year. The Board believes that the new insights and ideas contributed by these individuals will be essential to our Board and its strategy and complement the valuable experience and familiarity that longer-serving directors bring to the Company.

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 shares cast "for" his election must exceed the number of votes cast "against" his 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 is not elected, our Bylaws provide that such director must promptly tender a resignation to the Board. Our Nominating and Governing 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

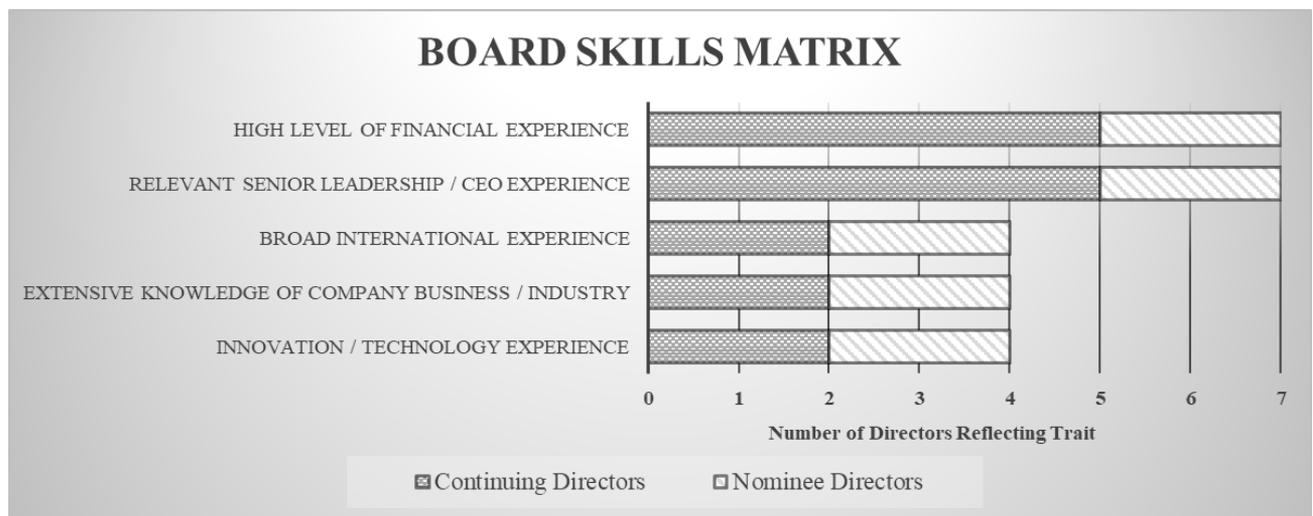
Our Board and its Nominating & Governance Committee believe that all of the directors and nominees are highly qualified and have demonstrated leadership skills and have experience and judgment in areas that are relevant to our business. We believe that their ability to challenge and stimulate management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

The two (2) Class I nominees for director and the current Class II and Class III directors with unexpired terms are set forth below. All information is as of the record date.

| Name | Position | Board Tenure |
|--|---|--------------|
| <i>Nominee Class I Directors:</i> | | |
| Leo Berlinghieri | Former Chief Executive Officer and President, MKS Instruments, Inc. | 9.50 years |
| Michael P. Plisinski | Chief Executive Officer, Rudolph Technologies, Inc. | 2.33 years |
| <i>Continuing Class II Directors:</i> | | |
| Daniel H. Berry | Operating Partner, Riverside Partners, LLC | 19.42 years |
| Thomas G. Greig | Former Senior Managing Director, Liberty Capital Partners, Inc. | 14.17 years |
| <i>Continuing Class III Directors:</i> | | |
| Jeffrey A. Aukerman | Former Partner, Deloitte & Touche LLP | 3.25 years |
| David B. Miller | Former President, DuPont Electronics & Communications | 2.75 years |
| John R. Whitten | Former Chief Financial Officer, Vice President and Treasurer, Applied Industrial Technologies, Inc. | 11.75 years |

Except as discussed below, each nominee or 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 following reflects additional information regarding the background and qualifications of our directors, including the experience and skills that support the Board’s determination that each director should serve on our Board.



NOMINEES FOR CLASS I DIRECTORS

Leo Berlinghieri



| | |
|-----------------------------|--|
| Director Since: | September 2008 |
| Age: | 64 |
| Independent Status: | Independent Director |
| Board Committee(s): | Nominating & Governance (Chairman) |
| Other Boards Served: | Unipower, LLC (Since 2017) 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., an equipment supplier 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

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.

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.

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, 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.

Michael P. Plisinski



| | |
|-----------------------------|--------------------------|
| Director Since: | November 2015 |
| Age: | 48 |
| 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 November 2015. Prior to his appointment as our CEO, Mr. Plisinski served as our 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 the Company merged with August Technology Corporation 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 President and sole founder 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

High Level of Financial Experience

- Substantial financial experience gained in roles as Chief Executive Officer, Chief Operating Officer and Vice President, General Manager with the Company.

Relevant Senior Leadership / CEO Experience

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

Broad International Exposure

- Extensive experience working with Rudolph Technologies Asian and European customers through the various roles held within the Company.

Extensive Knowledge of Company Business/Industry

- Over fourteen (14) years of dedicated experience with Rudolph Technologies and 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 Technologies. Prior entrepreneurial experience in the founding of optical review and automated metrology equipment company, Counterpoint Solutions.

**The Company’s Board of Directors unanimously recommends voting
“FOR” each of the nominees set forth above.**

CONTINUING CLASS II DIRECTORS

Daniel H. Berry



| | |
|-----------------------------|--|
| Director Since: | October 1998 |
| Age: | 72 |
| Independent Status: | Independent Director |
| Board Committee(s): | Compensation (Chairman/Member through January 2018); Nominating & Governance (beginning in January 2018) |
| Other Boards Served: | R&D Altanova (Since 2015) Thinklogical (2012-2017) NYU - Tandon School of Engineering (1999-2016) NDS Surgical Imaging (2009-2011) IZI Medical Products (2009-2011) Applied Precision (2004-2007) |

Since January 2002, Mr. Berry has been an Operating Partner of Riverside Partners, LLC, a private equity investment firm. From September 2010 to August 2011, Mr. Berry served as Chief Executive Officer of NDS Surgical Imaging, LLC, a supplier to the medical imaging industry. From July 2004 to August 2007, Mr. Berry also served as Executive Vice President of Applied Precision, formerly a Riverside portfolio company. He was employed by Ultratech Stepper, Inc. (presently Ultratech, Inc.), an equipment supplier to the semiconductor industry, from 1990 to 2001 in various positions including President and Chief Operating Officer from May 1999 to November 2001. Prior to this, Mr. Berry held positions at General Signal, Perkin Elmer and Bell Laboratories. Mr. Berry holds a B.S. in Electrical Engineering from the Polytechnic Institute of Brooklyn.

Specific Qualifications, Attributes, Skills and Experience

High Level of Financial Experience

- Substantial financial experience gained both as Operating Partner with Riverside Partners, LLC and in serving in executive management roles with various companies such as NDS Surgical Imaging, LLC, Ultratech, Inc. and Applied Precision, among others.

Relevant Senior Leadership / CEO Experience

- Served as Chief Executive Officer for NDS Surgical Imaging and, within the semiconductor industry, as Chief Operating Officer of Ultratech, Inc. and as Executive Vice President of Applied Precision. Further, he has served as an Operating Partner of Riverside Partners, LLC for over sixteen (16) years.

Broad International Exposure

- Roles with global companies including Bell Laboratories, Perkin Elmer, General Signal, Applied Precision, NDS Surgical Imaging and Ultratech provide broad and deep experience in international business and customer relations.

Extensive Knowledge of Company Business/Industry

- Over thirty-five (35) years of employment experience within an array of fields in the semiconductor industry including both lithography and probe card test and analysis.

Innovation/Technology Experience

- Expansive scope of technological and innovative experience from over thirty-five (35) years of semiconductor industry employment.

Thomas G. Greig, III



| | |
|-----------------------------|---|
| Director Since: | January 2003 |
| Age: | 70 |
| Independent Status: | Independent Director |
| Board Committee(s): | Nominating & Governance (through January 2018); Compensation (beginning in January 2018) |
| Other Boards Served: | Black Box Corporation (Since 1999) |

Mr. Greig has served as the Company's independent Chairman since April 2016. He served as the Company's independent Lead Director from January 2013 through March 2016.

Mr. Greig was employed by Liberty Capital Partners, Inc., a private equity investment firm, from July 1998 to June 2016 and last held the position of Senior Managing Director. From December 1985 to July 1998, Mr. Greig was a Managing Director of Donaldson, Lufkin, & Jenrette, Inc., an investment-banking firm. Mr. Greig holds a B.S. in Engineering from Princeton University, an M.S.E. in Electrical Engineering from New York University and an M.B.A. from Harvard University Graduate School of Business Administration.

Specific Qualifications, Attributes, Skills and Experience

High Level of Financial Experience

- Wide-ranging acquisition and financial background as a result of his affiliation with Liberty Capital Partners, Inc., a private equity investment firm, for over nineteen (19) years and Donaldson, Lufkin, & Jenrette, Inc., an investment banking firm, for over twelve (12) years.

Relevant Senior Leadership / CEO Experience

- Served as in senior management roles for over 30 years, both as Senior Managing Director of Liberty Capital Partners, Inc. and as Managing Director of Donaldson, Lufkin, & Jenrette, Inc.

CONTINUING CLASS III DIRECTORS

Jeffrey A. Aukerman



| | |
|-----------------------------|--|
| Director Since: | December 2014 |
| Age: | 52 |
| Independent Status: | Independent Director |
| Board Committee(s): | Audit, Compensation |
| Other Boards Served: | Advisory Council to the Lariccia School of Accounting & Finance at Youngstown State University (since 2012) |

Mr. Aukerman is a certified public accountant and has extensive public accounting and consulting experience, serving many public and private equity sponsored public reporting companies in the manufacturing, distribution and services industries. From July 1987 to May 2014, Mr. Aukerman was employed by Deloitte & Touche LLP, which, together with its affiliates, is an audit, consulting, tax and advisory services firm, and served as an audit partner for the most recent fifteen (15) years. He also served in various capacities for the firm, including as an audit function professional practice director for the Cleveland, Ohio office and a regional leader of internal control subject matter specialists. Mr. Aukerman graduated magna cum laude with a B.S.B.A. in Accounting from Youngstown State University.

Specific Qualifications, Attributes, Skills and Experience

High Level of Financial Experience

- Twenty-seven (27) years of extensive experience with a wide range of financial reporting, accounting, risk management, and compliance matters at Deloitte & Touche LLP.

Relevant Senior Leadership / CEO Experience

- Served as Partner at Deloitte & Touche LLP.

David B. Miller



| | |
|-----------------------------|---|
| Director Since: | July 2015 |
| Age: | 61 |
| Independent Status: | Independent Director |
| Board Committee(s): | Audit, Compensation (Chairman beginning in January 2018) |
| Other Boards Served: | President, University of Virginia School of Engineering & Applied Science Foundation (since 2011); Merrimac Industries (2002-2008) SEMI International (2011-2015) North Carolina Chamber of Commerce (2010-2015) |

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

High Level of Financial Experience

- Substantial financial experience gained in role 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.

Relevant Senior Leadership / CEO Experience

- Served as President of DuPont Electronics & Communications.

Broad International Exposure

- Served as President of DuPont Electronics & Communications, a global electronic materials company. Served several joint venture boards in the U.S. and Asia while with DuPont Electronics & Communications as well as 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.

John R. Whitten



| | |
|-----------------------------|---|
| Director Since: | July 2006 |
| Age: | 71 |
| Independent Status: | Independent Director |
| Board Committee(s): | Audit (Chairman), Nominating & Governance |
| Other Boards Served: | American Century Investments (since 2008) |

From November 1995 to December 2003, Mr. Whitten served as Chief Financial Officer, Vice President and Treasurer of Applied Industrial Technologies, Inc., an industrial supply distributor. Mr. Whitten is a C.P.A. and holds a B.B.A. in Accounting from Cleveland State University.

Specific Qualifications, Attributes, Skills and Experience

High Level of Financial Experience

- Has public accounting firm experience and served for eight (8) years as Chief Financial Officer, Vice President and Treasurer of Applied Industrial Technologies, Inc. Currently serving as Audit Committee Chairman for the Board of American Century Investments, a registered investment company that oversees sixty-eight (68) mutual fund portfolios with over \$100 billion of assets under management.

Relevant Senior Leadership / CEO Experience

- Served as Chief Financial Officer, Vice President and Treasurer of Applied Industrial Technologies, Inc.

Compensation Of Directors

Directors who are employees of the Company receive no compensation for their services as members of the Board of Directors. Director compensation is a mix of cash and equity-based compensation, which is largely comprised of the equity component to align with the Company's long-term performance and stockholder interests. To enhance this alignment further, the Board increased the stock holding requirements for all outside directors and the CEO as discussed below.

The components of the compensation for directors who are not employees of the Company are as follows:

| Board Compensation Element | Amount/Value |
|--|------------------------|
| Annual Retainer | \$70,000 ¹ |
| Annual Equity Grant (Restricted Stock Units (RSUs)) | \$100,000 ² |
| Committee Chairmanship | \$15,000 ¹ |
| Board Chairmanship | \$40,000 ¹ |
| Initial Equity Grant (Restricted Stock Units (RSUs)) | \$100,000 ³ |

¹ Paid in quarterly installments at the middle of each quarter

² Awarded at second quarter Board meeting in an amount of shares calculated by dividing amount by the Company Common Stock closing stock price 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. All 2017 equity awards were granted under and subject to the terms of the Rudolph Technologies, Inc. 2009 Stock Plan.

In 2017, directors were not paid to serve on the committees of the Board of Directors with the exception of those directors serving as committee chairmen. Mr. Berlinghieri, Mr. Berry and Mr. Whitten each received the cash compensation cited in the table above in 2017 for their services as the Chairman of the Nominating & Governance Committee, the Compensation Committee and the Audit Committee, respectively. From time to time, directors may be compensated for work performed as members of special subcommittees of the Board of Directors. Notwithstanding the foregoing, no fees were paid to directors for special subcommittee work in 2017.

In 2017, Mr. Greig received the above referenced annual retainer for the independent Chairman of the Board as compensation for his service in this role.

For the year ended December 31, 2017, the directors, excluding the directors who are named executive officers, received total compensation indicated in the table below. There were no option awards granted to such directors and 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 |
|---------------------|------------------------------------|-------------------------|-------------------------------|--------------|
| Jeffery A. Aukerman | \$70,000 | \$100,590 | \$ — | \$170,590 |
| Leo Berlinghieri | \$85,000 | \$100,590 | \$ — | \$185,590 |
| Daniel H. Berry | \$85,000 | \$100,590 | \$ — | \$185,590 |
| Thomas G. Greig | \$110,000 | \$100,590 | \$ — | \$210,590 |
| David B. Miller | \$70,000 | \$100,590 | \$ — | \$170,590 |
| John R. Whitten | \$85,000 | \$100,590 | \$ — | \$185,590 |

- (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 31, 2017 filed with the SEC. As of December 31, 2017, our directors had the following stock awards outstanding: Mr. Aukerman - 4,200 RSUs; Mr. Berlinghieri – 4,200 RSUs; Mr. Berry – 4,200 RSUs; Mr. Greig – 4,200 RSUs; Mr. Miller – 4,200 RSUs; and Mr. Whitten – 4,200 RSUs.

Stock Ownership/Retention Guidelines For Directors

The Company has established guidelines related to stock ownership and retention for its outside directors. Currently, the guidelines require that each non-employee director of the Company own at least 5,000 shares of Company Common Stock within one (1) year following the date of election or appointment to the Board and thereafter maintain such ownership status during the term of service as a director of the Company.

These guidelines, last amended in January 2017, further require that each non-employee director own shares of Company Common Stock by November 2018 valued at a minimum of three (3) times the amount of the director's total cash compensation which includes the annual cash retainer as well as any additional fee paid to those individuals who are Committee Chairs, Lead Director or Chairman of the Board. For a new director the stock holding requirement is to be attained within three (3) years of his or her election to the Board.

PROPOSAL 2

ADVISORY VOTE ON EXECUTIVE 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 of Directors 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 2017 Annual Meeting of Stockholders, the Company currently holds an annual “say on pay” vote.

Our executive compensation arrangements are designed to enhance stockholder value on an annual and long-term basis. Through the use of base pay as well as annual and long-term incentives, we seek to compensate our named executive officers for their contributions to our profitability and success. Please read the Compensation Discussion and Analysis beginning on page 42 of this proxy statement and the tabular and additional narrative disclosures on executive compensation beginning on page 66 of this proxy statement for additional details about our executive compensation arrangements, including information about the fiscal year 2017 compensation of our named executive officers.

This advisory vote addresses the overall compensation of our named executive officers as well as our philosophy and policies regarding executive compensation practices as described in this proxy statement. 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 this proxy statement 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 view expressed by our stockholders in their vote on this proposal and will take into account the outcome of the vote when considering executive 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

APPROVAL OF RUDOLPH TECHNOLOGIES, INC. 2018 STOCK PLAN

The Board of Directors is requesting that our stockholders approve a new stock plan, the Rudolph Technologies, Inc. 2018 Stock Plan (the “2018 Plan”). The Board has adopted the 2018 Plan, subject to stockholder approval at the Annual Meeting. If approved by our stockholders, the 2018 Plan will become effective as of May 16, 2018 and will expire 10 years from such date, unless terminated earlier.

The 2018 Plan is structured to allow the Board to award equity incentives to eligible directors, officers, employees and consultants in order to assist the Company in attracting, retaining and motivating the best available personnel for the successful conduct of the Company’s business. The Company believes that linking compensation to corporate performance motivates employees and consultants to improve stockholder value. The Company has, therefore, consistently included equity incentives as a significant component of compensation for its officers, employees, directors and consultants. With the high demand for highly skilled employees and consultants, especially in the technology industries, management believes it is critical to the Company’s success to maintain competitive compensation programs. The Board believes that the approval of the 2018 Plan would be in the best interests of the Company and its stockholders.

We currently maintain the Rudolph Technologies, Inc. 2009 Stock Plan (the “2009 Plan”). The 2009 Plan currently expires on January 27, 2019 which is before our regularly scheduled 2019 annual meeting of stockholders. If the 2018 Plan is not approved by our stockholders at the 2018 Annual Meeting, no new awards may be granted under the Plan after January 27, 2019. We are seeking stockholder approval of the 2018 Plan with a term that expires in May 2028 to continue to provide our officers, employees, directors and consultants with equity-based compensation that aligns their interests with the interests of our stockholders.

In addition, the number of shares remaining available under the 2009 Plan is insufficient to meet the Company’s compensation goals in future years. To ensure that the Company has an adequate number of shares available for compensation to its directors, executive officers and other employees and consultants, we are asking our stockholders to approve the 2018 Plan with a total share reserve of 3,240,000 shares, as described below under “Share Reserve Under the 2018 Plan”.

Key Governance Highlights Of The 2018 Plan

The following are key governance highlights of the 2018 Plan:

- *Minimum Vesting Requirements.* Minimum one-year vesting period for all awards subject to certain limited carve-outs.
- *No Dividends on Unvested Awards.* Prohibition on payment of dividends and dividend equivalents while an award is unvested.
- *No Liberal Share Recycling.* Shares of common stock not issued as the result of a net settlement of options or stock appreciation rights (“SARs”) as well as shares tendered or withheld to pay the exercise price of withholding taxes relating to awards will not again be made available for issuance as awards under the 2018 Plan.
- *Individual Annual Award Limits for Directors.* Limitations apply to the value of awards an individual non-employee director (“outside director”) may receive in a given calendar year.
- *Individual Annual Award Limits for Other Participants.* Limitations apply to the value of awards an individual officer, employee or consultant may receive in a given calendar year.
- *No Liberal Change-in-Control Definition.* The change-in-control definition under the 2018 Plan is not considered “liberal” and, for example, is not triggered by shareholder approval of a transaction.
- *Clawback.* Awards are subject to potential cancellation or clawback in certain circumstances in accordance with the Company’s clawback policy.
- *No Repricing.* The 2018 Plan prohibits, without shareholder approval, the cancellation of underwater options or SARs for cash or other awards, the reduction of the exercise price of options or SARs, or any other action that would be treated as a repricing, without shareholder approval.

Share Reserve Under The 2018 Plan

Under the 2018 Plan, the number of shares of Company common stock available for issuance to eligible participants will be 3,240,000 shares, subject to stockholder approval. As of the effective date of the 2018 Plan, no additional grants may thereafter be issued under the 2009 Plan. As of March 29, 2018, 1,949,577 shares remained available for grant under the 2009 Plan.

The following table presents information about the number of shares that were subject to various outstanding equity awards under the 2009 Plan and the shares remaining available for issuance under the 2009 Plan. On March 29, 2018, the total number of shares outstanding was 31,741,645 and our closing stock price was \$27.70.

| | |
|---|------------------|
| Number of outstanding stock options as of March 29, 2018. | 65,000 |
| Weighted average exercise price of the outstanding stock options as of March 29, 2018. | \$12.22 |
| Weighted average remaining contractual term of the outstanding stock options as of March 29, 2018. | 4.7 years |
| Number of outstanding serviced-based restricted stock units ⁽¹⁾ as of March 29, 2018. | 864,759 |
| Number of outstanding performance-based restricted stock units (at target) as of March 29, 2018. ⁽¹⁾ | 89,262 |
| Shares remaining available under the 2009 Plan as of March 29, 2018. | 1,949,577 |
| Number of shares available for issuance under the 2018 Plan⁽²⁾ | 3,240,000 |
| ⁽¹⁾ Includes earned performance-based restricted stock units that have been earned and remain subject to service-based vesting requirements. | |
| ⁽²⁾ As may be increased after the effective date of the 2018 Plan as a result of awards granted under the 2009 Plan that expire unexercised, terminate, are forfeited or repurchased by the Company, are surrendered pursuant to an exchange program, are settled in cash in lieu of stock or released from a reserve for failure to meet vesting conditions, or shares used to satisfy an exercise price or tax withholding obligation subject to the terms of the 2009 Plan. | |

In determining whether to approve the 2018 Plan, including the share reserve under the 2018 Plan, the following considerations were taken into account:

- We expect the share reserve under the 2018 Plan to provide us with enough shares for awards for approximately 5.7 years. However, this expectation assumes that we continue to grant awards consistent with our current practices and historical usage as reflected in our historical burn rate, and is dependent on our stock price and hiring activity during the next few years and forfeitures of outstanding awards under the 2009 Plan. We cannot predict our future equity grant practices, the future price of our stock or future hiring activity with any degree of certainty at this time and, as a result, the share reserve under the 2018 Plan could last for a shorter or longer time.
- The potential dilution to our stockholders that may result from the issuance of shares pursuant to outstanding awards: our overhang rate as of March 29, 2018 (calculated by dividing (x) the number of shares subject to equity awards outstanding plus shares remaining available for issuance for future awards by (y) the number of common shares outstanding plus the number of shares subject to equity awards outstanding plus the remaining shares available for issuance was 8.6%. Our overhang rate on a pro forma basis, assuming that the 3,240,000 share reserve under the 2018 Plan was authorized as of that date, would have been 12.0%.
- Over the past three calendar years, our “burn rate,” or annual share usage expressed as a percentage of weighted average shares outstanding, was 7.7%, 3.5% and 2.2% (for the years ended December 31, 2015, December 31, 2016 and December 31, 2017, respectively). Our average 3-year burn rate of 4.5% is lower than the 6.3% burn rate cap for companies in our industry, as established by certain major proxy advisory firms.
- Analysis by our compensation consultant, which was based on generally accepted evaluation methodologies used by proxy advisory firms, that the number of shares to be reserved under the 2018 Plan is within generally accepted standards as measured by an analysis of the 2018 Plan cost relative to industry standards.

Summary Of The 2018 Plan

The following is a summary of the principal features of the 2018 Plan and its operation. This summary is qualified in its entirety by reference to the 2018 Plan itself set forth in Appendix A.

General

The 2018 Plan provides for the grant of equity awards to employees, directors and consultants. Options granted under the 2018 Plan may either be “incentive stock options” as defined in Code Section 422 or nonstatutory stock options, as determined by the Board.

Purpose

The general purposes of the 2018 Plan are to attract and retain the best available personnel for positions of substantial responsibility, to provide additional incentive to the employees, directors and consultants of the Company and to promote the success of the Company’s business.

Administration

The 2018 Plan will be administered by the Compensation Committee (“Committee”) or the Board, as applicable (in either case, the “Administrator”).

Eligibility

The 2018 Plan provides that nonstatutory stock options, stock appreciation rights (“SARs”), restricted stock, restricted stock units, performance units and performance shares may be granted to employees, directors and consultants of the Company and any parent or subsidiary. Incentive stock options may be granted only to employees of the Company and any parent or subsidiary. The Administrator will determine which eligible persons will be granted awards.

Shares Available Under The 2018 Plan

The maximum aggregate number of shares that may be awarded and sold under the 2018 Plan is 3,240,000 shares. If, after the effective date of the 2018 Plan, any shares subject to awards granted under the 2009 Plan would again become available for new awards under the terms of the 2009 Plan if it were still in effect and without regard to any termination of such plan, then those shares will be available for the purpose of granting awards under the 2018 Plan. The shares issued pursuant to awards under the 2018 Plan may be authorized but unissued or reacquired Common Stock. No awards have been granted under the 2018 Plan.

If an award terminates, expires or becomes unexercisable without having been exercised in full without being exercised in full, or, with respect to restricted stock, restricted stock units, performance units or performance shares, is terminated or forfeited in whole or in part due to failure to vest, the shares (or forfeited shares) which were subject to such terminated, expired, unexercised, surrendered or forfeited award will become available for future issuance under the 2018 Plan. To the extent that an award under the 2018 Plan is paid out in cash, rather than shares, such cash payment will not result in reduction of the shares available for issuance under the 2018 Plan.

Shares used to pay the exercise price of an award or to satisfy the tax withholding obligations related to an award will not again become available for future grant under the 2018 Plan. Upon exercise of a SAR settled in shares, all shares subject to the SAR (not the number of net shares actually issued pursuant to the SAR upon any exercise) will cease to be available under the 2018 Plan.

Individual Award Limits

For any calendar year, (i) the value of awards granted to an outside director under the 2018 Plan may not exceed \$600,000 and (ii) the value of awards granted to any individual participant other than an outside director under the 2018 Plan may not exceed \$5,000,000, in each case calculating the value of any such awards based on the grant date fair value of such awards for financial reporting purposes. For purposes of applying this annual limit, any award of performance units, performance shares or any other award subject to performance-based vesting criteria will be taken into account assuming target performance achievement under the terms of such award.

Minimum Vesting Period

All awards granted to all participants under the 2018 Plan will be subject to a minimum vesting period of not less than 1 year from the date of grant; provided, the Administrator may provide for the grant of awards to participants without regard to the minimum vesting requirement with respect to a maximum of five percent (5%) of the total number of shares authorized for issuance under the 2018 Plan.

Substitute Awards

In connection with an entity's merger or consolidation with the Company or any subsidiary or the direct or indirect acquisition by the Company or any subsidiary of an entity's property or stock, the Committee may grant awards in substitution or exchange for any options or other stock or stock-based awards granted before such merger or consolidation by such entity or its affiliate. Substitute awards may be granted on such terms and conditions as the Committee deems appropriate, notwithstanding any limitations on awards in the 2018 Plan. Substitute awards will generally not count against the aggregate share reserve. Additionally, in the event that a company acquired by the Company or any subsidiary, or with which the Company or any subsidiary otherwise combines, has shares available under a pre-existing plan approved by its stockholders and not adopted in contemplation of such acquisition or combination as determined by the Administrator, the shares available for grant pursuant to the terms of such pre-existing plan may be used under certain circumstances for awards under the 2018 Plan and shall not reduce the shares authorized for grant under the 2018 Plan.

Types Of Awards Under The 2018 Plan

Stock Options

Stock option awards may be granted to employees, directors or consultants of the Company at any time and from time to time as determined by the Administrator in its discretion, except incentive stock options may be granted only to employees of the Company. The exercise price of options granted under the 2018 Plan is determined by the Administrator and must not be less than 100% of the fair market value of the Common Stock at the time of grant. Options granted under the 2018 Plan expire as determined by the Administrator, but in no event later than 10 years from date of grant. No option may be exercised by any person after its expiration. Incentive stock options granted to stockholders owning more than 10% of the voting stock of the Company must have an exercise price per share no less than 110% of the fair market value at the time of grant and the term of such option may be no more than five years from the date of grant. The fair market value of the Common Stock is generally determined with reference to the closing sale price for the Common Stock (or the closing bid if no sales were reported) on the day of determination.

Options become exercisable at such times as are determined by the Administrator and as set forth in the individual award agreements. An option is exercised by giving notice to the Company in the form determined by the Administrator, specifying the number of full shares of Common Stock to be purchased and tendering payment of the purchase price. The 2018 Plan permits payment to be made by cash, check, other shares of Common Stock, delivery of a properly executed exercise notice together with any other documentation as the Administrator and the participant's broker (if applicable) may require to effect an exercise of the option and delivery to the Company of the sale or other proceeds (as permitted by applicable law) required to pay the exercise price, withholding shares otherwise issuable in connection with the exercise of the option, such other consideration and method of payment authorized by the Administrator in its discretion or permitted by the award agreement, or any combination thereof.

Restricted Stock

Restricted stock awards may be granted to employees, directors or consultants of the Company at any time and from time to time as determined by the Administrator in its discretion. Each restricted stock grant will be evidenced by an award agreement that will specify the number of shares granted and such other terms and conditions as the Administrator will determine in accordance with the terms of the 2018 Plan.

Subject to the terms of the 2018 Plan, the Administrator will have complete discretion to determine (i) the number of shares subject to a restricted stock award granted to any participant, and (ii) any vesting conditions that must be satisfied. The Administrator may provide that awards of restricted stock earn dividends paid with respect to such shares. Any such dividends will be accumulated and credited to an account for the participant, with interest in the Administrator's discretion, and will be subject to the same terms and conditions, including vesting restrictions, as the award with respect to which the dividends are credited. To the extent an award of restricted stock is forfeited in whole or in part, any accrued dividends with respect to such award will be forfeited at the same time and to the same extent as such award. No dividends or accrued interest, if any, earned with respect to an award of restricted stock may be paid before the underlying award vests.

Restricted Stock Units

Restricted stock units may be granted to employees, directors or consultants of the Company at any time and from time to time as determined by the Administrator. Each restricted stock unit grant will be evidenced by an award agreement that will specify such terms and conditions as the Administrator will determine in accordance with the terms of the 2018 Plan.

Restricted stock units result in a payment to a participant only if the vesting criteria the Administrator establishes are satisfied. The Administrator may set vesting criteria based on the achievement of Company-wide, business unit, or individual goals (including continued employment), or any other basis determined by the Administrator in its discretion. The restricted stock units will vest at a rate determined by the Administrator. Upon satisfying the applicable vesting criteria, the participant will be entitled to a payout as specified in the award agreement or as otherwise determined by the Administrator. The Administrator, in its sole discretion, may pay earned restricted stock units in shares, cash, or a combination thereof. On the date set forth in, and otherwise subject to the terms and conditions of the award agreement, or as provided by the Administrator, all unearned restricted stock units will be terminated and forfeited to the Company. Additionally, the Administrator is authorized to grant participants dividend equivalents based on the dividends declared on shares that are subject to any outstanding restricted stock unit. Any such dividend equivalents will be accumulated and credited to an account for the participant, with interest in the Administrator's discretion, and will be subject to the same terms and conditions, including vesting restrictions, as the award with respect to which the dividend equivalents are credited. To the extent an award of restricted stock units is forfeited in whole or in part, any accrued dividend equivalents with respect to such award will be forfeited at the same time and to the same extent as such award. No dividend equivalents or accrued interest, if any, earned with respect to restricted stock units may be paid before the underlying award vests.

Stock Appreciation Rights

SARs may be granted to employees, directors or consultants of the Company at any time and from time to time as determined by the Administrator in its discretion. Each SAR grant will be evidenced by an award agreement that will specify the exercise price, the term of the SAR, the conditions of exercise, and such other terms and conditions as the Administrator will determine in accordance with the terms of the 2018 Plan.

The Administrator will have discretion to determine the terms and conditions of SARs granted under the 2018 Plan; provided that no SAR may have a term of more than 10 years from the date of grant and that the exercise price of a SAR may not have an exercise price below 100% of the fair market value of the Common Stock on the grant date. No SAR can be exercised by any person after its expiration.

Upon exercise of a SAR, the holder of the SAR will be entitled to receive payment from us in an amount determined by multiplying (i) the difference between the fair market value of a share on the date of exercise over the exercise price, times (ii) the number of shares with respect to which the SAR is exercised.

At the discretion of the Administrator and as set forth in the applicable award agreement, payment to the holder of a SAR may be in cash, shares of Common Stock or a combination thereof.

Grant Of Performance Units And/Or Performance Shares

Performance units and performance shares may be granted to employees, directors or consultants of the Company at any time and from time to time, as determined by the Administrator in its sole discretion. The Administrator will have complete discretion in determining the number of performance units/shares granted to each participant. The Administrator may provide that awards of performance shares and performance units earn dividends or dividend equivalents, as applicable, and accrued interest in its discretion. To the extent an award of performance units or performance shares is terminated, cancelled or forfeited in whole or in part, due to failure to meet performance conditions or otherwise, any dividends, dividend equivalents and accrued interest will be terminated, cancelled or forfeited at the same time and to the same extent as such award. No dividends, dividend equivalents or accrued interest, if any, earned with respect to a performance unit award or a performance share award may be paid before the underlying award vests.

The Administrator will set performance objectives or other vesting provisions (including, without limitation, continued status as a service provider to the Company) in its discretion which, depending on the extent to which they are met, will determine the number or value of performance units or performance shares that will be paid out. Each award of performance units and performance shares will be evidenced by an award agreement that will specify the time period during which the performance objectives or other vesting provisions must be met (the “performance period”), vesting period and such other terms and conditions as the Administrator will determine in its discretion in accordance with the terms of the 2018 Plan. The Administrator may set performance objectives based upon the achievement of Company-wide, divisional, or individual goals, or any other basis determined by the Administrator in its discretion.

After the applicable performance period has ended, the holder of performance units or performance shares will be entitled to receive a payout of the number of performance units or performance shares earned by the participant over the performance period, to be determined as a function of the extent to which the corresponding performance objectives or other vesting provisions have been achieved. The Administrator may pay earned performance units and performance shares in the form of cash, in shares, or in a combination thereof. After the grant of performance units or performance shares, the Administrator may reduce or waive any performance objectives or other vesting provisions for such performance unit or performance share.

On the date set forth in, and otherwise subject to the terms and conditions of, the award agreement, or as otherwise provided by the Administrator, all unearned or unvested performance units and performance shares will be forfeited to the Company.

Other Plan Provisions

Termination Of Employment

The 2018 Plan gives the Administrator the authority to vary the terms of the individual award agreements. Under the 2018 Plan, unvested awards granted will generally be forfeited or expire upon a participant’s termination of employment unless the Committee exercises its discretion to modify the time at which stock options and SARs may be exercised or any restrictions will lapse or be removed, notwithstanding any provision of the 2018 Plan to the contrary. Generally, with respect to stock options and SARs, if a participant ceases to provide ongoing service as an employee, director or consultant for any reason other than death or disability or termination for cause, then the participant will generally have the right to exercise his or her outstanding options and SARs for three months after the date of termination, but only to the extent that the participant was entitled to exercise such option or SAR at the date of such termination. If such termination is due to death or disability, the participant (or the participant’s legal representative) will generally have the right to exercise any existing unexercised option or SAR at any time within 12 months following the termination date, but only to the extent that the participant was entitled to exercise such option or SAR at the date of such termination. In no event will an option or SAR be exercisable beyond its term. In the event of a participant’s termination for cause, then the participant’s options, whether vested or unvested, will immediately be forfeited upon termination.

Recoupment

A participant’s rights with respect to any award granted under the 2018 Plan shall in all events be subject to (i) any right that the Company may have under any clawback or recoupment policy as may be in effect from time to time or any other clawback or recoupment agreement or arrangement applicable to a participant; or (ii) any right or obligation that the Company may have regarding the recoupment of incentive-based compensation under Exchange Act Section 10D and any applicable rules and regulations issued by the SEC.

Compliance With Code Section 409A

Awards are intended to operate in such a manner that they are either exempt from the application of, or comply with, the requirements of Code Section 409A such that the grant, payment, settlement or deferral will not be subject to the additional tax or interest applicable under Code Section 409A, except as otherwise determined in the sole discretion of the Administrator, provided that no warranty of such exemption or compliance is made. The 2018 Plan and each award Agreement under the 2018 Plan is intended to meet the requirements of Code Section 409A and will be construed and interpreted in accordance with such intent, except as otherwise determined in the sole discretion of the Administrator.

Non-Transferability Of Awards

Unless determined otherwise by the Administrator, an award granted under the 2018 Plan may not be sold, pledged, assigned, hypothecated, transferred, or disposed of in any manner other than by will or by the laws of descent or distribution or as otherwise permitted in the 2018 Plan and may be exercised, during the lifetime of the participant, only by the participant. If the Administrator makes an award granted under the 2018 Plan transferable, such award shall be subject to the terms of the 2018 Plan and the award agreement and will contain such additional terms and conditions as the Administrator deems appropriate. Notwithstanding the foregoing, under no circumstance may unvested or unexercised awards be transferred for value or consideration.

Adjustments

In the event that any dividend (other than ordinary cash dividends) or other distribution (whether in the form of cash, shares, other securities, or other property), recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase, or exchange of shares or other securities of the Company, or other change in the corporate structure of the Company affecting the shares occurs, the Administrator, in order to prevent diminution or enlargement of the benefits or potential benefits intended to be made available under the 2018 Plan, will adjust, in such equitable manner as the Administrator deems appropriate, the number and class of shares issuable under the 2018 Plan and/or the number, class and, if applicable, exercise price of shares subject to each outstanding award.

Dissolution Or Liquidation

In the event of a liquidation or dissolution, the Administrator will notify each participant as soon as practicable prior to the effective date of such proposed transaction. To the extent that an award has not been previously exercised (with respect to options and SARs) or vested (with respect to other awards), an award will terminate immediately prior to the consummation of such proposed action.

Change-in-Control

In the event of a Change-in-Control, notwithstanding any other provision of the 2018 Plan or an award, each outstanding award shall be treated as the Administrator determines in its discretion without a participant's consent, including, without limitation, that awards may be assumed, or substantially equivalent awards may be substituted, by the acquiring or succeeding entity or an affiliate thereof (a "successor") with appropriate adjustments as to the number and kind of shares and prices; upon written notice to a participant, the participant's awards will terminate immediately prior to the consummation of such Change-in-Control; awards will vest and become exercisable, realizable, or payable, or restrictions applicable to an award will lapse, in whole or in part, prior to or upon consummation of such Change-in-Control, and, to the extent the Administrator determines, terminate upon the effectiveness of such Change-in-Control; awards will terminate in exchange for an amount of cash and/or property, if any, equal to the amount (if any) that would have been attained upon the exercise of such award or realization of the participant's rights as of the date of the occurrence of the transaction; the replacement of such award with other rights or property selected by the Administrator in its sole discretion; or any combination of the foregoing.

In the event of a Change-in-Control, with respect to awards held by participants other than outside directors, if the successor elects not to assume or substitute an Award, as determined by the Administrator in accordance with the terms of the 2018 Plan, the participant will fully vest in and have the right to exercise all of his or her outstanding stock options and SARs; all restrictions on restricted stock and restricted stock units will lapse; and, with respect to performance units, performance shares and any other awards subject to performance-based vesting conditions, all performance goals or other vesting conditions will be deemed achieved at target.

With respect to awards granted to an outside director that are assumed or substituted by a successor, if, on the date of or following such assumption or substitution, the participant's status as a Director or a director of the successor, as applicable, is terminated other than upon a voluntary resignation by the participant (unless such resignation is at the request of the successor), then the participant will fully vest in and have the right to exercise options and/or SARs as to all of the shares underlying such award for a period of one year following such termination (but in no event later than the expiration of the term of such option as set forth in the award agreement; all restrictions on restricted stock and restricted stock units will lapse; and, with respect to performance units, performance shares and any other awards subject to performance-based vesting conditions, all performance goals or other vesting conditions will be deemed achieved at target.

Plan Term; Amendment Or Termination Of The 2018 Plan

The 2018 Plan will become effective on the date approved by stockholders and will have a ten-year term commencing on that date, subject to any earlier termination by the Board. The Board may amend, alter, suspend or terminate the 2018 Plan or any part thereof from time to time, except that stockholder approval will be required for any amendment to the 2018 Plan to the extent required by any applicable laws, regulations of the securities exchange on which the shares are then listed, or otherwise in the Board's discretion. The Administrator may waive any conditions or restrictions of or amend, modify or terminate outstanding awards under the 2018 Plan notwithstanding any plan provision to the contrary. As a general matter, no amendment, alteration, suspension or termination of the 2018 Plan or an outstanding award may impair the rights of any participant under any then outstanding award without the participant's written consent, with the exception of certain compliance amendments.

New Plan Benefits

Future grants under the 2018 Plan will be made at the discretion of the Administrator and, accordingly, are not yet determinable. In addition, the value of the awards granted under the 2018 Plan will depend on a number of factors, including the fair market value of our common stock on future dates and the exercise decisions made by the participants. Consequently, it is not possible to determine the benefits that might be received by participants receiving discretionary grants under the Plan.

We granted awards under the 2009 Plan in 2017 to the named executive officers, outside directors and to other eligible employees. The 2017 grants to our named executive officers and to our outside directors are reflected in the 2017 Grants of Plan-Based Awards Table and the 2017 Director Compensation Table, respectively, in this proxy statement. The closing market price of a share of Company common stock as reported on the New York Stock Exchange on December 29, 2017 was \$23.90.

Equity Compensation Plan Information

The following table sets forth, as of December 31, 2017, certain information related to our equity compensation plans.

| | (a) | (b) | (c) |
|--|---|---|---|
| | Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights (1) | Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights | 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 | 1,087,224 | \$0.82 | 4,299,341 |
| Equity compensation plans not approved by security holders | n/a | n/a | n/a |
| Total | 1,087,224 | \$0.82 | 4,299,341 |

- (1) Includes 1,014,224 shares issuable upon vesting of outstanding restricted stock units.
- (2) As of December 31, 2017, 2,048,647 of these shares were available under the 2009 Stock Plan. As of December 31, 2017 there were 2,250,694 shares available under the 2009 Employee Stock Purchase Plan ("2009 ESPP"). Pursuant to its terms, there is an annual increase to the number of shares available under the 2009 ESPP on the first day of each fiscal year during which the 2009 ESPP is in effect equal to the lesser of (i) 300,000 shares; (ii) 2% of the outstanding shares of Common Stock on such date; or (iii) a lesser amount determined by the Board.

Federal Income Tax Information

Nonstatutory Sock Options

No taxable income is reportable by the recipient when a nonstatutory stock option with an exercise price equal to the fair market value of the underlying stock on the date of grant is granted to a participant. Upon exercise, the participant will recognize ordinary income in an amount equal to the excess of the fair market value (on the exercise date) of the shares purchased over the exercise price of the option. Any taxable income recognized in connection with an option exercise by an employee of the Company is subject to tax withholding by the Company. Any additional gain or loss recognized upon any later disposition of the shares would be capital gain or loss.

Incentive Stock Options

No taxable income is generally reportable by the recipient when an incentive stock option is granted or exercised. If the participant exercises the option and then later sells or otherwise disposes of the shares more than two years after the grant date and more than one year after the exercise date, the difference between the sale price and the exercise price will be taxed as capital gain or loss. If the participant exercises the option and then later sells or otherwise disposes of the shares before the end of the two or one year holding periods described above, he or she generally will have ordinary income at the time of the sale equal to the fair market value of the shares on the exercise date (or the sale price, if less) minus the exercise price of the option.

Stock Appreciation Rights

No taxable income is reportable by the recipient when a stock appreciation right with an exercise price equal to the fair market value of the underlying stock on the date of grant is granted to a participant. Upon exercise, the participant will recognize ordinary income in an amount equal to the amount of cash received and the fair market value of any shares received. Any additional gain or loss recognized upon any later disposition of the shares would be capital gain or loss.

Restricted Stock And Restricted Stock Units

A participant generally will not have taxable income at the time an award of restricted stock or restricted stock units is granted. Instead, he or she will recognize ordinary income in the first taxable year in which his or her interest in the shares underlying the Award becomes either (i) freely transferable or (ii) no longer subject to substantial risk of forfeiture. However, the recipient of a restricted stock award may elect to recognize income at the time he or she receives the award in an amount equal to the fair market value of the shares underlying the award (less any cash paid for the shares) on the date the award is granted.

Performance Units And Performance Shares

A participant generally will not have taxable income at the time an award of performance units or performance shares is granted. Instead, he or she will recognize ordinary income in the first taxable year in which his or her interest in the shares underlying the award becomes either (i) freely transferable or (ii) no longer subject to substantial risk of forfeiture.

Tax Effect For The Company

The Company generally will be entitled to a tax deduction in connection with an award under the 2018 Plan in an amount equal to the ordinary income realized by a participant and at the time the participant recognizes such income (for example, the exercise of a nonstatutory stock option). Code Section 162(m) places a \$1 million limit on the deductibility of compensation paid to certain covered employees. Based on recent legislation effective for tax years commencing after December 31, 2017, this limit on deductibility now applies to the Company's chief executive officer, its chief financial officer, its three most highly compensated executive officers included as named executive officers in the proxy statement, and any individual who was a named executive officer for fiscal 2017 or thereafter. In addition, the recent legislation eliminates the exception to limit on deductibility for certain performance-based compensation.

THE FOREGOING IS ONLY A SUMMARY OF THE EFFECT OF FEDERAL INCOME TAXATION UPON THE PARTICIPANT AND THE COMPANY AS OF THE DATE HEREOF WITH RESPECT TO AWARDS UNDER THE 2018 PLAN AND DOES NOT PURPORT TO BE COMPLETE, AND REFERENCE SHOULD BE MADE TO THE APPLICABLE PROVISIONS OF THE INTERNAL REVENUE CODE. IN ADDITION, THIS SUMMARY DOES NOT DISCUSS THE TAX CONSEQUENCES OF A PARTICIPANT'S DEATH OR THE PROVISIONS OF THE INCOME TAX LAWS OF ANY MUNICIPALITY, STATE OR FOREIGN COUNTRY IN WHICH THE PARTICIPANT MAY RESIDE.

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 the adoption of the 2018 Stock Plan.

**The Board recommends a vote "FOR" the adoption of the
Rudolph Technologies, Inc. 2018 Stock Plan.**

PROPOSAL 4

APPROVAL OF THE RUDOLPH TECHNOLOGIES, INC. 2018 EMPLOYEE STOCK PURCHASE PLAN

The Board of Directors is requesting that our stockholders approve a new employee stock purchase plan, the 2018 Employee Stock Purchase Plan, as amended (the “2018 ESPP”). The Board has adopted the 2018 ESPP, subject to stockholder approval at the Annual Meeting. If approved by our stockholders, the 2018 ESPP will become effective as of November 1, 2018 and will expire ten (10) years from such date, unless terminated earlier. The 2018 ESPP is intended to replace the Rudolph Technologies, Inc. 2009 Employee Stock Purchase Plan (the “2009 ESPP”), which otherwise expires on or about November 1, 2019; provided, however, if the stockholders approve this Proposal Four, the 2009 ESPP will expire after the final share purchase is made on or about October 31, 2018. The Board has determined that it remains in the best interests of the Company and its stockholders to have an employee stock purchase plan and is asking the Company’s stockholders to approve the 2018 ESPP.

Changes Being Made To The 2018 ESPP

Our 2009 ESPP provided for an initial share reserve of 300,000 shares with an “evergreen” provision, pursuant to which the shares authorized for issuance under the 2009 Plan were automatically replenished on an annual basis. Our 2018 ESPP eliminates this evergreen provision and instead provides for a maximum share reserve of 1,500,000 shares, which represents 4.8% of our outstanding shares as of January 24, 2018.

Summary Of The 2018 Employee Stock Purchase Plan

The following is a summary of the principal features of the 2018 ESPP and its operation. The summary is qualified in its entirety by reference to the 2018 ESPP as set forth in Appendix B.

General

The 2018 ESPP was adopted by the Board in March 2018, subject to stockholder approval at the Annual Meeting. The purpose of the 2018 ESPP is to provide eligible employees with an opportunity to purchase shares of the Company’s common stock (“Common Stock”) through payroll deductions, to enhance the employees’ sense of participation in the Company and its participating subsidiaries, and to provide an incentive for continued employment.

Shares Available For Issuance

If the Company’s stockholders approve this proposal, the maximum number of shares of the Company’s Common Stock to be reserved for issuance under the 2018 ESPP for sale under the Plan shall be 1,500,000 shares, as may be adjusted for stock splits, stock dividends or other changes in capitalization, mergers, reorganizations and other transactions in accordance with plan terms.

Administration

The 2018 ESPP will be administered by the Board or a committee of members of the Board (in either case, the “Administrator”). Subject to the provisions of the 2018 ESPP, all questions of interpretation or application of the 2018 ESPP are determined by the Administrator and its decisions are final and binding upon all participants.

Eligibility

Each of the Company's (or the Company's participating subsidiaries') employees who is customarily employed for at least twenty (20) hours per week and more than five months in a calendar year by the Company or a designated subsidiary, (provided that, in certain jurisdictions outside the United States employees employed for less than twenty (20) hours per week or less than five (5) months in a calendar year if so required by local laws, as determined by the Company), on the first trading day of the applicable offering period is eligible to participate in the 2018 ESPP. Notwithstanding the foregoing, no employee will be granted an option under the 2018 ESPP (i) to the extent that, immediately after the grant, such employee would own 5% or more of the total combined voting power of all classes of the Company's capital stock or the capital stock of any Company parent or subsidiary, or (ii) to the extent that his or her rights to purchase stock under all of the Company's employee stock purchase plans accrues at a rate which exceeds \$25,000 worth of stock (determined at the fair market value of the shares at the time such option is granted) for each calendar year.

Offering Period & Purchase Price

Each offering period under the 2018 ESPP will have a duration of approximately six (6) months, commencing on the first trading day on or after May 1st and November 1st of each year of the 2018 ESPP and terminating on the last trading day of the applicable period ending six (6) months later. On the last trading day of each offering period (the exercise date), shares of Common Stock may be purchased on behalf of the participant in accordance with the terms of the 2018 ESPP.

Eligible employees may participate in the 2018 ESPP by delivering a subscription agreement as provided by the Company prior to the beginning of an offering period authorizing payroll deductions pursuant to the 2018 ESPP. Such payroll deductions may not be less than 1% or exceed 15% of a participant's compensation during the offering.

Under the terms of the 2018 ESPP, the purchase price of shares under the 2018 ESPP is 95% of the fair market value of a share of Common Stock on the exercise date, as may be adjusted in accordance with plan terms.

Merger Or Asset Sale

In the event of a proposed sale of all or substantially all of the assets of the Company, or the merger of the Company with or into another corporation, each outstanding option under the 2018 ESPP may be assumed or an equivalent option will be substituted by the successor corporation or a parent or subsidiary of such successor corporation. In the event the successor corporation refuses to assume or substitute for the options, any offering period then in progress will be shortened by setting a new exercise date on which such offering period will end. The new exercise date will be prior to the proposed sale or merger. The Administrator will notify each participant in writing at least 10 business days prior to the new exercise date that the purchase date for the participant's option has been changed to the new exercise date and that the participant's option will be exercised automatically on the new exercise date unless the participant withdraws from the 2018 ESPP prior to such date.

Amendment And Termination Of The 2018 ESPP

The Administrator may amend, terminate or suspend the 2018 ESPP at any time and for any reason. Generally, no such termination can adversely affect options previously granted and stockholder approval will be sought for certain changes as required by applicable law.

Upon its approval by the stockholders, the 2018 ESPP will continue until the earlier to occur of (i) the termination of the 2018 ESPP by the Board, or (ii) November 1, 2028 (the date which is ten (10) years from the effective date of the 2018 ESPP).

Federal Income Tax Consequences Relating To The 2018 ESPP

The federal income tax consequences of an employee's purchases under the 2018 ESPP will vary. The following discussion is only a summary of the general federal income tax rules applicable to the 2018 ESPP. Employees should consult their own tax advisors since a taxpayer's particular situation may be such that some variation of the rules described below will apply.

The 2018 ESPP and the right of participants to make purchases thereunder are intended to qualify under the provisions of Section 421 and 423 of the Code. Under those provisions, no income will be taxable to a participant at the time of grant of the option or purchase of shares. However, a participant may become liable for tax upon dispositions of shares acquired under the 2018 ESPP (or if he or she dies holding such shares), and the tax consequences will depend on how long a participant has held the shares prior to disposition.

If the shares are disposed of at least one year after the shares were acquired under the 2018 ESPP and at least two years after the first day of the offering period to which the shares relate, or if the employee dies while holding the shares, the following tax consequences will apply. The lesser of (a) the excess of fair market value of the shares at the time of such disposition over the purchase price of the shares (the “option price”) or (b) the excess of the fair market value of the shares at the time the option was granted over the option price will be treated as ordinary income to the participant. Any further gain upon disposition generally will be taxed at long-term capital gain rates. If the shares are sold and the sales price is less than the option price, there is no ordinary income and the participant has a long-term capital loss equal to the difference. No deduction in respect of the disposition of such shares will be allowed to the Company.

If the shares are sold or disposed of (including by way of gift) before the expiration of either the two-year or the one-year holding period described above, the following tax consequences will apply. The amount by which the fair market value of the shares on the date the option is exercised (which is the last business day of the offering period and which is hereafter referred to as the “termination date”) exceeds the option price will be treated as ordinary income to the participant. This excess will constitute ordinary income in the year of sale or other disposition even if no gain is realized on the sale or a gratuitous transfer of the shares is made. The balance of any gain will be treated as capital gain and will qualify for long-term capital gain treatment if the shares have been held for more than one year following the exercise of the option. Even if the shares are sold for less than their fair market value on the termination date, the same amount of ordinary income is attributed to a participant and a capital loss is allowed equal to the difference between the sales price and the value of such shares on such termination date. The Company, in the event of an early disposition, will be allowed a deduction for federal income tax purposes equal to the ordinary income realized by the disposing employee.

THE FOREGOING IS ONLY A SUMMARY OF THE EFFECT OF FEDERAL INCOME TAXATION UPON THE PARTICIPANT AND THE COMPANY AS OF THE DATE HEREOF WITH RESPECT TO THE 2018 ESPP AND DOES NOT PURPORT TO BE COMPLETE, AND REFERENCE SHOULD BE MADE TO THE APPLICABLE PROVISIONS OF THE INTERNAL REVENUE CODE. IN ADDITION, THIS SUMMARY DOES NOT DISCUSS THE TAX CONSEQUENCES OF A PARTICIPANT’S DEATH OR THE PROVISIONS OF THE INCOME TAX LAWS OF ANY MUNICIPALITY, STATE OR FOREIGN COUNTRY IN WHICH THE PARTICIPANT MAY RESIDE.

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 the 2018 ESPP.

**The Board recommends a vote “FOR” the adoption of
the Rudolph Technologies, Inc. 2018 Employee Stock Purchase Plan.**

PROPOSAL 5

RATIFICATION OF APPOINTMENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Although ratification by stockholders is not required by law, the Board of Directors 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 2018 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 of Directors 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. Representatives of E&Y, the independent registered public accounting firm presented herein, will be in attendance at the Annual Meeting and will have the opportunity to make a statement, if they desire to do so, and to respond to appropriate questions.

Independent Registered Public Accounting Firm Selection Process

Ernst & Young LLP has served as the Company's independent registered public accounting firm since March 2008. 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 the 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 decision 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 receiving proposals and presentations from a number of firms in 2008, the Audit Committee's basis for the selection of E&Y as the Company's independent registered public accounting firm included, among other considerations, 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 have appropriately assisted the 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 this Board'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

The Audit Committee pre-approves 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 2017, all services provided by Ernst & Young LLP were pre-approved by the Audit Committee in accordance with this policy.

Fees Billed To The Company By Ernst & Young LLP For 2017 And 2016

For the years ended December 31, 2017 and 2016, aggregate fees for professional services rendered by our independent registered public accounting firm, Ernst & Young LLP, in the following categories were as follows:

| Fees | 2017 | 2016 |
|---------------|-------------|-----------|
| Audit | \$1,160,779 | \$965,041 |
| Audit Related | 31,500 | 32,243 |
| Tax | 111,250 | - |
| All Other | 1,995 | 1,995 |
| Total | \$1,305,524 | \$999,279 |

Audit Fees

Audit fees for the years ended December 31, 2017 and 2016 were for the audit of the Company's annual financial statements and a review of those financial statements included in the Company's quarterly reports on Form 10-Q and 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 Related Fees

Audit related fees for the years ended December 31, 2017 and 2016 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," specifically fees for employee benefit plan audits.

Tax Fees

Tax fees may include fees for tax compliance, tax planning and tax advice. Tax fees for the year ended December 31, 2017 were for tax advice. There were no tax fees for the year ended December 31, 2016.

All Other Fees

All other fees would consist of fees for products and services other than the services described above. For the years ended December 31, 2017 and 2016, 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 fees listed in the chart above were pre-approved by the Audit Committee, which concluded that the provisions of such services by Ernst & Young LLP were 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 Ernst & Young LLP as the Company's independent registered public accounting firm for the year ending December 31, 2018.

The Company's Board of Directors 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 December 31, 2018.

AUDIT COMMITTEE REPORT

The following is the Audit Committee's report submitted to the Board of Directors for the year ended December 31, 2017.

The Audit Committee of the Board of Directors 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 year ended December 31, 2017;
- 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 31, 2017. The Audit Committee also discussed Ernst & Young LLP's audit report on internal controls over financial reporting as of December 31, 2017 with management and Ernst & Young LLP.

Based on the foregoing review and discussions, the Audit Committee recommended to the Board of Directors that the audited financial statements be included in the Company's Annual Report on Form 10-K for the year ended December 31, 2017.

THE AUDIT COMMITTEE

John R. Whitten (Chairman)
Jeffrey A. Aukerman
David B. Miller

EXECUTIVE COMPENSATION

COMPENSATION DISCUSSION AND ANALYSIS

This Compensation Discussion and Analysis 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, the principal financial officer, and the next three most highly compensated executives of Rudolph Technologies, Inc. in 2017.

| Name | Title |
|---------------------------|--|
| Michael Plisinski | Chief Executive Officer |
| Steven Roth | Senior Vice President, Finance and Administration and Chief Financial Officer |
| Robert Koch | Vice President and General Counsel |
| Richard Rogoff | Vice President and General Manager, Lithography Systems Group |
| Elvino da Silveira | Vice President, Business Development |

EXECUTIVE SUMMARY

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 compensation program. Our program focuses on incentive arrangements that reward executives for improvement in the Company's financial and operating results and appreciation in our stock value. The Compensation Committee of the Board of Directors of the Company (referred to as the "Committee" or the "Compensation Committee") developed the executive compensation program using a set of core objectives. The specific objectives of our executive compensation program are to:

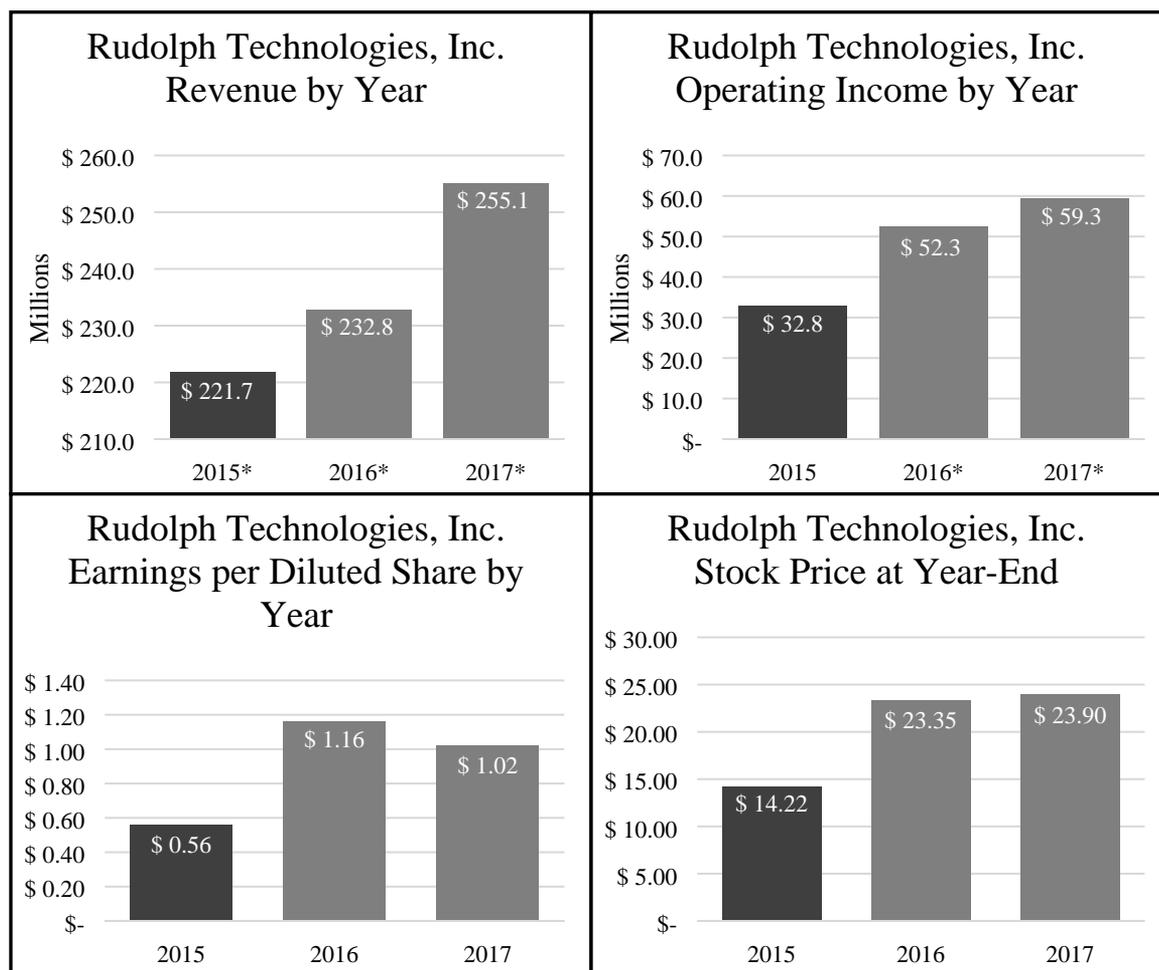
- Attract, retain, and motivate executive talent;
- Align compensation with Company and individual performance; and
- Foster an ownership mentality that aligns our executives' interests with stockholder interests.

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 established at levels which the Committee believes, at target achievement, will incentivize our executives to meet or exceed industry performance. The incentive component of the Company's executive compensation program, also referred to as the Key Executive Incentive Compensation Plan, rewards executives for achieving specific corporate, business unit and individual goals as well as strategic and operational measures depending on the executive 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 peers. Our long-term incentive program also includes service-based RSUs, which also vest in equal annual increments over time. All grants are currently made under the stockholder approved Rudolph Technologies, Inc. 2009 Stock Plan and shares earned and vested are subject to the Company's stock ownership and retention guidelines.

2017 Financial Highlights

In 2017, for the first time in the Company's public company history, the Company realized its third consecutive year of record sales. In addition, the Company attained record operating income for two consecutive years in 2016 and 2017. Both of these achievements helped to drive strong financial performance in 2017. The following reflects some of our financial accomplishments in 2017 as compared to 2016 and 2015:



*Record Year

Our Compensation Practices

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

| What We Do | |
|---|---|
| <i>Committee Independence</i> | The Compensation Committee consists of independent directors and reserves time at each meeting to meet in executive session without management present. |
| <i>Independent Compensation Consultant</i> | 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. |
| <i>Independent Legal Advisor</i> | The Compensation Committee has engaged its own independent legal advisor specializing in corporate compensation issues, as necessary. |
| <i>CEO Goal Setting and Performance Evaluation</i> | The Compensation Committee, with the input of the full Board, engages in formal goal setting and performance evaluation processes with the CEO. |
| <i>Peer Group</i> | The Compensation Committee has established formal criteria for the selection of peer group companies used as a competitive reference point with respect to executive and director compensation, program design and practices, and financial and stock performance. |
| <i>Share Ownership Guidelines</i> | The Company maintains rigorous share ownership guidelines, which apply to executives and directors, and serve as a risk-mitigating feature within our compensation structure. |
| <i>Double Trigger Change-in-Control</i> | The Company has entered into employment agreements with senior executives, including the CEO, that contain change-in-control severance protection. Executives are entitled to severance in the event of both a change-in-control of the Company and a qualifying termination of employment (“double trigger”). |
| <i>Clawback Policy</i> | The Company has adopted a policy that 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 the award or payment were determined are restated or adjusted. |
| What We Don’t Do | |
| <i>Anti-Hedging and Pledging Policies</i> | The Company’s insider trading policy prohibits 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. |
| <i>Tax Gross-Ups on Perquisites or Severance</i> | 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. |

NEO Compensation Elements

Our executive 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 compensation structure.

| NEO Compensation Elements | | |
|---|---|---|
| Element | Form | Description |
| <i>Base Salary</i> | 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. |
| <i>Annual Cash Incentive Plan</i> | Annual Performance-Based Cash Compensation | Annual cash incentive contingent on meeting performance criteria related to corporate, business unit/department, and individual performance objectives. |
| <i>Long-Term Equity Incentive Program</i> | Performance- and Time-Based Restricted Stock Units | A set percentage of PSUs that are earned based on TSR performance relative to peers, with remaining percentage of the RSUs vesting incrementally over a fixed period. |
| <i>Executive Perquisites</i> | Monthly car allowance Income tax preparation Airline club membership | Limited perquisites, consistent with market practice, that promote efficient use of executives' time and attract and retain executive talent. |

The Compensation Committee aligns the Key Executive 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 executives and reward the achievement of strategic, operational and financial goals, thereby enhancing stockholder value.

Impact Of 2016 Stockholder Vote On Executive Officer Compensation & Results Of Our 2017 Stockholder Vote On Executive Compensation

Our Board recognizes the fundamental interest our stockholders have in the compensation of our executive officers. At the Company's 2016 Annual Meeting, our stockholders approved our say on pay proposal, with approximately 70.7% voting in favor of the compensation of the Company's NEOs. Based on the results of this advisory vote and our review of our compensation policies and decisions, the Compensation Committee, with the assistance of its independent compensation consultant, conducted a market-based review of incentive design practices, seeking to adopt an incentive program for 2017 that balanced both contemporary industry design with incentives that would encourage our executive officers to achieve the Company's annual and long-term goals. We believe that the compensation program instituted in 2017 and now in place, as described below, achieves these goals.

Our stockholders also responded favorably to our revised incentive compensation program for 2017. At our 2017 Annual Meeting, over 96% of stockholders present at the meeting voted in favor of our advisory vote on executive compensation.

Compensation Plan Design And Decisions For 2017

For 2017, the Compensation Committee conducted an in-depth review of our incentive programs with the intent to align our programs more closely with our current business strategy and to enhance the pay for performance alignment of our executive compensation program. It was determined that the 2017 NEO compensation plan would retain the same four basic elements as the prior year's plan with some modifications. Taking into account the Company's 2016 performance and outlook for 2017, each NEO's performance and responsibilities, and current market compensation rates for each NEO position, among other criteria, the Compensation Committee recommended and the Board approved the following updated program and compensation plan structure for our NEOs:

Base Salary

The Compensation Committee approved increases ranging between 3.0% and 6.7% for the base salaries of our NEOs for 2017.

Annual Cash Incentive Plan

For 2017, the target cash incentive percentages remained unchanged for each of the NEOs as compared to 2016, with the exception of Mr. Koch whose target cash incentive percentage increased from 30% to 35%. Annual cash bonuses for 2017 performance were based on rigorous corporate revenue and non-GAAP operating income goals as well as business unit/department and individual performance goals established by the Compensation Committee in early 2017, consistent with prior years. However, in 2017, the Compensation Committee narrowed the performance ranges for each metric, and the target to achieve the maximum payout upside by exceeding the corporate performance objectives was lowered for each of the corporate financial metrics. In addition, the payout level for threshold performance was reduced to 50% of target from 70% of target. Finally, the target to achieve the maximum payout upside by exceeding the corporate performance objectives was lowered for each of the corporate financial metrics. Actual performance relative to our NEO's goals was achieved within a range of 57.3% to 105.3% of target and awards were paid to each executive in early 2018.

Long-Term Equity Incentive Program

As a result of its in-depth review of the Company's incentive programs, the Compensation Committee adopted significant changes to the 2017 long-term equity incentive element of our NEO compensation program. While the same metrics were used for the annual cash incentive program, the Compensation Committee determined that an alternative measure, total shareholder return (TSR), was to be employed with the long-term equity incentive program beginning in 2017. TSR combines price appreciation and dividends paid to show the total return to a stockholder as an annualized percentage, thus directly linking executive pay to stock price changes. In addition, the period of measurement of the long-term equity incentive element was extended from the one (1) year utilized in prior years to three (3) years in 2017. These changes, as further outlined below, were adopted by the Compensation Committee to align our NEOs' incentive compensation with a better measure of the long-term performance of the Company while also employing a metric that is believed to be important to stockholders.

The following changes were made to the design of the long-term equity incentive program in early 2017:

- **Performance-Based Stock Units:** For 2017, forty percent (40%) of each NEO's equity grant was comprised of performance-based stock units. A relative TSR plan design was adopted and included the following features:
 - The performance period covered a three-year period (2017 through 2020 for the awards granted in early 2017).
 - 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 a performance peer group consisting of eighteen (18) companies of which ten (10) companies are from the Company's 2017 compensation peer group and an additional eight (8) companies are from within the Company's industry. The formation of the performance peer group takes into consideration each of the companies in the Company's compensation peer group currently projected to be standalone operations in three (3) years and supplements them with additional industry-specific

companies in order to produce a broader, yet relevant, base of comparative TSR performance companies. The long-term equity incentive plan peer group companies are as follows:

| Long-Term Equity Incentive Program - Peer Group Companies | | |
|---|-------------------------------------|--------------------------|
| Advanced Energy Industries, Inc. | Cohu, Inc. | MKS Instruments, Inc. |
| Applied Materials, Inc. | Electro Scientific Industries, Inc. | Nanometrics Incorporated |
| ASML Holding N.V. | FormFactor, Inc. | PDF Solutions, Inc. |
| Axcelis Technologies, Inc. | KLA-Tencor Corporation | Teradyne, Inc. |
| Brooks Automation, Inc. | Kulicke & Soffa Industries, Inc. | Veeco Instruments, Inc. |
| Camtek Ltd. | Lam Research Corporation | Xcerra Corporation |

- The performance and standards to earn the PSU equity awards are as follows:

| TSR Performance Relative to Peers | RSUs Earned as % of Target |
|---------------------------------------|----------------------------|
| Below 30 th Percentile | 0% |
| 30 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 30th & 55th and the 55th & 80th percentile levels referenced above.
- A negative TSR cap was 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:** For 2017, sixty percent (60%) of each NEO's equity grant was comprised of time-based RSUs. The time required for RSUs to fully vest was reduced from five (5) years from the date of grant to three (3) years from the date of grant. The RSUs continue to vest in equal increments over the vesting period.

After implementing these changes for 2017, further consideration may be made in subsequent program years to increasing the percentage of PSU awards from that cited above.

For 2017, the Compensation Committee approved adjustments to the long-term incentive grant values provided to our CEO and other NEOs that ranged from +0.0% to +37.5% when compared to values granted in 2016. As discussed above, PSUs granted in early 2017 are subject to a measure of the Company's relative TSR measured over the three year performance period; thus the results of this measure shall be determined subsequent to February 2020.

Executive Perquisites

In 2017, executive base perquisites provided to the NEOs included a monthly car allowance, income tax preparation fee payment and airline club membership. These perquisites remained unchanged from those provided to the NEOs in 2016.

Retirement Provision For Equity Awards

As part of their 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. Previously, upon retirement of an employee any equity grants that had not vested were forfeited. Thus, any incentive realized through the

service-vesting schedule for Company equity grants was diminished. As a result, the Compensation Committee assessed various 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.
- 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 in 2017 and onward shall vest based on:
 - The vesting schedule established for time-based equity awards; or
 - The actual performance results for performance-based equity awards.
- For clarity, in the event of an employee’s retirement under the provision, there will be no acceleration of an award’s vesting schedule or forfeiture of unvested awards granted in or after 2017.

Compensation Design, Decisions And Changes For 2018

In 2017, the Compensation Committee continued their review of the executive compensation program with an eye toward further potential enhancements. The Committee determined that the 2018 NEO compensation plan would retain the same four basic elements as the 2017 plan with some modifications. The Committee recommended this updated program to the Board and the Board approved the incentive program for 2018, which reflects the following compensation elements as compared to the 2017 plan:

Base Salary

For 2018, the Compensation Committee approved a 9.4% increase to the CEO’s base salary and increases ranging from 2.0% to 3.0% for the base salaries of each of our other NEOs. The CEO’s increase was approved in order to bring the CEO’s base salary within the median of the Company’s 2018 Compensation Peer Group, as hereinafter defined in the “Peer Group” section.

Annual Cash Incentive Plan

For 2018, the Compensation Committee adopted an annual cash incentive plan as part of the NEO compensation program that was generally consistent with the 2017 plan. This plan continues to employ corporate revenue and corporate Non-GAAP Operating Income as the measurement elements for the cash incentive performance objectives. The performance ranges for each metric are consistent with those utilized in 2017 including a payout level for threshold performance at 50% of target and the same target level to achieve the maximum payout by exceeding the corporate performance objectives for each of the corporate financial metrics.

Long-Term Equity Incentive Program

For 2018, the Compensation Committee determined to increase the portion of our NEOs’ long-term incentive awards granted in the form of PSUs to 50% (from 40% in 2017) and to reduce the portion of our long-term incentive awards granted in the form of service-vesting RSUs to 50% (from 60% in 2017), demonstrating our commitment to pay-for-performance. The Compensation Committee expects to consider further increasing the percentage of performance-based awards in future years.

As implemented in 2017, the 2018 performance-based long-term equity incentive of our NEO compensation program is based on the metric of TSR. The performance period remains a single three (3) year period spanning 2018 through 2021. The Compensation Committee elected to again to employ the TSR measure relative to selected peer companies in order to align our NEOs’ incentive compensation with an appropriate measure of the long-term performance of the Company while also utilizing a metric that is important to our stockholders.

The following parameters are included in the design of the long-term equity incentive program in 2018:

- **Performance-Based Stock Units:** For 2018, fifty percent (50%) of each NEO’s equity grant is comprised of PSUs. The relative TSR plan design includes the following features:
 - The performance period will cover a three-year period (2018 through 2021, for awards granted in early 2018).
 - 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 same eighteen (18) company performance peer group utilized in 2017, based on the same rationale established for 2017.
 - The performance and standards to earn the PSU equity awards are unchanged from 2017 and are as follows:

| TSR Performance Relative to Peers | RSUs Earned as % of Target |
|--|-----------------------------------|
| Below 30 th Percentile | 0% |
| 30 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 30th & 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 2018, fifty percent (50%) of each NEO’s equity grant is comprised of time-based RSUs. The time required the RSUs to fully vest is three (3) years from the date of grant. The RSUs will continue to vest in equal annual increments over the vesting period.

Executive Perquisites

In 2018, executive base perquisites, including a monthly car allowance, income tax preparation fee payment and airline club membership remained unchanged from that provided to the NEOs in 2017.

INTRODUCTION / CORPORATE GOVERNANCE

Compensation Committee Members And Responsibilities

In 2017, the Compensation Committee was composed of Daniel H. Berry, who served as the Chairman, Jeffrey A. Aukerman and David B. Miller, each of whom are independent directors under the NYSE independence requirements. In January 2018, Mr. Berry resigned his position as Chairman of the Compensation Committee. A change to the membership was then made with Mr. Berry coming off the Compensation Committee and Thomas G. Greig becoming a member. In addition, Mr. Miller was elected Chairman of the Compensation Committee at this time.

In general, the Compensation Committee is responsible for reviewing and recommending for approval by the independent members of the Board of Directors, the Company’s compensation policies and practices, including executive salary levels and variable compensation programs, both cash-based and equity-based. The Compensation Committee reviews and recommends for approval by the independent Board members the various elements of the CEO’s compensation. With respect to other executive officers, including each of our NEOs, the Compensation Committee reviews the recommendations for compensation for such individuals provided to the Committee by the CEO, and the reasons therefore and, in its discretion, may modify the compensation packages for any such individuals. The Committee then recommends

such compensation packages to the independent members of the Board of Directors for approval. The Committee holds an executive session at its meetings, whenever appropriate, without the presence of management or the CEO.

Compensation Consultant

From time to time, the Compensation Committee has engaged the services of outside compensation consultants to provide advice on compensation plans and issues related to the Company's executive and non-executive employees. In 2017, the Committee again engaged Pay Governance LLC, an independent executive compensation consulting firm, to provide a review of the Company's executive compensation arrangements. Pay Governance LLC does not provide any services other than those related to compensation consulting and does not provide any services to Company management. The Committee has determined that Pay Governance LLC is independent within the meaning of the Compensation Committee Charter and NYSE listing standards, and the work of Pay Governance LLC for the Committee does not raise any conflicts of interest.

Independent Legal Counsel

The Compensation Committee has, as necessary, engaged the services of independent outside legal counsel for compensation issues. No independent counsel was engaged for compensation issues in 2017.

Role Of Executives In Establishing Compensation

The Compensation Committee makes all determinations regarding executive compensation subject to approval by the independent members of the Board. On an annual basis, the Committee evaluates our CEO's performance in light of the goals and objectives established for measuring his performance at the beginning of the previous fiscal year. The results of this evaluation guide the Committee in setting our 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 compensation.

With regard to compensation for executives other than the CEO, the Committee seeks input from the CEO. Each year, the CEO is responsible for establishing proposed personal and corporate objectives for each of the Company's other executives, including our other NEOs. These objectives, subject to the approval of the Compensation Committee, are reviewed and agreed upon by the CEO with the executive. In addition, as part of the annual performance review of the Company's executives, the CEO assesses the performance of his direct reports and recommends any merit increase to be proposed for each individual. These recommendations are compiled by the CEO into executive compensation plans which include any proposed merit increases, each executive'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 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 approve all executive compensation plans, subject to any modifications made by the Committee.

Compensation Committee Activity

During 2017, the Compensation Committee met four (4) times. As discussed above, in early 2017 the Company's CEO met with the Compensation Committee to present the proposed compensation plans for each of the Company's executives as well as the proposed incentive award opportunities under the 2017 Employee Cash Bonus Program for certain non-executive employees. At each of its meetings held during 2017, the Compensation Committee met in executive session, without the presence of the CEO or any other Company executives, to review the relevant compensation matters.

In 2017, the Compensation Committee took a number of actions. These included reviewing and recommending for approval by the independent members of the Board:

- the annual compensation of the Company's CEO for 2017;
- annual compensation for each of our other executive officers for 2017;
- the Key Executive Incentive Compensation Plan and Employee Cash Bonus Programs for 2017; and
- the service-based and performance-based equity incentive awards and related performance targets for the Company's executives for 2017.

In reviewing and setting the annual compensation for each executive of the Company, 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 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 Committee determined that the base salary and annual and long-term incentive award opportunities for the individual executives were at an acceptable level for 2017 and that the perquisites were appropriate for the related positions.

As described above, under "Compensation Design, Decisions And Changes For 2018", in late 2017, the Compensation Committee, with the assistance of the Committee's compensation consultant, reviewed our annual- and long-term incentive programs for 2018. At this time, measures were 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 the foregoing, in early 2018, 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 2018;
- the annual compensation for each of our other executive officers for 2018;
- the Key Executive Incentive Compensation Plan and Employee Cash Bonus Programs for 2018; and
- the service-based and performance-based equity incentive awards and related performance targets for the Company's executives for 2018.

OBJECTIVES OF COMPENSATION PROGRAMS

Compensation Philosophy And Policies

The Compensation Committee believes that the most effective executive compensation program is one that is designed to reward the achievement of specific annual, long-term and strategic and operating goals of the Company, and which aligns our executives' interests with those of our stockholders by compensating executives based on specified financial, strategic and operating performance, with the objective of improving stockholder value. 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 and that compensation provided to key employees remains competitive relative to the compensation paid to similarly situated executives at competitor companies. The Compensation Committee believes executive compensation packages provided by the Company to its executives, including the NEOs, should include base salary, annual cash incentive opportunities, select perquisites and stock-based compensation, including equity incentive opportunities which rewards performance as measured against established goals.

The Company strives to promote an ownership mentality among its key leadership and the Board of Directors, in part through the guidelines described below under the heading "Stock Ownership/Retention Guidelines." We believe this "skin in the game" further mitigates the incentive to take on unnecessary risks. In early 2017, the Board of Directors reassessed the previously established stock ownership retention levels for directors and the CEO and determined that an adjustment was desired. To that end, the Board approved an increase in director stock ownership requirements from a minimum number of shares held equivalent in value of two (2) times a director's total annual cash compensation to three (3) times such compensation. For the CEO, the increase was from two (2) times the CEO's year-end base salary to three (3) times such salary. In further support of this approach, our Board of Directors previously established an anti-pledging and anti-hedging policy to ensure that personal interests relating to the stock holdings of employees and directors do not conflict with their duties to the Company.

The Compensation Committee has developed a set of core objectives and principles that it has used to develop the executive compensation program. The specific objectives of our executive compensation program are to:

- Attract and retain executive talent;
- Align compensation with Company and individual performance; and
- Foster an ownership mentality and create alignment with stockholders.

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;

- A substantial portion of an executive’s compensation is designed to be at risk and linked to the achievement of both corporate and individual goals and changes in stockholder value;
- Retirement benefits are designed to provide financial stability following employment but will not be the focal point of why executives choose to work for the Company;
- The use of select, limited perquisites and other executive benefits are designed to serve a business purpose; and
- All compensation program elements taken as a whole are designed to help focus executives to achieve the Company’s financial and strategic goals.

Peer Companies

In order to meet its objective of maintaining competitive executive compensation packages, the Committee obtains third-party compensation information from time to time and reviews executive compensation programs of comparable, publicly held, high technology companies.

The Committee has engaged independent compensation consultants at various times in the development and evaluation of its compensation programs. To the extent that independent compensation consultants are not engaged to consult with the Committee with respect to compensation for a position or time period, the Committee obtains market compensation information using internal resources at the Company. The 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 fall of 2012 and through 2018, the Committee engaged Pay Governance LLC to provide peer group data and perform an assessment of compensation levels provided to executives.

Data representing company proxy disclosures and industry compensation surveys was used in conducting this assessment. The peer group of industry related companies that was developed was based generally on the following criteria:

- Semiconductor equipment industry (publicly traded companies);
- Revenues of approximately \$500 million or less;
- Market capitalization of less than \$1 billion; and
- Competitors for business and employee talent.

Since the initially establishing a compensation peer group with advice of our compensation consultant, our list of peer companies has evolved. Companies have been removed over time due to being acquired or a re-evaluation of the fit with the Company’s peer group criteria, while other companies have been added. The peer group for the 2018 and 2017 review (which was used to make decisions regarding the respective year’s compensation), as approved by the Committee, consisted of the following companies.

| Companies Included In Compensation Peer Group For 2018 | | |
|--|-------------------------------------|--------------------------|
| Advanced Energy Industries, Inc. | DSP Group, Inc. (1) | Nanometrics Incorporated |
| Amtech Systems, Inc. (1) | Electro Scientific Industries, Inc. | Sigma Designs, Inc. (1) |
| Axcelis Technologies Inc. | EMCORE Corporation (1) | Veeco Instruments, Inc. |
| Brooks Automation Inc. | FormFactor Inc. | Xcerra Corporation |
| Cohu, Inc. | Maxwell Technologies, Inc. (1) | |
| Additional Companies Included In Compensation Peer Group For 2017 But Not In 2018 | | |
| MKS Instruments, Inc. (2) | Ultratech, Inc. (3) | |

(1) Company added in 2018 to broaden the peer group comparison group in order to more accurately assess median level of compensation for executives.

(2) Removed in 2018 due to no longer being considered as meeting the Company’s peer group criteria.

(3) Removed in 2018 due to being acquired by another company.

The pay practices of the foregoing peer group were analyzed for base salary and short-term and long-term incentives. Periodically, peer groups are used to evaluate other programs such as executive 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 (25th

percentile), middle (50th percentile) and high (75th percentile) end of the market for each pay element (base salary and short-term and long-term incentives) and for total compensation.

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

Compensation Program Design

The compensation program provided to the Company's executive officers is 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 and service-vesting RSU grants, and limited perquisites. Executives are also entitled to participate in benefit programs available to all Company employees, such as our ESPP and 401(k) Plan. This design was adopted for executives by the 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 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.

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

The Committee and Board believe that each of the elements as well as the entire compensation package for Company executives is appropriate for the Company given its performance, industry, current challenges and environment.

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

In establishing these components of the executive compensation package, it is the Committee's intention to set total executive 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 compensation.

Base salary levels for executive officers of the Company have been generally established at or near the start of each year. The Company's annual executive cash incentive bonuses are administered through its Key Executive Incentive Compensation Plan. The plan provides guidelines for the calculation of annual non-equity incentive based compensation, subject to the Committee's oversight and the Company's and executive's achievement of corporate and individual goals. Generally, at its first meeting each year, the 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 plan for that year.

Each of the Company's executives, including our NEOs, is eligible to receive equity compensation, which has recently been in the form of PSU and RSU grants under the Company's stockholder approved 2009 Stock Plan. All full-time and part-time employees are eligible for equity grants. The Committee believes that through the Company's broad-based equity compensation plan, the economic interests of all employees, including the executives, 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 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 Committee's review and approval process. The 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 has a direct impact on the compensation received by such executive from the Company. On an annual basis, the CEO reviews the performance and compensation for the Company's executives 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'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 Committee any annual cash incentive payout to the NEOs (other than the CEO) under the annual cash incentive component of their Key Executive Incentive Compensation Plan. The plan includes various incentive level opportunities based on the executive's accountability and impact on Company operations, with target award opportunities that are established as a percentage of base salary. Typically, these targets range from 30% to 100% of base salary for the executives in the plan. For our NEOs, 2017 and 2018 target annual cash bonus opportunities were set as follows:

| Name | Target Annual Cash Incentive Percentage | |
|----------------------|---|--------|
| | 2018 | 2017 |
| Michael P. Plisinski | 100.0% | 100.0% |
| Steven R. Roth | 60.0% | 60.0% |
| Robert A. Koch | 35.0% | 35.0% |
| Richard Rogoff | 45.0% | 45.0% |
| Elvino da Silveira | 40.0% | 40.0% |

Under the annual cash incentive component of our Key Executive 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 also confer to propose new individual performance targets for the executives (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 2017 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 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 Key Executive Incentive Compensation Plan, the results for each participating executive employee are submitted to, and reviewed by, the Compensation Committee, which considers the CEO's recommendations for executives other than the CEO and determines the final bonus earned by each executive based on Company and individual performance. The Compensation Committee then establishes the Company and individual metrics applicable to the current year's Key Executive Incentive Compensation Plan. Thereafter, the 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 Key Executive 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 Key Executive Incentive Compensation Plan based upon its review.

An executive'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 of Directors for approval as long-term incentive to the individual.

Based upon the foregoing, the compensation that an executive 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 Key Executive 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 is more subjective when applied to salary adjustments. In this case, an executive's performance is evaluated by taking into consideration the executive's contribution to the Company, the significance of the individual's achievements in relation to the overall corporate goals and mission, and the executive's effectiveness in his or her role within the Company and then weighed against the performance of other executives. 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.

DETAILS REGARDING OUR ELEMENTS OF COMPENSATION

Base Salary

The Company provides executives 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'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 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.

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

Annual base salary increases for the NEOs for 2017 ranged from 3.0% to 6.7%. There were no increases due to promotions for any NEO in 2017. In 2018, the annual base salary increase ranged from 2.0% to 3.0% for each of our other NEOs and 9.4% for our CEO.

Annual Cash Incentive Compensation

An executive's annual cash incentive award under the Key Executive Incentive Compensation Plan generally depends on the financial performance of the Company relative to profit, revenue and other financial targets and the executive'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. All executive employees, including all of our NEOs, participate in the Company's Key Executive Incentive Compensation Plan, if and when established, 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 Key Executive Incentive Compensation Plan for any given year.

When implemented, an executive may earn an annual incentive award due to success as it relates to the executive's individual goals, as long as the Company's financial performance meets at least the threshold level of at least one of the corporate financial performance goals.

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 Committee. The Committee reviews the proposed payouts and suggests changes to the extent it deems such action necessary. Key Executive Incentive Compensation 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.

2017 Key Executive Incentive Compensation Plan – Annual Cash Incentive

The annual cash incentive component of the 2017 Key Executive Incentive Compensation Plan was established such that each NEO's potential cash award was subject to the achievement of 2017 corporate financial objectives relating to corporate revenue and non-GAAP operating income. The targets established for 2017 were of comparable difficulty compared to prior years. Had the Company not reached the both the threshold level of 80% of target for the 2017 corporate revenue goal and 70% of target for the 2017 non-GAAP operating income goal, then no payout under the plan would have been earned by the executives.

Provided that either of the corporate performance goal thresholds was met, the cash bonus potential of the plan was divided into a variable component, which in 2017 related to corporate revenue and non-GAAP operating income ("Variable Component"), and fixed components related to personal performance goals and/or Company business unit/department performance goals ("Fixed Components"). The annual cash incentive component of the 2017 Key Executive Incentive Compensation Plan was designed and administered as follows:

- Variable Components:
 - Cash bonuses arising from the Variable Components were proposed to be awarded starting at a 50% level at threshold and increasing linearly up to the plan target amount.
 - If the plan target was exceeded in either or both categories then the cash payout would increase as follows:
 - 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.
- Fixed Components:
 - Cash bonuses arising from the Fixed Components were awarded on an "each or nothing" basis.
 - Only executives associated with a particular Company business unit or department had a portion of their cash bonus potential allocated to the business unit/department performance goal aspect of the Fixed Components.
 - At corporate revenue levels or non-GAAP operating income at or above their respective thresholds, each business unit/department performance goal, if applicable, and personal performance goal could have been earned in full.
 - If neither the corporate revenue nor the non-GAAP operating income exceeded their respective thresholds, then payouts from business unit/department and personal goals automatically would have been zero.
 - The business unit/department performance goals in 2017 included targets related to additional business unit or business financial measures, operational measures and market performance depending on the executive involved.
 - The personal performance goals in 2017 included targets related to additional corporate financial measures, operational measures and activities, product development and marketing initiatives depending on the executive involved.

Of the NEOs, Mr. Rogoff had a portion of his potential cash bonus allocated to fixed business unit/department performance goal components in 2017.

2017 Key Executive Incentive Compensation Plan – Annual Cash Incentive Results

In each year the Company has offered the Key Executive Incentive Compensation Plan, the corporate targets have been established at levels in excess of the overall industry projections in order that the Company drive to outperform the industry.

In 2016, the Company achieved 99.8% of the corporate revenue and 96.6% of the non-GAAP operating income goals. The Company achieved the following performance results (dollars in millions) in 2017:

| Performance Measure | Threshold | Target | Maximum | Actual Performance Achieved | Actual Performance Achieved as Percentage of Target |
|-------------------------------|-----------|---------|---------|-----------------------------|---|
| Corporate Revenue | \$203.2 | \$254.0 | \$304.8 | \$255.1 | 102.2% |
| Non-GAAP Operating Income (1) | \$38.1 | \$54.4 | \$70.7 | \$56.5 | 113.0% |

(1) This non-GAAP financial measure excludes the impact of amortization of intangibles, acquisition related expenses, litigation fees, share-based compensation and patent litigation income.

The following tables reflect the 2017 Key Executive Incentive Compensation Plan performance component percentages at target and based on actual achievement for each NEO for 2017:

| Name | Corporate Target Variable Components | | Business Unit / Department Target Fixed Components | | Personal Goals |
|----------------------|--------------------------------------|---------------------------|--|---------------------------------|----------------|
| | Revenue | Non-GAAP Operating Income | Revenue / Gross Margin | Operating Income / Market Share | |
| Michael P. Plisinski | 35% | 35% | n/a | n/a | 30% |
| Steven R. Roth | 35% | 35% | n/a | n/a | 30% |
| Robert A. Koch | 35% | 35% | n/a | n/a | 30% |
| Richard Rogoff (1) | 15% | 15% | 20% | 20% | 30% |
| Elvino da Silveira | 35% | 35% | n/a | n/a | 30% |

(1) Mr. Rogoff's Business Unit Target Fixed Components were Business Unit Revenue and Business Unit Operating Income.

| Name | Corporate Achieved Variable Components | | Business Unit / Department Achieved Fixed Components | | Personal Goals | Total Achieved |
|----------------------|--|---------------------------|--|---------------------------------|----------------|----------------|
| | Revenue | Non-GAAP Operating Income | Revenue / Gross Margin | Operating Income / Market Share | | |
| Michael P. Plisinski | 35.8% | 39.5% | n/a | n/a | 30.0% | 105.3% |
| Steven R. Roth | 35.8% | 39.5% | n/a | n/a | 24.3% | 99.6% |
| Robert A. Koch | 35.8% | 39.5% | n/a | n/a | 30.0% | 105.3% |
| Richard Rogoff | 15.3% | 16.9% | 0% | 0% | 25.0% | 57.3% |
| Elvino da Silveira | 35.8% | 39.5% | n/a | n/a | 20.0% | 95.3% |

In 2017, while the Company exceeded the target levels of the corporate revenue and non-GAAP operating income financial performance goals established under our annual and long-term incentive program, our NEOs did not meet all of their individual metrics established under our annual incentive program. As a result, our NEOs earned cash bonus awards for 2017 under our annual cash incentive program approximately at target levels with the exception of Mr. Rogoff who earned a cash bonus awards for 2017 at below target but above threshold. Actual amounts paid to our NEOs under our 2017 annual cash incentive component of our Key Executive Incentive Compensation Plan are reported below in the Non-Equity Incentive Plan Compensation column of our Summary Compensation Table.

2018 Key Executive Incentive Compensation Plan – Annual Cash Incentive

The annual cash incentive component of the 2018 Key Executive Incentive Compensation Plan has been established consistent with that for 2017. As in 2017, the 2018 cash incentive component is structured such that each NEO's potential cash award is subject to the achievement of 2018 corporate financial objectives relating to corporate revenue and corporate non-GAAP operating income. The financial goal targets established for 2018 are of comparable difficulty as compared to prior years. The cash bonus payout is contingent on meeting at least one of the 2018 corporate revenue or corporate non-GAAP operating income goals. Should the Company not reach the threshold level for either the 2018 corporate revenue or corporate non-GAAP operating income goal, then no payout under the plan will be made to executives.

Provided that either of the corporate performance goal thresholds is met, the cash bonus potential of the plan is again divided into Variable Components and Fixed Components. For 2018, business unit/department performance goals will be assessed as Variable Components. The annual cash incentive component of the 2018 Key Executive Incentive Compensation Plan was designed and administered as follows:

- Variable Components:
 - Fifty percent (50%) of the cash bonus arising from the corporate revenue Variable Component is proposed to be awarded starting at the goal threshold level of 80% and increasing linearly up to the plan target amount.
 - Fifty percent (50%) of the cash bonus arising from the corporate non-GAAP operating income Variable Component is proposed to be awarded starting at the goal threshold level of 70% and increasing linearly up to the plan target amount.
 - Should the Company exceed the 2018 corporate revenue goal, additional upside in the cash awarded under this component will be earned up to a maximum of 200%, on a linear basis between 100% and 120% achievement of this goal.
 - Should the Company exceed the 2018 corporate non-GAAP operating income goal, additional upside in the cash awarded under this component will be earned up to a maximum of 200%, on a linear basis between 100% and 130% achievement of this goal.
 - Only executives associated with a particular Company business unit or department had a portion of their cash bonus potential allocated to the business unit/department performance goal aspect of the Variable Components.
 - The business unit/department performance goals in 2018 include targets related to additional business unit financial measures, operational measures and market performance depending on the executive involved.
 - For business unit/department Variable Components in 2018, 50% of the cash bonus arising from the business unit revenue and from the business unit non-GAAP operating income goals are each proposed to be awarded starting at the goal threshold level of 85% and increasing linearly up to the plan target amount.
- Fixed Components:
 - Cash bonuses arising from the Fixed Components are to be awarded on an “each or nothing” basis.
 - At corporate revenue levels or non-GAAP operating income at or above the thresholds described above, each personal performance goal can be earned in full.
 - If neither the corporate revenue nor the non-GAAP operating income exceeds the identified thresholds, then payouts from personal goals automatically will be forfeited.
 - The personal performance goals in 2018 include individual targets that, depending upon the executive, may relate to any of senior management planning, additional corporate financial measures, operational measures and activities, product development measures or marketing initiatives.

The following table reflects a comparison of the structure of the annual cash incentive components of the 2017 and 2018 Key Executive Incentive Compensation Plans.

| Key Executive Incentive Compensation Plan - Annual Cash Incentive Provisions | 2017 | 2018 |
|---|-------------|-------------|
| Payout if both financial metric thresholds are not reached | 0% | 0% |
| Corporate revenue threshold | 80% | 80% |
| Corporate non-GAAP operating income threshold | 70% | 70% |
| Payout upon attaining corporate financial metric threshold level | 50% | 50% |
| Payout upon attaining corporate financial metric goal | 100% | 100% |
| Payout upside maximum for corporate financial metric goals | 200% | 200% |
| Corporate revenue metric upside range | 100%-120% | 100%-120% |
| Corporate non-GAAP operating income metric upside range | 100%-130% | 100%-130% |
| Business unit/department goal payout | Variable | Variable |
| Personal goal payout | Fixed | Fixed |

Long-Term Equity Incentive Plan

The Compensation Committee currently administers the Company's 2009 Stock Plan, which was approved by stockholder vote on May 19, 2009. At this year's Annual Meeting, we are asking our stockholders to vote to approve a new 2018 Stock Plan. If approved, equity awards will no longer be granted under the 2009 Stock Plan and will instead be awarded under the new 2018 Stock Plan. See Proposal 3 in this proxy statement for additional information regarding the proposed 2018 Stock Plan.

Employees and members of management, including the Company's NEOs, generally receive annual equity grants (collectively, "Grants") at or about the time of their performance reviews each year from a pool of shares established under the 2009 Stock Plan. The Company's long-term incentive compensation program seeks to align the executives' interests with the Company's stockholders by rewarding successes in stockholder returns. Additionally, the Committee desires to foster an ownership mentality among executives by providing stock-based incentives as a portion of compensation.

Over the past several years, the Committee has annually awarded executives with grants of performance-based and service-based RSUs.

The purpose of the Grant program is to provide incentive to executives and other key employees of the Company to work to maximize long-term return to the Company's stockholders. The number of Grants awarded to each executive officer is initially determined on a discretionary rather than formula basis by the Compensation Committee.

In awarding Grants to the executive officers, the CEO (except in connection with his own Grants) and the Committee consider a number of subjective factors, including the executive's position and responsibilities at the Company, the executive's individual performance, the number of Grants held (if any) and other factors that they may deem relevant.

2017 Key Executive Incentive Compensation Plan – Long-Term Equity Incentive

In 2017, the Committee recommended and the independent members of the Board approved equity grants, with the long-term incentive dollar value allocated to each named executive officer determined in the manner discussed above.

The long-term equity incentive component of the 2017 Key Executive Incentive Compensation Plan was divided between PSU grants and service-based RSU grants. Due to the changes reflected in the adjusted long-term equity component of the plan, for 2017, 40% of each NEO's grant was subject to performance-based goals and the remaining 60% was subject to service-based vesting requirements. After the implementation of the adjusted plan in 2017, the Committee determined to increase the percentage of PSU awards to 50% of each NEO's long-term incentive grant, and the Committee may consider further increasing this percentage in succeeding years. Each service-based RSU award is subject solely to service-based vesting in one-third increments over three (3) years from the grant date. See above under "Compensation Plan Design And Decisions For 2017 – Long-Term Equity Incentive Program" for more details regarding these awards.

2017 Key Executive Incentive Compensation Plan – Long-Term Equity Incentive Results

For the 2017 long-term equity incentive component, determination of the final TSR results shall be following the three (3) year performance period, which ends on February 6, 2020. At such time, any PSUs earned based on our TSR performance relative to the specified peer companies will fully vest.

2018 Key Executive Incentive Compensation Plan – Long-Term Equity Incentive

In 2018, the Committee granted equity awards to our NEOs with the dollar value allocated to each NEO and the structure of the long-term equity incentive component determined in a similar manner as that implemented in 2017 and discussed above.

The long-term equity incentive component of the 2018 Key Executive Incentive Compensation Plan continues to be divided between PSU grants and service-based RSU grants. For 2018, 50% of each NEO’s grant is subject to performance-based goals and the remaining 50% is subject to service-based vesting requirements. Each service-based RSU award will be subject solely to service-based vesting in one-third increments over three (3) years from the grant date. See above under “Compensation Design, Decisions And Changes For 2018 – Long-Term Equity Incentive Program” for more details regarding these awards.

The following table reflects a comparison of the structure of the annual cash incentive components of the 2017 and 2018 Key Executive Incentive Compensation Plans.

| Key Executive Incentive Compensation Plan - Long-Term Equity Incentive Provisions | 2017 | 2018 |
|--|---------------------------------|---------------------------------|
| Performance-based / Service-based grant breakout | 40%-60% | 50%-50% |
| Service-based grant vesting period | 33.3% annually over 3 years | 33.3% annually over 3 years |
| Performance-based grant evaluation period | 3 years | 3 years |
| Performance-based grant metric(s) | TSR | TSR |
| Performance-based grant vesting period | 100% upon earning | 100% upon earning |
| Performance threshold for earning grant | 30 th TSR percentile | 30 th TSR percentile |
| Percent of grant earned at threshold | 50% | 50% |
| Measure at which 100% of grant is earned | 55 th TSR percentile | 55 th TSR percentile |
| Maximum grant upside | 200% | 200% |
| Measure at which maximum upside of grant is earned | 80 th TSR percentile | 80 th TSR percentile |

Personal Benefits And Perquisites

All employees of the Company, including its executives, 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) savings plan;
- Short and long term disability insurance with supplemental income continuation;
- Health care and dependent care flexible spending account programs;
- Employee assistance program (EAP);

- Tuition reimbursement plan;
- Employee stock purchase plan;
- Employee referral bonus program; and
- Length of service awards.

The Company, in its discretion, may offer to reimburse the expenses which an employee incurs as a result of the Company requiring the individual to relocate their primary residence for employment purposes.

The Committee believes that these benefits are consistent with industry practice and are important in recruiting and retaining qualified employees.

In addition to the Benefit Package, executive employees, including NEOs, receive the following:

- A monthly car allowance;
- Company-paid tax preparation services; and
- Company-paid membership in one (1) airline executive club.

The foregoing perquisites were determined based on a review of comparable company offerings performed by the Company and the Committee's compensation consultant and are evaluated annually as part of the compensation review. The Committee believes that these benefits are reasonable and consistent with the Company's overall compensation program and better enable the Company to attract and retain superior employees for key positions.

Finally, in 2017, the Compensation Committee implemented, for all employees of the Company, including NEOs, the retirement benefit described above under "Compensation Plan Design And Decisions For 2017 – Retirement Provision For Equity Awards", pursuant to which RSUs awarded in 2017 and thereafter are not forfeited upon retirement but instead remain outstanding and continue to vest in accordance with their original terms.

Employee Stock Purchase Plan

The Company has maintained an Employee Stock Purchase Plan since 1999. The Company's 2009 Employee Stock Purchase Plan was approved by stockholders in 2009 and is currently administered by the Compensation Committee. At this year's Annual Meeting, we are asking our stockholders to vote to approve a new 2018 Employee Stock Purchase Plan. See Proposal 4 in this proxy statement for additional information regarding the proposed 2018 ESPP.

Under the terms of our current and prior Employee Stock Purchase Plans, 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 ninety-five percent (95%) 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.

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, the Company entered into a management agreement with Mr. Roth, effective as of July 24, 2000. Mr. Roth previously had employment agreements with the Company when it was a private entity and, at the time of the Company'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, he entered into a new employment agreement with the Company. This agreement superseded the executive employment agreement that Mr. Plisinski had entered into with August Technology Corporation which was assumed by the Company 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 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 Committee believes that providing severance in a Change-in-Control situation is beneficial to stockholders so that executives may remain objectively neutral when evaluating a transaction that may be beneficial to stockholders yet could negatively impact the continued employment of the executive. As a result, in August 2009, the Compensation Committee further authorized the Company to enter into a Change-in-Control Agreement with Mr. Koch and other Company executives and authorized amendment to the management agreement of Mr. Roth to include comparable Change-in-Control terms. In February 2014, the Company entered into a Change-in-Control Agreement with Mr. Rogoff and Mr. da Silveira with comparable Change-in-Control terms. Further, Mr. Plisinski's employment agreement also contains Change-in-Control terms.

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, 2017.

Other Elements Of Post-Termination Compensation

The Company does not have a practice of providing retirement benefits, including any supplemental executive retirement plans (SERP), to its executives, other than through its 401(k) plan and the retirement provision for equity grants effective in 2017. 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 executives.

Non-Solicitation And Non-Competition Policy

The Company maintains a policy of entering into an agreement with each of its new executives, 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. Each of the Company's executives has entered into these covenants with the Company, except 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. In each case, 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'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 through such date. Thereafter, further cash compensation to the executives 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 executives 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 executives and its outside directors to further align the interest of the executives 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.

In 2005, the Board established the Company's initial stock ownership policy. Since that time, the policy has been periodically amended 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 total cash compensation (1) | November 2018 or within 3 years of initial election to Board |
| CEO | 3x value of CEO's base annual salary | November 2018 or within 3 years of hire/promotion |
| CFO, COO, Business Unit GM, VP Worldwide Sales, General Counsel | 1x value of executive's base annual salary | November 2018 or within 3 years of hire/promotion |
| VP reporting directly to CEO (excluding above) | 5,000 shares | Within 1 year of date of hire/promotion |
| VP not reporting directly to CEO | 2,500 shares | Within 1 year of date of hire/promotion |

(1) Includes annual cash retainer and any fee paid for service as a Committee Chair, Lead Director or Chairman.

In assessing compliance with the foregoing guidelines, the Company takes into consideration only the ownership of Common Stock in the Company. To that end, 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.

Compliance with the Company's stock ownership and retention guidelines is reviewed annually by the Nominating & Governance Committee. At their last review on January 23, 2018, the Nominating & Governance Committee determined that all executives and directors who were with the Company and acting in their executive/director capacities for periods in excess of one (1) year were in compliance with the ownership requirements or would be upon the first quarter 2018 vesting of RSU grants. Should any individual in the future not own the minimum number of required shares after notice by the Nominating & Governance Committee, additional action, including possible removal from the executive role or a determination to not nominate the director for election, would be considered by the Board.

The Nominating & Governance Committee has scheduled its review of the Company's stock ownership and retention guidelines for its January 2019 meeting and at this annual review will evaluate the appropriateness of the foregoing stock ownership levels for 2019 based in part on the trailing three-year weighted average of the Company's stock price at the time of the evaluation, 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 executives, including our NEOs, bear the full risk of the Company's stock ownership, our insider trading policy prohibits 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 were determined are to be 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

In 2017, the Committee engaged the compensation consultant to conduct a comprehensive review of our executive compensation program and practices including an assessment of 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. The compensation risk assessment covered potential risks and risk mitigating features in each of 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 compensation risk assessment framework, the Committee evaluated our current executive 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

Section 162(m) of the IRC historically 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 compensation elements, the Committee believes that the other compensation objectives, such as attracting, retaining and providing appropriate incentives to executives, are important and can supersede the goal of maintaining deductibility. Consequently, the Compensation Committee generally makes compensation decisions without regard to deductibility, as the Committee believes it has appropriately structured its compensation programs to provide incentives to our executives to increase Company return and stockholder value. Recent changes in the tax laws eliminated the "performance-based" exception, and the limitation on deductibility has been expanded to include all named executive officers. As a result, beginning in 2018, the company may no longer deduct compensation paid to our named executive officers 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 executives with the interests of the stockholders, and rewards the achievement of specific annual, long-term and strategic goals of the Company. The Committee believes that the compensation program established by the Company 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 COMPENSATION

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

THE COMPENSATION COMMITTEE

David B. Miller (Chairman)
Jeffrey A. Aukerman
Thomas G. Greig

Summary Compensation Table

The table below sets forth information for the years ended December 31, 2017, 2016 and 2015 concerning the compensation of the CEO, the CFO and the three other most highly compensated executive officers (together, the “Named Executive Officers” or “NEOs”):

| Name and Principal Position | Year | Salary (\$) | Stock Awards (\$)(1) | Option Awards (\$) | Non-Equity Incentive Plan Compensation (\$)(2) | All Other Compensation (\$)(4) | Total (\$) |
|--|------|-------------|--------------------------|--------------------|--|--------------------------------|-------------|
| Michael P. Plisinski Chief Executive Officer | 2017 | \$476,539 | \$910,659 | — | \$505,413 | \$8,964 | \$1,901,575 |
| | 2016 | \$450,000 | \$650,005 | — | \$426,555 | \$8,814 | \$1,535,374 |
| | 2015 | \$356,000 | \$1,845,000 ³ | — | \$282,815 | \$7,839 | \$2,491,654 |
| Steven R. Roth Senior Vice President, Finance and Administration and Chief Financial Officer | 2017 | \$341,658 | \$289,537 | — | \$204,852 | \$8,964 | \$845,011 |
| | 2016 | \$331,707 | \$199,992 | — | \$197,279 | \$8,814 | \$737,792 |
| | 2015 | \$322,046 | \$153,750 | — | \$211,299 | \$8,814 | \$695,909 |
| Robert A. Koch Vice President and General Counsel | 2017 | \$280,432 | \$136,875 | — | \$103,696 | \$8,900 | \$529,903 |
| | 2016 | \$272,264 | \$102,489 | — | \$80,963 | \$8,814 | \$464,530 |
| | 2015 | \$264,334 | \$102,500 | — | \$88,308 | \$8,814 | \$463,956 |
| Richard Rogoff Vice President and General Manager, Lithography Systems Group | 2017 | \$288,600 | \$129,485 | — | \$68,111 | \$31,314 | \$517,510 |
| | 2016 | \$280,194 | \$122,996 | — | \$65,130 | \$8,814 | \$477,134 |
| | 2015 | \$272,033 | \$123,000 | — | \$68,249 | \$8,814 | \$472,096 |
| Elvino da Silveira Vice President, Business Development | 2017 | \$264,259 | \$107,907 | — | \$101,069 | \$8,964 | \$482,199 |
| | 2016 | \$255,879 | \$102,489 | — | \$40,654 | \$8,814 | \$407,836 |

- (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 9 to our consolidated financial statements, which are included in our Annual Report on Form 10-K filed with the SEC on February 16, 2018. For 2017, the amount reported for each NEO includes the grant date fair value attributable to the 2017 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 2017 PSUs assuming maximum performance achievement is as follows: Mr. Plisinski, \$783,339; Mr. Roth, \$249,053; Mr. Koch, \$117,746; Mr. Rogoff, \$111,371; and Mr. da Silveira, \$92,800. The actual amounts earned will be determined following the end of the three (3) year performance period (February 6, 2017 – February 6, 2020).
- (2) Represents annual cash performance bonus awards under the Key Executive Incentive Compensation Plan earned for 2017, 2016 and 2015, respectively.
- (3) Includes stock award granted with promotion to CEO in November of 2015.
- (4) The table below details the components of this column for 2017.

| Name | Year | Matching Contribution to 401(k) | Insurance ⁽¹⁾ | Perquisites | Severance Compensation | Total “All Other Compensation” |
|----------------------|------|---------------------------------|--------------------------|-------------------------|------------------------|--------------------------------|
| Michael P. Plisinski | 2017 | \$8,100 | \$864 | — ⁽²⁾ | — | \$8,964 |
| Steven R. Roth | 2017 | \$8,100 | \$864 | — ⁽²⁾ | — | \$8,964 |
| Robert A. Koch | 2017 | \$8,036 | \$864 | — ⁽²⁾ | — | \$8,900 |
| Richard Rogoff | 2017 | \$8,100 | \$864 | \$22,350 ⁽³⁾ | — | \$31,314 |
| Elvino da Silveira | 2017 | \$8,100 | \$864 | — ⁽²⁾ | — | \$8,964 |

- (1) Insurance is the premium associated with coverage under the group term life insurance and accidental death and dismemberment insurance plans provided by the Company to its employees. Coverage is equal to the lesser of two (2) times salary or \$450,000.
- (2) Less than \$10,000 of perquisites in the aggregate, and therefore, zero perquisites disclosed in accordance with SEC rules.
- (3) Mr. Rogoff’s perquisites included car allowance of \$6,000 and tax return preparation fee reimbursement of \$1,350. In addition, Mr. Rogoff was reimbursed \$15,000 for incurred relocation expenses.

Grants of Plan-Based Awards in 2017

The following table sets forth information with respect to non-equity and equity incentive plan awards granted during 2017 to the Named Executive Officers.

| 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 | | |
| <i>Michael P. Plisinski</i> | 2/6/2017 | \$58,800 | \$480,000 | \$960,000 | | | | | |
| | 2/6/2017 | | | | 7,741 | 15,481 | 30,962 | | \$391,669 |
| | 2/6/2017 | | | | | | | 23,221 | \$518,989 |
| <i>Steven R. Roth</i> | 2/6/2017 | \$25,197 | \$205,686 | \$411,372 | | | | | |
| | 2/6/2017 | | | | 2,461 | 4,922 | 9,844 | | \$124,527 |
| | 2/6/2017 | | | | | | | 7,383 | \$165,010 |
| <i>Robert A. Koch</i> | 2/6/2017 | \$12,064 | \$98,482 | \$196,964 | | | | | |
| | 2/6/2017 | | | | 1,164 | 2,327 | 4,654 | | \$58,873 |
| | 2/6/2017 | | | | | | | 3,490 | \$78,002 |
| <i>Richard Rogoff</i> | 2/6/2017 | \$15,963 | \$130,308 | \$260,616 | | | | | |
| | 2/6/2017 | | | | 1,101 | 2,201 | 4,402 | | \$55,685 |
| | 2/6/2017 | | | | | | | 3,302 | \$73,800 |
| <i>Elvino da Silveira</i> | 2/6/2017 | \$12,992 | \$106,060 | \$212,120 | | | | | |
| | 2/6/2017 | | | | 917 | 1,834 | 3,668 | | \$46,400 |
| | 2/6/2017 | | | | | | | 2,752 | \$61,507 |

- (1) The amounts reported in these columns represent the annual cash incentive opportunities under the Company's Key Executive Incentive Compensation Plan for each of our Named Executive Officers for the 2017 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 Named Executive Officers under the plan are reflected in the "Non-Equity Incentive Plan Compensation" column of the Summary Compensation Table above.
- (2) The amounts reported in these columns represent the award opportunities under the Company's 2017 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." This award was granted under the Company's 2009 Stock Plan. These performance period for these awards is three years and the final determination of the award ultimately earned will be made in 2020.
- (3) 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." This award was granted under the Company's 2009 Stock Plan. These RSUs vest in 33.3% increments on each of the first three (3) anniversaries of the grant date.

Outstanding Equity Awards At 2017 Year-End

The following table sets forth information with respect to outstanding equity awards held by the Named Executive Officers at December 31, 2017.

| Name | Grant Date (1) | Option Awards (2) | | | | Stock Awards | | | |
|----------------------|----------------|---|---|----------------------------|------------------------|--|---|---|--|
| | | Number of Securities Underlying Unexercised Options Exercisable (#) | Number of Securities Underlying Unexercised Options Unexercisable (#) | Option Exercise Price (\$) | Option Expiration Date | Number of Shares or Units of Stock That Have Not Vested (#)(3) | Market Value of Units of Stock That Have Not Vested (\$)(4) | Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights That Have Not Vested (#) (5) | Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested (\$) (4) |
| Michael P. Plisinski | 2/22/2013 | | | | | 2,217 | \$52,986 | | |
| | 1/31/2014 | | | | | 5,624 | \$134,414 | | |
| | 10/1/2014 | | | | | 2,812 | \$67,207 | | |
| | 1/28/2015 | | | | | 26,400 | \$630,960 | | |
| | 11/9/2015 | | | | | 100,000 | \$2,390,000 | | |
| | 1/27/2016 | | | | | 42,312 | \$1,011,257 | | |
| | 2/6/17 | | | | | 23,221 | \$554,982 | 15,481 | \$369,996 |
| Steven R. Roth | 2/22/2013 | | | | | 1,508 | \$36,041 | | |
| | 1/31/2014 | | | | | 4,500 | \$107,550 | | |
| | 1/28/2015 | | | | | 9,900 | \$236,610 | | |
| | 1/27/2016 | | | | | 13,018 | \$311,130 | | |
| | 2/6/17 | | | | | 7,383 | \$176,454 | 4,922 | \$117,636 |
| Robert A. Koch | 2/22/2013 | | | | | 887 | \$21,199 | | |
| | 1/31/2014 | | | | | 3,750 | \$89,625 | | |
| | 1/28/2015 | | | | | 6,600 | \$157,740 | | |
| | 1/27/2016 | | | | | 6,671 | \$159,437 | | |
| | 2/6/17 | | | | | 3,490 | \$83,411 | 2,327 | \$55,615 |
| Richard Rogoff | 10/14/2013 | | | | | 1,000 | \$23,900 | | |
| | 1/31/2014 | | | | | 4,500 | \$107,550 | | |
| | 1/28/2015 | | | | | 7,920 | \$189,288 | | |
| | 1/27/2016 | | | | | 8,006 | \$191,343 | | |
| | 2/6/17 | | | | | 3,302 | \$78,918 | 2,201 | \$52,604 |
| Elvino da Silva | 12/12/2012 | 10,000 | — | 12.22 | 12/11/2022 | | | | |
| | 1/31/2014 | | | | | 3,750 | \$89,625 | | |
| | 1/28/2015 | | | | | 6,600 | \$15,740 | | |
| | 1/27/2016 | | | | | 6,671 | \$159,437 | | |
| | 2/6/17 | | | | | 2,752 | \$65,773 | 1,834 | \$43,833 |

(1) For better understanding of this table, we have included an additional column showing the grant date of stock options and restricted stock units.

(2) Stock options became exercisable 1/5th per year on the anniversary of the grant date.

- (3) 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 |
|------------|--|---|
| 2/22/2013 | Service-based RSU | 1/5 th per year on the anniversary of the grant date |
| 2/22/2013 | Earned PSU | 1/5 th on March 1, 2014 and 1/5 th per year on the anniversary of the grant date |
| 1/31/2014 | Service-based RSU | 1/5 th per year on the anniversary of the grant date |
| 1/31/2014 | Earned PSU | 1/5 th on February 20, 2015 and 1/5 th per year on the anniversary of the grant date |
| 10/1/2014 | Service-based RSU & earned performance-based PSU | 1/5 th per year on the anniversary of the grant date |
| 1/28/2015 | Service-based RSU | 1/5 th per year on the anniversary of the grant date |
| 1/28/2015 | Earned PSU | 1/5 th on February 19, 2016 and 1/5 th per year on the anniversary of the grant date |
| 11/9/2015 | Service-based RSU | 100% on third anniversary of the grant date |
| 1/27/2016 | Service-based RSU | 1/5 th per year on the anniversary of the grant date |
| 1/27/2016 | Earned PSU | 1/5 th on February 16, 2017 and 1/5 th per year on the anniversary of the grant date |
| 2/6/2017 | Service-based RSU | 1/5 th per year on the anniversary of the grant date |
| 2/6/2017 | PSU | 100% of final performance determination on third anniversary of the grant date following end of three (3) year performance period (February 6, 2017 – February 6, 2020) based on TSR performance relative to peer companies |

- (4) Based on the Company's common stock closing price of \$23.90 per share on December 31, 2017.
- (5) PSUs granted in 2017 are reported in this table at target. The actual number of PSUs earned will be determined based on performance achievement measured over the three (3) year performance period, and any earned PSUs will vest on February 6, 2020.

Option Exercises And Stock Vested In 2017

The following table sets forth information with respect to the exercise of stock options and vesting of RSUs by the Named Executive Officers during the year ended December 31, 2017:

| Name | Option Awards | | Stock Awards | |
|----------------------|---|---------------------------------|--|-----------------------------------|
| | Number of Shares Acquired on Exercise (#) | Value Realized on Exercise (\$) | Number of Shares Acquired on Vesting (#) | Value Realized on Vesting (\$)(1) |
| Michael P. Plisinski | — | \$ — | 29,116 | \$671,266 |
| Steven R. Roth | 56,000 | \$1,352,400 | 13,614 | \$312,423 |
| Robert A. Koch | 18,000 | \$441,900 | 7,511 | \$172,078 |
| Richard Rogoff | — | \$ — | 7,893 | \$185,118 |
| Elvino da Silveira | 20,000 | \$508,500 | 5,744 | \$131,928 |

- (1) Value realized is based on the fair market value of the shares at time of 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 his estate if his employment had terminated on December 31, 2017, under the hypothetical circumstances set forth below.

Each of our NEOs would be entitled to certain termination payments upon his death or Disability, his involuntary termination without Cause, or his 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, due to physical or mental impairment, is unable to perform his duties to the Company for a specified period of time.
- "Cause" generally means that the executive engaged in a crime or other serious act involving moral turpitude; materially breached an agreement between him and the Company; or otherwise materially breached his obligations to the Company.
- A voluntary termination for "Good Reason" generally means, depending on the particular executive's agreement, that the executive's duties, responsibilities or status with the Company or its successor are materially reduced; his 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 agreement with the Company or any successor fails to assume the executive's change of 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 case 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 case 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-Control¹, 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 of control termination payments made to Mr. Plisinski under his agreement are subject to the excise tax imposed by Section 4999 of the Internal Revenue Code, 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 of 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 | | | | |
|--|--------------------------------|-----------------------------------|------------------------------------|------------------------------|
| Termination Circumstance as of 12/31/2017 | Cash Severance | | Value of | Benefits Continuation |
| | Base Salary | Management Incentive Bonus | Accelerated Unvested Equity | |
| By the Company without cause | \$960,000 (2x salary) | \$ - | \$3,117,970 | \$34,236 |
| Executive resignation for good reason | \$960,000 (2x salary) | \$ - | \$3,117,970 | \$34,236 |
| Death | \$120,000 (3 months salary) | \$505,413 (1x bonus) | \$2,827,800 | \$11,412 |
| Disability | \$ - | \$505,413 (1x bonus) | \$2,827,800 | \$11,412 |
| <i>Within 18 months following sale or change of control:</i> | | | | |
| By the Company without cause | \$960,000 (2x salary) | \$1,010,826 (2x bonus) | \$5,211,801 | \$34,236 |
| By the executive with good reason | \$960,000 (2x salary) | \$1,018,826 (2x bonus) | \$5,211,801 | \$34,236 |

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 Internal Revenue Code.

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 of Control², 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;

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 Internal Revenue Code.

- 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 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 termination or change of control payments made to Mr. Roth under his agreement are subject to the excise tax imposed by Section 4999 of the Internal Revenue Code, 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 of control payments, Mr. Roth would be required to sign a general release of all known and unknown claim the 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 | | | | |
|---|--------------------------|-----------------------------------|------------------------------------|------------------------------|
| Termination Circumstance as of 12/31/2017 | Cash Severance | | Value of | Benefits Continuation |
| | Base Salary | Management Incentive Bonus | Accelerated Unvested Equity | |
| By the Company without cause | \$342,810 (1x salary) | \$204,852 (1x bonus) | \$985,421 | \$ - |
| Executive resignation for good reason | \$342,810 (1x salary) | \$204,852 (1x bonus) | \$985,421 | \$ - |
| Death | \$ - | \$204,852 (1x bonus) | \$985,421 | \$ - |
| Disability | \$ - | \$204,852 (1x bonus) | \$985,421 | \$ - |
| <i>Within 12 months following sale or change of control:</i> | | | | |
| By the Company without cause | \$342,810 (1x salary) | \$204,852 (1x bonus) | \$985,421 | \$22,824 |
| By the executive with good reason | \$342,810 (1x salary) | \$204,852 (1x bonus) | \$985,421 | \$22,824 |

Messrs. Koch, Rogoff and da Silveira

The executive change of control agreements for Messrs. Koch, Rogoff and da Silveira provide for the following:

- In the event Mr. Koch's, Mr. Rogoff's or Mr. da Silveira's employment is terminated as a result of his death or "Disability", the executive 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 of Control³, Mr. Koch’s, Mr. Rogoff’s or Mr. da Silveira’s employment is terminated for any reason other than for Good Cause or Mr. Rogoff, Mr. Koch or Mr. da Silveira terminates his employment for Good Reason, the executive 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 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 of control termination payments made to Mr. Koch, Mr. Rogoff or Mr. da Silveira are subject to the excise tax imposed by Section 4999 of the Internal Revenue Code, Mr. Koch, Mr. Rogoff or Mr. da Silveira 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 of control termination payments, Mr. Koch, Mr. Rogoff or Mr. da Silveira would be required to sign a general release of all known and unknown claims that he may have against the Company.

Each of Mr. Koch, Mr. Rogoff or Mr. da Silveira, have entered into a separate agreement upon employment with the Company that subjects the executive 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 12/31/2017 | Cash Severance (Base Salary) | Value of Accelerated Unvested Equity | Benefits Continuation | |
| Death | \$ - | \$567,028 | \$ - | |
| Disability | \$ - | \$567,028 | \$ - | |
| <i>Within 12 months following sale or change of control:</i> | | | | |
| By the Company without cause | \$281,377 (1x salary) | \$567,028 | \$18,972 | |
| By the executive with good reason | \$281,377 (1x salary) | \$567,028 | \$18,972 | |

³ For Messrs. Koch, Rogoff and da Silveira, a “Change-in-Control” would generally be considered to have occurred if:

- (1) any person or persons becomes the beneficial owner of fifty percent (50%) or more of our outstanding voting shares;
- (2) 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
- (3) 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 Internal Revenue Code.

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

| Potential Payments To Mr. Rogoff Upon Termination Or Change-In-Control | | | | |
|---|--|---|---|----------------------------------|
| Termination Circumstance as of 12/31/2017 | | Cash Severance (Base Salary) | Value of Accelerated Unvested Equity | Benefits Continuation |
| Death | | \$ - | \$643,603 | \$ - |
| Disability | | \$ - | \$643,603 | \$ - |
| <i>Within 12 months following sale or change of control:</i> | | | | |
| By the Company without cause | | \$289,573 (1x salary) | \$643,603 | \$18,972 |
| By the executive with good reason | | \$289,573 (1x salary) | \$643,603 | \$18,972 |

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

| Potential Payments To Mr. da Silveira Upon Termination Or Change-In-Control | | | | |
|--|--|---|---|----------------------------------|
| Termination Circumstance as of 12/31/2017 | | Cash Severance (Base Salary) | Value of Accelerated Unvested Equity | Benefits Continuation |
| Death | | \$ - | \$516,407 | \$ - |
| Disability | | \$ - | \$516,407 | \$ - |
| <i>Within 12 months following sale or change of control:</i> | | | | |
| By the Company without cause | | \$265,150 (1x salary) | \$516,407 | \$ - |
| By the executive with good reason | | \$265,150 (1x salary) | \$516,407 | \$ - |

Executive Officers

Set forth below is certain information regarding the executive officers of the Company and their ages as of March 31, 2018. Information relating to Michael P. Plisinski is set forth above under the caption “PROPOSAL 1 — ELECTION OF DIRECTORS — Continuing Class I Directors.”

Named Executive Officers (NEOs)

Steven R. Roth Senior Vice President, Finance and Administration and Chief Financial Officer Age: 57

- Mr. Roth has served the Company in his current role since February 2002.
- Prior Experience:
 - September 1996 to February 2002: Vice President, Finance and Administration and Chief Financial Officer of the Company.
 - August 1991 to August 1996: Director of Corporate Finance for Bell Communications Research, a former research and development company which served the telecommunications industry.
- Mr. Roth is a C.P.A. and holds a B.S. in Accounting from Villanova University.

Robert A. Koch Vice President & General Counsel Age: 56

- Mr. Koch has served the Company in his current role since May 2003.
- Prior Experience:
 - April 1986 to May 2003: In-house counsel, last serving as Director of Legal Affairs for Howmedica Osteonics Corp., the orthopaedic implant 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.

Richard B. Rogoff Vice President and General Manager, Lithography Systems Group Age: 51

- Mr. Rogoff has served the Company in his current role since October 2013.
- Prior Experience:
 - July 2007 to October 2013: Vice President, Optics Business Unit of ASML Holding NV, a supplier of lithography systems to the semiconductor industry.
 - March 2004 to July 2007: Vice President of European Sales and Worldwide Account Support of ASML Holding NV.
 - Other prior roles included various executive, operational and engineering positions with ASML Holding NV since 1990.
- Mr. Rogoff has a Bachelor of Science in Microelectronic Engineering from Rochester Institute of Technology and an M.B.A. from INSEAD Business School.

Elvino da Silveira Vice President, Business Development Age: 58

- Mr. da Silveira has served the Company in his current role since August 2017.
- Prior Experience:
 - November 2015 to July 2017: Vice President, Marketing and Product Management of the Company.
 - 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 of the Company.
 - March 1999 to December 2012: President and Chief Executive Officer of Azores Corporation (from Azores inception to its acquisition by the Company).
 - 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.

Other Executive Officers

Debbora A. Ahlgren Vice President and General Manager, Emerging Solutions Business Unit Age: 62

- Ms. Ahlgren has served the Company in her current role since August 2017.
- Prior Experience:
 - March 2016 to July 2017: Vice President, Global Operations of the Company.
 - Mid-2012 to November 2014: Vice President of Marketing for Cascade Microtech, Inc., a semiconductor test equipment manufacturer.
 - January 2010 through mid-2012: Vice President of Marketing for Universal Instruments Corporation, a manufacturer of electronics assembly equipment.
 - Other prior roles included Vice President and General Manager for Field Operations for Agilent Technologies and Chief Marketing Officer of Verigy Ltd., at the time of its spin-out from Agilent Technologies.
- Ms. Ahlgren received a B.S. in Biology from the State University of New York at Stony Brook.

Cleon Chan Vice President, Global Field Operations Age: 50

- Mr. Chan has served the Company in his current role since August 2017.
- Prior Experience:
 - February 2015 to July 2017: Vice President, Asia Operations of the Company.
 - November 2011 to January 2015: General Manager for Strategic Sales and Marketing for Asia for Applied Materials, Inc.
 - January 2002 to November 2011: General Manger for Asia Strategic Marketing and South East Asia Operations for Varian Semiconductor Equipment Associates, Inc., a supplier of Ion Implanter systems.
 - Other prior roles included General Manager for the semiconductor equipment division of STEAG Electronic Systems AG, for Asia-Pacific Operations. This division of STEAG Electronic Systems merged with Mattson Technology Inc. in January 2001.
- Mr. Chan received a B.Eng. in Electronics and Electrical Engineering from National University of Singapore and M.B.A. from University of Dubuque.

Alex Chow Vice President, Advance Packaging Strategic Marketing Age: 41

- Mr. Chow has served the Company in his current role since January 2018.
- Prior Experience:
 - May 2015 to January 2018: Vice President of Product Marketing for Ultratech, Inc., a semiconductor lithography, laser annealing and inspection equipment manufacturer.
 - January 2010 through May 2015: Director of Product Marketing for Ultratech, Inc., a semiconductor lithography, laser annealing and inspection equipment manufacturer.
 - Other prior roles included Manager for Product Marketing, Field Applications Operations for Ultratech, Inc., and Senior Applications Engineer of Suss Microtec.
- Mr. Chow received a M.S. in Materials Science and Engineering from the University of Maryland College Park. Mr. Chow completed an Executive Education Program of Strategy in Competitive Market at University of California Berkeley.

Michael J. Colgan Vice President, Research and Development, Process Control Group Age: 55

- Dr. Colgan has served the Company in his current role since January 2016.
- Prior Experience:
 - January 2013 to December 2015: Vice President and General Manager of the Metrology Business Unit of the Company.
 - January 2011 to December 2012: Director of Operations, Metrology Business Unit of the Company.
 - Other prior roles included Director of Engineering, Metrology Business Unit as well as various engineering management and staff positions at the Company since 1999.
- Dr. Colgan holds a B.S. in Physics from Catholic University, a Ph.D. in Physics from Rutgers University and an M.B.A. from University of Scranton.

Steven D. Gardner Vice President, Engineering, Lithography Systems Group Age: 54

- Mr. Gardner has served the Company in his current role since December 2012.
- Prior Experience:
 - March 1999 to December 2012: Vice President of Engineering for Azores Corporation (from Azores inception to its acquisition by the Company).
 - November 1992 to December 1998: Various positions, the latest as Senior Systems Engineer for MRS Technology, Inc., a former manufacturer of capital equipment for the flat panel display industry.
- Mr. Gardner received a B.S. in Mechanical Engineering from North Carolina State University.

Michael F. Goodrich Vice President and General Manager, Process Control Group Age: 48

- Mr. Goodrich has served the Company in his current role since January 2016.
- Prior Experience:
 - May 2014 to December 2016: Vice President and General Manager, Inspection Business Unit of the Company.
 - January 2013 to May 2014: Vice President, Global Customer Support of the Company.
 - Other prior roles included Director of Customer Support and Director of Worldwide Sales with the Company as well as Technical Sales Director and various service and sales management roles for August Technology Corporation.
- Mr. Goodrich holds a B.S. in Electronics Engineering from DeVry University and an M.B.A. from the University of St. Thomas.

Anthony Nazzaro Vice President, Worldwide Customer Support Age: 57

- Mr. Nazzaro has served the Company in his current role since April 2018.
- Prior Experience:
 - August 2017 to March 2018: Director, Worldwide Customer Support of the Company.
 - December 2016 to July 2017: Director Technical Support of the Company.
 - January 2015 to December 2016: President, FosterWorth, Inc., a company specializing in business expense reduction services.
 - September 2011 to October 2014: Senior Director Customer Support, ASML Holding N.V., a semiconductor equipment manufacturer.
- Mr. Nazzaro has over 30 years of customer service leadership experience in large and small organizations ranging in complexity from component manufacturers to leading edge front-end capital equipment suppliers for the semiconductor industry.

Timothy J. Walker Vice President, Manufacturing, Process Control Group Age: 51

- Mr. Walker has served the Company in his current role since November 2015.
- Prior Experience:
 - April 2014 to November 2015: Director, Manufacturing Engineering, Compliance and Configuration Management for the Inspection Business Unit of the Company.
 - February 2006 to April 2014: Manager, Manufacturing Engineering of the Company.
 - Other prior roles included Manager, Manufacturing Engineering for August Technology Corporation and various Director of Operations, Manufacturing Management and Manufacturing Engineering Management positions in semiconductor, medical, automotive, and aerospace industries.
- Mr. Walker holds a B.S. in Aerospace Engineering and Mechanics from the University of Minnesota, an M.S. in Manufacturing Systems and an M.B.A. from the University of St. Thomas.

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 are providing the following information about the relationship of the annual total compensation of our employees and the annual total compensation of Michael P. Plisinski, our CEO, during 2017.

For fiscal 2017, our last completed fiscal year:

- The median of the annual total compensation of all employees of our Company (other than our CEO), was \$88,347; and
- The annual total compensation of our CEO, as reported in the Summary Compensation Table included in this Proxy Statement, was \$1,901,574.

Based on this information, the ratio of the annual total compensation of our CEO to the median employee's annual total compensation is 22 to 1.

This pay ratio is a reasonable estimate calculated in good faith, in a manner consistent with Item 402(u) of Regulation S-K, based on our payroll and employment records and the methodology described below. The Securities and Exchange Commission ("SEC") rules for identifying the "median employee" and calculating the pay ratio based on that employee's annual total compensation allow companies to adopt a variety of methodologies, to apply certain exclusions, and to make reasonable estimates and assumptions that reflect their compensation practices. As such, the pay ratios reported by other companies may not be comparable to the pay ratio set forth above, as other companies may have different employment and compensation practices and may utilize different methodologies, exclusions, estimates and assumptions in calculating their own pay ratios.

To identify the median of the annual total compensation of all our employees, we used the following methodology and made the following material assumptions, adjustments and estimates:

- We determined that as of December 31, 2017, our employee population consisted of approximately 592 individuals located in the U.S. and in countries in Europe and Asia. This population consisted of our full-time, part-time and temporary employees. We excluded a limited number of temporary agency employees and independent contractors, who are employees of, and whose compensation is determined by third parties unaffiliated with the Company and as such are not considered our employees for the purposes of the pay ratio calculation.
- To identify the "median employee" from our employee population, we used a consistently applied compensation measure which included annual salary as reflected in our payroll records, as well as stock awards and non-equity incentive plan compensation earned in 2017, which was our measurement period. We applied a foreign currency to U.S. dollar exchange rate to the compensation paid in foreign currency and we did not make any cost-of-living adjustments. We selected this compensation measure because it is readily available in our existing payroll records and because it is a reasonable proxy for total compensation for purposes of determining the "median employee."

Once we identified our "median employee," we calculated the elements of such employee's compensation for 2017 in accordance with the requirements of Item 402(c)(2)(x) of Regulation S-K. The median employee's annual total compensation of \$88,347 includes salary, stock awards and non-equity incentive plan compensation, as well as Company matching contributions to the 401(k) employee savings plan, and the cost of Company paid premiums associated with coverage under the group term life insurance and accidental death and dismemberment insurance plan. With respect to the annual total compensation of our CEO, we used the amount reported in the "Total" column of the Summary Compensation Table included in this proxy statement. Any estimates and assumptions used to calculate total annual compensation are described in footnotes to the Summary Compensation Table.

SECURITY OWNERSHIP

The following table sets forth certain information with respect to beneficial ownership of the Company's Common Stock as of March 29, 2018 (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 Named Executive Officers;
- (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.

| Beneficial Owner | Number of Shares (1) | Percentage (2) |
|--|----------------------|----------------|
| BlackRock, Inc. (3) <i>55 East 52nd Street, New York, NY 10055</i> | 4,024,438 | 12.7% |
| Dimensional Fund Advisors, LP (4) <i>Building One, 6300 Bee Cave Road, Austin, TX 78746</i> | 2,647,639 | 8.3% |
| The Vanguard Group (5) <i>100 Vanguard Boulevard, Malvern, PA 19355</i> | 1,786,569 | 5.6% |
| Michael P. Plisinski | 175,548 | * |
| Steven R. Roth | 41,971 | * |
| Richard Rogoff | 17,153 | * |
| Robert A. Koch | 36,304 | * |
| Elvino da Silveira | 28,392 | * |
| Jeffrey A. Aukerman (6) | 22,346 | * |
| Leo Berlinghieri | 20,100 | * |
| Daniel H. Berry | 21,000 | * |
| Thomas G. Greig | 134,000 | * |
| David B. Miller | 18,200 | * |
| John R. Whitten | 34,200 | * |
| All directors and executive officers as a group (eighteen (18) persons) | 631,632 | 2.0% |

* Less than 1%

- (1) Includes the number of shares subject to options which are outstanding and exercisable as well as restricted stock units vesting within 60 days of March 29, 2018 by the following persons: Mr. da Silveira (10,000 shares) and all directors and executive officers as a group (43,600 shares).
- (2) Applicable percentage ownership is based on 31,741,645 shares of Common Stock outstanding as of March 29, 2018. 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 options that are presently exercisable or which will become exercisable, and RSUs which will vest, within sixty (60) days of March 29, 2018 are deemed to be beneficially owned by the person holding such options or 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 stockholders named in this table is c/o Rudolph Technologies, Inc., 16 Jonspin Road, Wilmington, MA 01887.
- (3) Information provided herein is based on the Schedule 13G/A that was filed by BlackRock, Inc. on January 19, 2018.
- (4) Information provided herein is based on the Schedule 13G/A that was filed by Dimensional Fund Advisors LP on February 9, 2018.
- (5) Information provided herein is based on the Schedule 13G that was filed by The Vanguard Group on February 9, 2018.
- (6) Includes shares held by Aukerman Investments LLC.

SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

Section 16(a) of the Securities Exchange Act of 1934 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. Such persons are also required by SEC rules to furnish the Company with copies of all Section 16(a) forms they file. Based solely on its review of Section 16 filings made with the SEC, the copies of such forms received by it, or written representations from certain reporting persons, the Company believes that, during 2017 and through the record date of March 29, 2018, all officers, directors and greater than ten percent (10%) beneficial owners complied with all Section 16(a) filing requirements, except the following:

- Alex Chow filed one Form 4 on January 26, 2018 with respect to one equity grant on January 22, 2018
- Michael Colgan, Elvino da Silveira, Steven Gardner, Michael Goodrich, Robert Koch, Michael Plisinski, Richard Rogoff and Steven Roth each filed on Form 4 on February 5, 2018 with respect to withholding of shares upon the vesting of equity grants on January 31, 2018

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 of Directors 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 31, 2017, including financial statements and schedules included in the annual report on Form 10-K, without charge, by visiting the Company's website at www.rudolphtech.com and clicking on Investors 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

Steven R. Roth
Secretary

Dated: April 18, 2018

RUDOLPH TECHNOLOGIES, INC.

2018 STOCK PLAN

1. Purposes of the Plan. The purposes of this 2018 Stock Plan are:

- to attract and retain the best available personnel for positions of substantial responsibility,
- to provide additional incentive to Employees, Directors and Consultants, and
- to promote the success of the Company's business.

The Plan permits the grant of Incentive Stock Options, Nonstatutory Stock Options, Stock Appreciation Rights, Restricted Stock, Restricted Stock Units, Performance Units and Performance Shares.

2. Definitions. As used herein, the following definitions shall apply:

(a) "Administrator" means the Committee or the Board, as applicable.

(b) "Affiliate" means any corporation or any other entity (including, but not limited to, partnerships and joint ventures) controlling, controlled by, or under common control with the Company.

(c) "Applicable Laws" means any applicable law, including without limitation, provisions of the Code, the Securities Act, the Exchange Act and any rules or regulations thereunder; corporate, securities, tax or other laws, statutes, rules, requirements or regulations, whether federal, state or local; and rules of any securities exchange or automated quotation system on which the Stock is listed, quoted or traded; and the applicable laws of any foreign country or jurisdiction where Awards are, or will be, granted under the Plan.

(d) "Award" means a grant under the Plan of Options, Stock Appreciation Rights, Restricted Stock, Restricted Stock Units, Shares pursuant to Section 4(e), Performance Units or Performance Shares.

(e) "Award Agreement" means the written or electronic agreement setting forth the terms and provisions applicable to each Award granted under the Plan. The Award Agreement is subject to the terms and conditions of the Plan.

(f) "Board" means the Board of Directors of the Company.

(g) "Cause" means, in the absence of any employment agreement then in effect between a Participant and the Company (or the Affiliate employing Participant) otherwise defining Cause:

(i) acts of personal dishonesty, gross negligence or willful misconduct on the part of a Participant in the course of his or her employment or services;

(ii) a Participant's engagement in conduct that results, or could reasonably be expected to result, in material injury to the reputation or business of the Company or its Affiliates;

(iii) misappropriation by a Participant of the assets or business opportunities of the Company or its Affiliates;

(iv) embezzlement or fraud committed by a Participant, or at his or her direction, or with his or her personal knowledge;

(v) a Participant's conviction by a court of competent jurisdiction of, or pleading "guilty" or "no contest" to:

(A) a felony (or its state law equivalent); or

(B) any other criminal charge (other than minor traffic violations) that has, or could be reasonably expected to have, an adverse impact on the performance of the Participant's duties to the Company or its Affiliates; or

- (vi) failure by a Participant to follow the lawful directions of a superior officer or manager or the Board.

In the event there is then in effect an employment agreement between a Participant and the Company or Affiliate employing Participant defining Cause, "Cause" will have the meaning provided in such agreement.

- (h) "Change-in-Control" means the occurrence of any of the following events:

- (i) A change in the ownership of the Company which occurs on the date that any one person or more than one person acting as a group ("Person") acquires ownership of the stock of the Company that, together with the stock held by such Person, constitutes more than fifty percent (50%) of the total voting power of the stock of the Company; provided, however, that for purposes of this subsection 2(h)(i), the acquisition of additional stock by any Person, who is considered to own more than fifty percent (50%) of the total voting power of the stock of the Company, will not be considered a Change-in-Control; or

- (ii) A change in the effective control of the Company which occurs on the date that a majority of members of the Board is replaced during any twelve (12) month period by Directors whose appointment or election is not approved by a majority of the members of the Board prior to the date of the appointment or election. For purposes of this subsection 2(h)(ii), if any Person is considered to be in effective control of the Company, the acquisition of additional control of the Company by the same Person will not be considered a Change-in-Control; or

- (iii) A change in the ownership of a substantial portion of the Company's assets which occurs on the date that any Person acquires (or has acquired during the twelve (12) month period ending on the date of the most recent acquisition by such Person or Persons) assets from the Company that have a total gross fair market value equal to or more than fifty percent (50%) of the total gross fair market value of all of the assets of the Company immediately prior to such acquisition; provided, however, that for purposes of this subsection 2(h)(iii), the following will not constitute a change in the ownership of a substantial portion of the Company's assets:

- (A) a transfer to an entity that is controlled by the Company's stockholders immediately after the transfer; or

- (B) a transfer of assets by the Company to:

- (1) a stockholder of the Company (immediately before the asset transfer) in exchange for or with respect to the Company's stock;

- (2) an entity, fifty percent (50%) or more of the total value or voting power of which is owned, directly or indirectly, by the Company;

- (3) a Person, that owns, directly or indirectly, fifty percent (50%) or more of the total value or voting power of all the outstanding stock of the Company; or

- (4) an entity, at least fifty percent (50%) of the total value or voting power of which is owned, directly or indirectly, by a Person described in subsection 2(h)(iii)(B)(3).

For purposes of this subsection 2(h)(iii), gross fair market value means the value of the assets of the Company, or the value of the assets being disposed of, determined without regard to any liabilities associated with such assets.

For purposes of this definition, "group" shall have the meaning under Section 13 of the Exchange Act.

In the event that this Section 2(h) is inconsistent with the definition of Change-in-Control under Section 409A of the Code and the Regulations thereunder, the definition under Section 409A of the Code and Regulations shall apply.

- (i) "Code" means the Internal Revenue Code of 1986, as amended. Any reference to a section of the Code herein will be a reference to any successor or amended section of the Code.

- (j) "Committee" means the Compensation Committee of the Board or other committee appointed by the Board to administer the Plan, in either case, the composition of which shall at all times satisfy the provisions of Rule 16b-3 and

applicable stock exchange rules, except that, if for any reason the Committee does not meet the requirements of Rule 16b-3, such noncompliance with the requirements of Rule 16b-3 shall not affect the validity of the Awards, interpretations or other actions of the Committee. If no committee of the Board has been established to administer the Plan, the Board shall exercise all of the powers of the Committee granted herein, and, in any event, the Board may in its discretion exercise any or all of such powers.

(k) “Common Stock” means the common stock of the Company, \$0.001 par value per share.

(l) “Company” means Rudolph Technologies, Inc., a Delaware corporation, and its Subsidiaries, successors and assigns.

(m) “Consultant” means any person, including an advisor, engaged by the Company or its Affiliates to render services to such entity.

(n) “Director” means a member of the Board.

(o) “Disability” means a determination that the Participant or Service Provider is unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than twelve (12) months, as determined by the Administrator upon the basis of such evidence as the Administrator deems appropriate or necessary. A determination that a Participant or Service Provider is eligible for full long-term disability under any long-term disability plan, as may then be in effect at the Company, will be conclusive evidence of Disability.

(p) “Effective Date” has the meaning set forth in Section 18.

(q) “Employee” means any person, including Officers and Directors, employed by the Company or its Affiliates. Neither service as a Director nor payment of a director’s fee by the Company shall be sufficient to constitute “employment” by the Company.

(r) “Exchange Act” means the Securities Exchange Act of 1934, as amended.

(s) “Exchange Program” means a program, which may be applicable to a single Award or Participant or multiple Awards or Participants, under which, subject to stockholder approval thereof:

(i) outstanding Options or Stock Appreciation Rights are surrendered or cancelled when the exercise price per Share exceeds the Fair Market Value of one Share in exchange for Awards of the same type, Awards of a different type, and/or cash (other than in connection with a merger, acquisition or similar transaction);

(ii) the exercise price of an outstanding Option or Stock Appreciation Right is reduced; and/or

(iii) any other action is taken with respect to an Award that would be treated as a repricing under the rules and regulations of the national securities exchange on which the Shares are then listed.

(t) “Fair Market Value” means, as of any date, the value of Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or a national market system, including without limitation the New York Stock Exchange, its Fair Market Value shall be the closing sales price for such stock (or the closing bid, if no sales were reported) on such exchange or system on the day of determination, as reported in The Wall Street Journal or such other source as the Administrator deems reliable;

(ii) If the Common Stock is regularly quoted by a recognized securities dealer but selling prices are not reported, the Fair Market Value of a Share of Common Stock shall be the mean between the high bid and low asked prices for the Common Stock on the day of determination, as reported in The Wall Street Journal or such other source as the Administrator deems reliable; or

(iii) In the absence of an established market for the Common Stock, the Fair Market Value shall be determined in good faith by the Administrator.

(u) “Family Member” means any child, stepchild, grandchild, parent, stepparent, grandparent, spouse, former spouse, sibling, niece, nephew, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law (including adoptive relationships) of the Employee, any person sharing the Employee’s household (other than a tenant or employee), a trust in which these persons (or the Employee) have more than fifty percent (50%) of the beneficial interest, a foundation in which these persons (or the Employee) control the management of assets, and any other entity in which these persons (or the Employee) own more than fifty percent (50%) of the voting interests.

(v) “Fiscal Year” means the fiscal year of the Company.

(w) “Incentive Stock Option” means an Option intended to qualify as an incentive stock option within the meaning of Section 422 of the Code and the regulations promulgated thereunder.

(x) “Nonstatutory Stock Option” means an Option not intended to qualify as an Incentive Stock Option.

(y) “Officer” means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act and the rules and regulations promulgated thereunder.

(z) “Option” means a stock option granted pursuant to the Plan.

(aa) “Outside Director” means a Director who is not an Employee.

(bb) “Parent” means a “parent corporation,” whether now or hereafter existing, as defined in Section 424(e) of the Code.

(cc) “Participant” means the holder of an outstanding Award.

(dd) “Performance Share” means an Award denominated in Shares which may be earned in whole or in part upon attainment of performance goals or other vesting criteria as the Administrator may determine pursuant to Section 10 and which may be settled for Shares.

(ee) “Performance Period” shall have the meaning set forth in Section 10(b) of the Plan.

(ff) “Performance Unit” means an Award denominated in units, which may be earned in whole or in part upon attainment of performance goals or other vesting criteria as the Administrator may determine and which may be settled for cash, Shares or other securities or a combination of the foregoing pursuant to Section 10.

(gg) “Period of Restriction” means the period during which the transfer of Shares of Restricted Stock is subject to restrictions, and therefore, the Shares are subject to a substantial risk of forfeiture. Such restrictions may be based on the passage of time, the achievement of target levels of performance, or the occurrence of other events as determined by the Administrator, subject to Section 4(d) of the Plan.

(hh) “Plan” means this 2018 Stock Plan.

(ii) “Prior Plan” means the Rudolph Technologies, Inc. 2009 Stock Plan.

(jj) “Restricted Stock” means shares of Common Stock issued pursuant to Section 7 of the Plan subject to certain restrictions and risk of forfeiture.

(kk) “Restricted Stock Unit” means a bookkeeping entry representing one Share, granted pursuant to Section 8. Each Restricted Stock Unit represents an unfunded and unsecured obligation of the Company.

(ll) “Rule 16b-3” means Rule 16b-3 of the Exchange Act or any successor to Rule 16b-3.

(mm) “Section 16(b)” means Section 16(b) of the Exchange Act.

(nn) “Service Provider” means an Employee, Director or Consultant.

(oo) “Share” means a share of the Common Stock, as may be adjusted in accordance with Section 14 of the Plan.

(pp) “Specified Employee” is a Participant or Service Provider who, as of the Participant's or Service Provider's date of termination, is a key employee of the Company within the meaning of Section 416(i)(1)(A)(i), (ii), or (iii) of the Code (applied in accordance with the regulations thereunder and disregarding Section 416(i)(5)) at any time during the twelve (12) month period ending on a Specified Employee Identification Date. If a Participant or Service Provider is a key employee as of a Specified Employee Identification Date, the Participant or Service Provider is treated as a key employee for purposes of the Plan for the entire twelve (12) month period beginning on the Specified Employee Effective Date.

(qq) “Specified Employee Effective Date” is the date as set forth in Treasury Regulation Section 1.409A-1(i)(4).

(rr) “Specified Employee Identification Date” shall mean December 31 of each year.

(ss) “Stock Appreciation Right” means an Award, granted alone or in connection with an Option, that pursuant to Section 9 is designated as a Stock Appreciation Right.

(tt) “Subsidiary” means a “subsidiary corporation”, whether now or hereafter existing, as defined in Section 424(f) of the Code.

(uu) “Substitute Awards” has the meaning set forth in Section 3(e) of the Plan.

3. Stock Subject to the Plan.

(a) Share Reserve. Subject to the provisions of Section 14 of the Plan, the maximum number of Shares that may be issued under the Plan is 3,240,000 Shares. Upon the Effective Date, no further awards shall be granted under the Prior Plan. If, after the Effective Date, any Shares subject to awards granted under the Prior Plan would again become available for new awards under the terms of such plan if such plan were still in effect and without regard to any termination thereof, then those Shares will be available for the purpose of granting Awards under this Plan, thereby increasing the limit in the preceding sentence. The Shares issued pursuant to Awards under the Plan may be authorized, but unissued, or reacquired Common Stock.

(b) Certain Adjustments to Share Reserve.

(i) To the extent that an Award terminates, expires or becomes unexercisable without having been exercised in full, is surrendered pursuant to an Exchange Program approved by stockholders, or, with respect to Restricted Stock, Restricted Stock Units, Performance Units or Performance Shares, is terminated or forfeited in whole or in part due to failure to vest, the Shares (or for Awards other than Options or Stock Appreciation Rights, the forfeited Shares) which were subject to such terminated, expired, unexercised, surrendered or forfeited Award shall become available for future grant or issuance under the Plan. To the extent that the full number of Shares subject to an Award of Performance Units, Performance Shares or other Award subject to performance-based vesting criteria is not issued by reason of failure to achieve maximum performance goals, the number of Shares not issued shall be shall become available for future grant or issuance under the Plan.

(ii) All Shares subject to a Stock Appreciation Right (not the number of net Shares actually issued pursuant to a Stock Appreciation Right upon any exercise) will be counted against the number of Shares available for issuance under Section 3(a).

(iii) Shares used to pay the exercise price of an Award or to satisfy the tax withholding obligations related to an Award will not again become available for future grant or sale under the Plan.

(iv) To the extent an Award under the Plan is paid out in cash rather than Shares, such cash payment will not result in reducing the number of Shares available for issuance under the Plan.

(v) Any dividend equivalent denominated in Shares will be counted against the number of Shares available for issuance under Section 3(a) in such amount and at such time as the dividend equivalent first constitutes an unconditional obligation to issue Shares.

(c) Incentive Stock Option Limit. Notwithstanding the foregoing and, subject to adjustment as provided in Section 14, the maximum number of Shares that may be issued upon the exercise of Incentive Stock Options will equal

the aggregate Share number stated in the first sentence of subsection 3(a) above, plus, to the extent allowable under Section 422 of the Code and the Treasury Regulations promulgated thereunder, any Shares that become available for issuance under the Plan pursuant to Sections 3(a) and 3(b) above.

(d) Individual Award Limits.

(i) Outside Directors. For any calendar year, the value of Awards granted to an individual Outside Director may not exceed \$600,000, calculating the value of any such Awards based on the grant date fair value of such Awards for financial reporting purposes.

(ii) All Service Providers Other than Outside Directors. For any calendar year, the value of all Awards granted to any individual Service Provider other than an Outside Director may not exceed \$5,000,000, calculating the value of any such Awards based on the grant date fair value of such Awards for financial reporting purposes. Notwithstanding the foregoing, any Award of Performance Units or Performance Shares or any other Award subject to performance-based vesting criteria shall be taken into account assuming target performance achievement under the terms of such Award for purposes of applying this annual limit.

(e) Substitute Awards.

(i) In connection with an entity's merger or consolidation with the Company or any Subsidiary or the direct or indirect acquisition by the Company or any Subsidiary of an entity's property or stock, the Committee may grant Awards in substitution or exchange for any options or other stock or stock-based awards granted before such merger or consolidation by such entity or its affiliate ("Substitute Awards"). Substitute Awards may be granted on such terms and conditions as the Committee deems appropriate, notwithstanding any limitations on Awards in the Plan, including, but not limited to, the limitation under Section 4(d). Substitute Awards will not count against the aggregate Share reserve in Section 3(a), except that Shares acquired by exercise of substitute Incentive Stock Options will count against the maximum number of Shares that may be issued pursuant to the exercise of Incentive Stock Options under the Plan.

(ii) Additionally, in the event that a company acquired by the Company or any Subsidiary, or with which the Company or any Subsidiary combines by merger, consolidation or otherwise, has shares available under a pre-existing plan approved by its stockholders and not adopted in contemplation of such acquisition or combination as determined by the Administrator, the shares available for grant pursuant to the terms of such pre-existing plan (as appropriately adjusted to reflect the transaction) may be used for Awards under the Plan and shall not reduce the Shares authorized for grant under the Plan under Section 3(a) (and shares subject to such Awards, which, for the avoidance of doubt, excludes Substitute Awards, may again become available for Awards under the Plan as provided under Section 3(b) above); provided that Awards using such available Shares (or any Shares that again become available for issuance under the Plan under Section 3(b) above) shall not be made after the date awards or grants could have been made under the terms of the pre-existing plan absent the acquisition or combination, and shall only be made to individuals who were employees or directors of such acquired or combined company or any of its subsidiaries prior to such acquisition or combination.

4. Administration of the Plan.

(a) Powers of the Administrator. Subject to the provisions of the Plan, the Administrator shall have the authority, in its discretion:

- (i) to determine the Fair Market Value;
- (ii) to select the Service Providers to whom Awards may be granted hereunder;
- (iii) to determine the number of Shares to be covered by each Award granted hereunder;
- (iv) to approve forms of Award Agreements for use under the Plan;

(v) to determine the terms and conditions, not inconsistent with the terms of the Plan, of any Award granted hereunder. Such terms and conditions may include, but are not limited to, the exercise price; the vesting period of Awards or the time or times when Awards may be exercised (which may be based in whole or in part on performance criteria), which shall be established in accordance with Section 4(d); any vesting acceleration or waiver of forfeiture restrictions

(notwithstanding Section 4(d) to the contrary); any restriction or limitation regarding any Award or the Shares relating thereto; and any and all other Award terms and conditions;

(vi) to interpret, construe and administer the Plan and Awards granted pursuant to the Plan, including the adoption of rules, modifications, procedures and sub-plans as may be necessary or desirable for administration of the Plan, including for purposes of granting Awards to Participants in foreign countries and qualifying any such Awards for preferential tax treatment under Applicable Law; the Administrator may correct any defect or supply any omission or reconcile any inconsistency in the Plan or in any Award in the manner and to the extent the Administrator deems necessary or desirable to carry it into effect. Any action or decision of the Administrator in the interpretation or administration of the Plan, as described herein, shall be within its sole and absolute discretion and shall be final, conclusive and binding on all parties concerned;

(vii) to prescribe, amend and rescind rules and regulations relating to the Plan, including rules and regulations relating to sub-plans established for the purpose of satisfying applicable foreign laws;

(viii) to modify or amend each Award (subject to Section 19 of the Plan), including, but not limited to, the discretionary authority to extend the post-termination exercisability or vesting period of Awards (but in no event shall such period of exercisability be extended beyond the expiration of the term of the Award);

(ix) to allow Participants to satisfy withholding tax obligations in such a manner as prescribed in Section 15;

(x) to authorize any person to execute on behalf of the Company any instrument required to effect the grant of an Award previously granted by the Administrator;

(xi) delegate to a committee of one or more Outside Directors or, to the extent permitted by Applicable Law, to one or more officers or a committee of officers, the authority to grant Awards to, and to cancel or take any other action in respect of, any Awards to Employees or Consultants of the Company who are not Directors or Officers;

(xii) to allow a Participant to defer the receipt of the payment of cash or the delivery of Shares that would otherwise be due to such Participant under an Award, subject to compliance with Section 409A of the Code; and

(xiii) to make all other determinations deemed necessary or advisable for administering the Plan.

Notwithstanding the foregoing, other than pursuant to Section 14, no Exchange Program may be implemented by the Administrator without the prior approval of the Company's stockholders.

(b) Effect of Administrator's Decision. All decisions, determinations, interpretations or actions of the Administrator made or taken pursuant to grants of authority under the Plan shall be made or taken in the sole discretion of the Administrator and shall be final, conclusive and binding on all persons for all purposes. The Administrator's decisions and determinations under the Plan need not be uniform and may be made selectively among Participants, whether or not such Participants are similarly situated.

(c) No Liability. Under no circumstances shall the Company, its Affiliates, the Administrator, the Board, any Director or any Officer of the Company incur any liability, including for any direct, indirect, incidental, consequential or special damages (including lost profits) of any form, whether or not foreseeable, with respect to the Plan or the Company's, its Affiliates', the Administrator's, the Board's or any Director's or Officer's roles, acts, omissions, determinations or interpretations in connection with the Plan or any Award.

(d) Minimum Vesting. All Awards granted to all Participants under the Plan shall be subject to a minimum vesting period of not less than one year from the date of grant; provided, however, the Administrator may provide for the grant of Awards to Participants without regard to the foregoing minimum vesting requirement with respect to a maximum of five percent (5%) of the total number of Shares authorized for issuance under the Plan pursuant to Section 3(a), as may be adjusted under Section 14(a).

5. Eligibility. Nonstatutory Stock Options, Restricted Stock, Restricted Stock Units, Performance Units, and Performance Shares may be granted to Service Providers. Incentive Stock Options may be granted only to employees of the Company or any Parent or Subsidiary of the Company.

6. Stock Options.

(a) Limitations. Each Option shall be designated in the Award Agreement as either an Incentive Stock Option or a Nonstatutory Stock Option. However, notwithstanding such designation, to the extent that the aggregate Fair Market Value of the Shares with respect to which Incentive Stock Options are exercisable for the first time by the Participant during any calendar year (under all plans of the Company and any Parent or Subsidiary) exceeds one hundred thousand dollars (\$100,000), such Options shall be treated as Nonstatutory Stock Options. For purposes of this subsection 6(a), Incentive Stock Options shall be taken into account in the order in which they were granted. The Fair Market Value of the Shares shall be determined as of the time the Option with respect to such Shares is granted. No dividends or dividend equivalents may be granted in respect of any Option, and holders of Options carry no voting rights.

(b) Term of Option. The term of each Option shall be stated in the Award Agreement. In the case of an Incentive Stock Option, the term shall be ten (10) years from the date of grant or such shorter term as may be provided in the Award Agreement. Moreover, in the case of an Incentive Stock Option granted to a Participant who, at the time the Incentive Stock Option is granted, owns stock representing more than ten percent (10%) of the total combined voting power of all classes of stock of the Company or any Parent or Subsidiary, the term of the Incentive Stock Option shall be five (5) years from the date of grant or such shorter term as may be provided in the Award Agreement. In the case of a Nonqualified Stock Option, the term shall be ten (10) years from the date of grant or such shorter term as may be provided in the Award Agreement.

(c) Option Exercise Price and Consideration.

(i) Exercise Price. The per share exercise price for the Shares to be issued pursuant to exercise of an Option shall be determined by the Administrator, but will be no less than one hundred percent (100%) of the Fair Market Value per Share on the date of the grant. In addition, in the case of an Incentive Stock Option granted to an employee of the Company or any Parent or Subsidiary of the Company who, at the time the Incentive Stock Option is granted, owns stock representing more than ten percent (10%) of the voting power of all classes of stock of the Company or any Parent or Subsidiary, the per Share exercise price shall be no less than one hundred ten percent (110%) of the Fair Market Value per Share on the date of grant.

(ii) Vesting Period. At the time an Option is granted, the Administrator shall fix the period within which the Option may be exercised and shall determine any conditions that must be satisfied before the Option may be exercised. Any vesting period shall be established in accordance with Section 4(d) of the Plan.

(d) Exercise of Option.

(i) Procedure for Exercise; Rights as a Stockholder. Any Option granted hereunder shall be exercisable according to the terms of the Plan and the Award Agreement and at such times and under such conditions as determined by the Administrator and set forth in the Award Agreement. An Option may not be exercised for a fraction of a Share.

An Option shall be deemed exercised when the Company receives:

(A) notice of exercise (in such form as the Administrator may specify from time to time) from the person entitled to exercise the Option, and

(B) full payment for the Shares with respect to which the Option is exercised (together with applicable withholding taxes). Full payment shall be made:

(1) in cash or by personal check, certified check or bank check or wire transfer of immediately available funds;

(2) other Shares provided that such Shares have a Fair Market Value on the date of surrender equal to the aggregate exercise price of the Shares as to which said Option is exercised, provided that accepting such Shares will not result in any adverse accounting consequences to the Company, as the Administrator determines in its sole discretion;

(3) by delivery of a properly executed exercise notice together with any other documentation as the Administrator and the Participant's broker, if applicable, require to effect an exercise of the Option and delivery to the Company of the sale or other proceeds (as permitted by Applicable Law) required to pay the exercise price;

(4) by withholding Shares otherwise issuable in connection with the exercise of the Option ("net exercise");

(5) such other consideration and method of payment authorized by the Administrator in its discretion or permitted by the Award Agreement, the Plan and Applicable Law; or

(6) any combination of the foregoing methods of payment.

(7) Shares issued upon exercise of an Option shall be issued in the name of the Participant or, if requested by the Participant, in the name of the Participant and his or her spouse. Until the Shares are issued (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company), no right to vote or receive dividends or any other rights as a stockholder shall exist with respect to the Shares subject to an Option, notwithstanding the exercise of the Option. The Company shall issue (or cause to be issued) such Shares promptly after the Option is exercised. No adjustment will be made for a dividend or other right for which the record date is prior to the date the Shares are issued, except as provided in Section 14 of the Plan.

Exercising an Option in any manner shall decrease the number of Shares thereafter available under the Option by the number of Shares as to which the Option is exercised.

(ii) Termination of Relationship as a Service Provider. If a Participant ceases to be a Service Provider, other than for Cause or due to the Participant's death or Disability, the Participant may exercise his or her Option within such period of time as is specified in the Award Agreement to the extent that the Option is vested on the date of termination (but in no event later than the expiration of the term of such Option as set forth in the Award Agreement). In the absence of a specified time in the Award Agreement, any vested portion of the Option shall remain exercisable for three (3) months following the Participant's termination (but in no event later than the expiration of the term of such Option as set forth in the Award Agreement). Unless otherwise provided by the Administrator or in the Award Agreement, if on the date of termination, the Participant is not vested as to all or any portion of his or her Option, the unvested portion of the Option shall terminate. If after termination the Participant does not exercise his or her Option within the time specified by the Administrator or in the Award Agreement, the Option shall terminate.

(iii) Disability of Participant. If a Participant ceases to be a Service Provider as a result of the Participant's Disability, the Participant may exercise his or her Option within such period of time as is specified in the Award Agreement to the extent the Option is vested on the date of termination (but in no event later than the expiration of the term of such Option as set forth in the Award Agreement). In the absence of a specified time in the Award Agreement, any vested portion of the Option shall remain exercisable for twelve (12) months following the Participant's termination (but in no event later than the expiration of the term of such Option as set forth in the Award Agreement). Unless otherwise provided by the Administrator or in the Award Agreement, if on the date of termination the Participant is not vested as to all or any portion of his or her Option, the unvested portion of the Option shall terminate. If after termination the Participant does not exercise his or her Option within the time specified by the Administrator or in the Award Agreement, the Option shall terminate.

(iv) Death of Participant. If a Participant dies while a Service Provider, the Option may be exercised following the Participant's death within such period of time as is specified in the Award Agreement to the extent that the Option is vested on the date of death (but in no event later than the expiration of the term of such Option as set forth in the Award Agreement). In the absence of a specified time in the Award Agreement, any vested portion of the Option shall remain exercisable for twelve (12) months following the Participant's death (but in no event later than the expiration of the term of such Option as set forth in the Award Agreement). The Option may be exercised by the Participant's designated beneficiary, provided such beneficiary has been designated prior to Participant's death in a form acceptable by the Administrator. If no such beneficiary has been designated by the Participant, then such Option may be exercised by the personal representative of the Participant's estate or by the person or persons to whom the Option is transferred pursuant to the Participant's will or in accordance with the laws of descent and distribution. Unless otherwise provided by the Administrator or in the Award Agreement, if at the time of death the Participant is not vested as to all or any portion of his or her Option, the unvested portion of the Option shall terminate. If the Option is not so exercised within the time specified by the Administrator or in the Award Agreement, the Option shall terminate.

(v) Termination for Cause. If a Participant's status as a Service Provider is terminated for Cause, then the Option, whether vested or unvested, will immediately terminate upon such termination.

7. Restricted Stock.

(a) Grant of Restricted Stock. Subject to the terms and provisions of the Plan, the Administrator, at any time and from time to time, may grant Shares of Restricted Stock to Service Providers in such amounts as the Administrator, in its sole discretion, will determine.

(b) Restricted Stock Agreement. Each Award of Restricted Stock will be evidenced by an Award Agreement that will specify the Period of Restriction, which shall be established in accordance with Section 4(d) of the Plan; the number of Shares granted; and such other terms and conditions as the Administrator, in its sole discretion, will determine. Unless the Administrator determines otherwise, the Company (or its designee) as escrow agent will hold Shares of Restricted Stock (or a stop-transfer restriction will be placed on any Shares of Restricted Stock issued in book-entry form) until the restrictions on such Shares have lapsed.

(c) Transferability. Except as provided in this Section 7 and Section 13, Shares of Restricted Stock may not be sold, transferred, pledged, assigned, or otherwise alienated or hypothecated until the end of the applicable Period of Restriction.

(d) Other Restrictions. The Administrator, in its sole discretion, may impose such other restrictions on Shares of Restricted Stock as it may deem advisable or appropriate.

(e) Removal of Restrictions. Except as otherwise provided in this Section 7, Shares of Restricted Stock granted under the Plan will be released from these restrictions as soon as practicable after the last day of the Period of Restriction, as provided in the Award Agreement, or at such other time as the Administrator may determine. Notwithstanding the foregoing, the Administrator is authorized, in its sole discretion, to allow participants to cause their otherwise vested Restricted Stock to be deferred pursuant to the terms of any nonqualified deferred compensation program as may be established by the Company from time to time in its discretion for eligible employees or Directors. Notwithstanding any provision of the Plan to the contrary, including but not limited to Section 4(d), in the event of the death, Disability, retirement or other termination of service of a Service Provider or a Change-in-Control, the Administrator, in its discretion, may accelerate or otherwise modify the time at which any restrictions will lapse or be removed.

(f) Voting Rights. During the Period of Restriction, Participants holding Shares of Restricted Stock granted hereunder may exercise full voting rights with respect to those Shares, unless the Administrator determines otherwise.

(g) Dividends. The Administrator may, in its sole discretion, provide that Awards of Restricted Stock earn dividends paid with respect to such Shares. Any such dividends shall be accumulated and credited to an account for the Participant, settled in cash or shares of Stock as determined by the Administrator, and shall be subject to the same terms and conditions, including vesting restrictions, as the Award with respect to which the dividends are credited. The Administrator may determine that any dividends so credited to a Participant's account shall accrue interest at a rate per annum specified by the Administrator. Any credited dividends and accrued interest, if any, shall be paid as soon as administratively practicable following the time the related shares of Restricted Stock vest and are paid to the Participant. For the avoidance of doubt, no dividends or accrued interest, if any, may be paid before the underlying Restricted Stock vests, and to the extent an Award of Restricted Stock is terminated, cancelled or forfeited in whole or in part, due to failure to meet performance conditions or otherwise, any dividends and accrued interest, if any, credited with respect to such Award shall be terminated, cancelled or forfeited at the same time and to the same extent as such Award.

(h) Termination of Restricted Stock Award. On the date set forth in the Award Agreement or as provided by the Administrator, the Restricted Stock for which restrictions have not lapsed will be forfeited to the Company.

8. Restricted Stock Units.

(a) Grant. Restricted Stock Units may be granted at any time and from time to time as determined by the Administrator. After the Administrator determines that it will grant Restricted Stock Units under the Plan, it will advise the Participant in an Award Agreement of the terms, conditions, and restrictions related to the grant, including the number of Restricted Stock Units.

(b) Vesting Criteria and Other Terms. The Administrator will set the vesting period, which shall be established in accordance with Section 4(d) of the Plan, and the vesting criteria in its discretion, which may be service-based and/or performance-based vesting criteria. The Administrator may set vesting criteria based upon the achievement of Company-wide, business unit, or individual goals (including, but not limited to, continued employment), or any other basis determined by the Administrator in its discretion.

(c) Earning Restricted Stock Units. Upon meeting the applicable vesting criteria, the Participant will be entitled to receive a payout as determined by the Administrator. Notwithstanding any provision of the Plan to the contrary, including but not limited to Section 4(d), in the event of the death, Disability, retirement or other termination of service of a Service Provider or a Change-in-Control at any time after the grant of Restricted Stock Units, the Administrator, in its sole discretion, may reduce or waive any vesting criteria that must be met to receive a payout.

(d) Form and Timing of Payment. Payment of earned Restricted Stock Units will be made as soon as practicable, and in no event later than sixty (60) days, after the date(s) set forth in, and otherwise subject to the terms and conditions of, the Award Agreement or as provided by the Plan Administrator. The Administrator, in its sole discretion, may settle earned Restricted Stock Units in cash, Shares, or a combination of both, as provided in the Award Agreement. Notwithstanding the foregoing to the contrary, the Administrator is authorized, in its sole discretion from time to time, to allow participants to further defer receipt of the Shares or cash issued in settlement of Restricted Stock Units pursuant to the terms of any nonqualified deferred compensation program as may be established by the Company from time to time in its discretion for eligible employees or Directors.

(e) Cancellation. On the date set forth in, and otherwise subject to the terms and conditions of, the Award Agreement or as provided by the Administrator, all unearned Restricted Stock Units will be terminated and forfeited to the Company.

(f) Dividend Equivalents. The Administrator is authorized to grant to Participants dividend equivalents based on the dividends declared on Shares that are subject to any outstanding Restricted Stock Unit. Unless otherwise provided by the Administrator or in the Award Agreement, for an Award of Restricted Stock Units that is subject to performance-based vesting conditions, dividend equivalents shall be accrued only with respect to the target number of Restricted Stock Units, and additional dividend equivalents will not be earned for any Restricted Stock Units earned in excess of target. Dividend equivalents shall be credited as of dividend payment dates during the period between the date the Restricted Stock Unit Award is granted and the date the Restricted Stock Unit Award is vested, paid or expired. Such dividend equivalents shall be converted to cash, Shares or additional Restricted Stock Units by such formula and at such time and subject to such limitations as may be determined by the Administrator. Dividend equivalents accruing on unvested Restricted Stock Units shall, as provided in the Award Agreement, either (i) be reinvested in the form of additional Shares, which shall be subject to the same vesting provisions as provided for in the Restricted Stock Unit Award or (ii) be held by the Company under the same vesting provisions in an account allocated to the Participant and accumulated, with or without interest in the Administrator's discretion, until the date upon which the Restricted Stock Unit Award becomes vested. For the avoidance of doubt, no dividend equivalents or accrued interest, if any, may be paid before the underlying Restricted Stock Units vest, and to the extent an Award of Restricted Stock Units is terminated, cancelled or forfeited in whole or in part, due to failure to meet performance conditions or otherwise, any dividend equivalents and accrued interest if any, credited with respect to such Award shall be terminated, cancelled or forfeited at the same time and to the same extent as such Award.

9. Stock Appreciation Rights.

(a) Grant of Stock Appreciation Rights. Subject to the terms and conditions of the Plan, a Stock Appreciation Right may be granted to Service Providers at any time and from time to time as will be determined by the Administrator, in its sole discretion. No dividends or dividend equivalents may be granted in respect of any Stock Appreciation Right, and holders of Stock Appreciation Rights carry no voting rights.

(b) Number of Shares. The Administrator will have complete discretion to determine the number of Stock Appreciation Rights granted to any Service Provider.

(c) Exercise Price and Other Terms. The per share exercise price for the Shares to be issued pursuant to exercise of a Stock Appreciation Right will be determined by the Administrator and will be no less than one hundred percent (100%) of the Fair Market Value per Share on the date of grant. Otherwise, the Administrator, subject to the provisions of the Plan, will have complete discretion to determine the terms and conditions of Stock Appreciation Rights granted under the Plan. Any vesting period for a Stock Appreciation Right shall be established in accordance with Section 4(d) of the Plan.

(d) Stock Appreciation Right Agreement. Each Stock Appreciation Right grant will be evidenced by an Award Agreement that will specify the exercise price, the term of the Stock Appreciation Right, the conditions of exercise, and such other terms and conditions as the Administrator, in its sole discretion, will determine.

(e) Expiration of Stock Appreciation Rights. A Stock Appreciation Right granted under the Plan will expire upon the date determined by the Administrator, in its sole discretion, and set forth in the Award Agreement or as provided by the Administrator. Notwithstanding the foregoing, Stock Appreciation Rights shall be subject to a maximum term of ten (10) years and to the provisions of subsection 6(d) relating to exercise.

(f) Payment of Stock Appreciation Right Amount. Upon exercise of a Stock Appreciation Right, a Participant will be entitled to receive payment from the Company in an amount determined by multiplying:

(i) The difference between the Fair Market Value of a Share on the date of exercise over the exercise price; times

(ii) The number of Shares with respect to which the Stock Appreciation Right is exercised.

As provided in the Award Agreement or except as otherwise determined by the Administrator, the payment to the Participant upon exercise of a Stock Appreciation Right may be in cash, in Shares of equivalent value, or in some combination thereof.

10. Performance Units and Performance Shares.

(a) Grant of Performance Units and/or Performance Shares. Performance Units and Performance Shares may be granted to Service Providers at any time and from time to time, as will be determined by the Administrator, in its sole discretion. The Administrator will have complete discretion in determining the number of Performance Units and Performance Shares granted to each Participant. The Administrator may, in its sole discretion, provide that Awards of Performance Shares and Performance Units earn dividends or dividend equivalents, as applicable, in accordance with, and subject to the restrictions of, Section 7(g) and Section 8(f), respectively. For the avoidance of doubt, no dividends or dividend equivalents or accrued interest, if any, earned with respect to a Performance Unit Award or a Performance Share Award may be paid before the underlying Award vests, and to the extent an Award of Performance Units or Performance Shares is terminated, cancelled or forfeited in whole or in part, due to failure to meet performance conditions or otherwise, any dividends, dividend equivalents and accrued interest if any, credited with respect to such Award shall be terminated, cancelled or forfeited at the same time and to the same extent as such Award.

(b) Performance Objectives and Other Terms. The Administrator will set performance objectives and/or other vesting provisions (including, without limitation, continued status as a Service Provider) in its discretion which, depending on the extent to which they are met, will determine the number or value of Performance Units or Performance Shares that will be paid out to the Service Providers. The time period during which the performance objectives or other vesting provisions must be met will be called the "Performance Period." Each Award of Performance Units and Performance Shares will be evidenced by an Award Agreement that will specify the Performance Period, vesting period (which shall be established in accordance with Section 4(d)) and such other terms and conditions as the Administrator, in its sole discretion, will determine. The Administrator may set performance objectives, which may be based on financial, strategic or operational goals or any other performance goals or metrics determined by the Administrator in its discretion. Such performance objectives may be based upon the achievement of Company-wide, divisional, or individual goals, measured on an absolute or relative basis, or any other goals, metrics or bases determined by the Administrator in its discretion.

(c) Earning of Performance Units and Performance Shares. After the applicable Performance Period has ended, the holder of Performance Units or Performance Shares will be entitled to receive a payout of the number of Performance Units or Performance Shares earned by the Participant over the Performance Period, to be determined as a function of the extent to which the corresponding performance objectives or other vesting provisions have been achieved. After the grant of a Performance Units or Performance Shares, notwithstanding any provision of the Plan to the contrary, including but not limited to Section 4(d), the Administrator may, in its sole discretion, reduce or waive any performance objectives or other vesting provisions for such Performance Unit or Performance Share.

(d) Form and Timing of Payment of Performance Units and Performance Shares. Payment of earned Performance Units and Performance Shares will be made as soon as practicable after the expiration of the applicable Performance Period. The Administrator, in its sole discretion, may pay earned Performance Units and Performance Shares in the form of cash, in Shares, or a combination thereof.

(e) Cancellation of Performance Units and Performance Shares. On the date set forth in, and otherwise subject to the terms and conditions of, the Award Agreement or as otherwise provided by the Administrator, all unearned or unvested Performance Units and Performance Shares will be forfeited to the Company.

11. Compliance With Code Section 409A.

(a) Awards are intended to operate in a manner that they are either exempt from the application of, or comply with, the requirements of Code Section 409A such that the grant, payment, settlement or deferral will not be subject to the additional tax or interest applicable under Code Section 409A, except as otherwise determined in the sole discretion of the Administrator, provided no warranty of such compliance or exemption is hereby made. The Plan and each Award Agreement under the Plan is intended to meet the requirements of Code Section 409A and will be construed and interpreted in accordance with such intent, except as otherwise determined in the sole discretion of the Administrator. To the extent that an Award or payment, or the settlement or deferral thereof, is subject to Code Section 409A, the Award is intended to be granted, paid, settled or deferred in a manner that will meet the requirements of Code Section 409A, and the Plan and Award Agreements shall be interpreted and administered accordingly, though no guarantee or warranty of such compliance is made to any individual. The parties agree that this Plan may be amended, as determined in the discretion of the Administrator, and as may be necessary or advisable to comply with Section 409A of the Code and all related rules and regulations in order to preserve the payments and benefits provided hereunder.

(b) Notwithstanding anything in the Plan or in any Award Agreement to the contrary, to the extent that any amount or benefit that would constitute non-exempt “deferred compensation” for purposes of Section 409A of the Code would otherwise be payable or distributable under the Plan or any Award Agreement by reason of the occurrence of a Change-in-Control, or the Participant’s Disability or separation from service, such amount or benefit will not be payable or distributable to the Participant by reason of such circumstance unless (i) the circumstances giving rise to such Change-in-Control, Disability or separation from service meet any description or definition of “change-in-control event”, “disability” or “separation from service,” as the case may be, in Section 409A of the Code and applicable regulations (without giving effect to any elective provisions that may be available under such definition), or (ii) the payment or distribution of such amount or benefit would be exempt from the application of Section 409A of the Code by reason of the short-term deferral exemption or otherwise. This provision does not prohibit the vesting of any Award. If this provision prevents or delays the payment or distribution of any amount or benefit, such payment or distribution shall be made on the next earliest payment or distribution date or event specified in the Award Agreement that is permissible under Section 409A of the Code.

(c) Notwithstanding anything in the Plan or in any Award Agreement to the contrary, if any amount or benefit that would constitute non-exempt “deferred compensation” for purposes of Section 409A of the Code would otherwise be payable or distributable under this Plan or any Award Agreement by reason of a Participant’s separation from service during a period in which the Participant is a Specified Employee, then, subject to any permissible acceleration of payment by the Administrator under Treas. Reg. Section 1.409A-3(j)(4)(ii) (domestic relations order), (j)(4)(iii) (conflicts of interest), or (j)(4)(vi) (payment of employment taxes):

(i) if the payment or distribution is payable in a lump sum, the Participant’s right to receive payment or distribution of such non-exempt deferred compensation will be delayed until the earlier of the Participant’s death or the first day of the seventh month following the Participant’s separation from service; and

(ii) if the payment or distribution is payable over time, the amount of such non-exempt deferred compensation that would otherwise be payable during the six-month period immediately following the Participant’s separation from service will be accumulated and the Participant’s right to receive payment or distribution of such accumulated amount will be delayed until the earlier of the Participant’s death or the first day of the seventh month following the Participant’s separation from service, whereupon the accumulated amount will be paid or distributed to the Participant and the normal payment or distribution schedule for any remaining payments or distributions will resume.

For purposes of this Plan, the term “Specified Employee” has the meaning in Section 2(pp) of the Plan, provided, however, that, as permitted in such final regulations, the Company’s Specified Employees and its application of the six-month delay rule of Section 409A(a)(2)(B)(i) of the Code shall be determined in accordance with any rules adopted by the Board or any committee of the Board, which shall be applied consistently with respect to all nonqualified deferred compensation arrangements of the Company, including this Plan.

(d) If any one or more Awards granted under the Plan to a Participant could qualify for any separation pay exemption described in Treas. Reg. Section 1.409A-1(b)(9), but such Awards in the aggregate exceed the dollar limit

permitted for the separation pay exemptions, the Administrator may determine which Awards or portions thereof will be subject to such exemptions.

(e) If, pursuant to an Award, a Participant is entitled to a series of installment payments, such Participant's right to the series of installment payments shall be treated as a right to a series of separate payments and not to a single payment. For purposes of the preceding sentence, the term "series of installment payments" has the meaning provided in Treas. Reg. Section 1.409A-2(b)(2)(iii) (or any successor thereto).

12. Leaves of Absence/Transfer Between Locations. Unless the Administrator provides otherwise, vesting of Awards granted hereunder will be suspended during any unpaid leave of absence. A Participant will not cease to be an Employee in the case of:

- (a) any leave of absence approved by the Company; or
- (b) transfers between locations of the Company or between the Company, its Parent, or any Subsidiary.

For purposes of Incentive Stock Options, no such leave may exceed three (3) months, unless reemployment upon expiration of such leave is guaranteed by statute or contract. If reemployment upon expiration of a leave of absence approved by the Company is not so guaranteed, then six (6) months following the first day of such leave, any Incentive Stock Option held by the Participant will cease to be treated as an Incentive Stock Option and will be treated for tax purposes as a Nonstatutory Stock Option.

13. Transferability of Awards. Unless determined otherwise by the Administrator, an Award may not be sold, pledged, assigned, hypothecated, transferred, or disposed of in any manner other than by will or by the laws of descent or distribution or as otherwise provided in this Section 13 and may be exercised, during the lifetime of the Participant, only by the Participant. If the Administrator makes an Award transferable, including, without limitation, for estate planning purposes by instrument to an inter vivos or testamentary trust in which the Awards are to be passed to beneficiaries upon the death of the trustor (settlor) or by gift to Family Members, or pursuant to a domestic relations order (as defined in the Code) or other court-ordered marital settlement agreement, such Award shall be subject to the terms of the Plan and the Award Agreement and shall contain such additional terms and conditions as the Administrator deems appropriate. Notwithstanding the foregoing, under no circumstance may unvested or unexercised Awards be transferred for value or consideration.

14. Adjustments; Dissolution or Liquidation; Merger or Change-in-Control.

(a) Adjustments. In the event that any dividend (other than ordinary cash dividends) or other distribution (whether in the form of cash, Shares, other securities, or other property), recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase, or exchange of Shares or other securities of the Company, or other change in the corporate structure of the Company affecting the Shares occurs, the Administrator, in order to prevent diminution or enlargement of the benefits or potential benefits intended to be made available under the Plan, will adjust, in such equitable manner as the Administrator deems appropriate, the number and class of Shares issuable under the Plan and/or the number, class and, if applicable, exercise price, of Shares subject to each outstanding Award.

(b) Dissolution or Liquidation. In the event of the proposed dissolution or liquidation of the Company, the Administrator shall notify each Participant as soon as practicable prior to the effective date of such proposed transaction. To the extent it has not been previously exercised, an Award will terminate immediately prior to the consummation of such proposed action.

(c) Change-in-Control.

(i) In the event of a Change-in-Control, then notwithstanding any other provision of the Plan or an Award to the contrary, including without limitation Section 4(d), each outstanding Award shall be treated as the Administrator determines in its discretion without a Participant's consent, including, without limitation:

(A) Awards may be assumed, or substantially equivalent Awards may be substituted, by the acquiring or succeeding entity or an affiliate thereof (for purposes of this Section 14, the "successor") with appropriate adjustments as to the number and kind of shares and prices;

(B) upon written notice to a Participant, the Participant's Awards will terminate immediately prior to the consummation of such Change-in-Control;

(C) Awards will vest and become exercisable, realizable, or payable, or restrictions applicable to an Award will lapse, in whole or in part, prior to or upon consummation of such Change-in-Control, and, to the extent the Administrator determines, terminate upon the effectiveness of such Change-in-Control;

(D) (1) Awards will terminate in exchange for an amount of cash and/or property, if any, equal to the amount (if any) that would have been attained upon the exercise of such Award or realization of the Participant's rights as of the date of the occurrence of the transaction (and, for the avoidance of doubt, if as of the date of the occurrence of the transaction the Administrator determines in good faith that no amount would have been attained upon the exercise of such Award or realization of the Participant's rights, then such Award may be terminated by the Company without payment), or (2) the replacement of such Award with other rights or property selected by the Administrator in its sole discretion; or

(E) any combination of the foregoing.

In taking any of the actions permitted under this subsection 14(c), the Administrator will not be obligated to treat all Awards, all Awards held by a Participant, or all Awards of the same type, similarly.

(ii) If, in the event of a Change-in-Control, the successor elects not to assume or substitute an Award, as determined by the Administrator, then upon the effective date of the Change-in-Control, the Participant shall fully vest in and have the right to exercise all of his or her outstanding Options and Stock Appreciation Rights; all restrictions on then outstanding Restricted Stock and Restricted Stock Units will lapse; and, with respect to then outstanding Performance Units, Performance Shares and any other Awards subject to performance-based vesting conditions, all performance goals or other vesting conditions will be deemed achieved at one hundred percent (100%) of target levels and all other terms and conditions met. In addition, if an Option or Stock Appreciation Right is not assumed or substituted by the successor in the event of a Change-in-Control, as determined by the Administrator, the Administrator may notify the Participant in writing or electronically that the Option or Stock Appreciation Right shall be exercisable for a period of time determined by the Administrator in its sole discretion (but in no event later than the expiration of the term of such Option as set forth in the Award Agreement), and the Option or Stock Appreciation Right shall terminate upon the expiration of such period.

(d) Outside Director Awards. With respect to Awards granted to an Outside Director that are assumed or substituted by a successor (in each case as determined by the Administrator), if, on the date of or following such assumption or substitution, the Participant's status as a Director or a director of the successor, as applicable, is terminated other than upon a voluntary resignation by the Participant (unless such resignation is at the request of the successor), then the Participant will fully vest in and have the right to exercise Options and/or Stock Appreciation Rights as to all of the Shares underlying such Award for a period of one year following such termination (but in no event later than the expiration of the term of such Option as set forth in the Award Agreement); all restrictions on Restricted Stock and Restricted Stock Units will lapse; and, with respect to Performance Units, Performance Shares and any other Awards subject to performance-based vesting conditions, all performance goals or other vesting conditions will be deemed achieved at one hundred percent (100%) of target levels and all other terms and conditions met.

(e) Assumption, Conversion or Substitution of Awards. For the purposes of Sections 14(c) and 14(d), a successor will be deemed to have "assumed or substituted" an Award under this Plan if the surviving entity substitutes an Award under this Plan with an award under a plan of the surviving entity having substantially equivalent value to and terms and conditions not materially less favorable than the original Award, or otherwise assumes the obligations under and/or equitably adjusts such original Award. The Administrator or the Board shall have sole and complete authority and discretion (which authority and discretion the Administrator or Board may exercise prior to the Change-in-Control, in which case such exercise of authority and discretion shall be final and binding) to determine whether the proposed assumption or substitution of an Award by a successor meets the requirements provided for in this paragraph. Notwithstanding anything in this Section 14(e) to the contrary, an Award that vests, is earned or paid out upon the satisfaction of one or more performance goals will not be considered assumed or substituted if, as determined by the Administrator or the Board, the Company or its successor modifies any of such performance goals without the Participant's consent; provided, however, a modification to such performance goals only to reflect the successor's post-Change-in-Control corporate structure will not be deemed to invalidate an otherwise valid Award assumption, as determined by the Administrator or the Board.

15. Tax Withholding.

(a) Withholding Requirements. Prior to the delivery of any Shares or cash pursuant to an Award (or exercise thereof), the Company will have the power and the right to deduct or withhold, or require a Participant to remit to the Company, an amount sufficient to satisfy any federal, state, local, foreign or other taxes (including the Participant's FICA obligation) required to be withheld with respect to such Award (or exercise thereof).

(b) Withholding Arrangements. The Administrator, in its sole discretion and pursuant to such procedures as it may specify from time to time, may permit a Participant to satisfy such tax withholding obligation, in whole or in part by (without limitation):

(i) paying cash;

(ii) electing to have the Company withhold otherwise deliverable cash or Shares having a Fair Market Value equal to the minimum statutory amount required to be withheld (or such other amount in the Administrator's discretion that does not cause the Award to be treated as a liability instrument under generally accepted accounting principles); or

(iii) delivering to the Company already-owned Shares having a Fair Market Value equal to the minimum statutory amount required to be withheld (or such other amount in the Administrator's discretion that does not cause the Award to be treated as a liability instrument under generally accepted accounting principles).

The Fair Market Value of the Shares to be withheld or delivered will be determined as of the date that the taxes are required to be withheld.

16. No Effect on Employment or Service. Neither the Plan nor any Award shall confer upon a Participant any right with respect to continuing the Participant's relationship as a Service Provider with the Company, nor shall they interfere in any way with the Participant's right or the Company's right to terminate such relationship at any time, with or without cause, to the extent permitted by Applicable Laws.

17. Date of Grant. The date of grant of an Award shall be, for all purposes, the date on which the Administrator (or its delegee, to the extent permitted by the Plan) makes the determination granting such Award, or such other later date as is determined by the Administrator (or its delegee, to the extent permitted by the Plan). Notice of the determination shall be provided to each Participant within a reasonable time after the date of such grant.

18. Term of Plan. Following the Board's adoption of the Plan, the Plan will become effective upon its approval by the Company's stockholders (the "Effective Date"). It will continue in effect for a term of ten (10) years from the Effective Date, unless terminated earlier under Section 19 of the Plan.

19. Amendment and Termination of the Plan.

(a) Amendment and Termination. The Board may at any time amend, alter, suspend or terminate the Plan.

(i) Stockholder Approval. The Company shall obtain stockholder approval of any Plan amendment to the extent required by Applicable Laws or otherwise in the Board's discretion.

(ii) Effect of Amendment or Termination. Subject to Section 19(c), no amendment, alteration, suspension or termination of the Plan shall impair the rights of any Participant under any then outstanding Award, unless mutually agreed otherwise between the Participant and the Administrator, which agreement must be in writing and signed by the Participant and the Company. Termination of the Plan shall not affect the Administrator's ability to exercise the powers granted to it hereunder with respect to Awards granted under the Plan prior to the date of such termination.

(b) Awards Previously Granted. The Administrator may waive any conditions or restrictions under, amend or modify the terms and conditions of, or cancel or terminate any outstanding Award at any time, in connection with any termination of service of a Service Provider or otherwise and notwithstanding any provision of the Plan to the contrary, including but not limited to Section 4(d); provided, however, subject to Section 19(c) and the provisions of the applicable Award Agreement, no such amendment, modification, cancellation or termination shall impair the rights of a Participant under an Award unless mutually agreed otherwise between the Participant and the Administrator, which agreement must be in writing and signed by the Participant and the Company.

(c) Compliance Amendments. Notwithstanding any other provision of this Section 19, the Plan or any Award Agreement to the contrary, the Administrator may, in its sole discretion and without the consent of any Participant, amend the Plan or any Award Agreement, to take effect retroactively or otherwise, as it deems necessary or advisable in order for the Company, the Plan, an Award or an Award Agreement to satisfy or conform to any present or future Applicable Law (including without limitation, Code Section 409) or to meet the requirements of any accounting standard.

20. Conditions Upon Issuance of Shares.

(a) Legal Compliance. Shares shall not be issued pursuant to the exercise of an Award unless the exercise of such Award and the issuance and delivery of such Shares shall comply with Applicable Laws and shall be further subject to the approval of counsel for the Company with respect to such compliance.

(b) Investment Representations. As a condition to the exercise of an Award, the Company may require the person exercising such Award to represent and warrant at the time of any such exercise that the Shares are being purchased only for investment and without any present intention to sell or distribute such Shares if, in the opinion of counsel for the Company, such a representation is required.

21. Inability to Obtain Authority. The inability of the Company to obtain authority from any regulatory body having jurisdiction, which authority is deemed by the Company's counsel to be necessary to the lawful issuance and sale of any Shares hereunder, shall relieve the Company of any liability in respect of the failure to issue or sell such Shares as to which such requisite authority shall not have been obtained.

22. Recoupment. A Participant's rights with respect to any Award hereunder shall in all events be subject to (i) any right that the Company may have under any Company clawback or recoupment policy as may be in effect from time to time or any other clawback or recoupment agreement or arrangement applicable to a Participant; or (ii) any right or obligation that the Company may have regarding the recoupment of "incentive-based compensation" under Section 10D of the Exchange Act and any applicable rules and regulations promulgated thereunder from time to time by the U.S. Securities and Exchange Commission.

RUDOLPH TECHNOLOGIES, INC.

2018 EMPLOYEE STOCK PURCHASE PLAN

1. Purpose of the Plan. The purpose of the Plan is to provide employees of the Company and its Designated Subsidiaries with an opportunity to purchase Common Stock of the Company. It is the intention of the Company to have the Plan qualify as an “Employee Stock Purchase Plan” under Section 423 of the Internal Revenue Code of 1986, as amended. The provisions of the Plan shall, accordingly, be construed so as to extend and limit participation in a manner consistent with the requirements of that section of the Code.

2. Definitions. As used herein, the following definitions shall apply:

- (a) “Board” shall mean the Board of Directors of the Company.
- (b) “Code” shall mean the Internal Revenue Code of 1986, as amended.
- (c) “Common Stock” shall mean the common stock of the Company.
- (d) “Company” shall mean Rudolph Technologies, Inc., a Delaware corporation.
- (e) “Compensation” shall mean the total compensation paid to an Employee, including all salary, wages (including amounts elected to be deferred by the Employee, that would otherwise have been paid, under any cash or deferred arrangement or other deferred compensation program established by the Company or the Employer), overtime pay, commissions, bonuses, and other remuneration paid directly to the Employee, but excluding referral and hiring bonuses, profit sharing, the cost of employee benefits paid for by the Company or the Employer, education, tuition or other similar reimbursements, imputed income arising under any Company group insurance or benefit program, traveling expenses, business and moving expense reimbursements, income received in connection with stock options, restricted stock grants, or other equity based awards, contributions made by the Company or the Employer under any employee benefit plan, and similar items of compensation.
- (f) “Continuous Status as an Employee” shall mean the absence of any interruption or termination of service as an Employee. Continuous Status as an Employee shall not be considered interrupted in the case of sick leave or other leave of absence agreed to in writing by the Company or the Employer, provided that such leave is for a period of not more than ninety (90) days or reemployment upon the expiration of such leave is guaranteed by contract, statute or as a matter of local law.
- (g) “Contributions” shall mean all amounts credited to the account of a participant pursuant to the Plan.
- (h) “Designated Subsidiary” shall mean any Subsidiary that has been designated by the Board, or a committee named by the Board, from time to time in its sole discretion as eligible to participate in the Plan.
- (i) “Employee” shall mean any person, including an Officer, who is customarily employed for at least twenty (20) hours per week and more than five (5) months in a calendar year by the Company or a Designated Subsidiary, provided that, in certain jurisdictions outside the United States, the term “Employee” may, if so provided by the Company in writing, also include a person employed for less than twenty (20) hours per week or less than five (5) months in a calendar year if such person must be permitted to participate in the Plan pursuant to local laws (as determined by the Company).
- (j) “Employer” shall mean the Designated Subsidiary that employs a participant, if the employer is not the Company.
- (k) “Enrollment Date” shall mean the first Trading Day of each Offering Period.
- (l) “Exchange Act” shall mean the U.S. Securities Exchange Act of 1934, as amended.

- (m) “Exercise Date” shall mean the last Trading Day of each Offering Period.
- (n) “Fair Market Value” shall mean, as of any date, the value of Common Stock determined as follows:
- (i) If the Common Stock is listed on any established stock exchange or a national market system, including without limitation the New York Stock Exchange, its Fair Market Value shall be the closing sales price for such stock (or the closing bid, if no sales were reported) as quoted on such exchange or system on the date of determination, as reported in *The Wall Street Journal* or such other source as the Board deems reliable;
 - (ii) If the Common Stock is regularly quoted by a recognized securities dealer but selling prices are not reported, its Fair Market Value shall be the mean of the closing bid and asked prices for the Common Stock on the date of determination, as reported in *The Wall Street Journal* or such other source as the Board deems reliable; or
 - (iii) In the absence of an established market for the Common Stock, the Fair Market Value thereof shall be determined in good faith by the Board.
- (o) “Offering Periods” shall mean the periods of approximately six (6) months during which an option granted pursuant to the Plan may be exercised, commencing on the first Trading Day on or after May 1st and November 1st of each year and terminating on the last Trading Day in the periods ending six (6) months later. The duration and timing of Offering Periods may be changed pursuant to Section 4 of this Plan.
- (p) “Officer” shall mean a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act and the rules and regulations promulgated thereunder.
- (q) “Parent” shall mean a “parent corporation”, domestic or foreign, whether now or hereafter existing, as defined in Section 424(e) of the Code.
- (r) “Plan” shall mean this 2018 Employee Stock Purchase Plan.
- (s) “Purchase Price” shall mean an amount equal to 95% of the Fair Market Value of a Share of Common Stock on the Exercise Date; provided however that Purchase Price may be adjusted by the Board pursuant to Section 19.
- (t) “Reserves” shall mean the number of Shares covered by each option under the Plan which have not yet been exercised and the number of Shares which have been authorized for issuance under the Plan but not yet placed under option.
- (u) “Share” shall mean a share of Common Stock, as may be adjusted in accordance with Section 19 of the Plan.
- (v) “Subsidiary” shall mean a “subsidiary corporation”, domestic or foreign, whether now or hereafter existing, as defined in Section 424(f) of the Code.
- (w) “Trading Day” shall mean a day on which national stock exchanges are open for trading.

3. Eligibility.

- (a) Any person who is an Employee as of the beginning of any given Offering Period shall be eligible to participate in such Offering Period under the Plan, subject to the requirements of Section 5(a) and the limitations imposed by Section 423(b) of the Code.
- (b) Any provisions of the Plan to the contrary notwithstanding, no Employee shall be granted an option under the Plan:
- (i) if, immediately after the grant, such Employee (or any other person whose stock would be attributed to such Employee pursuant to Section 424(d) of the Code) would own stock and/or hold outstanding options to purchase stock possessing five percent (5%) or more of the total combined voting power or value of all classes of stock of the Company, any Subsidiary or any Parent; or
 - (ii) if such option would permit his or her rights to purchase stock under all employee stock purchase plans (described in Section 423 of the Code) of the Company, any Subsidiary or any Parent to accrue at a rate

which exceeds Twenty-Five Thousand Dollars (\$25,000) of Fair Market Value of such stock (determined at the time such option is granted) for each calendar year in which such option is outstanding at any time.

4. Offering Periods. The Plan shall be implemented by consecutive Offering Periods with a new Offering Period commencing on the first Trading Day on or after May 1st and November 1st each year, or on such other date as the Board shall determine, and continuing thereafter. The Plan shall continue until terminated in accordance with Section 19 hereof. The Board shall have the power to change the duration and/or the frequency of Offering Periods (including the commencement dates thereof) with respect to future offerings without shareholder approval if such change is announced prior to the scheduled beginning of the first Offering Period to be affected.

5. Participation.

(a) An eligible Employee may become a participant in the Plan by completing a subscription agreement on the form provided by the Company and filing it with the Company's payroll office prior to the applicable Enrollment Date, unless a later time for filing the subscription agreement is set by the Board for all eligible Employees with respect to a given offering. The subscription agreement shall set forth the percentage of the participant's Compensation (subject to Section 6(a) below) to be paid as Contributions pursuant to the Plan.

(b) An eligible Employee may contribute to the Plan by means of payroll deductions, unless payroll deductions are not permitted under local law, as determined by the Company, in which case eligible Employees may be permitted to contribute to the Plan by an alternative method, as determined by the Company. Payroll deductions, or, if payroll deductions are not permitted under local law, payments made under an alternative method, shall commence as of the first payday following the Enrollment Date and shall end on the last payday paid on or prior to the Exercise Date of the Offering Period to which the subscription agreement is applicable, unless the Employee's participation is sooner terminated as provided in Section 10.

6. Method of Payment of Contributions.

(a) Where permitted under local law, the participant shall elect to have payroll deductions made on each payday during the Offering Period in an amount not less than one percent (1)% and not more than fifteen percent (15)% of such participant's Compensation on each such payday (or such other maximum percentage as the Board may establish from time to time before an Enrollment Date). Where payroll deductions are not permitted under local law, the participant may be permitted to contribute to the Plan by an alternative method, as determined by the Company. All payroll deductions or other payments made by a participant shall be credited to his or her account under the Plan. A participant may not make any additional payments into such account.

(b) A participant may discontinue his or her participation in the Plan as provided in Section 10, or, during an Offering Period, may decrease the rate of his or her Contributions during the applicable Period by completing and filing with the Company a new subscription agreement. The Board may, in its discretion, limit the number of participation rate changes during any Offering Period. The change in rate shall be effective as soon as administratively practicable following the date of filing of the new subscription agreement; provided that any change elected on a new subscription agreement filed within twenty-one (21) days of the end of any Offering Period shall not take effect earlier than the beginning of the first new Offering Period to commence after the date of that filing. A participant may change the rate of his or her Contributions effective as of the beginning of any Offering Period by filing a new subscription agreement prior to the beginning of such Offering Period; provided that any change elected within twenty-one (21) days prior to the beginning of that Offering Period shall be given effect as soon as administratively practicable on or after the first day of that Offering Period. A participant's subscription agreement shall remain in effect for successive Offering Periods unless terminated as provided in Section 10 hereof.

(c) Notwithstanding the foregoing, to the extent necessary to comply with Section 423(b)(8) of the Code and Section 3(b) herein, a participant's payroll deductions or other payments may be decreased to zero percent (0%) at any time during an Offering Period, as applicable. Payroll deductions or other payments shall re-commence at the rate provided in such participant's subscription agreement at the beginning of the first Offering Period, as applicable, which is scheduled to end in the following calendar year, unless the participant's participation is terminated as provided in Section 10. In addition, a participant's payroll deductions or other payments may be decreased by the Company to zero percent (0%) at any time during an Offering Period in order to avoid unnecessary contributions as a result of application of the maximum Share limit set forth in Section 7(a), or as a result of the limitations set forth in Section 3(b), in which case payroll deductions or payments shall re-commence at the rate provided in such participant's subscription agreement at the beginning of the next Offering Period, unless terminated by the participant as provided in Section 10.

(d) As may be further specified in the subscription agreement, at the time the option is exercised, in whole or in part, or at the time some or all of the Company's Common Stock issued under the Plan is disposed of, the participant must make adequate provision for the Company's and/or the Employer's federal, state, or other tax and social insurance withholding obligations, if any, which arise upon the exercise of the option or the disposition of the Common Stock. At any time, the Company and the Employer may, but shall not be obligated to, withhold from the participant's compensation the amount necessary for the Company and/or the Employer to meet applicable withholding obligations, including any withholding required to make available to the Company or the Employer any tax deductions or benefits attributable to sale or early disposition of Common Stock by the participant.

7. Grant of Option. On the Enrollment Date of each Offering Period, each eligible Employee participating in such Offering Period shall be granted an option to purchase on each Exercise Date occurring within the Offering Period a number of Shares determined by dividing such Employee's Contributions accumulated prior to such Exercise Date and retained in the participant's account as of the Exercise Date by the applicable Purchase Price; provided however, that the maximum number of Shares an Employee may purchase during any one Offering Period shall be 3,000 Shares, subject to adjustment as provided in Section 18, and provided further that such purchase shall be subject to the limitations set forth in Sections 3(b) and 12. The Board may, for future Offering Periods, increase or decrease, in its absolute discretion, the maximum number of shares of the Company's Common Stock an Employee may purchase during such Offering Period. The option shall expire on the last day of the Offering Period.

8. Exercise of Option.

(a) Unless a participant's participation is terminated as provided in Section 10, his or her option for the purchase of Shares will be exercised automatically on the Exercise Date of an Offering Period, and the maximum number of full Shares subject to the option will be purchased at the applicable Purchase Price with the accumulated Contributions in his or her account (subject to such limitations as are specified in the Plan). The Shares purchased upon exercise of an option hereunder shall be deemed to be transferred to the participant on the Exercise Date. During his or her lifetime, a participant's option to purchase Shares hereunder is exercisable only by him or her.

(b) No fractional Shares shall be purchased. Any payroll deductions or other payments accumulated in a participant's account which are not sufficient to purchase a full Share shall be retained in the participant's account for the subsequent Offering Period, subject to earlier withdrawal by the participant or termination of such participant's participation as provided in Section 10 below. Any other amounts left over in a participant's account after an Exercise Date shall be returned to the participant.

9. Delivery. As promptly as practicable after each Exercise Date of each Offering Period, the Company shall arrange the delivery to each participant (by electronic or other means), as appropriate, of a certificate representing the Shares purchased upon exercise of his or her option. Notwithstanding the foregoing, the Board may require that all Shares purchased under the Plan be held in an account (the participant's "ESPP Stock Account") established in the name of the participant (or in the name of the participant and his or her spouse, as designated by the participant on his or her subscription agreement), subject to such rules as determined by the Board and uniformly applied to all participants, including designation of a brokerage or other financial services firm (an "ESPP Broker") to hold such Shares for the participant's ESPP Stock Account with registration of such Shares in the name of such ESPP Broker for the benefit of the participant (or for the benefit of the participant and his or her spouse, as designated by the participant on his or her subscription agreement).

10. Voluntary Withdrawal: Termination of Employment.

(a) A participant may withdraw all, but not less than all the Contributions credited to his or her account under the Plan, by giving notice of withdrawal from the Plan in accordance with the withdrawal procedures then in effect, not less than twenty-one (21) days prior to the last day of the Offering Period for which such election is to be given effect. All of the participant's Contributions credited to his or her account will be paid to him or her promptly after receipt of his or her notice of withdrawal and his or her option for that Offering Period will be automatically terminated, and no further Contributions for the purchase of Shares may be made by the participant for that Offering Period.

(b) Upon termination of the participant's Continuous Status as an Employee prior to the last day of an Offering Period for any reason, including retirement or death, the Contributions credited to his or her account will be promptly returned to him or her or, in the case of his or her death, to the person or persons entitled thereto under Section 14, if any; his or her option for that Offering Period will be automatically terminated; and no further Contributions for the purchase of Shares may be made by the participant for that Offering Period. If a Subsidiary ceases to be a Subsidiary, each

person employed by that Subsidiary will be deemed to have terminated employment for purposes of the Plan, unless the person continues as an employee of the Company or another Designated Subsidiary.

(c) In the event an Employee fails to remain in Continuous Status as an Employee for at least twenty (20) hours per week during an Offering Period in which the Employee is a participant, unless such Employee is on an approved leave of absence or a temporary reduction of hours, or unless otherwise required by local law, he or she will be deemed to have elected to withdraw from the Plan; the Contributions credited to his or her account will be returned to him or her; his or her option for that Offering Period will be automatically terminated; and no further Contributions for the purchase of Shares may be made by the participant for that Offering Period.

(d) A participant's withdrawal from an Offering Period will not have any effect upon his or her eligibility to participate in a succeeding Offering Period or in any similar plan which may hereafter be adopted by the Company.

11. Interest. No interest shall accrue on the Contributions of a participant in the Plan, unless required by local law.

12. Stock.

(a) Subject to adjustment as provided in Section 18, the maximum number of Shares of the Company's Common Stock which shall be made available for sale under the Plan shall be 1,500,000 Shares.

(b) If the Board determines that, on a given Exercise Date, the number of Shares with respect to which options are to be exercised may exceed:

(i) the number of Shares that were available for sale under the Plan on the Enrollment Date of the applicable Offering Period; or

(ii) the number of Shares available for sale under the Plan on such Exercise Date, the Board may in its sole discretion provide (x) that the Company shall make a pro rata allocation of the Shares of Common Stock available for purchase on such Enrollment Date or Exercise Date, as applicable, in as uniform a manner as shall be practicable and as it shall determine in its sole discretion to be equitable among all participants exercising options to purchase Common Stock on such Exercise Date, and continue the Offering Period then in effect, or (y) that the Company shall make a pro rata allocation of the Shares available for purchase on such Enrollment Date or Exercise Date, as applicable, in as uniform a manner as shall be practicable and as it shall determine in its sole discretion to be equitable among all participants exercising options to purchase Common Stock on such Exercise Date, and terminate the Offering Period then in effect pursuant to Section 19 below. The Company may make pro rata allocation of the Shares available on the Enrollment Date of any applicable Offering Period pursuant to the preceding sentence, notwithstanding any authorization of additional Shares for issuance under the Plan by the Company's stockholders subsequent to such Enrollment Date.

(c) The participant will have no interest or voting right in Shares covered by his or her option until such option has been exercised and such Shares have actually been delivered to and held of record by the participant. No adjustment will be made for dividends or other rights as a stockholder for which a record date is prior to such date of delivery.

(d) Shares to be delivered (by electronic or other means) to a participant under the Plan will be registered in the name of the participant or in the name of the participant and his or her spouse, as designated by the participant in his or her subscription agreement; provided that if the Board has determined that Shares shall be held in an ESPP Stock Account held by an ESPP Broker in accordance with Section 9, Shares shall be registered in the name of such ESPP Broker for the benefit of the participant or the participant and his or her spouse, as designated by the participant in his or her subscription agreement.

13. Administration.

(a) The Board, or a committee named by the Board, shall supervise and administer the Plan and shall have full power to adopt, amend and rescind any rules deemed desirable and appropriate for the administration of the Plan and not inconsistent with the Plan, to construe and interpret the Plan, and to make all other determinations necessary or advisable for the administration of the Plan. Any action taken by, or inaction of, the Company, any Subsidiary, the Board or a Board committee relating or pursuant to the Plan and within its authority hereunder or under applicable law shall be within the absolute discretion of that entity or body and shall be conclusive and binding upon all persons.

(b) The Board or Board committee has discretion to adopt any rules regarding administration of the Plan to conform to local laws. Without limiting the generality of the foregoing, the Board or a Board committee is specifically authorized to adopt rules and procedures regarding handling of payroll deductions, payment of interest and handling of stock certificates which vary according to local requirements. The Board or a Board committee has the authority to suspend or limit participation in the Plan by employees of any particular Subsidiary for any reason, including administrative or economic reasons. The Board or a Board committee may also adopt rules, procedures or sub-plans applicable to particular Subsidiaries or locations, which sub-plans may be designed to be outside the scope of Section 423 of the Code.

(c) In making any determination or in taking or not taking any action under the Plan, the Board or a Board committee may obtain and may rely upon the advice of experts, including professional advisors to the Company. No director, officer or agent of the Company or any Subsidiary shall be liable for any such action or determination taken or made or omitted in good faith. The Board or a Board committee may delegate ministerial, non-discretionary functions relating to the Plan to individuals who are officers or employees of the Company or a Subsidiary.

(d) Neither the Board nor any Board committee, nor any member thereof or person acting at the direction thereof, shall be liable for any act, omission, interpretation, construction or determination made in good faith in connection with the Plan, and all such persons shall be entitled to indemnification and reimbursement by the Company in respect of any claim, loss, damage or expense (including, without limitation, attorneys' fees) arising or resulting therefrom to the fullest extent permitted by law and/or under any directors and officers liability insurance coverage that may be in effect from time to time.

14. Designation of Beneficiary.

(a) Unless otherwise determined by the Company, a participant may file a written designation of a beneficiary who is to receive any Shares and cash, if any, from the participant's account under the Plan in the event of such participant's death subsequent to the end of an Offering Period, as applicable, but prior to delivery to him or her of such Shares and/or cash. In addition, unless otherwise determined by the Company, a participant may file a written designation of a beneficiary who is to receive any cash from the participant's account under the Plan in the event of such participant's death prior to the Exercise Date of an Offering Period. If a participant is married and the designated beneficiary is not the spouse, spousal consent shall be required for such designation to be effective.

(b) Unless otherwise determined by the Company, such designation of beneficiary may be changed by the participant (and his or her spouse, if any) at any time by written notice to the Company in a manner acceptable to the Company. In the event of the death of a participant and in the absence of a beneficiary validly designated under the Plan who is living at the time of such participant's death, the Company shall deliver such Shares and/or cash to the executor or administrator of the estate of the participant, or if no such executor or administrator has been appointed (to the knowledge of the Company), the Company, in its discretion, may deliver such Shares and/or cash to the spouse or to any one or more dependents or relatives of the participant, or if no spouse, dependent or relative is known to the Company, then to such other person as the Company may designate or determine to be the appropriate recipient of the Shares and/or cash under applicable local law.

15. Transferability. Neither Contributions credited to a participant's account nor any rights with regard to the exercise of an option or to receive Shares under the Plan may be assigned, transferred, pledged or otherwise disposed of in any way (other than by will, the laws of descent and distribution, or as provided in Section 14) by the participant. Any such attempt at assignment, transfer, pledge or other disposition shall be without effect, except that the Company may treat such act as an election to withdraw funds in accordance with Section 10.

16. Use of Funds. All Contributions received or held by the Company under the Plan may be used by the Company for any corporate purpose, and the Company shall not be obligated to segregate such Contributions, unless required by local law.

17. Reports. Individual accounts will be maintained for each participant in the Plan. Statements of account will be given to participating Employees as promptly as practically feasible following the Exercise Date, which statements will set forth the amounts of Contributions, the per Share Purchase Price, the number of Shares purchased and the remaining cash balance, if any.

18. Adjustments Upon Changes in Capitalization: Corporate Transactions.

(a) Adjustment. Subject to any required action by the stockholders of the Company, the Reserves, the maximum number of Shares an Employee may purchase during each Offering Period as well as the price per Share and the number of Shares covered by each option under the Plan which has not yet been exercised shall be proportionately adjusted for any increase or decrease in the number of issued Shares resulting from a stock split, reverse stock split, stock dividend, combination or reclassification of the Common Stock, or any other increase or decrease in the number of Shares effected without receipt of consideration by the Company; provided, however, that conversion of any convertible securities of the Company shall not be deemed to have been “effected without receipt of consideration.” Such adjustment shall be made by the Board, whose determination in that respect shall be final, binding and conclusive. Except as expressly provided herein, no issue by the Company of shares of stock of any class, or securities convertible into shares of stock of any class, shall affect, and no adjustment by reason thereof shall be made with respect to, the number or price of Shares subject to an option.

(b) Corporate Transactions. In the event of the proposed dissolution or liquidation of the Company, the Plan, any Offering Period then in progress, and any outstanding option granted with respect to such Offering Period will terminate immediately prior to the consummation of such proposed action, unless otherwise provided by the Board. If a participant’s option is terminated pursuant to the preceding sentence, the Contributions then credited to such participant’s account will be paid to him or her in cash without interest. In the event of a proposed sale of all or substantially all of the assets of the Company, or the merger of the Company with or into another corporation, unless otherwise determined by the Board, each option under the Plan shall be assumed or an equivalent option shall be substituted by such successor corporation or a parent or subsidiary of such successor corporation, or, if not so assumed or substituted, the Offering Period then in progress shall be shortened and the Board shall set a new Exercise Date (the “New Exercise Date”). The New Exercise Date shall be on or before the date of consummation of the transaction and the Board shall notify each participant in writing, at least ten (10) days prior to the New Exercise Date, that the Exercise Date for his or her option (including for purposes of determining the Purchase Price of such option) has been changed to the New Exercise Date and that his or her option will be exercised automatically on the New Exercise Date, unless prior to such date he or she has withdrawn from the Offering Period as provided in Section 10. For purposes of this paragraph, an option granted under the Plan shall be deemed to be assumed if, following the sale of assets or merger, the option confers the right to purchase, for each Share subject to the option immediately prior to the sale of assets or merger, the consideration (whether stock, cash or other securities or property) received in the sale of assets or merger by holders of Common Stock for each Share held on the effective date of the transaction (and if such holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding Shares of Common Stock); provided, however, that if such consideration received in the sale of assets or merger was not solely common stock of the successor corporation or its parent (as defined in Section 424(e) of the Code), the Board may, with the consent of the successor corporation and the participant, provide for the consideration to be received upon exercise of the option to be solely common stock of the successor corporation or its parent equal in Fair Market Value to the per Share consideration received by holders of Common Stock and the sale of assets or merger.

(c) The Board may, if it so determines in the exercise of its sole discretion, also make provision for adjusting the Reserves, as well as the price per Share covered by each outstanding option, in the event that the Company effects one or more reorganizations, recapitalizations, rights offerings or other increases or reductions of shares of its outstanding Common Stock, and in the event of the Company being consolidated with or merged into any other corporation.

19. Amendment or Termination.

(a) The Board may at any time and for any reason terminate or amend the Plan. Except as provided in Section 13(b) and 18, no such termination of the Plan may affect options previously granted, provided that the Plan or an Offering Period may be terminated by the Board on any Exercise Date or by the Board’s setting a new Exercise Date with respect to an Offering Period then in progress if the Board determines that termination of the Plan and/or the Offering Period is in the best interests of the Company and the stockholders or if continuation of the Plan and/or the Offering Period would cause the Company to incur adverse accounting charges as a result of a change after the effective date of the Plan in the generally accepted accounting rules applicable to the Plan. Except as provided in Section 18 and in this Section 19, no amendment to the Plan shall make any change in any option previously granted which adversely affects the rights of any participant without such participant’s written consent. In addition, to the extent necessary to comply with the requirements of Rule 16b-3 under the Exchange Act, Section 423 of the Code (or any successor rule or provision or any applicable law or regulation) or any stock exchange on which the Shares are then listed, the Company shall obtain stockholder approval in such a manner and to such a degree as so required.

(b) Without stockholder consent and without regard to whether any participant rights may be considered to have been adversely affected, the Board shall be entitled to change the Offering Periods, limit the frequency and/or number of changes in the amount withheld during an Offering Period, establish the exchange ratio applicable to amounts withheld in a currency other than U.S. dollars, permit payroll withholding in excess of the amount designated by a participant in order to adjust for delays or mistakes in the Company's processing of properly completed withholding elections, establish reasonable waiting and adjustment periods and/or accounting and crediting procedures to ensure that amounts applied toward the purchase of Shares for each participant properly correspond with amounts withheld from the participant's Compensation, and establish such other limitations or procedures as the Board determines in its sole discretion advisable which are consistent with the Plan.

20. Notices. All notices or other communications by a participant to the Company under or in connection with the Plan shall be deemed to have been duly given when received in the form specified by the Company at the location, or by the person, designated by the Company for the receipt thereof.

21. Conditions Upon Issuance of Shares. The Company shall have no obligation to issue Shares with respect to an option unless the exercise of such option and the issuance and delivery of such Shares pursuant thereto shall comply with all applicable provisions of law, domestic or foreign, including, without limitation, the U.S. Securities Act of 1933, as amended, the Exchange Act, the rules and regulations promulgated thereunder, and the requirements of any stock exchange upon which the Shares may then be listed, and shall be further subject to the approval of counsel for the Company with respect to such compliance.

As a condition to the exercise of an option, the Company may require the person exercising such option to represent and warrant at the time of any such exercise that the Shares are being purchased only for investment and without any present intention to sell or distribute such Shares if, in the opinion of counsel for the Company, such a representation is required by any of the aforementioned applicable provisions of law.

22. Term of Plan; Effective Date. The Plan shall become effective upon the earlier to occur of its adoption by the Board or its approval by the stockholders of the Company. The Plan shall continue in effect for a term of ten (10) years unless sooner terminated under Section 19.

23. Additional Restrictions of Rule 16b-3. The terms and conditions of options granted hereunder to, and the purchase of Shares by, persons subject to Section 16 of the Exchange Act shall comply with the applicable provisions of Rule 16b-3. This Plan shall be deemed to contain, and such options shall contain, and the Shares issued upon exercise thereof shall be subject to, such additional conditions and restrictions as may be required by Rule 16b-3 to qualify for the maximum exemption from Section 16 of the Exchange Act with respect to Plan transactions.

24. No Employment Rights. Nothing in the Plan (or in any subscription agreement or other document related to this Plan) will confer upon any Employee or participant any right to continue in the employ or other service of the Company or any Subsidiary, constitute any contract or agreement of employment or other service or effect an employee's status as an employee at will, nor shall interfere in any way with the right of the Company or any Subsidiary to change such person's compensation or other benefits or to terminate his or her employment or other service, with or without cause. Nothing contained in this Section 24, however, is intended to adversely affect any express independent right of any such person under a separate employment or service contract other than a subscription agreement.

25. No Right to Assets of the Company. No participant or other person will have any right, title or interest in any fund or in any specific asset (including Shares) of the Company or any Subsidiary by reason of any option hereunder. Neither the provisions of the Plan (or of any subscription agreement or other document related to the Plan), nor the creation or adoption of the Plan, nor any action taken pursuant to the provisions of the Plan will create, or be construed to create, a trust of any kind or a fiduciary relationship between the Company or any Subsidiary and any participant, beneficiary or other person. To the extent that a participant, beneficiary or other person acquires a right to receive payment pursuant to the Plan, such right will be no greater than the right of any unsecured general creditor of the Company.

26. Miscellaneous.

(a) The Plan, the options, subscription agreements and other documents related to the Plan shall be governed by, and construed in accordance with, the laws of the State of Delaware. If any provision of the Plan shall be held by a court of competent jurisdiction to be invalid and unenforceable, the remaining provisions of the Plan shall continue in effect.

(b) Captions and headings are given to the sections of the Plan solely as a convenience to facilitate reference. Such captions and headings shall not be deemed in any way material or relevant to the construction of interpretation of the Plan or any provision hereof.

(c) The adoption of the Plan shall not affect any other Company or Subsidiary compensation or incentive plans in effect. Nothing in the Plan will limit or be deemed to limit the authority of the Board or a Board committee:

(i) to establish any other forms of incentives or compensation for employees of the Company or any Subsidiary (with or without reference to the Common Stock), or

(ii) to grant or assume options (outside the scope of and in addition to those contemplated by the Plan) in connection with any proper corporate purpose, to the extent consistent with any other plan or authority.

Benefits received by a participant under an option granted pursuant to the Plan shall not be deemed a part of the participant's compensation for purposes of the determination of benefits under any other employee welfare or benefit plans or arrangements, if any, provided by the Company or any Subsidiary, except where the Board or Board committee (or the Board of Directors of the Subsidiary that sponsors such plan or arrangement, as applicable) expressly otherwise provides or authorizes in writing.

ANNUAL MEETING OF STOCKHOLDERS OF RUDOLPH TECHNOLOGIES, INC.

May 16, 2018

GO GREEN

e-Consent makes it easy to go paperless. With e-Consent, you can quickly access your proxy material, statements and other eligible documents online, while reducing costs, clutter and paper waste. Enroll today via www.astfinancial.com to enjoy online access.

NOTICE OF INTERNET AVAILABILITY OF PROXY MATERIAL:

The Notice of Meeting, Proxy Statement, 2017 Annual Report and Proxy Card are available at http://www.rudolphtech.com/assets/uploads/2017_annual_report.pdf

Please sign, date and mail
your proxy card in the
envelope provided as soon
as possible.

↓ Please detach along perforated line and mail in the envelope provided. ↓

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THE BOARD OF DIRECTORS RECOMMENDS YOU VOTE "FOR" ALL NOMINEES,
"FOR" PROPOSALS 2, 3, 4 AND 5.

PLEASE SIGN, DATE AND RETURN PROMPTLY IN THE ENCLOSED ENVELOPE. PLEASE MARK YOUR VOTE IN BLUE OR BLACK INK AS SHOWN HERE

- | | FOR | AGAINST | ABSTAIN |
|---|--------------------------|--------------------------|--------------------------|
| 1. ELECTION OF DIRECTORS: | | | |
| Leo Berlinghieri | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Michael P. Plisinski | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. TO APPROVE, ON AN ADVISORY (NON-BINDING) BASIS, THE COMPENSATION OF OUR NAMED EXECUTIVE OFFICERS AS DISCLOSED IN THE PROXY STATEMENT. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. TO APPROVE THE RUDOLPH TECHNOLOGIES, INC. 2018 STOCK PLAN. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. TO APPROVE THE RUDOLPH TECHNOLOGIES, INC. 2018 EMPLOYEE STOCK PURCHASE PLAN. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. TO RATIFY THE APPOINTMENT OF ERNST & YOUNG LLP AS OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE YEAR ENDING DECEMBER 31, 2018. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. IN THEIR DISCRETION, THE PROXIES ARE AUTHORIZED TO VOTE UPON SUCH OTHER BUSINESS AS MAY PROPERLY BE BROUGHT BEFORE THE MEETING OR ANY ADJOURNMENT THEREOF. | | | |

This proxy, when properly executed, will be voted in the manner described herein by the undersigned. If no direction is made, this proxy will be voted FOR all nominees listed, FOR Items 2, 3, 4 and 5 and according to the discretion of the proxy holders on any other matter that may properly come before the Annual Meeting of Stockholders.

To change the address on your account, please check the box at right and indicate your new address in the address space above. Please note that changes to the registered name(s) on the account may not be submitted via this method.

Signature of Stockholder Date: Signature of Stockholder Date:

Note: Please sign exactly as your name or names appear on this Proxy. When shares are held jointly, each holder should sign. When signing as executor, administrator, attorney, trustee or guardian, please give full title as such. If the signer is a corporation, please sign full corporate name by duly authorized officer, giving full title as such. If signer is a partnership, please sign in partnership name by authorized person.

□

RUDOLPH TECHNOLOGIES, INC.

PROXY

**THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD
OF DIRECTORS OF RUDOLPH TECHNOLOGIES, INC.**

The undersigned hereby constitutes and appoints Jeffrey A. Aukerman and Daniel H. Berry, or either of them, as and for his or her proxies, each with the power to appoint such proxy's substitute, and hereby authorizes them, or either of them, to vote all of the shares of Common Stock of Rudolph Technologies, Inc. held of record by the undersigned on March 29, 2018, at the Annual Meeting of Stockholders of Rudolph Technologies, Inc. to be held on Wednesday, May 16, 2018 and at any and all adjournments or postponements thereof as follows:

(Continued and to be signed on the reverse side.)

SHAREHOLDER INFORMATION

LOCATIONS

CORPORATE HEADQUARTERS
Rudolph Technologies, Inc.
16 Jonspin Road
Wilmington, Massachusetts
01887
Phone: 978 253 6200
www.rudolphtech.com

OTHER OFFICES
Rudolph Technologies
Process Control Group
Bloomington, Minnesota
Budd Lake, New Jersey
Richardson, Texas
Snoqualmie, Washington
Bohemia, New York

Rudolph Technologies
Integrated Solutions Group
Wilmington, Massachusetts
Richardson, Texas
Tianjin, China

Rudolph Technologies
Lithography Systems Group
Wilmington, Massachusetts

Rudolph Technologies Europe
B.V.
Scotland, United Kingdom

Rudolph Technologies Japan
KK
Takatsu, Japan

Rudolph Technologies China
Shanghai, China

Rudolph Technologies Korea
Sungnam-si, South Korea

Rudolph Technologies
Singapore
Singapore

Rudolph Technologies Taiwan
Hsin-Chu City, Taiwan

INVESTOR INFORMATION

General Shareholder and
Investor Questions may be
directed to:

Michael Sheaffer
Senior Director,
Corporate Communications
Rudolph Technologies, Inc.
16 Jonspin Road
Wilmington, Massachusetts
01887
investors@rudolphtech.com

Independent Registered Public
Accounting Firm

Ernst & Young, LLP
Iselin, New Jersey

Registrar and Transfer Agent

AST
6201 15th Avenue
Brooklyn, New York 11219
Phone: 800 937 5449
www.astfinancial.com

Stock Symbol

Common Stock is traded on the
New York Stock Exchange
under the symbol, RTEC.

Annual Meeting

Stockholders are invited to
attend the Annual Meeting
at 10:00 AM on Wednesday,
May 16, 2018 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

Thomas G. Greig
Chairman of the Board
Former Senior Managing
Director
Liberty Capital Partners, Inc.

Michael P. Plisinski
Chief Executive Officer

Jeffrey A. Aukerman
Former Partner
Deloitte & Touche, LLP

Leo Berlinghieri
Former Chief Executive Officer
and President,
MKS Instruments, Inc.

Daniel H. Berry
Operating Partner
Riverside Partners, LLC

David B. Miller
Former President
DuPont Electronics &
Communications

John R. Whitten
Former Chief Financial Officer,
Vice President and Treasurer
Applied Industrial
Technologies, Inc.

EXECUTIVE OFFICERS

Michael P. Plisinski
Chief Executive Officer

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

RUDOLPH
TECHNOLOGIES



NYSE | RTEC

*RUDOLPH TECHNOLOGIES, INC.
16 JONSPIN ROAD
WILMINGTON MA 01887*

978 253 6200

WWW.RUDOLPHTECH.COM