INTEVAC INC
Form 10-K
February 14, 2018
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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

(Mark One)

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

For the fiscal year ended December 30, 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 number 0-26946

INTEVAC, INC.

(Exact name of registrant as specified in its charter)

Delaware	**94-3125814**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

3560 Bassett Street

Santa Clara, California 95054

(Address of principal executive office, including Zip Code)

Registrant s telephone number, including area code: (408) 986-9888

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

Title of each class	**Name of each exchange on which registered**

Common Stock ($0.001 par value)	**The Nasdaq Stock Market LLC (NASDAQ Global Select)**

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

Indicate by a check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K(§ 229.405 of this chapter) 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, 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		Accelerated filer
Non-accelerated filer	(Do not check if a smaller reporting company)	Smaller reporting company
		Emerging growth company

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

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

As of June 30, 2017, the aggregate market value of voting and non-voting stock held by non-affiliates of the Registrant was approximately $201,615,560 (based on the closing price for shares of the Registrant s Common Stock as reported by the Nasdaq Stock Market for the last trading day prior to that date). Shares of Common Stock held by each executive officer and director have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

On February 14, 2018, 22,059,458 shares of the Registrant s Common Stock, $0.001 par value, were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE.

Portions of the Registrant s Proxy Statement for the 2018 Annual Meeting of Stockholders are incorporated by reference into Part III. Such proxy statement will be filed within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain information in this Annual Report on Form 10-K (report or Form 10-K) of Intevac, Inc. and its subsidiaries (Intevac or the Company), including Management s Discussion and Analysis of Financial Condition and Results of Operations in Item 7, is forward-looking in nature. All statements in this report, including those made by the management of Intevac, other than statements of historical fact, are forward-looking statements. Examples of forward-looking statements include statements regarding Intevac s future financial results, operating results, cash flows and cash deployment strategies, business strategies, costs, products, working capital, competitive positions, management s plans and objectives for future operations, research and development, acquisitions and joint ventures, growth opportunities, customer contracts, investments, liquidity, declaration of dividends, and legal proceedings, as well as market conditions and industry trends. These forward-looking statements are based on management s estimates, projections and assumptions as of the date hereof and include the assumptions that underlie such statements. Forward-looking statements may contain words such as may, will, should, could, would, expect, anticipate, believe, estimate, predict, potential and continue, the negative of these terms, or other comparable terminology. Any expectations based on these forward-looking statements are subject to risks and uncertainties and other important factors, including those discussed in Item 1A, Risk Factors, below and elsewhere in this report. Other risks and uncertainties may be disclosed in Intevac s prior Securities and Exchange Commission (SEC) filings. These and many other factors could affect Intevac s future financial condition and operating results and could cause actual results to differ materially from expectations based on forward-looking statements made in this report or elsewhere by Intevac or on its behalf. Intevac undertakes no obligation to revise or update any forward-looking statements.

The following information should be read in conjunction with the Consolidated Financial Statements and the accompanying Notes to Consolidated Financial Statements included in this report.

PART I

Item 1. *Business*

Overview

Intevac s business consists of two reportable segments:

Thin-film Equipment: Intevac is a leader in the design and development of high-productivity, thin-film processing systems. Our production-proven platforms are designed for high-volume manufacturing of substrates with precise thin-film properties, such as the hard disk drive (HDD) media, display cover panel (DCP), and solar photovoltaic (PV) markets we serve currently.

Photonics: Intevac is a leading developer of advanced high-sensitivity digital sensors, cameras and systems that primarily serve the defense industry. We are the provider of integrated digital night-vision imaging systems for the U.S. military.

Intevac was incorporated in California in October 1990 and was reincorporated in Delaware in 2007.

Thin-film Equipment Segment

Hard Disk Drive (HDD) Equipment Market

Intevac designs, manufactures, markets and services complex capital equipment used to deposit thin films and lubricants onto substrates to produce magnetic disks that are used in HDDs. Disk and disk drive manufacturers produce magnetic disks in a sophisticated manufacturing process involving many steps, including plating, annealing, polishing, texturing, sputtering, etching, stripping and lubrication. Intevac believes its systems represent approximately 60% of the installed capacity for disk sputtering worldwide. Intevac s systems are used by manufacturers of magnetic media such as Seagate Technology, Western Digital, including its wholly-owned subsidiary HGST, Fuji Electric, and Showa Denko.

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HDDs are a primary storage medium for digital data including nearline cloud applications and are used in products and applications such as personal computers (PCs), enterprise data storage, video players and video game consoles. Intevac believes that HDD media shipments will grow over time, driven by continued high growth rates in digitally-stored data, by the slowing of areal density improvements, by the increase in demand for nearline drives for cloud storage, an increasing tie ratio (the average number of disks per hard drive) and by new and emerging applications. The projected growth rates for digitally-stored data on HDDs exceed the rate of areal density improvements, at the same time as the tie ratio is increasing, which results in demand for magnetic disks outpacing HDD units.

In recent years HDD media units have been negatively impacted by declining PC units, primarily caused as a result of the proliferation of tablets and the transition to centralized storage. Although the HDD industry continues to expect growth in the nearline data storage market segment, the transition to centralized storage combined with the negative growth in PC shipments has resulted in lower HDD shipments in recent years. However, Intevac continues to believe that long-term demand for hard disks required for high capacity HDDs will increase, driven by growth in demand for digital storage, a declining growth rate in areal density improvements, and increased information technology spending to support the transition to cloud storage. The number of disk manufacturing systems needed to support this growth as well as future technology transitions and improvements is expected to vary from year to year depending on the factors noted above.

Intevac expects that HDD manufacturers will extend their utilization of planar perpendicular media with the introduction of new technologies such as Heat Assisted Magnetic Recording (HAMR) and Microwave Assisted Magnetic Recording (MAMR). Initial volume shipments of both HAMR and MAMR-based HDDs are expected to begin in 2019. Intevac believes that leading manufacturers of magnetic media, that are using Intevac systems for the development of these new technologies, will create a significant market opportunity for system upgrades in support of the media evolution required by these new technologies, as they are more widely adopted.

Display Cover Panel (DCP) Market

Intevac develops equipment to deposit optically transparent thin films onto DCPs typically found on consumer and automotive electronic products.

DCPs are found in products including smartphones, tablet PCs, wearable devices, gaming systems, digital cameras, automotive infotainment systems and digital signage. In 2016, approximately 1.5 billion smartphones, 175 million tablet PCs and 35 million smart watches were shipped to consumers worldwide. For smartphones alone, it is forecasted that nearly 1.7 billion units will ship by 2021, representing a CAGR of 3.3% for the 2016 2021 time period.

The DCP is typically made of tempered glass, such as soda-lime or aluminosilicate, or other materials such as sapphire. The primary function of the DCP is to provide a clear protective interface to the display it protects. In many cases, the DCP is treated with various coatings to enhance its protective performance as well as for clarity, readability and touch sensitivity.

The types of coatings typically found on DCPs of electronic devices include: Scratch Protection (SP) coatings, Anti-Reflection (AR) coatings, Anti-Finger (AF) and Non-Conductive Vacuum Metallization (NCVM) coatings.

SP coatings generally consist of hard thin films deposited onto the surface of the DCP. Their primary function is to provide enhanced protection against the incidence of scratch, but they can also provide greater breakage resistance.

AR coatings enable greater light transmission though the DCP by reducing the light reflected by the surface back to the user s eye. This allows the user to more easily read the display and reduces the required power

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needed to display the image which results in extending the battery life. A significant drawback to using AR coatings is their susceptibility to scratch. AR coatings are typically soft and must be applied to the outer surface of the DCP. These coatings generally scratch easily, and as such, smartphone manufacturers have been reluctant to implement AR coatings on their products.

AF coatings provide water and oil protection for the surface of the DCP. This coating, which prevents fingerprints, provides greater aesthetics as well as improving readability. AF coatings allow for greater visual acuity when fingerprints are not visible. The drawback to AF coatings is their relatively low resistance to wear. The coating is soft and usually wears off within a few months of product purchase.

With the adoption of wireless charging and the upcoming 5G standard of wireless communication, smartphone manufacturers are making a major transition to DCP on the backside of the device. This transition is essential to ensure that the backside cover, which previously used to be metallic, does not interfere with the wireless signals. NCVM coatings are a new type of color film coating, applied for decorative purposes, to the backside DCP. When applied to the exterior, the NCVM coating provides a pleasing aesthetic and gives manufacturers flexibility with color customization. NCVM has a tendency to scratch easily and rub off over time, leading to a poor appearance. To preserve the color film on the backside DCP, manufacturers are reliant on SP coatings for scratch-resistance and a consistent appearance.

Intevac has developed and is currently marketing a SP coating known as Optical Diamond-like-Carbon (oDLC) utilizing its production-proven carbon film technology that is also used on HDD media. This coating provides a hard protective layer which significantly improves the DCP s resistance to scratches and breakage. The scratch protection benefits with the oDLC coating has demonstrated a greater than 20 times improvement over current standard cover glass under stainless steel ball Taber scratch testing. Furthermore using a Ring-on-Ring (RoR) test, cover glass with our oDLC coating provides a greater than 20 percent increase in breakage resistance strength over cover glass without the oDLC coating. Intevac expects that the adoption of AR and NCVM coatings on mobile devices will create an increased need for SP coatings and provide a significant demand opportunity for oDLC.

Solar Market

Intevac designs, manufactures and markets capital equipment for the PV solar manufacturing industry.

A solar cell (also called a PV cell) is a solid state device that converts the energy of sunlight directly into electricity. Assemblies of cells are used to make solar modules, also known as solar panels. Solar panels have broad-based end market applications for utility-scale solar farms; integrated building PV arrays for commercial, retail, and offices; residential rooftop; and for portable devices.

The cost of electricity generated from solar energy, in many cases, remains higher than that of electricity generated from traditional energy sources. However, deployment of photovoltaics is gaining momentum on a worldwide scale, particularly in Asia, North America and other regions, where solar PV is now increasingly competitive with conventional energy sources. Grid parity, whereby solar PV generates power at a levelized cost of electricity (LCOE) less than or equal to the price of power purchased from the electrical grid, has already been reached in about thirty countries. In countries or areas where the cost of solar energy generation remains higher than traditional electricity generation sources, some governments have implemented various tax credits and other financial incentives to promote the growth in solar and other alternative energy sources. As a result of solar energy costs having favorably declined due to the increased scale and improved manufacturing efficiencies spurred by these incentive policies, many governments have reduced or are planning to reduce their incentives for solar, a trend which is likely to continue. More than 90 gigawatts of solar capacity were expected to be added globally in 2017, growing 15.2% year-on-year, before leveling off towards sustained growth of 5.6% in 2018. Intevac expects that 2018 will continue to be challenging for the solar industry due to further declines in solar panel pricing.

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The PV industry continues to focus on the development of high-efficiency cell technologies aimed at simultaneously boosting PV efficiency and reducing solar energy production costs. New vacuum process technologies and integrated processing steps are expected to become increasingly important as companies search for lower-cost manufacturing solutions for PV cells.

Intevac offers products for wafer-based crystalline silicon (c-Si) solar cell manufacturing processes, the prevailing manufacturing process in the PV industry. Intevac s products for the solar industry are specifically focused on cell designs with the highest energy conversion efficiency, which are within the n-type mono crystalline portion of the market.

Intevac offers thin-film vacuum process manufacturing solutions for c-Si cell fabrication applications. Intevac offers high-productivity process equipment solutions that enable low-cost solar cell manufacturing with high cell efficiency, consistent with the PV industry s focus and requirements. Intevac has developed two vacuum process application technologies for solar cell manufacturing: one utilizes Physical Vapor Deposition (PVD) technology for the deposition of thin films onto c-Si wafers, and the other utilizes ion implantation, which selectively changes the electrical characteristics of the c-Si solar cell.

PVD is a process used in multiple ways in the manufacturing of solar cells such as for fabricating electrical contacts and conductor layers, depositing reflective layers of various types, and for growing transparent conductive oxide layers, all of which are critical to the efficiency of solar cells.

Ion implantation is a solar cell processing technology whereby an impurity is added to a PV structure to improve its conductivity. In ion implantation, a beam of ions of a desired dopant element such as phosphorus or boron is electrostatically accelerated and directed toward the target material, introducing the impurity. In a subsequent thermal annealing step, the dopant is electrically activated. The ion implant processes enable precision engineering of the dose and of the depth of dopant elements to form emitter structures in working solar cells. Ion implantation is a technique being introduced to solar cell lines as a means to lower the cost per watt to manufacture the cell. Ion implantation can replace existing diffusion processes in existing solar processing lines for present-day PV cell structures, and is also extendable to new advanced cell structures. In both cases, ion implant-formed emitters are created with fewer processing steps, and therefore at lower cost, than the diffusion processes implant displaces. Intevac s ion implantation products are based upon technology developed by Solar Implant Technologies, Inc. (SIT) which was acquired by Intevac in November 2010.

Fan-Out Packaging Market

Intevac is bringing to market capital equipment for fan-out packaging applications, fan-out packaging being a specialized part of the overall semiconductor device packaging market.

Semiconductor device packaging technology in general, and fan-out wafer level packaging (FOWLP)/fan-out panel level packaging (FOPLP) technology in particular, is being driven by the strong cost advantages these technologies offer over the cost of further implementing continued Moore s Law progress for 10nm and 7nm semiconductor interconnect (IC) process nodes. Generally speaking, fan-out packaging provides for increased Input/Output (I/O) density for a given semiconductor device while simultaneously supporting continued progress in shrinking the individual semiconductor devices, resulting in decreased footprint per device and, by extension, decreases in the amount of space integrated circuit content occupies in handheld consumer electronic products, for example in smartphones, wearables, and in Internet of Things (IoT) devices.

Fan-out packaging technology consists of a series of operations where known good semiconductor devices from silicon wafers fabricated by an Integrated Device Manufacturer (IDM), or by a semiconductor foundry, are singulated and then assembled onto a substrate or temporary carrier, which is then overmolded with epoxy mold compound and cured to create what is known as a reconstituted wafer. The reconstituted wafer then goes through another series of process steps (dielectric deposition, metallization, photolithography), to create a

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redistributed fan-out of the electrical interconnections from the original silicon device area to an expanded area that includes the device (die) surface itself, along with a generous amount of extra surface created from the mold compound area.

A redistribution layer (RDL) is the fanned-out metal layer on a packaged integrated circuit that makes the I/O pads of the integrated circuit available in other locations. PVD processes are essential to RDL fabrication; in fan-out packaging, our Intevac MATRIX PVD system is used to deposit thin layers of Titanium (Ti), Titanium Tungsten (TiW), Aluminum (Al) and Copper (Cu) to form the barrier/seed layer upon which the full RDL is constructed.

Applications driving the adoption of fan-out packaging include, among others:

- Baseband processors and application processors
- RF transceivers, switches, etc.
- Power management integrated circuits (PMIC)
- Radar modules for automotive
- Audio codec
- Microcontrollers

Smartphones of the iPhone 8 generation incorporate fan-out packaged components, as do most higher-end automobiles. IoT applications in the future are expected to contribute additional significant volume in fan-out packaged devices.

The significant advantages our INTEVAC MATRIX® PVD system brings to fan-out packaging are a much-reduced cost of ownership over the current PVD process tools of record used for RDL barrier/seed layer applications, and also the flexibility to run round wafers, and square or rectangular substrates, with no changes to the INTEVAC MATRIX PVD system beyond a simple substrate carrier substitution.

Thin-Film Equipment Products

Intevac s Thin-film Equipment product portfolio addressing each of these markets is based around common core technologies and competencies. Intevac believes its Thin-film Equipment product portfolio can be extended to support adjacent markets. Based on its history and market and technology leadership in the hard disk drive industry, Intevac offers superior high-productivity vacuum handling of small substrates at the lowest cost of ownership. Lowest cost of ownership includes various advantages such as high target utilization, high throughput, small footprint, double-sided coating, and reduced materials costs.

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Product Table

The following table presents a representative list of the Thin-film Equipment products that we offered during fiscal 2017, fiscal 2016 and fiscal 2015.

Thin Film Equipment Products	Applications and Features
Hard Disk Drive Equipment Market	
200 Lean® Disk Sputtering System	Uses PVD and chemical vapor deposition (CVD) technologies. Deposits magnetic films, non-magnetic films and protective carbon-based overcoats. Provides high-throughput for small-substrate processing. Over 150 units installed.
200 Lean Etch and Deposition System	Uses PVD and etch technologies. For use in HAMR and patterned media development.
AccuLuber® Disk Lubrication System	Deposits lubricants onto the hard disk s surface to improve durability and reduce surface friction. Lubricates disks while under vacuum. Eliminates the environmentally hazardous use of solvents.
Upgrades, spares, consumables and services (non-systems business)	Upgrades to the installed base to support the continued growth in areal density or reduce the manufacturing cost per disk.
DCP Market	
INTEVAC VERTEX® System	Utilizes vertical sputtering for multiple film types. Provides high-throughput for small-substrate processing. Uses patented carbon deposition source. Modular design enables expandability. Enables low-temperature processing.
Solar PV Market	
INTEVAC MATRIX PVD System	Deposits electrical contacts and conductor layers, reflective layers, and transparent conductive oxide layers, all of which are critical to the efficiency of solar cells. Includes patented Linear Scanning Magnetic Array (LSMA) magnetron source, with industry-leading target utilization rate of

	over 65 percent.
	Provides high-throughput for small-substrate processing.
INTEVAC MATRIX Implant System	Utilizes the chambers and transport mechanism of the MATRIX platform while using the implant sources from the ENERG*i* system.
ENERG*i*® Implant System	Supports both phosphorus and boron dopant technologies.
	Extendable to new advanced solar cell structures.
Fan-Out Packaging Market	
INTEVAC MATRIX PVD System	Deposits barrier/seed layers for fan-out RDL.
	Includes LSMA magnetron source, with industry-leading target utilization rate of over 65 percent.
	Provides high-throughput and low cost of ownership for small-substrate or large panel processing.
	Provides flexibility for handling round, square, or rectangular substrates for fan-out packaging.

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Thin Film Equipment Products Adjacent Markets	Applications and Features
INTEVAC MATRIX System	Incorporates multiple thin-film deposition techniques such as PVD, CVD, Etch, Implant, heating and cooling. Consists of high-speed linear transport. Flexible design enables handling of various different small substrate sizes and shapes. Performs double-sided coating within vacuum.

Photonics Segment

Photonics Market

Intevac Photonics develops, manufactures and sells compact, cost-effective, high-sensitivity digital-optical products for the capture and display of extreme low-light images. These products incorporate high resolution digital night-image sensors operating in the visible and near infrared (NIR) light spectrums and are based on Intevac s proprietary EBAPS® (Electron Bombarded Active Pixel Sensor) technology.

Photonics products primarily address the high performance military night-vision market. Our products provide digital imagery in extremely low-light level conditions. Intevac provides these products for military aircraft including the U.S. Army AH-64 Apache Attack Helicopter and the F-35 Joint Strike Fighter. Additionally, the Company is developing applications to address ground vehicles, and soldier head-mounted and weapon-mounted applications.

Military Products

Intevac s EBAPS sensors are incorporated into custom-designed cameras, modules and goggle products for high performance military applications. Intevac s EBAPS sensors can be integrated at various levels with optics, electronics, software, and displays based upon customer specifications and requirements. Customization typically occurs in the areas of electronics, near-eye micro-displays, and mechanical packaging. Intevac s products by application are:

Helicopter Pilotage

Intevac provides a night-vision camera with a 2.0 mega-pixel resolution EBAPS module which is gimbal turret-mounted on the nose of the Apache helicopter. The low-light level digital video is then viewable by the helicopter pilot on a Head-Mounted Display (HMD) enabling the pilot to have enhanced night vision and allowing the aircrew to view multiple aircraft-mounted sensor information. In addition, the U.S. Navy has funded a High Resolution Digital Night Vision Goggle (HRDG) development program incorporating a 4.0 mega-pixel resolution EBAPS module for aviation applications. The initial HRDG prototypes were delivered to the U.S. Navy in 2016. These goggles are under evaluation for an enhanced night vision program for Navy helicopters.

Fixed Wing Aircraft Pilotage

Intevac provides night-vision cameras with a 2.0 mega-pixel resolution EBAPS module which is integrated with the F-35 fighter pilot s helmet and enables the pilot to have enhanced night vision incorporating navigational and tactical information. Additionally, a similar integrated night vision camera utilizing a 2.0 mega-pixel resolution EBAPS is being designed into the Striker II helmet for the Typhoon Fighter aircraft.

Long-Range Target Identification

Intevac provides the Laser Illuminated Viewing and Ranging (LIVAR®) shortwave-infrared camera for long range military night time surveillance systems that can identify targets at distances of up to twenty

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kilometers. Photonics LIVAR camera is incorporated into long range target identification systems manufactured by a major defense contractor.

Soldier Mobility

Both the U.S. Army and Special Operations Command sponsored programs to develop binocular night-vision goggles incorporating digitally fused low-light level and thermal image sensors. Both head-mounted digital imaging systems will allow low-light level and thermal imagery to be viewed individually or to be overlaid. Our solution targets the fused night-vision monocular for U.S. Army ground forces, which is the program of record to replace analog night vision. We delivered our first demonstrator monocular to the Army in 2016, for evaluation of alternatives for the fused mobility vision program. We will be demonstrating not only superior night-vision capability, but the advantage of digital, such as zoom, information overlay, and wireless digital image transmission and reception.

Augmented Reality (AR) and Wireless Weapon Sights

Intevac provides HMDs for applications in AR and wireless weapon sights. The HMD is a near-eye, high definition, wide field of view micro-display system for portable viewing of video in military and commercial markets. Depending on the application, Intevac provides configuration choices that include monocular or binocular, mono or stereo video, and wired or wireless interfaces. Integral Inertial Measurement Units (IMU) are also offered.

Rifle Sight

Intevac provided EBAPS modules that were integrated by our customers into a weapon sight attached to weaponry, including rifles for night time aiming and targeting.

Commercial Products

Low-Light Cameras

Photonics MicroVista® product line of commercial compact and lightweight low-light Complementary Metal Oxide Semiconductor (CMOS) cameras provides high sensitivity in the ultraviolet, visible or NIR regions of the spectrum for use in industrial inspection, bio-medical and scientific applications. These cameras are primarily sold through distribution channels and to original equipment manufacturers.

Backlog

Intevac s backlog of orders at December 30, 2017 was $64.0 million, as compared to $68.5 million at December 31, 2016. Backlog at December 30, 2017 consisted of $51.7 million of Thin-film Equipment backlog and $12.3 million of Photonics backlog. Backlog at December 31, 2016 consisted of $46.3 million of Thin-film Equipment backlog and $22.2 million of Photonics backlog. Backlog at December 30, 2017 includes three 200 Lean systems and twelve PV implant systems.

Customer Concentration

Historically, a significant portion of Intevac s revenue in any particular period has been attributable to sales to a limited number of customers.

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The following customers accounted for at least 10 percent of Intevac s consolidated net revenues in fiscal 2017, 2016, and 2015.

	2017	2016	2015
Seagate Technology	40%	34%	22%
U.S. Government	15%	22%	26%
Elbit Systems of America	*	10%	*
HGST	*	*	15%

* Less than 10%

Intevac expects that sales of Intevac s products to relatively few customers will continue to account for a high percentage of Intevac s revenues in the foreseeable future.

Foreign sales accounted for 67% of revenue in fiscal 2017, 48% of revenue in fiscal 2016, and 35% of revenue in fiscal 2015. The majority of Intevac s foreign sales are to companies in Asia or to U.S. companies for use in their Asian manufacturing or development operations. Intevac anticipates that foreign sales will continue to be a significant portion of Intevac s Thin-film Equipment revenues. Intevac s disk sputtering equipment customers include magnetic disk manufacturers, such as Fuji Electric and Showa Denko, and vertically integrated HDD manufacturers, such as Seagate, Western Digital and HGST. Intevac s PV solar equipment customers include several major solar cell manufacturers. Intevac s DCP equipment customers include DCP manufacturers, such as Truly Opto-electronics. Intevac s customers manufacturing facilities are primarily located in California, China, Taiwan, Japan, Malaysia, Philippines and Singapore.

Competition

The principal competitive factors affecting the markets for Intevac Thin-film Equipment products include price, product performance and functionality, ease of integration, customer support and service, reputation and reliability. Intevac has one major competitor, Canon Anelva, in the hard disk drive equipment market and has historically experienced intense worldwide competition for magnetic disk sputtering equipment. Intevac primarily faces competition from large established global competitors in the PV equipment market including Applied Materials, Centrotherm Photovoltaics, Amtech, Jusung and Von Ardenne. Intevac faces competition in the DCP market from optical coating equipment manufacturers such as Optorun and Shincron, glass manufacturers that may develop scratch resistant glass, touchscreen manufacturers that may adopt harder substrate materials, or other equipment companies, chemical companies or the display cover plate manufacturers themselves that may offer competing protective coatings including oDLC. These competitors generally have substantially greater financial, technical, marketing, manufacturing and other resources as compared to Intevac. Furthermore, any of Intevac s competitors may develop enhancements to, or future generations of, competitive products that offer superior price or performance features. In addition, new competitors, with enhanced products may enter the markets that Intevac currently serves.

The principal competitive factors affecting Photonics products include price, extreme low-light level detection performance, power consumption, resolution, size, ease of integration, reliability, reputation and customer support and service. Intevac faces substantial competition for Photonics products, and many competitors have substantially greater resources and brand recognition. In the military market, Harris Corporation and L-3 Communications are large and well-established defense contractors and are the primary U.S. manufacturers of analog image intensifier tubes used in Generation-III night-vision devices and their derivative products. Intevac expects that other companies will develop digital night-vision products and aggressively promote their sales. Within the near-eye display market, Intevac also currently faces competition from Rockwell-Collins, Kopin and Six 15 Technologies in the defense space and anticipates that in the future it will experience competition from lower performance, niche commercial HMD providers expanding into defense applications, all of which can offer cost-competitive products.

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Marketing and Sales

Thin-film Equipment sales are made primarily through Intevac s direct sales force. Intevac also sells its products through distributors in Japan and China. The selling process for Intevac s Thin-film Equipment products is multi-level and lengthy, involving individuals from marketing, engineering, operations, customer service and senior management.

Installing and integrating new equipment requires a substantial investment by a customer. Sales of Intevac s systems depend, in significant part, upon the decision of a prospective customer to replace obsolete equipment or to increase manufacturing capacity by upgrading or expanding existing manufacturing facilities or by constructing new manufacturing facilities, all of which typically involve a significant capital commitment. Intevac s systems have a lengthy sales cycle, during which Intevac may expend substantial funds and management time and effort with no assurance that a sale will result.

The production of large complex systems requires Intevac to make significant investments in inventory both to fulfill customer orders and to maintain adequate supplies of spare parts to service previously shipped systems. Intevac maintains inventories of spare parts in the United States, Singapore, Malaysia and China to support its Thin-film Equipment customers. Intevac often requires its Thin-film Equipment customers to pay for systems in three installments, with a portion of the system price billed upon receipt of an order, a portion of the price billed upon shipment, and the balance of the price and any sales tax due upon completion of installation and acceptance of the system at the customer s factory.

Intevac provides process and applications support, customer training, installation, start-up assistance and post-installation service support to Intevac s Thin-film Equipment customers. Intevac has field offices in Singapore, China, and Malaysia to support Intevac s customers in Asia.

Warranties for Intevac s Thin-film Equipment products typically range between 12 and 24 months from customer acceptance. During the warranty period any necessary non-consumable parts are supplied and installed without charge.

Sales of Photonics products for military applications are primarily made to the end user through Intevac s direct sales force. Intevac sells to the U.S. government and to leading defense contractors such as Lockheed Martin Corporation, Northrop Grumman Corporation, Elbit Systems of America, Raytheon, DRS Technologies, BAE and Safran Electronics and Defense.

Intevac is subject to long sales cycles in the Photonics segment because many of Intevac s products, such as Intevac s night-vision systems, typically must be designed into Intevac s customers products, which are often complex and state-of-the-art. These development cycles are generally multi-year, and Intevac s sales are dependent on Intevac s customer successfully integrating Intevac s product into its product, completing development of its product and then obtaining production orders for its product. Sales of these products are also often dependent on ongoing funding of defense programs by the U.S. government and its allies. Additionally, sales to international customers are contingent on issuance of export licenses by the U.S. government.

Photonics generally invoices its research and development customers either as costs are incurred, or as program milestones are achieved, depending upon the particular contract terms. As a government contractor, Intevac invoices customers using estimated annual rates approved by the Defense Contracts Audit Agency (DCAA).

Research and Development and Intellectual Property

Intevac s long-term growth strategy requires continued development of new products. Intevac works closely with Intevac s customers to design products that meet their planned technical and production requirements. Product development and engineering organizations are located primarily in the United States and Singapore.

Intevac invested $17.7 million (15.7% of net revenue) in fiscal 2017, $18.2 million (22.7% of net revenue) in fiscal 2016, and $15.7 million (20.8% of net revenue) in fiscal 2015 for product development and engineering programs to create new products and to improve existing technologies and products. Intevac has spent an average of 21.9% of net revenues on product development and engineering over the last five years.

Intevac s competitive position significantly depends on Intevac s research, development, engineering, manufacturing and marketing capabilities, and not just on Intevac s patent position. However, protection of Intevac s technological assets by obtaining and enforcing intellectual property rights, including patents, is important. Therefore, Intevac s practice is to file patent applications in the United States and other countries for inventions that Intevac considers important. Although Intevac does not consider Intevac s business materially dependent upon any one patent, the rights of Intevac and the products made and sold under Intevac s patents along with other intellectual property, including trademarks, know-how, trade secrets and copyrights, taken as a whole, are a significant element of Intevac s business.

Intevac enters into patent and technology licensing agreements with other companies when management determines that it is in Intevac s best interest to do so. Intevac pays royalties under existing patent license agreements for use of certain patented technologies in several of Intevac s products. Intevac also receives, from time to time, royalties from licenses granted to third parties. Royalties received from or paid to third parties have not been material to Intevac s consolidated results of operations.

In the normal course of business, Intevac periodically receives and makes inquiries regarding possible patent infringements. In dealing with such inquiries, it may be necessary or useful for us to obtain or grant licenses or other rights. However, there can be no assurance that such licenses or rights will be available to us on commercially reasonable terms, or at all. If Intevac is not able to resolve or settle claims, obtain necessary licenses and/or successfully prosecute or defend Intevac s position, Intevac s business, financial condition and results of operations could be materially and adversely affected.

Manufacturing

Intevac manufactures its Thin-film Equipment products at its facilities in California and Singapore. Intevac s Thin-film Equipment manufacturing operations include electromechanical assembly, vacuum processing, fabrication of sputter sources, and system assembly, alignment and testing.

Photonics products are manufactured at Intevac s facilities in California. Photonics manufactures sensors, cameras, integrated camera systems, and near-eye display systems using advanced manufacturing techniques and equipment. Intevac s operations include vacuum processing, and electromechanical and optical system assembly.

Employees

At December 30, 2017, Intevac had 298 employees, including 17 contract employees.

Compliance with Environmental Regulations

Intevac is subject to a variety of governmental regulations relating to the use, storage, discharge, handling, emission, generation, manufacture, treatment and disposal of toxic or otherwise hazardous substances, chemicals, materials or waste. Intevac treats the cost of complying with government regulations and operating a safe workplace as a normal cost of business and allocates the cost of these activities to all functions, except where the cost can be isolated and charged to a specific function. The environmental standards and regulations promulgated by government agencies in California and Singapore are rigorous and set a high standard of compliance. Intevac believes its costs of compliance with these regulations and standards are comparable to other companies operating similar facilities in these jurisdictions.

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Executive Officers of the Registrant

Certain information about our executive officers as of February 14, 2018 is listed below:

Name	Age	Position
Executive Officers:		
Wendell T. Blonigan	56	President and Chief Executive Officer
James Moniz	60	Executive Vice President, Finance and Administration, Chief Financial Officer and Treasurer
Andres Brugal	60	Executive Vice President and General Manager, Photonics
Jay Cho	53	Executive Vice President and General Manager, Thin-Film Equipment
Christopher Smith	58	Vice President, Business Development
Other Key Officers:		
Verle Aebi	63	Chief Technology Officer, Photonics
Terry Bluck	58	Chief Technology Officer, Thin-film Equipment
Kimberly Burk	52	Senior Vice President, Global Human Resources
Timothy Justyn	55	Senior Vice President of Global Operations

Mr. Blonigan joined Intevac in July 2013 as President and Chief Executive Officer. Prior to joining Intevac, Mr. Blonigan co-founded Orbotech LT Solar in 2009 and served as the company s Chief Executive Officer until 2013. From 2006 until 2009, he was the Chief Operating Officer at Photon Dynamics, Inc. In 1991, Mr. Blonigan joined Applied Materials AKT display subsidiary. During his tenure at AKT, he held various positions. In 2003, he was appointed President and served in this role until 2006; from 1999 through 2003 he was Vice President, and prior to that time he was Director of Engineering and New Product Development. Mr. Blonigan holds a BS in electronic engineering technology from DeVry University Missouri Institute of Technology.

Mr. Moniz joined Intevac as Executive Vice President, Finance and Administration, Chief Financial Officer and Treasurer in November 2014. Mr. Moniz previously served as the Chief Financial Officer of Nanometrics, Inc. from 2009 until his retirement in 2011. During 2008, Mr. Moniz was the Chief Financial Officer at Photon Dynamics, Inc. From 2000 until 2008, Mr. Moniz served as the Chief Financial Officer at Nextest Systems Corporation. Prior to Nextest, Mr. Moniz held senior financial management positions at Millennia Vision Corporation, Lockheed Martin Corporation, Loral Corporation and Varian Associates. Mr. Moniz holds an MBA, a BS in accounting and a BS in marketing from San Jose State University.

Mr. Brugal joined Intevac as Executive Vice President and General Manager, Photonics in January 2012. Before joining Intevac, Mr. Brugal was employed at Vision Systems International, a joint venture between Rockwell Collins and Elbit Systems of America, from 2006 to 2012, serving as President and Chief Executive Officer from April 2007 to January 2012. From 2005 to 2006, Mr. Brugal was employed as a consultant for DRS Technologies, a subsidiary of Finmeccanica SPA. Mr. Brugal retired from active service with the U.S. Navy in October 2005 with the rank of Captain. Mr. Brugal holds an MS in strategic studies and security affairs from the U.S. Naval War College and a BS in general engineering from the U.S. Naval Academy.

Mr. Cho joined Intevac in January 2014 and currently serves as Executive Vice President and General Manager, Thin-Film Equipment. Prior to joining Intevac, Mr. Cho was President, Chief Executive Officer and Co-Founder of REEnewal Corporation. From 2006 to 2011, Mr. Cho served as Vice President / General Manager of the Tester and Repair Business Units of Orbotech LTD. From 2005 to 2006, Mr. Cho served as Vice President, Product Development at Metara Inc. From 1992 to 2005, Mr. Cho held various management positions at Novellus Systems, Inc. Prior to Novellus, Mr. Cho worked for Digital Equipment Corporation and Intermec Corporation. Mr. Cho holds a BS in electrical engineering from Washington State University and an MBA from University of Phoenix.

Mr. Smith joined Intevac in August 2010 and currently serves as Vice President, Business Development. Prior to joining Intevac, Mr. Smith served as Senior Vice President Sales and Customer Support at Oerlikon

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Solar, from November 2007 to August 2010. From 2006 to 2007 he served as Senior Vice President of Sales and Service with Cymer. Previously, Mr. Smith was employed by Applied Materials from 1994 to 2006. While at Applied Materials he held a variety of executive-level customer support and operations positions. He also served as product business group general manager for Chemical Mechanical Polishing and was managing director of Global Business Development for the Dielectric and Physical Vapor Deposition Product Business Groups. Mr. Smith earned his BS in Business Administration / Material Management from San Jose State University.

Mr. Aebi has served as Chief Technology Officer of the Photonics business since August 2006. Previously, Mr. Aebi served as President of the Photonics Division from July 2000 to July 2006 and as General Manager of the Photonics Division since May 1995. Mr. Aebi was elected as a Vice President of the Company in September 1995. From 1988 through 1994, Mr. Aebi was the Engineering Manager of the night-vision business Intevac acquired from Varian Associates in 1991, where he was responsible for new product development in the areas of advanced photocathodes and image intensifiers. Mr. Aebi holds a BS in physics and an MS in electrical engineering from Stanford University.

Mr. Bluck rejoined Intevac as Chief Technology Officer of the Thin-film Equipment in August 2004. Mr. Bluck had previously worked at Intevac from December 1996 to November 2002 in various engineering positions. The business unit Mr. Bluck worked for was sold to Photon Dynamics in November 2002, and he was employed there as Vice President, Rapid Thermal Process Product Engineering until August 2004. Mr. Bluck holds a BS in physics from San Jose State University.

Ms. Burk joined Intevac in May 2000 and currently serves as Senior Vice President of Global Human Resources. Prior to joining Intevac, Ms. Burk served as Human Resources Manager of Moen, Inc. from 1999 to 2000 and as Human Resources Manager of Lawson Mardon from 1994 to 1999. Ms. Burk holds a BS in sociology from Northern Illinois University.

Mr. Justyn has served as Senior Vice President of Global Operations from February 2015. Mr. Justyn served as Vice President, Photonics from October 2008 to February 2015. Mr. Justyn served as Vice President, Thin-film Equipment Manufacturing from April 1997 to October 2008. Mr. Justyn joined Intevac in February 1991 and has served in various roles in our Thin-film Equipment Products Division and our former night-vision business. Mr. Justyn holds a BS in chemical engineering from the University of California, Santa Barbara.

Available Information

Intevac s website is *http://www.intevac.com.* Intevac makes available free of charge, on or through its website, its annual, quarterly and current reports, and any amendments to those reports, as soon as reasonably practicable after electronically filing such reports with, or furnishing them to, the SEC. This website address is intended to be an inactive textual reference only and none of the information contained on Intevac s website is part of this report or is incorporated by reference herein.

Trademarks

Intevac s trademarks, include the following: 200 Lean®, AccuLuber®, EBAPS®, ENERG*i*®, I-Port , LIVAR®, INTEVAC LSMA , INTEVAC MATRIX®, MicroVista®, NightVista®, Night Port , oDLC and INTEVAC VERTEX®.

Item 1A. ***Risk Factors***

The following factors could materially affect Intevac s business, financial condition or results of operations and should be carefully considered in evaluating the Company and its business, in addition to other information presented elsewhere in this report.

The industries we serve are cyclical, volatile and unpredictable.

A significant portion of our revenue is derived from the sale of equipment used to manufacture commodity technology products such as disk drives, PV solar cells and cell phones. This subjects us to business cycles, the timing, length and volatility of which can be difficult to predict. When demand for commodity technology products exceeds production capacity, then demand for new capital equipment such as ours tends to be amplified. Conversely, when supply of commodity technology products exceeds demand, then demand for new capital equipment such as ours tends to be depressed. For example, sales of systems for magnetic disk production were depressed from late 2007 through 2009. The number of new systems delivered increased in 2010 as customers increased their production capacity in response to increased demand for data storage, but decreased in 2011 through 2015 as the hard disk drive industry did not add the same level of capacity that it did in 2010. We cannot predict with any certainty when these cycles will begin or end. Our sales of systems for magnetic disk production increased modestly in 2016 as a customer began upgrading the technology level of its manufacturing capacity. 2017 sales of systems for magnetic disk production were higher than 2016 levels as this customer s technology upgrade continued.

Our equipment represents only a portion of the capital expenditure that our customers incur when they upgrade or add production capacity. Accordingly, our customers generally commit to making large capital expenditures far in excess of the cost of our systems alone when they decide to purchase our systems. The magnitude of these capital expenditures requires our customers to have access to large amounts of capital. Our customers generally reduce their level of capital investment during downturns in the overall economy or during a downturn in their industries.

In recent years the photovoltaic (solar) market has undergone a downturn, which is likely to impact our sales of PV equipment. The solar industry from time to time experiences periods of structural imbalance between supply and demand, and such periods put intense pressure on our customers pricing. The solar industry is currently in such a period. Competition in solar markets globally and across the solar value chain is intense, and could remain that way for an extended period of time. During any such period, solar module manufacturers may reduce their sales prices in response to competition, even below their manufacturing costs, in order to generate sales and may do so for a sustained period of time. As a result, our customers may be unable to sell their solar modules or systems at attractive prices or for a profit during a period of excess supply of solar modules, which would adversely affect their results of operations and their ability to make capital investments such as purchasing our products.

We must effectively manage our resources and production capacity to meet rapidly changing demand. Our business experiences rapid growth and contraction, which stresses our infrastructure, internal systems and managerial resources. During periods of increasing demand for our products, we must have sufficient manufacturing capacity and inventory to meet customer demand; attract, retain and motivate a sufficient number of qualified individuals; and effectively manage our supply chain. During periods of decreasing demand for our products, we must be able to align our cost structure with prevailing market conditions; motivate and retain key employees and effectively manage our supply chain.

Sales of our equipment are primarily dependent on our customers upgrade and capacity expansion plans and whether our customers select our equipment.

We have no control over our customers upgrade and capacity expansion plans, and we cannot be sure they will select, or continue to select, our equipment when they upgrade or expand their capacity. The sales cycle for our equipment systems can be a year or longer, involving individuals from many different areas of Intevac and numerous product presentations and demonstrations for our prospective customers. Our sales process also commonly includes production of samples and customization of our products. We do not typically enter into long-term contracts with our customers, and until an order is actually submitted by a customer there is no binding commitment to purchase our systems.

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Sales of new manufacturing systems are also dependent on obsolescence and replacement of the installed base of our customers existing equipment with newer, more capable equipment. If upgrades are developed that extend the useful life of the installed base of systems, then we tend to sell more upgrade products and fewer new systems, which can significantly reduce total revenue.

Our 200 Lean customers also experience competition from companies that produce alternative storage technologies like flash memory, which offer smaller size, lower power consumption and more rugged designs. These storage technologies are being used increasingly in enterprise applications and smaller form factors such as tablets, smart-phones, ultra-books, and notebook PCs instead of hard disk drives. Tablet computing devices and smart-phones have never contained, nor are they likely in the future to contain, a disk drive. Products using alternative technologies, such as flash memory, optical storage and other storage technologies are becoming increasingly common and could become a significant source of competition to particular applications of the products of our 200 Lean customers, which could adversely affect our results of operations. If alternative technologies, such as flash memory, replace hard disk drives as a significant method of digital storage, then demand for our hard disk manufacturing products would decrease.

The Photonics business is also subject to long sales cycles because many of its products, such as our military imaging products, often must be designed into the customers end products, which are often complex state-of-the-art products. These development cycles are typically multi-year, and our sales are contingent on our customers successfully integrating our product into their product, completing development of their product and then obtaining production orders for their product from the U.S. government or its allies.

We operate in an intensely competitive marketplace, and our competitors have greater resources than we do.

In the market for our disk sputtering systems, we experience competition primarily from Canon Anelva, which has sold a substantial number of systems worldwide. In the PV equipment market, Intevac faces competition from large established competitors including Applied Materials, Centrotherm Photovoltaics, Amtech, Jusung and Von Ardenne. In the market for our military imaging products we experience competition from companies such as Harris Corporation and L-3 Communications. Some of our competitors have substantially greater financial, technical, marketing, manufacturing and other resources than we do, especially in the DCP and PV equipment markets. Our competitors may develop enhancements to, or future generations of, competitive products that offer superior price or performance features, and new competitors may enter our markets and develop such enhanced products. Moreover, competition for our customers is intense, and our competitors have historically offered substantial pricing concessions and incentives to attract our customers or retain their existing customers.

Our growth depends on development of technically advanced new products and processes.

We have invested heavily, and continue to invest, in the development of new products, such as our 200 Lean and other PVD systems, our coating systems for DCP, our solar systems for PV applications, our digital night-vision products and our near-eye display products. Our success in developing and selling new products depends upon a variety of factors, including our ability to: predict future customer requirements; make technological advances; achieve a low total cost of ownership for our products; introduce new products on schedule; manufacture products cost-effectively including transitioning production to volume manufacturing; commercialize and attain customer acceptance of our products; and achieve acceptable and reliable performance of our new products in the field. Our new product decisions and development commitments must anticipate continuously evolving industry requirements significantly in advance of sales. In addition, we are attempting to expand into new or related markets, including the PV and display cover glass markets. Our expansion into the PV and cover glass markets is dependent upon the success of our customers development plans. To date we have not recognized material revenue from such products. Failure to correctly assess the size of the markets, to successfully develop cost effective products to address the markets or to establish effective sales and support of the new products would have a material adverse effect on future revenues and profits. In addition, if we invest in

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products for which the market does not develop as anticipated, we may incur significant charges related to such investments.

Rapid technological change in our served markets requires us to rapidly develop new technically advanced products. Our future success depends in part on our ability to develop and offer new products with improved capabilities and to continue to enhance our existing products. If new products have reliability or quality problems, our performance may be impacted by reduced orders, higher manufacturing costs, delays in acceptance and payment for new products and additional service and warranty expenses.

We are exposed to risks associated with a highly concentrated customer base.

Historically, a significant portion of our revenue in any particular period has been attributable to sales of our disk sputtering systems to a limited number of customers. This concentration of customers, when combined with changes in the customers specific capacity plans and market share shifts can lead to extreme variability in our revenue and financial results from period to period.

The concentration of our customer base may enable our customers to demand pricing and other terms unfavorable to Intevac, and makes us more vulnerable to changes in demand by a given customer. Orders from a relatively limited number of manufacturers have accounted for, and will likely continue to account for, a substantial portion of our revenues. The loss of one of these large customers, or delays in purchasing by them, could have a material and adverse effect on our revenues.

Our operating results fluctuate significantly from quarter to quarter, which can lead to volatility in the price of our common stock.

Our quarterly revenues and common stock price have fluctuated significantly. We anticipate that our revenues, operating margins and common stock price will continue to fluctuate for a variety of reasons, including: (1) changes in the demand, due to seasonality, cyclicality and other factors in the markets for computer systems, storage subsystems and consumer electronics containing disks as well as cell phones and PV solar cells our customers produce with our systems; (2) delays or problems in the introduction and acceptance of our new products, or delivery of existing products; (3) timing of orders, acceptance of new systems by our customers or cancellation of those orders; (4) new products, services or technological innovations by our competitors or us; (5) changes in our manufacturing costs and operating expense; (6) changes in general economic, political, stock market and industry conditions; and (7) any failure of our operating results to meet the expectations of investment research analysts or investors.

Any of these, or other factors, could lead to volatility and/or a rapid change in the trading price of our common shares. In the past, securities class action litigation has been instituted against companies following periods of volatility in the market price of their securities. Any such litigation, if instituted against Intevac, could result in substantial costs and diversion of management time and attention.

We may not be able to obtain export licenses from the U.S. government permitting delivery of our products to international customers.

Many of our products, especially Photonics products, require export licenses from U.S. government agencies under the Export Administration Act, the Trading with the Enemy Act of 1917, the Arms Export Act of 1976 or the International Traffic in Arms Regulations. These regulations limit the potential market for some of our products. We can give no assurance that we will be successful in obtaining all the licenses necessary to export our products. Heightened government scrutiny of export licenses for defense related products has resulted in lengthened review periods for our license applications. Exports to countries that are not considered by the U.S. government to be allies are likely to be prohibited, and even sales to U.S. allies may be limited. Failure to comply with export control laws, including identification and reporting of all exports and re-exports of controlled technology or exports made without correct license approval or improper license use could result in severe penalties and revocation of licenses. Failure to obtain export licenses, delays in obtaining licenses, or revocation of previously issued licenses would prevent us from selling the affected products outside the United States and could negatively impact our results of operations.

The Photonics business is dependent on U.S. government contracts, which are subject to fixed pricing, immediate termination and a number of procurement rules and regulations.

We sell our Photonics products and services directly to the U.S. government, as well as to prime contractors for various U.S. government programs. The U.S government is considering significant changes in the level of existing, follow-on or replacement programs. We cannot predict the impact of potential changes in priorities due to military transformations and/or the nature of future war-related activities. A shift of government priorities to programs in which we do not participate and/or reductions in funding for or the termination of programs in which we do participate, unless offset by other programs and opportunities, could have a material adverse effect on our financial position, results of operations, or cash flows.

Funding of multi-year government programs is subject to congressional appropriations, and there is no guarantee that the U.S. government will make further appropriations, particularly given the U.S. government s recent focus on spending in other areas and spending reductions. Sales to the U.S. government and its prime contractors may also be affected by changes in procurement policies, budget considerations and political developments in the United States or abroad. For example, if the U.S. government is less focused on defense spending or there is a decrease in hostilities, demand for our products could decrease. The loss of funding for a government program would result in a loss of future revenues attributable to that program. The influence of any of these factors, which are beyond our control, could negatively impact our results of operations.

A significant portion of our U.S. government revenue is derived from fixed-price development and production contracts. Under fixed-price contracts, unexpected increases in the cost to develop or manufacture a product, whether due to inaccurate estimates in the bidding process, unanticipated increases in material costs, reduced production volumes, inefficiencies or other factors, are borne by us. We have experienced cost overruns in the past that have resulted in losses on certain contracts, and may experience additional cost overruns in the future. We are required to recognize the total estimated impact of cost overruns in the period in which they are first identified. Such cost overruns could have a material adverse effect on our results of operations.

Generally, government contracts contain provisions permitting termination, in whole or in part, without prior notice at the government s convenience upon the payment of compensation only for work done and commitments made at the time of termination. We cannot ensure that one or more of the government contracts under which we, or our customers, operate will not be terminated under these circumstances. Also, we cannot ensure that we, or our customers, would be able to procure new government contracts to offset the revenues lost as a result of any termination of existing contracts, nor can we ensure that we, or our customers, will continue to remain in good standing as federal contractors.

As a U.S. government contractor we must comply with specific government rules and regulations and are subject to routine audits and investigations by U.S. government agencies. If we fail to comply with these rules and regulations, the results could include: (1) reductions in the value of our contracts; (2) reductions in amounts previously billed and recognized as revenue; (3) contract modifications or termination; (4) the assessment of penalties and fines; and (5) suspension or debarment from government contracting or subcontracting for a period of time or permanently.

Changes to our effective tax rate affect our results of operations.

As a global company, we are subject to taxation in the United States, Singapore and various other countries. Significant judgment is required to determine and estimate worldwide tax liabilities. Our future effective tax rate could be affected by: (1) changes in tax laws; (2) the allocation of earnings to countries with differing tax rates; (3) changes in worldwide projected annual earnings in current and future years: (4) accounting pronouncements; or (5) changes in the valuation of our deferred tax assets and liabilities. Although we believe our tax estimates are reasonable, there can be no assurance that any final determination will not be different from the treatment reflected in our historical income tax provisions and accruals, which could result in additional payments by Intevac.

Comprehensive tax reform could adversely affect the company s business and financial condition.

The Tax and Jobs Act (the Act) was enacted on December 22, 2017 and significantly reforms the Internal Revenue Code of 1986, as amended. The Act contains significant changes to corporate taxation, including reduction of the corporate tax rate from 35% to 21%, limitation of the tax deduction for interest expense to 30% of earnings, limitation of the deduction for net operating losses to 80% of current year taxable income and elimination of net operating loss carrybacks, one time taxation of offshore earnings at reduced rates regardless of whether they are repatriated, elimination of U.S. tax on foreign earnings (subject to certain important exceptions), immediate deductions for certain new investments instead of deductions for depreciation expense over time, and modifying or repealing many business deductions and credits. Notwithstanding the reduction in the corporate income tax rate, the overall impact of the Act is uncertain, and the combined Company s business and financial condition could be adversely affected.

Our success depends on international sales and the management of global operations.

In previous years, the majority of our revenues have come from regions outside the United States. Most of our international sales are to customers in Asia, which includes products shipped to overseas operations of U.S. companies. We currently have manufacturing facilities in California and Singapore and international customer support offices in Singapore, China, and Malaysia. We expect that international sales will continue to account for a significant portion of our total revenue in future years. Certain of our suppliers are also located outside the United States.

Managing our global operations presents challenges including, but not limited to, those arising from: (1) global trade issues; (2) variations in protection of intellectual property and other legal rights in different countries; (3) concerns of U.S. governmental agencies regarding possible national commercial and/or security issues posed by growing manufacturing business in Asia; (4) fluctuation of interest rates, raw material costs, labor and operating costs, and exchange rates; (5) variations in the ability to develop relationships with suppliers and other local businesses; (6) changes in the laws and regulations of the United States, including export restrictions, and other countries, as well as their interpretation and application; (7) the need to provide technical and spares support in different locations; (8) political and economic instability; (9) cultural differences; (10) varying government incentives to promote development; (11) shipping costs and delays; (12) adverse conditions in credit markets; (13) variations in tariffs, quotas, tax codes and other market barriers; and (14) barriers to movement of cash.

We must regularly assess the size, capability and location of our global infrastructure and make appropriate changes to address these issues.

Difficulties in integrating past or future acquisitions could adversely affect our business.

We have completed a number of acquisitions and dispositions during our operating history. For example, in 2007, we acquired certain assets of DeltaNu, LLC and certain assets of Creative Display Systems, LLC, in 2008 we acquired certain assets of OC Oerlikon Balzers Ltd., in 2010 we acquired the outstanding shares of SIT, in 2012 we completed the sale of certain semiconductor mainframe technology assets and in 2013 we completed the sale of the assets of DeltaNu. We have spent and may continue to spend significant resources identifying and pursuing future acquisition opportunities. Acquisitions involve numerous risks including: (1) difficulties in

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integrating the operations, technologies and products of the acquired companies; (2) the diversion of our management s attention from other business concerns; and (3) the potential loss of key employees of the acquired companies. Failure to achieve the anticipated benefits of the prior and any future acquisitions or to successfully integrate the operations of the companies we acquire could have a material and adverse effect on our business, financial condition and results of operations. Any future acquisitions could also result in potentially dilutive issuance of equity securities, acquisition or divestiture-related write-offs or the assumption of debt and contingent liabilities. In addition, we have made and will continue to consider making strategic divestitures. With any divestiture, there are risks that future operating results could be unfavorably impacted if targeted objectives, such as cost savings, are not achieved or if other business disruptions occur as a result of the divestiture or activities related to the divestiture.

We may be subject to additional impairment charges due to potential declines in the fair value of our assets.

As a result of our acquisitions, we have significant intangible assets and had significant goodwill on our balance sheet. We test these assets for impairment on a periodic basis as required, and whenever events or changes in circumstances indicate that the carrying value may not be recoverable. The events or changes that could require us to test our intangible assets for impairment include: a significant reduction in our stock price, and as a result market capitalization, changes in our estimated future cash flows, as well as changes in rates of growth in our industry or in any of our reporting units. In the fourth quarter of 2012, as a result of a decline in our market capitalization and a reduction in our revenue expectations we recorded a goodwill impairment charge in the amount of $18.4 million. We will continue to evaluate the carrying value of our intangible assets and if we determine in the future that there is a potential further impairment, we may be required to record additional charges to earnings which could materially adversely affect our financial results and could also materially adversely affect our business.

Our success is dependent on recruiting and retaining a highly talented work force.

Our employees are vital to our success, and our key management, engineering and other employees are difficult to replace. We do not maintain key person life insurance on any of our employees. The expansion of high technology companies worldwide has increased demand and competition for qualified personnel, and has made companies increasingly protective of prior employees. It may be difficult for us to locate employees who are not subject to non-competition agreements and other restrictions.

The majority of our U.S. operations are located in California where the cost of living and of recruiting employees is high. Our operating results depend, in large part, upon our ability to retain and attract qualified management, engineering, marketing, manufacturing, customer support, sales and administrative personnel. Furthermore, we compete with industries such as the hard disk drive, semiconductor, and solar industries for skilled employees. Failure to retain existing key personnel, or to attract, assimilate or retain additional highly qualified employees to meet our needs in the future, could have a material and adverse effect on our business, financial condition and results of operations.

We are dependent on certain suppliers for parts used in our products.

We are a manufacturing business. Purchased parts constitute the largest component of our product cost. Our ability to manufacture depends on the timely delivery of parts, components and subassemblies from suppliers. We obtain some of the key components and subassemblies used in our products from a single supplier or a limited group of suppliers. If any of our suppliers fail to deliver quality parts on a timely basis, we may experience delays in manufacturing, which could result in delayed product deliveries, increased costs to expedite deliveries or develop alternative suppliers, or require redesign of our products to accommodate alternative suppliers. Some of our suppliers are thinly capitalized and may be vulnerable to failure.

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Our business depends on the integrity of our intellectual property rights.

The success of our business depends upon the integrity of our intellectual property rights, and we cannot ensure that: (1) any of our pending or future patent applications will be allowed or that any of the allowed applications will be issued as patents or will issue with claims of the scope we sought; (2) any of our patents will not be invalidated, deemed unenforceable, circumvented or challenged; (3) the rights granted under our patents will provide competitive advantages to us; (4) other parties will not develop similar products, duplicate our products or design around our patents; or (5) our patent rights, intellectual property laws or our agreements will adequately protect our intellectual property or competitive position.

From time to time, we have received claims that we are infringing third parties intellectual property rights or seeking to invalidate our rights. We cannot ensure that third parties will not in the future claim that we have infringed current or future patents, trademarks or other proprietary rights relating to our products. Any claims, with or without merit, could be time-consuming, result in costly litigation, cause product shipment delays or require us to enter into royalty or licensing agreements. Such royalty or licensing agreements, if required, may not be available on terms acceptable to us.

We could be involved in litigation.

From time to time we may be involved in litigation of various types, including litigation alleging infringement of intellectual property rights and other claims. Litigation is expensive, subjects us to the risk of significant damages and requires significant management time and attention and could have a material and adverse effect on our business, financial condition and results of operations.

We are subject to risks of non-compliance with environmental and other governmental regulations.

We are subject to a variety of governmental regulations relating to the use, storage, discharge, handling, emission, generation, manufacture, treatment and disposal of toxic or otherwise hazardous substances, chemicals, materials or waste. If we fail to comply with current or future regulations, such failure could result in suspension of our operations, alteration of our manufacturing process, remediation costs or substantial civil penalties or criminal fines against us or our officers, directors or employees. Additionally, these regulations could require us to acquire expensive remediation or abatement equipment and incur substantial expenses to comply with them.

Business interruptions could adversely affect our operations.

Our operations are vulnerable to interruption by fire, earthquake, floods or other natural disaster, quarantines or other disruptions associated with infectious diseases, national catastrophe, terrorist activities, war, disruptions in our computing and communications infrastructure due to power loss, telecommunications failure, human error, physical or electronic security breaches and computer viruses, and other events beyond our control. We do not have a detailed disaster recovery plan. Despite our implementation of network security measures, our tools and servers may be vulnerable to computer viruses, break-ins and similar disruptions from unauthorized tampering with our computer systems and tools located at customer sites. Political instability could cause us to incur increased costs in transportation, make such transportation unreliable, increase our insurance costs or cause international currency markets to fluctuate. All these unforeseen disruptions and instabilities could have the same effects on our suppliers and their ability to timely deliver their products. In addition, we do not carry sufficient business interruption insurance to compensate us for all losses that may occur, and any losses or damages incurred by us could have a material adverse effect on our business and results of operations. For example, we self-insure earthquake risks because we believe this is the prudent financial decision based on the high cost of the limited coverage available in the earthquake insurance market. An earthquake could significantly disrupt our operations, most of which are conducted in California. It could also significantly delay our research and engineering effort on new products, most of which is also conducted in California. We take steps to minimize the damage that would be caused by business interruptions, but there is no certainty that our efforts will prove successful.

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We could be negatively affected as a result of a proxy contest and the actions of activist stockholders.

A proxy contest with respect to election of our directors, or other activist stockholder activities, could adversely affect our business because: (i) responding to a proxy contest and other actions by activist stockholders can be costly and time-consuming, disruptive to our operations and divert the attention of management and our employees;
(ii) perceived uncertainties as to our future direction caused by activist activities may result in the loss of potential business opportunities, and may make it more difficult to attract and retain qualified personnel and business partners; and (iii) if individuals are elected to our Board of Directors with a specific agenda, it may adversely affect our ability to effectively and timely implement our strategic plans.

We are required to evaluate our internal control over financial reporting under Section 404 of the Sarbanes-Oxley Act of 2002, and any adverse results from such evaluation could result in a loss of investor confidence in our financial reports and have an adverse effect on our stock price.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, our management must perform evaluations of our internal control over financial reporting. Beginning in 2004, our Form 10-K has included a report by management of their assessment of the adequacy of such internal control. Additionally, our independent registered public accounting firm must publicly attest to the effectiveness of our internal control over financial reporting. We have completed the evaluation of our internal controls over financial reporting as required by Section 404 of the Sarbanes-Oxley Act. Although our assessment, testing, and evaluation resulted in our conclusion that as of December 30, 2017, our internal controls over financial reporting were effective, we cannot predict the outcome of our testing in future periods. Ongoing compliance with this requirement is complex, costly and time-consuming. If Intevac fails to maintain effective internal control over financial reporting; our management does not timely assess the adequacy of such internal control; or our independent registered public accounting firm does not deliver an unqualified opinion as to the effectiveness of our internal control over financial reporting, then we could be subject to restatement of previously reported financial results, regulatory sanctions and a decline in the public s perception of Intevac, which could have a material and adverse effect on our business, financial condition and results of operations.

Item 1B. ***Unresolved Staff Comments***

None.

Item 2. ***Properties***

Intevac maintains its corporate headquarters in Santa Clara, California. The location, approximate size and type of facility of the principal properties are listed below. Intevac leases all of its properties and does not own any real estate.

Location	**Square Footage**	**Principal Use**
Santa Clara, CA	169,583	Corporate Headquarters; Thin-film Equipment and Photonics Marketing, Manufacturing, Engineering and Customer Support
Carlsbad, CA	10,360	Photonics Micro Display Product Manufacturing
Singapore	31,947	Thin-film Equipment Manufacturing and Customer Support
Malaysia	1,291	Thin-film Equipment Customer Support
Shenzhen, China	2,568	Thin-film Equipment Customer Support

Intevac considers these properties adequate to meet its current and future requirements. Intevac regularly assesses the size, capability and location of its global infrastructure and periodically makes adjustments based on these assessments.

Item 3. ***Legal Proceedings***

From time to time, Intevac is involved in claims and legal proceedings that arise in the ordinary course of business. Intevac expects that the number and significance of these matters will increase as Intevac s business

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expands. Any claims or proceedings against us, whether meritorious or not, could be time consuming, result in costly litigation, require significant amounts of management time, result in the diversion of significant operational resources, or require us to enter into royalty or licensing agreements which, if required, may not be available on terms favorable to us or at all. Intevac is not presently a party to any lawsuit or proceeding that, in Intevac s opinion, is likely to seriously harm Intevac s business.

Item 4. ***Mine Safety Disclosures***

Not applicable.

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PART II

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

Price Range of Common Stock

Intevac common stock is traded on The Nasdaq Stock Market (NASDAQ Global Select) under the symbol IVAC. As of February 14, 2018, there were 80 holders of record. In fiscal years 2017 and 2016, Intevac did not declare or pay cash dividends to its stockholders. Intevac currently has no plans to declare or pay cash dividends.

The following table sets forth the high and low closing sale prices per share as reported on The Nasdaq Stock Market for the periods indicated.

	High	Low
Fiscal 2017:		
First Quarter	$ 12.50	$ 8.05
Second Quarter	13.75	11.10
Third Quarter	12.20	8.40
Fourth Quarter	9.00	6.80
Fiscal 2016:		
First Quarter	$ 5.08	$ 4.21
Second Quarter	5.74	4.35
Third Quarter	6.25	5.49
Fourth Quarter	8.55	5.65

Recent Sales of Unregistered Securities

None.

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Performance Graph

The following graph compares the cumulative total stockholder return on Intevac s Common Stock with that of the NASDAQ US Benchmark Total Return Index and the NASDAQ Computer Hardware (Subsector) Total Return Index. The comparison assumes $100 was invested on December 31, 2012 in Intevac Common Stock and in each of the foregoing indices and assumes reinvestment of dividends, if any. The performance shown in the graph represents past performance and should not be considered an indication of future performance.

COMPARISON OF CUMULATIVE TOTAL RETURN SINCE DECEMBER 31, 2012

AMONG INTEVAC, NASDAQ US BENCHMARK TOTAL RETURN INDEX AND

NASDAQ COMPUTER HARDWARE (SUBSECTOR) TOTAL RETURN INDEX

	12/31/12	12/31/13	01/03/15	01/02/16	12/31/16	12/30/17
Intevac, Inc.	$ 100	$ 163	$ 162	$ 103	$ 187	$ 150
Nasdaq US Benchmark Total Return Index	100	134	150	151	171	207
Nasdaq Computer Hardware Total Return Index	100	118	158	145	167	241

Repurchases of Intevac Common Stock

On November 21, 2013, Intevac s Board of Directors approved a stock repurchase program authorizing up to $30.0 million in repurchases. At September 30, 2017, $1.5 million remains available for future stock repurchases under the repurchase program. Intevac did not make any common stock repurchases during the three months ended December 30, 2017.

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Item 6. ***Selected Financial Data***

The following selected financial information has been derived from Intevac s historical audited consolidated financial statements and should be read in conjunction with the consolidated financial statements, the accompanying notes and Management s Discussion and Analysis of Financial Condition and Results of Operations for the corresponding fiscal years.

	Fiscal Year (1)				
	2017	**2016**	**2015**	**2014**	**2013**
	(in thousands, except per share data)				
Net revenues	$ 112,847	$ 80,124	$ 75,160	$ 65,550	$ 69,632
Gross profit	$ 45,663	$ 30,409	$ 26,317	$ 17,433	$ 21,973
Operating income (loss)	$ 4,848	$ (7,563)	$ (8,738)	$ (19,354)	$ (17,823)
Net income (loss)	$ 4,118	$ (7,441)	$ (9,166)	$ (27,445)	$ (15,696)
Net income (loss) per share:					
Basic	$ 0.19	$ (0.36)	$ (0.41)	$ (1.16)	$ (0.66)
Diluted	$ 0.18	$ (0.36)	$ (0.41)	$ (1.16)	$ (0.66)
At year end:					
Total assets	$ 115,023	$ 108,324	$ 97,681	$ 120,275	$ 148,276

1 On February 19, 2014, the Board of Directors of the Company approved the Company s change to a 52-53 week fiscal year ending on the Saturday nearest to December 31 of each year in order to improve the alignment of financial and business processes and to streamline financial reporting. Each fiscal quarter consists of 13 weeks, with an occasional fourth quarter extending to 14 weeks, if necessary, for the fiscal year to end on the Saturday nearest to December 31. The Company s fiscal 2017, fiscal 2016 and fiscal 2015 years ended on December 30, 2017, December 31, 2016, and on January 2, 2016, respectively.

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

Management s Discussion and Analysis (MD&A) is intended to facilitate an understanding of Intevac s business and results of operations. This MD&A should be read in conjunction with Intevac s Consolidated Financial Statements and the accompanying Notes to Consolidated Financial Statements included elsewhere in this Form 10- K. The following discussion contains forward-looking statements and should also be read in conjunction with the cautionary statement set forth at the beginning of this Form 10-K. MD&A includes the following sections:

Overview: a summary of Intevac s business, measurements and opportunities.

Results of Operations: a discussion of operating results.

Liquidity and Capital Resources: an analysis of cash flows, sources and uses of cash, contractual obligations and financial position.

Critical Accounting Policies: a discussion of critical accounting policies that require the exercise of judgments and estimates.

Overview

Intevac is a provider of vacuum deposition equipment for a wide variety of thin-film applications, and a leading provider of digital night-vision technologies and products to the defense industry. The Company leverages its core capabilities in high-volume manufacturing of small substrates to provide process manufacturing equipment solutions to the HDD, DCP, and solar cell industries. Intevac also provides sensors, cameras and systems for government applications such as night vision and long-range target identification. Intevac s customers include manufacturers of hard disk media, DCPs and solar cells as well as the U.S. government and its agencies, allies and contractors. Intevac reports two segments: Thin-film Equipment and Photonics.

Product development and manufacturing activities occur in North America and Asia. Intevac has field offices in Asia to support its Thin-film Equipment customers. Intevac s products are highly technical and are sold primarily through Intevac s direct sales force. Intevac also sells its products through distributors in Japan and China.

Intevac s results are driven by a number of factors including success in its equipment growth initiatives in the DCP and solar markets and by worldwide demand for HDDs. Demand for HDDs depends on the growth in digital data creation and storage, the rate of areal density improvements, the end-user demand for PCs, enterprise data storage, nearline cloud applications, video players and video game consoles that include such drives. Intevac continues to execute its strategy of equipment diversification into new markets by introducing new products, such as for a thin-film PVD application for protective coating for DCP manufacturing and a thin-film PVD application for PV solar cell manufacturing. Intevac believes that expansion into these markets will result in incremental equipment revenues for Intevac and decrease Intevac s dependence on the HDD industry. Intevac s equipment business is subject to cyclical industry conditions, as demand for manufacturing equipment and services can change depending on supply and demand for HDDs, cell phones, and PV cells as well as other factors such as global economic conditions and technological advances in fabrication processes.

Fiscal Year	2017	2016	2015	Change 2017 vs. 2016	Change 2016 vs. 2015
	(in thousands, except percentages and per share amounts)				
Net revenues	$ 112,847	$ 80,124	$ 75,160	$ 32,723	$ 4,964
Gross profit	45,663	30,409	26,317	15,254	4,092
Gross margin percent	40.5%	38.0%	35.0%	2.5 points	3.0 points
Operating income (loss)	4,848	(7,563)	(8,738)	12,411	1,175
Net income (loss)	4,118	(7,441)	(9,166)	11,559	1,725
Net income (loss) per diluted share	$ 0.18	$ (0.36)	$ (0.41)	$ 0.54	$ 0.05

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Fiscal 2015 financial results reflected a challenging environment. In the HDD industry media unit shipments declined year over year and PC sales decreased. PC sales were negatively impacted by price increases in Asian markets as a result of a stronger U.S. dollar against Asian currencies. During fiscal 2015, our HDD customers media production capacity continued to exceed demand, which limited the near-term demand for our 200 Lean systems. The Company shipped only one 200 Lean system to a HDD manufacturer during 2015. In 2015 the PV market continued to improve as global solar panel installations increased 33% over the previous year. In 2015, Intevac continued to execute on its diversification strategy to enter into new and adjacent markets and revenue recognized the first MATRIX PVD system for solar cell manufacturing and the first VERTEX coating system for DCPs. Intevac also received new customer system orders for VERTEX coating systems for DCPs and MATRIX tools for both solar metallization and implant. In fiscal 2015, Photonics business levels decreased as both Photonics product sales and Photonics contract research and development (R&D) declined. The fiscal 2015 net loss reflected higher net revenues, higher gross margins and lower operating expenses. Fiscal 2015 operating expenses reflected savings from cost reduction initiatives which were implemented in the first half of fiscal 2015. During fiscal 2015, as part of a continued effort to lower cash expenditures, the Company settled certain executive incentive variable compensation programs with restricted stock units with a one year vesting. During fiscal 2015, the Company did not recognize an income tax benefit on the U.S. net operating loss.

Fiscal 2016 financial results reflected an improved environment. In 2016 the HDD industry began to show signs of improvement as media unit shipments and PC sales increased in the second half of the year. Intevac revenue recognized four 200 Lean systems with an additional four in backlog at the end of the year as one of our HDD customers upgraded the technology level of its manufacturing capacity. In 2016 Intevac gained traction with its entry into the DCP market and booked its first production capacity order. In 2016, Intevac recognized revenue on one VERTEX coating system for DCPs and shipped an additional four VERTEX systems that were undergoing installation and acceptance testing at 2016 year-end. In 2016 the PV market showed signs of stress as utility-scale solar projects came under pricing pressure and retail deployments were below expectations as U.S. consumers delayed spending as a result of the extension of the investment tax credit. In 2016, Intevac recognized revenue on one MATRIX PVD system and one implant system for solar cell manufacturing and shipped an additional two ENERG*i* implant systems that were undergoing installation and acceptance testing at the end of fiscal 2016. In fiscal 2016, Photonics business levels were at similar levels compared to the prior year as increased Photonics product sales were offset by lower Photonics contract R&D. The fiscal 2016 net loss reflected higher net revenues and higher gross margins, offset in part by higher operating expenses as the Company made incremental R&D investments in both its business units. During fiscal 2016, as part of a continued effort to lower cash expenditures, the Company settled certain executive incentive variable compensation programs with restricted stock units with a one year vesting. During fiscal 2016, the Company did not recognize an income tax benefit on the U.S. net operating loss.

Fiscal 2017 financial results reflected an improved environment and the Company returned to profitability. Intevac recognized revenue on six 200 Lean systems with an additional three in backlog at the end of the year as one of our HDD customers continued to upgrade the technology level of its manufacturing capacity. In 2017, Intevac recognized revenue on four VERTEX coating system for DCPs, one MATRIX implant pilot system and two ENERG*i* implant systems for solar cell manufacturing. In 2017 Intevac shipped an additional three ENERG*i* implant systems which as of the end of fiscal 2017 had yet to be installed and qualification of the tools had not started. In fiscal 2017, Photonics business levels were at similar levels compared to the prior year with lower Photonics product sales, offset by higher Photonics contract R&D. Photonics margins and operating results were negatively impacted by a higher-mix of lower margin technology development contracts versus product sales. The fiscal 2017 net income reflected higher net revenues and higher gross margins, offset in part by higher operating expenses as the Company recorded higher variable compensation expenses as a result of the return to profitability. During fiscal 2017, the Company did not recognize an income tax benefit on the U.S. net operating loss.

We believe that we will continue to be profitable in fiscal 2018. Intevac expects that HDD equipment sales will be approximately at the same levels as 2017 as a HDD manufacturer takes delivery of the three 200 Lean systems in backlog and we expect additional 200 Lean system orders. In 2018, Intevac expects higher sales of new Thin-film Equipment products as we expect follow on production orders for our VERTEX coating system for DCPs and we recognize the three ENERG*i* implant systems that are pending installation at our customer s fab. We are also in discussions with our solar customer to determine a delivery schedule for the remaining nine ENERG*i* implant systems in backlog. Photonics will continue to deliver production shipments of the night-vision camera modules for the F35 Joint Strike Fighter program in fiscal 2018. Deliveries under the multi-year Apache arrangement were completed in 2017. With the completion of the Apache program, our Photonics revenue profile is now moving from a product-driven one, to a funded R&D revenue profile. For fiscal 2018, Intevac expects that Photonics profits will be lower than fiscal 2017 as Photonics results will reflect a higher mix of lower margin contract R&D revenue.

Results of Operations

Net revenues

	Fiscal Year			Change	Change
	2017	2016	2015	2017 vs. 2016	2016 vs. 2015
			(in thousands)		
Thin-film Equipment	$ 79,004	$ 45,253	$ 39,622	$ 33,751	$ 5,631
Photonics					
Products	25,852	29,089	28,450	(3,237)	639
Contract R&D	7,991	5,782	7,088	2,209	(1,306)
	33,843	34,871	35,538	(1,028)	(667)
Total net revenues	$ 112,847	$ 80,124	$ 75,160	$ 32,723	$ 4,964

Net revenues consist primarily of sales of equipment used to manufacture thin-film disks, PV cells, DCPs and related equipment and system components; sales of low-light imaging products; and revenue from contract R&D related to the development of electro-optical sensors, cameras and systems.

The increase in Thin-film Equipment revenues in fiscal 2017 versus fiscal 2016 was due primarily to revenue recognized on six 200 Lean systems, four VERTEX coating system for DCPs, two solar implant ENERG*i* systems, and a MATRIX implant pilot system as well as increases in revenue recognized on technology upgrades and spare parts. The increase in Thin-film Equipment revenues in fiscal 2016 versus fiscal 2015 was due primarily to revenue recognized on four 200 Lean systems, one VERTEX coating system for DCPs, one solar implant ENERG*i* system, and a MATRIX PVD system, offset in part by a decrease in revenue recognized on technology upgrades and spare parts. Thin-film Equipment revenues in fiscal 2015 reflected revenue recognized on one 200 Lean system, one MATRIX PVD system and one VERTEX coating system for DCPs as well as higher revenues recognized on technology upgrades and spare parts.

Photonics revenues decreased by 2.9% to $33.8 million in fiscal 2017 versus fiscal 2016 and decreased by 1.9% to $34.9 million in fiscal 2016 versus fiscal 2015. Contract R&D revenue increased in fiscal 2017 versus fiscal 2016 as a result of a higher volume of contracts. Contract R&D revenue decreased in fiscal 2016 versus fiscal 2015 as a result of a lower volume of contracts.

Photonics product revenue decreased in fiscal 2017 versus fiscal 2016 due to lower shipments and lower average sales prices for the Apache pilot night-viewing camera and lower average sales prices for the F35 Joint Strike Fighter program night-vision camera offset in part by increased F35 camera shipments. Photonics product revenue increased in fiscal 2016 versus fiscal 2015 due to increased F35 camera shipments, offset in part by lower shipments and lower average sales prices for the Apache camera. Photonics product revenue in fiscal 2015 reflected the lower average sales prices for the Apache camera. Deliveries under the multi-year Apache arrangement were completed in the third quarter of fiscal 2017.

For fiscal 2018, Intevac expects that Photonics revenue will be at similar levels as fiscal 2017. With the completion of the multi-year Apache arrangement in 2017, we expect our Photonics revenue profile in the near term to transition from a product-driven one, to a funded R&D profile. Substantial growth in future Photonics revenues is dependent on the proliferation of Intevac s technology into major military programs, continued defense spending, the ability to obtain export licenses for foreign customers and obtaining production subcontracts for these programs.

Backlog

	December 30, 2017	December 31, 2016
	(in thousands)	
Thin-film Equipment	$ 51,719	$ 46,283
Photonics	12,302	22,244
Total backlog	$ 64,021	$ 68,527

Thin-film Equipment backlog at December 30, 2017 included three 200 Lean HDD systems and twelve ENERG*i* solar ion implant systems. Three of the twelve ENERG*i* systems have been delivered to the customer s fab and are awaiting installation. Delivery of the remaining nine tools is pending finalization of shipment dates with the customer. Thin-film Equipment backlog at December 31, 2016 included four 200 Lean HDD systems, four VERTEX systems for DCP, one pilot MATRIX solar ion implant system, and two ENERG*i* solar ion implant systems.

Significant portions of Intevac s revenues in any particular period have been attributable to sales to a limited number of customers. The following customers accounted for at least 10 percent of Intevac s consolidated net revenues in fiscal 2017, 2016, and 2015.

	2017	2016	2015
Seagate Technology	40%	34%	22%
U.S. Government	15%	22%	26%
Elbit Systems of America	*	10%	*
HGST	*	*	15%

* Less than 10%

Revenue by geographic region

	Fiscal Year 2017	2016	2015	Change 2017 vs. 2016	Change 2016 vs. 2015
			(in thousands)		
United States	$ 37,311	$ 42,048	$ 49,034	$ (4,737)	$ (6,986)
Asia	73,525	37,143	23,855	36,382	13,288
Europe	884	933	2,271	(49)	(1,388)

Rest of World	1,127			1,127	
Total net revenues	$ 112,847	$ 80,124	$ 75,160	$ 32,723	$ 4,964

International sales include products shipped to overseas operations of U.S. companies. The decrease in sales to the U.S. region in 2017 versus 2016 was due primarily to no systems sold to factories in the U.S. region in 2017 versus one MATRIX PVD system sold in 2016. The decrease in sales to the U.S. region in 2016 versus 2015 was primarily due to no shipments of 200 Leans to factories in the U.S. compared to one 200 Lean delivered to a U.S. factory in 2015, offset in part by revenue recognized on one MATRIX PVD system.

The increase in sales to the Asia region in 2017 versus 2016 reflected higher system sales and increased technology upgrade and spare parts sales. Sales to the Asia region in 2017 included six 200 Lean HDD systems, four VERTEX coating systems for DCP, one pilot MATRIX solar ion implant system and two ENERG*i* solar ion implant systems versus four 200 Lean HDD systems, one solar implant ENERG*i* system and one VERTEX coating system for DCPs in 2016. The increase in sales to the Asia region in 2016 versus 2015 was primarily due to increased equipment sales including four 200 Lean systems, one solar implant ENERG*i* system and one VERTEX coating system for DCPs, offset in part by a decrease in revenue recognized on technology upgrades and spare parts.

Sales to the Europe region in 2017, 2016 and 2015 were not significant. The decrease in sales to the Europe region in 2016 versus 2015 was primarily due to lower sales of Photonics digital night-vision cameras to a NATO customer. This contract ended in fiscal 2015.

Rest of World includes contract R&D for the Australian government as part of a program under the Department of Defense s Coalition Warfare Program which is funded by the U.S. government and several foreign nation coalition partners.

Gross margin

		Fiscal Year		Change	Change
	2017	2016	2015	2017 vs. 2016	2016 vs. 2015
	(in thousands, except percentages)				
Thin-film Equipment gross profit	$33,750	$14,847	$12,852	$18,903	$1,995
% of Thin-film Equipment net revenues	42.7%	32.8%	32.4%		
Photonics gross profit	$11,913	$15,562	$13,465	$(3,649)	$2,097
% of Photonics net revenues	35.2%	44.6%	37.9%		
Total gross profit	$45,663	$30,409	$26,317	$15,254	$4,092
% of net revenues	40.5%	38.0%	35.0%		

Cost of net revenues consists primarily of purchased materials and costs attributable to contract R&D, and also includes assembly, test and installation labor and overhead, customer-specific engineering costs, warranty costs, royalties, provisions for inventory reserves and scrap.

Thin-film Equipment gross margin was 42.7% in fiscal 2017 compared to 32.8% in fiscal 2016 and 32.4% in fiscal 2015. Fiscal 2017 gross margins improved over fiscal 2016 due primarily to higher revenue levels, a higher mix of higher-margin upgrades versus systems shipments, higher factory utilization and lower provisions for inventory reserves. Thin-film Equipment gross margin in fiscal 2017 reflects the release of $2.2 million in previously-recognized inventory provisions upon the sale of two ENERG*i* solar ion implant systems, offset in part by the lower margin on the pilot MATRIX solar ion implant system. Fiscal 2016 gross margins improved slightly over fiscal 2015 due primarily to higher revenue levels, higher factory utilization and lower provisions for inventory reserves, offset in part by lower sales of higher-margin upgrades. Fiscal 2015 gross margins reflected higher sales of higher-margin upgrades, higher factory utilization and lower provisions for inventory reserves. Gross margins in the Thin-film Equipment business vary depending on a number of factors, including product mix, product cost, system configuration and pricing, factory utilization, and provisions for excess and obsolete inventory.

Photonics gross margin was 35.2% in fiscal 2017 compared to 44.6% in fiscal 2016 and 37.9% in fiscal 2015. Fiscal 2017 gross margins declined over fiscal 2016 due primarily to a higher mix of lower-margin contract R&D versus product sales, lower margins on contract R&D, loss provisions recorded on firm fixed price contracts, higher inventory provisions and higher manufacturing engineering spending. Fiscal 2016 gross margins improved over fiscal 2015 due primarily to higher margins on products and lower inventory provisions, offset in part by lower margins on contract R&D. Manufacturing costs for digital night-vision products decreased in fiscal 2017, 2016 and 2015 as a result of cost reductions and yield improvements.

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Research and development

	Fiscal Year			Change	Change
	2017	2016	2015	2017 vs. 2016	2016 vs. 2015
			(in thousands)		
Research and development expense	$17,724	$18,156	$15,661	$(432)	$2,495

Research and development expense consists primarily of salaries and related costs of employees engaged in and prototype materials used in ongoing research, design and development activities for PV cell manufacturing equipment, DCP manufacturing equipment, HDD disk sputtering equipment and Photonics products.

Research and development spending for Thin-film Equipment in fiscal 2017, fiscal 2016 and fiscal 2015 increased sequentially as a result of higher spending on DCP development, PV development and Fan-out development.

Research and development spending decreased for Photonics during 2017 as compared to 2016. Photonics research and development spending during 2016 reflected incremental spending on demonstrators developed for evaluation by the U.S. Army and U.S. Navy which were self-funded by Intevac. Research and development expenses do not include costs of $7.1 million, $4.5 million, and $5.1 million, in 2017, 2016, and 2015, respectively, which are related to customer-funded contract R&D programs and therefore included in cost of net revenues.

Selling, general and administrative

	Fiscal Year			Change	Change
	2017	2016	2015	2017 vs. 2016	2016 vs. 2015
			(in thousands)		
Selling, general and administrative expense	$23,314	$19,916	$19,638	$3,398	$278

Selling, general and administrative expense consists primarily of selling, marketing, customer support, financial and management costs. All domestic sales and the majority of international sales of HDD disk sputtering products in Asia are made through Intevac s direct sales force. Intevac also sells its Thin-film Equipment products through distributors in Japan and China. Intevac has offices in Singapore, Malaysia and China to support Intevac s Thin-film Equipment customers in Asia.

Selling, general and administrative expenses increased in 2017 over the amount spent in 2016 due primarily to higher variable compensation costs as a result of the Company s return to profitability, higher equity compensation expense, and increased spending for strategic consulting. Selling, general and administrative expenses increased in 2016 over the amount spent in 2015 due primarily to costs associated with the consolidation of our Photonics manufacturing facilities and increased equity compensation expense.

Acquisition-related (benefit), net

	Fiscal Year			Change	Change
	2017	2016	2015	2017 vs. 2016	2016 vs. 2015
			(in thousands)		

Acquisition-related (benefit), net	$ (223)	$ (100)	$ (244)	$ (123)	$ 144

Acquisition-related (benefit), net, represents the change in the fair value of contingent consideration arrangements related to the SIT acquisition. See Note 7 Contingent Consideration in the notes to the consolidated financial statements for additional information related to the fair value of contingent consideration. Increases in the assessed likelihood of a higher payout under a contingent consideration arrangement contribute to increases in the fair value of the related liability. Conversely, decreases in the assessed likelihood of a higher payout under a contingent consideration arrangement contribute to decreases in the fair value of the related liability.

The benefits recognized during fiscal 2017, fiscal 2016 and fiscal 2015 are associated with changes in the fair value of the contingent consideration related to the revenue earnout obligation. We recorded liabilities on our consolidated balance sheet of $4.1 million as of the original acquisition date for this contingent consideration arrangement and subsequently remeasured the liability to fair value, with changes in fair value reported in earnings. As a result of this remeasurement, we recorded a net gain of $223,000, $100,000 and $244,000, respectively during fiscal 2017, fiscal 2016 and fiscal 2015.

Cost reduction plan

During the first quarter of fiscal 2015, Intevac substantially completed implementation of the 2015 cost reduction plan (the 2015 Plan), which reduced expenses and reduced its workforce by 3 percent. The total cost of implementing the 2015 Plan was $148,000 of which $81,000 was reported under cost of net revenues and $67,000 was reported under operating expenses. Substantially all cash outlays in connection with the 2015 Plan occurred in the first quarter of fiscal 2015. Implementation of the 2015 Plan reduced salary, wages and other employee-related expenses by approximately $1.4 million on an annual basis. As of December 30, 2017, activities related to the 2015 Plan were complete.

Interest income and other, net

	Fiscal Year			Change	Change
	2017	**2016**	**2015**	**2017 vs. 2016**	**2016 vs. 2015**
			(in thousands)		
Interest income and other, net	$373	$373	$127	$	$246

Interest income and other, net in fiscal 2017 included $291,000 of interest income on investments and $115,000 earnout income from a divestiture, offset in part by $107,000 of foreign currency losses. Interest income and other, net in fiscal 2016 included $195,000 of interest income on investments, $136,000 of gains associated with the sale and disposal of fixed assets and $30,000 earnout income from a divestiture, offset in part by $99,000 of foreign currency losses. Interest income and other, net in fiscal 2015 included $179,000 of interest income on investments and $100,000 earnout income from a divestiture and $80,000 of foreign currency gains, offset in part by $271,000 in losses associated with the disposal of fixed assets. The increase in interest income in 2017 over 2016 reflected higher interest rates on Intevac s investments. The increase in interest income in 2016 over 2015 reflected higher interest rates on Intevac s investments, offset in part by lower invested balances.

Provision for income taxes

	Fiscal Year			Change	Change
	2017	**2016**	**2015**	**2017 vs. 2016**	**2016 vs. 2015**
			(in thousands)		
Provision for income taxes	$1,103	$251	$555	$852	$(304)

Intevac s effective income tax rate was 21.1% for fiscal 2017, (3.5%) for fiscal 2016 and (6.4%) for fiscal 2015. Intevac s tax rate differs from the applicable statutory rates due primarily to establishment of a valuation allowance, the utilization of deferred and current credits and the effect of permanent differences and adjustments of prior permanent differences. Intevac s future effective income tax rate depends on various factors including, the level of Intevac s projected earnings, the geographic composition of worldwide earnings, tax regulations governing each region, net operating loss carry forwards, availability of tax credits and the effectiveness of Intevac s tax planning strategies. Management carefully monitors these factors and timely adjusts the effective income tax rate accordingly.

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On December 22, 2017, the Tax Cuts and Jobs Act (ACT) was signed into law that significantly reforms the Internal Revenue Code of 1986, as amended. The Act, among other things, permanently lowers the U.S. federal tax rate to 21% from the existing maximum rate of 35%, allows for the expensing of capital expenditures, and puts into effect the migration from a worldwide system of taxation to a territorial system. Our net deferred tax assets and liabilities have been revalued at the newly enacted U.S. federal tax rate. There was no impact to our tax expense in fiscal 2017, the year of enactment.

Management assesses the available positive and negative evidence to estimate if sufficient future taxable income will be generated to use the existing deferred tax assets. In fiscal 2014, based upon an analysis, a valuation allowance of $9.4 million was recorded for the portion of the Singapore deferred tax asset that more likely than not will be realized. For fiscal 2017 and 2016, valuation allowance decreases of $603,000 and $136,000, respectively, for the Singapore deferred tax asset were recorded. For fiscal 2015, a valuation allowance increase of $631,000 for the Singapore deferred tax asset was recorded.

In fiscal 2012, a valuation allowance of $23.4 million was added to record only the portion of the U.S. federal deferred tax asset that more likely than not will be realized. For fiscal 2017, a valuation allowance decrease of $6.9 million for the U.S. federal deferred tax asset was recorded. This decrease was a result of revaluing our deferred tax assets and liabilities at the newly enacted U.S federal tax rate. For fiscal 2016 and 2015, valuation allowance increases of $3.3 million and $1.6 million, respectively, for the U.S federal deferred tax asset were recorded.

The amount of the deferred tax asset considered realizable, however, could be adjusted if estimates of future taxable income during the carryforward period are increased, or if objective negative evidence in the form of cumulative losses is no longer present and additional weight may be given to subjective evidence such as our projections for growth.

Liquidity and Capital Resources

At December 30, 2017, Intevac had $42.5 million in cash, cash equivalents, and investments compared to $48.2 million at December 31, 2016. During fiscal 2017, cash, cash equivalents and investments decreased by $5.8 million due primarily to cash used by operating activities, purchases of fixed assets and tax payments related to the net share settlement of restricted stock units, partially offset by cash received from the sale of Intevac common stock to Intevac s employees through Intevac s employee benefit plans.

Cash, cash equivalents and investments consist of the following:

	December 30, 2017	December 31, 2016
	(in thousands)	
Cash and cash equivalents	$ 19,941	$ 27,043
Short-term investments	15,698	17,602
Long-term investments	6,849	3,593
Total cash, cash-equivalents and investments	$ 42,488	$ 48,238

Cash used in operating activities totaled $2.4 million in 2017. Cash generated by operating activities totaled $3.8 million in 2016 and $635,000 in 2015. Lower operating cash flow in 2017 was a result of additional investments in working capital, offset in part by higher net income as a result of the return to profitability.

Accounts receivable totaled $20.5 million at December 30, 2017 compared to $17.4 million at December 31, 2016. The number of days outstanding for Intevac s accounts receivable was 74 at December 30, 2017 compared to 66 at December 31, 2016. Net inventories totaled $33.8 million at December 30, 2017 compared to $24.9 million at December 31, 2016. Net inventories at December 30, 2017

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include three ENERG*i* implant systems at a customer site for which installation procedures have not begun and four ENERG*i* implant systems in work in process that are virtually complete, pending customer shipment. Net inventories at December 31, 2016 included four VERTEX systems for DCP and two ENERG*i* implant systems at customer sites that were undergoing installation and acceptance testing. Inventory turns were 1.8 in fiscal 2017 and were 2.3 in fiscal 2016. Accounts payable totaled $3.9 million at December 30, 2017 and $5.3 million at December 31, 2016. Other accrued liabilities decreased to $7.7 million at December 30, 2017 compared to $17.0 million at December 31, 2016. Other accrued liabilities at December 30, 2017 includes $5.1 million in deferred revenue related to three ENERG*i* implant systems at a customer site for which installation procedures have not begun. Other accrued liabilities at December 31, 2016 includes $14.2 million in deferred revenue related to four VERTEX systems for DCP and two ENERG*i* implant systems at customer sites that were undergoing installation and acceptance testing. Customer advances increased from $5.4 million at December 31, 2016 to $11.0 million at December 30, 2017.

Investing activities used cash of $5.2 million in 2017, and generated cash of $8.6 million in 2016, and $8.7 million in 2015. Purchases of investments net of proceeds from sales and maturities of investments, totaled $1.4 million in 2017. Proceeds from sales and maturities of investments, net of purchases, totaled $11.6 million in 2016, and $11.8 million in 2015. Intevac is required to maintain a standby letter of credit for $600,000 for the Santa Clara, California campus lease. This standby letter of credit is secured with $600,000 of restricted cash. Intevac has pledged $400,000 as collateral for various guarantees with its bank. Capital expenditures were $4.4 million in 2017, $3.4 million in 2016, and $3.1 million in 2015.

Financing activities generated cash of $256,000 in 2017 and $1.0 million in 2016 and used cash of $16.9 million in 2015. The sale of Intevac common stock to Intevac s employees through Intevac s employee benefit plans provided $2.4 million in 2017, $1.5 million in 2016, and $1.7 million in 2015. Tax payments related to the net share settlement of restricted stock units were $2.0 million in 2017, $426,000 in 2016, and $132,000 in 2015. In November 2013, Intevac s Board of Directors approved a stock repurchase program authorizing up to $30 million in repurchases. Cash used to repurchase common stock totaled $18.5 million in 2015.

In connection with the acquisition of SIT, Intevac agreed to pay to the selling shareholders in cash a revenue earnout on Intevac s net revenue from commercial sales of certain solar implant products over a specified period up to an aggregate of $9.0 million. Payments made associated with the revenue earnout obligation were $174,000 in 2017 and $31,000 in 2016.

Intevac s investment portfolio consists principally of investment grade money market mutual funds, U.S. treasury and agency securities, certificates of deposit, commercial paper, municipal bonds, asset backed securities and corporate bonds. Intevac regularly monitors the credit risk in its investment portfolio and takes measures, which may include the sale of certain securities, to manage such risks in accordance with its investment policies.

As of December 30, 2017, approximately $6.3 million of cash and cash equivalents and $3.3 million of short term investments were domiciled in foreign tax jurisdictions. Intevac expects a significant portion of these funds to remain off shore in the short term. If the Company chose to repatriate these funds to the United States, it would be required to accrue and pay additional taxes on any portion of the repatriation subject to foreign withholding taxes.

Intevac believes that its existing cash, cash equivalents and investments will be sufficient to meet Intevac s cash requirements for the next 12 months. Intevac intends to undertake approximately $5.0 million to $7.0 million in capital expenditures during the next 12 months.

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Contractual Obligations

The following table summarizes Intevac s contractual obligations as of December 30, 2017:

	Payments due by period				
	Total	< 1 Year	1 3 Years	3-5 Years	> 5 Years
	(in thousands)				
Operating lease obligations	$ 18,877	$ 3,154	$ 6,073	$ 5,834	$ 3,816
Purchase obligations and commitments [1]	10,209	10,209			
Other long-term liabilities [2, 4]	237	237			
Total [3, 4]	$ 29,323	$ 13,600	$ 6,073	$ 5,834	$ 3,816

1 Purchase obligations include agreements to purchase goods or services that are enforceable and legally binding on Intevac and that specify all significant terms, including fixed or minimum quantities to be purchased; fixed, minimum or variable price provisions; and the approximate timing of the transaction. Purchase obligations exclude agreements that are cancelable without penalty. These purchase obligations are related principally to inventory and other items.

2 Intevac is unable to reliably estimate the timing of future payments related to uncertain tax positions; therefore, $84,000 of unrecognized tax benefits has been excluded from the table above.

3 Total excludes contractual obligations already recorded on the consolidated balance sheet as current liabilities (except other long-term liabilities) and certain purchase obligations.

4 Total excludes contingent consideration that may be paid pursuant to asset purchases or business combinations.

Off-Balance Sheet Arrangements

Off-balance sheet firm commitments relating to outstanding letters of credit amounted to approximately $1.0 million as of December 30, 2017. These letters of credit and bank guarantees are collateralized by $1.0 million of restricted cash. We do not maintain any other off-balance sheet arrangements, transactions, obligations, or other relationships that would be expected to have a material current or future effect on the consolidated financial statements.

Critical Accounting Policies

The preparation of consolidated financial statements and related disclosures in conformity with accounting principles generally accepted in the United States of America requires management to make judgments, assumptions and estimates that affect the amounts reported. Note 1 of Notes to Consolidated Financial Statements describes the significant accounting policies used in the preparation of the consolidated financial statements. Certain of these significant accounting policies are considered to be critical accounting policies.

A critical accounting policy is defined as one that is both material to the presentation of Intevac s consolidated financial statements and requires management to make difficult, subjective or complex judgments that could have a material effect on Intevac s financial condition or results of operations. Specifically, these policies have the following attributes: (1) Intevac is required to make assumptions about matters that are highly uncertain at the time of the estimate; and (2) different estimates Intevac could reasonably have used, or changes in the estimate that are reasonably likely to occur, would have a material effect on Intevac s financial condition or results of operations.

Estimates and assumptions about future events and their effects cannot be determined with certainty. Intevac bases its estimates on historical experience and on various other assumptions believed to be applicable and reasonable under the circumstances. These estimates may change as new events occur, as additional information is obtained and as Intevac s operating environment changes. These changes have historically been minor and

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have been included in the consolidated financial statements as soon as they became known. In addition, management is periodically faced with uncertainties, the outcomes of which are not within its control and will not be known for prolonged periods of time. These uncertainties are discussed in the section above entitled Risk Factors. Based on a critical assessment of its accounting policies and the underlying judgments and uncertainties affecting the application of those policies, management believes that Intevac s consolidated financial statements are fairly stated in accordance with accounting principles generally accepted in the United States of America, and provide a meaningful presentation of Intevac s financial condition and results of operations.

Management believes that the following are critical accounting policies:

Revenue Recognition

Intevac recognizes revenue when persuasive evidence of an arrangement exists, delivery has occurred and title and risk of loss have passed to Intevac s customer or services have been rendered, the price is fixed or determinable, and collectibility is reasonably assured. Intevac s shipping terms are customarily FOB shipping point or equivalent terms. Intevac s revenue recognition policy generally results in revenue recognition at the following points: (1) for all transactions where legal title passes to the customer upon shipment, Intevac recognizes revenue upon shipment for all products that have been demonstrated to meet product specifications prior to shipment; the portion of revenue associated with certain installation-related tasks is deferred, and that revenue is recognized upon completion of the installation-related tasks; (2) for products that have not been demonstrated to meet product specifications prior to shipment, revenue is recognized at customer acceptance; and (3) for arrangements containing multiple elements, the revenue relating to the undelivered elements is deferred until delivery of the deferred elements. When a sales arrangement contains multiple elements, Intevac allocates revenue to each element based on a selling price hierarchy. The selling price for a deliverable is based on its vendor specific evidence (VSOE) if available, third party evidence (TPE) if VSOE is not available, or best estimate of selling price (ESP) if neither VSOE nor TPE is available. Intevac generally utilizes the ESP due to the nature of its products. In certain cases, technology upgrade sales are accounted for as multiple-element arrangements, usually split between delivery of the parts and installation on the customer s systems. In these cases, Intevac recognizes revenue for the relative sales price of the parts upon shipment and transfer of title, and recognizes revenue for the relative sales price of installation services when those services are completed. Revenue related to sales of spare parts is generally recognized upon shipment. Intevac recognizes revenue in certain circumstances before delivery has occurred (commonly referred to as bill and hold transactions). In such circumstances, among other things, risk of ownership has passed to the customer, the customer has made a written fixed commitment to purchase the finished goods, the customer has requested the finished goods be held for future delivery as scheduled and designated by them, and no additional performance obligations exist by Intevac. For these transactions, the finished goods are segregated from inventory and normal billing and credit terms granted. Revenue related to services is generally recognized upon completion of the services. In addition, Intevac uses the installment method to record revenue based on cash receipts in situations where the account receivable is collected over an extended period of time and in management s judgment the degree of collectibility is uncertain.

Intevac performs research and development work under various government-sponsored research contracts. Revenue on cost-plus-fee contracts is recognized to the extent of costs actually incurred plus a proportionate amount of the fee earned. Intevac considers fixed fees under cost-plus-fee contracts to be earned in proportion to the allowable costs actually incurred in performance of the contract. Revenue on fixed-price contracts is recognized on a milestone method or percentage-of-completion method of contract accounting. For contracts structured as milestone agreements, revenue is recognized when a specified milestone is achieved, provided that (1) the milestone event is substantive in nature and there is substantial uncertainty about the achievement of the milestone at the inception of the agreement, (2) the milestone payment is non-refundable, and (3) there is no continuing performance obligations associated with the milestone payment. Any milestone payments received prior to satisfying these revenue recognition criteria are deferred. Intevac generally determines the percentage completed based on the percentage of costs incurred to date in relation to total estimated costs expected through

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completion of the contract. When estimates of total costs to be incurred on a contract exceed estimates of total revenue to be earned, a provision for the entire loss on the contract is recorded in the period the loss is determined.

Inventories

Inventories are valued using average actual costs and are stated at the lower of cost or net realizable value. The carrying value of inventory is reduced for estimated obsolescence by the difference between its cost and the net realizable value based upon assumptions about future demand. Intevac evaluates the inventory carrying value for potential excess and obsolete inventory exposures by analyzing historical and anticipated demand. In addition, inventories are evaluated for potential obsolescence due to the effect of known and anticipated engineering change orders and new products. If actual demand were to be substantially lower than estimated, additional inventory adjustments for excess or obsolete inventory might be required, which could have a material adverse effect on Intevac s business, financial condition and results of operations.

Warranty

Intevac estimates the costs that may be incurred under the warranty it provides and records a liability in the amount of such costs at the time the related revenue is recognized. Estimated warranty costs are determined by analyzing specific product and historical configuration statistics and regional warranty support costs. Intevac s warranty obligation is affected by product failure rates, material usage, and labor costs incurred in correcting product failures during the warranty period. As Intevac s customer service engineers and process support engineers are highly trained and deployed globally, labor availability is a significant factor in determining labor costs. The quantity and availability of critical replacement parts is another significant factor in estimating warranty costs. Unforeseen component failures or exceptional component performance can also result in changes to warranty costs. If actual warranty costs differ substantially from our estimates, revisions to the estimated warranty liability would be required.

Income Taxes

Intevac accounts for income taxes by recognizing deferred tax assets and liabilities using enacted tax rates for the effect of temporary differences between the book and tax bases of recorded assets and liabilities, net operating losses and tax credit carryforwards. Deferred tax assets are also reduced by a valuation allowance if it is more likely than not that a portion of the deferred tax asset will not be realized. Management has determined that it is more likely than not that its future taxable income will not be sufficient to realize its entire deferred tax assets.

The effective tax rate is highly dependent upon the geographic composition of worldwide earnings, tax regulations governing each region, non-tax deductible expenses and availability of tax credits. Management carefully monitors the changes in many factors and adjusts the effective income tax rate as required. If actual results differ from these estimates, Intevac could be required to record additional valuation allowances on deferred tax assets or adjust its effective income tax rate, which could have a material adverse effect on Intevac s business, financial condition and results of operations.

The calculation of tax liabilities involves significant judgment in estimating the impact of uncertainties in the application of complex tax laws. Resolution of these uncertainties in a manner inconsistent with Intevac s expectations could have a material impact on Intevac s results of operations and financial condition.

Valuation of Acquisition-Related Contingent Consideration

Contingent consideration related to a business combination is recorded at the acquisition date at the estimated fair value of the contingent payments. The acquisition date fair value is measured based on the consideration expected to be transferred (probability-weighted), discounted back to present value. The discount rate used is determined at the time of the acquisition in accordance with accepted valuation methods. The fair value of the acquisition-related contingent consideration is remeasured at the estimated fair value at each reporting period with the change in fair value recognized as income or expense in the consolidated statements of operations.

Equity-Based Compensation

Intevac records compensation expense for equity-based awards using the Black-Scholes option pricing model. This model requires Intevac to estimate the expected volatility of the price of Intevac s common stock and the expected life of the equity-based awards. Estimating volatility and expected life requires significant judgment and an analysis of historical data. Beginning January 1, 2017, Intevac accounts for forfeitures as they occur rather than estimating expected forfeitures. Intevac may have to increase or decrease compensation expense for equity-based awards if actual results differ significantly from Intevac s estimates.

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

Interest rate risk. Intevac s exposure to market risk for changes in interest rates relates primarily to its investment portfolio. Intevac does not use derivative financial instruments in Intevac s investment portfolio. The Company has adopted an investment policy and established guidelines relating to credit quality, diversification and maturities of its investments in order to preserve principal and maintain liquidity. All investment securities in Intevac s portfolio have an investment grade credit rating. Investments typically consist of money market funds, certificates of deposit, commercial paper, obligations of the U.S. government and its agencies, corporate debt securities, asset backed securities and municipal bonds.

The table below presents principal amounts and related weighted-average interest rates by year of expected maturity for Intevac s investment portfolio at December 30, 2017.

	2018	2019	2020	Total	Fair Value
		(In thousands, except percentages)			
Cash equivalents					
Variable rate amounts	$ 6,746	$	$	$ 6,746	$ 6,746
Weighted-average rate	1.18%				
Short-term investments					
Fixed rate amounts	$ 15,710	$	$	$ 15,710	$ 15,698
Weighted-average rate	1.27%				
Long-term investments					
Fixed rate amounts	$	$ 6,382	$ 500	$ 6,882	$ 6,849
Weighted-average rate		1.90%	1.99%		
Total investment portfolio	$ 22,456	$ 6,382	$ 500	$ 29,338	$ 29,293

Foreign exchange risk. From time to time, Intevac enters into foreign currency forward exchange contracts to hedge certain of its anticipated foreign currency re-measurement exposures and to offset certain operational exposures from the impact of changes in foreign currency exchange rates. The objective of these contracts is to minimize the impact of foreign currency exchange rate movements on Intevac s operating results. The derivatives have maturities of approximately 30 days. The notional amount of the Company s foreign currency derivatives was $1.3 million at

December 30, 2017 and $1.1 million at December 31, 2016.

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Item 8. ***Financial Statements and Supplementary Data***

INTEVAC, INC.

CONSOLIDATED FINANCIAL STATEMENTS

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Stockholders

Intevac, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Intevac, Inc. (a Delaware corporation) and its subsidiaries (the Company) as of December 30, 2017 and December 31, 2016, and the related consolidated statements of operations, comprehensive income (loss), stockholders equity, and cash flows for each of the three years in the period ended December 30, 2017, and the related notes (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 as of December 30, 2017 and December 31, 2016, and the results of its operations and its cash flows for each of the three years in the period ended December 30, 2017, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company s internal control over financial reporting as of December 30, 2017, based on criteria established in *Internal Control Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated February 14, 2018, expressed an unqualified opinion.

Basis for Opinion

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

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

/s/ BPM LLP

We have served as the Company s auditor since 2015.

San Jose, California

February 14, 2018

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INTEVAC, INC.

CONSOLIDATED BALANCE SHEETS

	December 30, 2017	December 31, 2016
	(In thousands, except par value)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 19,941	$ 27,043
Short-term investments	15,698	17,602
Trade and other accounts receivable, net of allowances of $0 at both December 30, 2017 and December 31, 2016	20,474	17,447
Inventories	33,792	24,876
Prepaid expenses and other current assets	2,524	1,768
Total current assets	92,429	88,736
Property, plant and equipment, net	12,478	11,237
Long-term investments	6,849	3,593
Restricted cash	1,000	1,602
Intangible assets, net of amortization of $6,884 and $6,129 at December 30, 2017 and December 31, 2016, respectively	1,503	2,258
Other long-term assets	764	898
Total assets	$ 115,023	$ 108,324
LIABILITIES AND STOCKHOLDERS EQUITY		
Current liabilities:		
Accounts payable	$ 3,949	$ 5,323
Accrued payroll and related liabilities	6,818	4,220
Other accrued liabilities	7,688	17,011
Customer advances	11,026	5,422
Total current liabilities	29,481	31,976
Other long-term liabilities	2,879	3,082
Commitments and contingencies		
Stockholders equity:		
Undesignated preferred stock, $0.001 par value, 10,000 shares authorized, no shares issued and outstanding		
Common stock, $0.001 par value :		
Authorized shares 50,000 issued and outstanding shares 21,811 and 20,939 at December 30, 2017 and December 31, 2016, respectively	22	21
Additional paid-in capital	177,521	171,314
Treasury stock, 4,845 shares at both December 30, 2017 and December 31, 2016	(28,489)	(28,489)

Accumulated other comprehensive income	490	321
Accumulated deficit	(66,881)	(69,901)
Total stockholders equity	82,663	73,266
Total liabilities and stockholders equity	$ 115,023	$ 108,324

See accompanying notes.

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INTEVAC, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended,		
	December 30, 2017	December 31, 2016	January 2, 2016
	(In thousands, except per share amounts)		
Net revenues:			
Systems and components	$ 104,856	$ 74,342	$ 68,072
Technology development	7,991	5,782	7,088
Total net revenues	112,847	80,124	75,160
Cost of net revenues:			
Systems and components	60,120	45,263	43,700
Technology development	7,064	4,452	5,143
Total cost of net revenues	67,184	49,715	48,843
Gross profit	45,663	30,409	26,317
Operating expenses:			
Research and development	17,724	18,156	15,661
Selling, general and administrative	23,314	19,916	19,638
Acquisition-related (benefit), net	(223)	(100)	(244)
Total operating expenses	40,815	37,972	35,055
Operating income (loss)	4,848	(7,563)	(8,738)
Interest income	291	195	179
Other income (expense), net	82	178	(52)
Income (loss) before income taxes	5,221	(7,190)	(8,611)
Provision for income taxes	1,103	251	555
Net income (loss)	$ 4,118	$ (7,441)	$ (9,166)
Net income (loss) per share:			
Basic	$ 0.19	$ (0.36)	$ (0.41)
Diluted	$ 0.18	$ (0.36)	$ (0.41)
Weighted average shares outstanding:			
Basic	21,555	20,761	22,218
Diluted	22,920	20,761	22,218

See accompanying notes.

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INTEVAC, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

	Year Ended,		
	December 30, 2017	December 31, 2016	January 2, 2016
	(In thousands)		
Net income (loss)	$ 4,118	$ (7,441)	$ (9,166)
Other comprehensive income (loss), before tax			
Change in unrealized net loss on available-for-sale investments	(23)	18	(39)
Foreign currency translation gains and losses	192	(109)	(168)
Other comprehensive income (loss), before tax	169	(91)	(207)
Income tax expense related to items in other comprehensive income (loss)			
Other comprehensive income (loss), net of tax	169	(91)	(207)
Comprehensive income (loss)	$ 4,287	$ (7,532)	$ (9,373)

See accompanying notes.

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INTEVAC, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS EQUITY

(In thousands)

	Common Stock			Treasury Stock		Accumulated		
	Shares	Amount	Additional Paid-In Capital	Shares	Amount	Other Comprehensive Income	Accumulated Deficit	Total Stockholders Equity
Balance at January 3, 2015	23,275	$ 23	$ 161,271	1,426	$ (9,989)	$ 619	$ (53,294)	$ 98,630
Shares issued in connection with:								
Exercise of stock options	54		239					239
Settlement of RSUs	113							
Employee stock purchase plan	374		1,460					1,460
Shares withheld in connection with net share settlement of RSUs	(25)		(132)					(132)
Equity-based compensation expense			3,296					3,296
Grant of RSUs to settle accrued bonus			380					380
Net loss							(9,166)	(9,166)
Other comprehensive loss						(207)		(207)
Common stock repurchases	(3,419)	(3)		3,419	(18,500)			(18,503)
Balance at January 2, 2016	20,372	$ 20	$ 166,514	4,845	$ (28,489)	$ 412	$ (62,460)	$ 75,997
Shares issued in connection with:								
Exercise of stock options	9		38					38
Settlement of RSUs	269							
Employee stock purchase plan	384	1	1,450					1,451
Shares withheld in connection with net share settlement of RSUs	(95)		(426)					(426)
Equity-based compensation expense			3,254					3,254
Grant of RSUs to settle accrued bonus			484					484

Net loss							(7,441)	(7,441)
Other comprehensive loss						(91)		(91)
Balance at December 31, 2016	20,939	$ 21	$ 171,314	4,845	$ (28,489)	$ 321	$ (69,901)	$ 73,266
Cumulative effect of accounting change			1,098				(1,098)	
Shares issued in connection with:								
Exercise of stock options	135		878					878
Settlement of RSUs	505							
Employee stock purchase plan	406	1	1,550					1,551
Shares withheld in connection with net share settlement of RSUs	(174)		(1,999)					(1,999)
Equity-based compensation expense			4,075					4,075
Grant of RSUs to settle accrued bonus			605					605
Net income							4,118	4,118
Other comprehensive income						169		169
Balance at December 30, 2017	21,811	$ 22	$ 177,521	4,845	$ (28,489)	$ 490	$ (66,881)	$ 82,663

See accompanying notes.

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INTEVAC, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

	December 30, 2017	Year Ended December 31, 2016 (In thousands)	January 2, 2016
Operating activities			
Net income (loss)	$ 4,118	$ (7,441)	$ (9,166)
Adjustments to reconcile net income (loss) to net cash and cash equivalents provided by (used in) operating activities:			
Depreciation & amortization	3,116	3,983	3,743
Net amortization (accretion) of investment premiums and discounts	42	128	319
Amortization of intangible assets	755	854	854
Equity-based compensation	4,178	3,744	3,620
Deferred income taxes	(1)	9	(12)
Change in the fair value of acquisition-related contingent consideration	(223)	(100)	(244)
Loss (gain) on disposal of equipment		(136)	271
Changes in assets and liabilities:			
Accounts receivable	(3,027)	(5,137)	(223)
Inventories	(8,916)	(6,116)	452
Prepaid expenses and other assets	(621)	496	(1,382)
Accounts payable	(1,374)	(627)	1,310
Accrued payroll and other accrued liabilities	(6,029)	12,329	19
Customer advances	5,604	1,797	1,074
Total adjustments	(6,496)	11,224	9,801
Net cash and cash equivalents provided by (used in) operating activities	(2,378)	3,783	635
Investing activities			
Purchase of investments	(26,581)	(12,429)	(21,058)
Proceeds from sales and maturities of investments	25,164	24,005	32,900
Proceeds from sale of equipment		208	11
Decrease in restricted cash	602	178	
Purchase of equipment	(4,356)	(3,373)	(3,117)
Net cash and cash equivalents provided by (used in) investing activities	(5,171)	8,589	8,736
Financing activities			
Proceeds from issuance of common stock	2,429	1,489	1,699
Common stock repurchases			(18,503)
Taxes paid related to net share settlement	(1,999)	(426)	(132)

Payment of acquisition-related contingent consideration		(174)		(31)		
Net cash and cash equivalents provided by (used in) financing activities		256		1,032		(16,936)
Effect of exchange rate changes on cash		191		(107)		(171)
Net increase (decrease) in cash and cash equivalents		(7,102)		13,297		(7,736)
Cash and cash equivalents at beginning of period		27,043		13,746		21,482
Cash and cash equivalents at end of period	$	19,941	$	27,043	$	13,746
Cash paid (received) for:						
Income taxes	$	902	$	516	$	1,190
Income tax refund	$	(19)	$	(524)	$	

See accompanying notes.

INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Summary of Significant Accounting Policies

Principles of Consolidation and Basis of Presentation

The consolidated financial statements include the accounts of Intevac, Inc. and its subsidiaries (Intevac or the Company) after elimination of inter-company balances and transactions.

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 amounts reported in the consolidated financial statements and accompanying notes. Actual results could differ materially from those estimates.

Change in Fiscal Year End Date

On February 19, 2014, the Board of Directors of the Company approved the Company s change to a 52-53 week fiscal year ending on the Saturday nearest to December 31 of each year in order to improve the alignment of financial and business processes and to streamline financial reporting. Each fiscal quarter consists of 13 weeks, with an occasional fourth quarter extending to 14 weeks, if necessary, for the fiscal year to end on the Saturday nearest to December 31. The Company s fiscal 2017, fiscal 2016 and fiscal 2015 years ended on December 30, 2017, December 31, 2016 and on January 2, 2016, respectively.

Cash, Cash Equivalents and Investments

Intevac considers all highly liquid investments with original maturities of three months or less when purchased to be cash equivalents. Available-for-sale securities, comprised of certificates of deposit, commercial paper, obligations of the U.S. government and its agencies, corporate debt securities, asset backed securities and municipal bonds, are carried at fair value, with unrealized gains and losses recorded within other comprehensive income (loss) as a separate component of stockholders equity. Realized gains and losses and declines in value judged to be other than temporary, if any, on available-for-sale securities are included in earnings. Purchases and sales of investment securities are recognized on a trade date basis. The cost of investment securities sold is determined by the specific identification method.

Restricted Cash

Restricted cash of $600,000 as of December 30, 2017 secures a standby letter of credit obligation associated with a lease obligation and the restriction on the cash will be removed when the letter of credit expires. In addition Intevac pledged $400,000 as collateral for various guarantees with its bank.

Derivative Instruments and Hedging Arrangements

Foreign Exchange Exposure Management Intevac enters into forward foreign currency contracts that economically hedge the gains and losses generated by the re-measurement of certain recorded assets and liabilities in a non-functional currency and to offset certain operational exposures from the impact of changes in foreign currency exchange rates. Such exposures result from the portion of the Company s operations, assets and liabilities that are denominated in currencies other than the U.S. dollar, primarily the Singapore dollar. These foreign currency exchange contracts are entered into to support transactions made in the normal course of business, and accordingly, are not speculative in nature. The contracts are for periods consistent with the terms of the underlying transactions, generally one year or less. Changes in the fair value of these undesignated hedges are recognized in other income (expense), net immediately as an offset to the changes in the fair value of the asset or liability being hedged.

INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Fair Value Measurement Definition and Hierarchy

Intevac reports certain financial assets and liabilities at fair value. Intevac defines fair value as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

Fair value measurements are classified and disclosed in one of the following three categories:

Level 1 Valuations based on quoted prices in active markets for identical assets or liabilities.

Level 2 Valuations based on other than quoted prices in active markets for identical assets and liabilities, quoted prices for identical or similar assets or liabilities in inactive markets, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 Valuations based on inputs that are generally unobservable and typically reflect management s estimates of assumptions that market participants would use in pricing the asset or liability.

Trade Accounts Receivables and Doubtful Accounts

Intevac evaluates the collectibility of trade accounts receivable on an ongoing basis and provides reserves against potential losses when appropriate. Management analyzes historical bad debts, customer concentrations, customer creditworthiness, changes in customer payment tendencies and current economic trends when evaluating the adequacy of the allowance for doubtful accounts. Customer accounts are written off against the allowance when the amount is deemed uncollectible.

Inventories

Inventories are generally stated at the lower of cost or net realizable value, with cost determined on an average cost basis.

Property, Plant and Equipment

Equipment and leasehold improvements are stated at cost. Depreciation is computed using the straight-line method over the estimated useful lives of the assets as follows: computers and software, 3 years; machinery and equipment, 5 years; furniture, 7 years; vehicles, 4 years; and leasehold improvements, remaining lease term.

Contingent Consideration and Purchased Intangible Assets

Contingent consideration related to a business combination is recorded at the acquisition date at the estimated fair value of the contingent payments. The acquisition date fair value is measured based on the consideration expected to be transferred (probability-weighted), discounted back to present value. The discount rate used is determined at the time of the acquisition in accordance with accepted valuation methods. The fair value of the acquisition-related contingent consideration is remeasured at the estimated fair value at each reporting period with the change in fair value recognized as income or expense in the consolidated statements of operations.

Purchased intangible assets other than goodwill are amortized over their useful lives unless these lives are determined to be indefinite. Purchased intangible assets are carried at cost, less accumulated amortization. Amortization is computed over the estimated useful lives of the respective assets, generally one to thirteen years using the straight line method. In 2012, as a result of its impairment analysis, Intevac wrote off all of the goodwill in both its Thin-film Equipment and Photonics reporting units.

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INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Impairment of Long-Lived Assets

Long-lived assets and certain identifiable finite-lived intangible assets to be held and used are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Determination of recoverability of long-lived assets is based on an estimate of undiscounted future cash flows resulting from the use of the asset and its eventual disposition. Measurement of an impairment loss for long-lived assets and certain identifiable intangible assets that management expects to hold and use is based on the fair value of the asset. When an impairment loss is recognized, the carrying amount of the asset is reduced to its estimated fair value. No impairment charges were recognized in fiscal 2017, 2016 and 2015.

Income Taxes

Deferred tax assets and liabilities are recognized using enacted tax rates for the effect of temporary differences between book and tax bases of recorded assets and liabilities. Deferred tax assets are reduced by a valuation allowance if it is more likely than not that a portion of the deferred tax asset will not be realized.

On a quarterly basis, Intevac provides for income taxes based upon an annual effective income tax rate. The effective tax rate is highly dependent upon the level of Intevac s projected earnings, the geographic composition of worldwide earnings, tax regulations governing each region, net operating loss carryforwards, availability of tax credits and the effectiveness of Intevac s tax planning strategies. Intevac carefully monitors the changes in many factors and adjust its effective income tax rate on a timely basis. If actual results differ from the estimates, this could have a material effect on Intevac s business, financial condition and results of operations.

The calculation of tax liabilities involves significant judgment in estimating the impact of uncertainties in the application of complex tax laws. Resolution of these uncertainties in a manner inconsistent with Intevac s expectations could have a material effect on Intevac s business, financial condition and results of operations.

Intevac recognizes accrued interest and penalties related to unrecognized tax benefits in the provision for income taxes.

Sales and Value Added Taxes

Taxes collected from customers and remitted to governmental authorities are presented on a net basis in the accompanying consolidated statements of operations.

Revenue Recognition

Intevac recognizes revenue when persuasive evidence of an arrangement exists, delivery has occurred and title and risk of loss have passed to Intevac s customer or services have been rendered, the price is fixed or determinable, and collectibility is reasonably assured. Intevac s shipping terms are customarily FOB shipping point or equivalent terms. Intevac s revenue recognition policy generally results in revenue recognition at the following points: (1) for all transactions where legal title passes to the customer upon shipment, Intevac recognizes revenue upon shipment for all products that have been demonstrated to meet product specifications prior to shipment; the portion of revenue associated with certain installation-related tasks is deferred, and that revenue is recognized upon completion of the installation-related tasks; (2) for products that have not been demonstrated to meet product specifications prior to shipment, revenue is recognized at customer acceptance; and (3) for arrangements containing multiple elements, the revenue relating to the undelivered elements is deferred until delivery of the deferred elements. When a sales arrangement contains multiple elements, Intevac allocates revenue to each element based on a selling price hierarchy. The selling price for a deliverable is based

INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

on its VSOE if available, TPE if VSOE is not available, or best ESP if neither VSOE nor TPE is available. Intevac generally utilizes the ESP due to the nature of its products. In certain cases, technology upgrade sales are accounted for as multiple-element arrangements, usually split between delivery of the parts and installation on the customer s systems. In these cases, Intevac recognizes revenue for the relative sales price of the parts upon shipment and transfer of title, and recognizes revenue for the relative sales price of installation services when those services are completed. Revenue related to sales of spare parts is generally recognized upon shipment. Intevac recognizes revenue in certain circumstances before delivery has occurred (commonly referred to as bill and hold transactions). In such circumstances, among other things, risk of ownership has passed to the customer, the customer has made a written fixed commitment to purchase the finished goods, the customer has requested the finished goods be held for future delivery as scheduled and designated by them, and no additional performance obligations exist by Intevac. For these transactions, the finished goods are segregated from inventory and normal billing and credit terms granted. Revenue related to services is generally recognized upon completion of the services. In addition, Intevac uses the installment method to record revenue based on cash receipts in situations where the account receivable is collected over an extended period of time and in management s judgment the degree of collectibility is uncertain.

Intevac performs research and development work under various government-sponsored research contracts. Revenue on cost-plus-fee contracts is recognized to the extent of costs actually incurred plus a proportionate amount of the fee earned. Intevac considers fixed fees under cost-plus-fee contracts to be earned in proportion to the allowable costs actually incurred in performance of the contract. Revenue on fixed-price contracts is recognized on a milestone method or percentage-of-completion method of contract accounting. For contracts structured as milestone agreements, revenue is recognized when a specified milestone is achieved, provided that (1) the milestone event is substantive in nature and there is substantial uncertainty about the achievement of the milestone at the inception of the agreement, (2) the milestone payment is non-refundable, and (3) there is no continuing performance obligations associated with the milestone payment. Any milestone payments received prior to satisfying these revenue recognition criteria are deferred. Intevac generally determines the percentage completed based on the percentage of costs incurred to date in relation to total estimated costs expected through completion of the contract. When estimates of total costs to be incurred on a contract exceed estimates of total revenue to be earned, a provision for the entire loss on the contract is recorded in the period the loss is determined.

Advertising Costs

Advertising costs are expensed as incurred. Advertising costs were not material for all periods presented.

Foreign Currency Translation

The functional currency of Intevac s foreign subsidiaries in Singapore and Hong Kong and the Taiwan branch is the U.S. dollar. The functional currency of Intevac s foreign subsidiaries in China, Malaysia and Korea is the local currency of the country in which the respective subsidiary operates. Assets and liabilities recorded in foreign currencies are translated at year-end exchange rates; revenues and expenses are translated at average exchange rates during the year. The effect of foreign currency translation adjustments are included in stockholders equity as a component of accumulated other comprehensive income in the accompanying consolidated balance sheets. The effects of foreign currency transactions are included in other income in the determination of net loss. Net income (losses) from foreign currency transactions were ($107,000), ($99,000), and $80,000 in 2017, 2016 and 2015, respectively.

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INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Comprehensive Income

The changes in accumulated other comprehensive income by component, were as follows for the years ended December 30, 2017 and December 31, 2016:

	Foreign currency	Unrealized holding gains (losses) on available-for-sale investments	Total
		(in thousands)	
Balance at January 2, 2016	$ 452	$ (40)	$ 412
Other comprehensive income (loss) before reclassification	(109)	18	(91)
Amounts reclassified from other comprehensive income (loss)			
Net current-period other comprehensive income (loss)	(109)	18	(91)
Balance at December 31, 2016	$ 343	$ (22)	$ 321
Other comprehensive income (loss) before reclassification	192	(23)	169
Amounts reclassified from other comprehensive income (loss)			
Net current-period other comprehensive income (loss)	192	(23)	169
Balance at December 30, 2017	$ 535	$ (45)	$ 490

Employee Stock Plans

Intevac has equity-based compensation plans that provide for the grant to employees of equity-based awards, including incentive or non-statutory stock options, restricted stock, stock appreciation rights, restricted stock units (RSUs), performance units and performance bonus awards. In addition, these plans provide for the grant of non-statutory stock options and RSUs to non-employee directors and consultants. Intevac also has an employee stock purchase plan, which provides Intevac s employees with the opportunity to purchase Intevac common stock at a discount through payroll deductions. See Note 2 for a complete description of these plans and their accounting treatment.

Recent Accounting Pronouncements

In May 2017, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2017-09, *Compensation Stock Compensation: Scope of Modification Accounting*, which provides guidance about which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting. An entity will account for the effects of a modification unless the fair value of the modified award is the same as the original award, the vesting conditions of the modified award are the same as the original award and the classification of the modified award as an equity instrument or liability instrument is the same as the original award. This update becomes effective and will be adopted by Intevac in the first quarter of fiscal 2019. The update is to be adopted prospectively to an award modified on or after the adoption date. Early adoption is permitted. Intevac does not expect the adoption of this update to have a material impact on its consolidated financial statements.

INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

In March 2017, the FASB issued ASU 2017-08, *Receivables Nonrefundable Fees and Other Costs (Subtopic 310-20): Premium Amortization on Purchased Callable Debt Securities*. ASU 2017-08 amends the amortization period for certain purchased callable debt securities held at a premium, shortening such period to the earliest call date. This update becomes effective and will be adopted by Intevac in the first quarter of fiscal 2019. Intevac does not expect the adoption of this update to have a material impact on its consolidated financial statements.

In January 2017, the FASB issued ASU 2017-04, *Intangibles Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment*. ASU 2017-04 eliminates Step 2 from the goodwill impairment test. Under Step 2, an entity had to perform procedures to determine the fair value at the impairment testing date of its assets and liabilities (including unrecognized assets and liabilities) following the procedure that would be required in determining the fair value of assets acquired and liabilities assumed in a business combination. Instead, under the amendments in ASU 2017-04, an entity should perform its annual, or interim, goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An entity should recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit s fair value; however, the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. Additionally, an entity should consider income tax effects from any tax deductible goodwill on the carrying amount of the reporting unit when measuring the goodwill impairment loss, if applicable. An entity still has the option to perform the qualitative assessment for a reporting unit to determine if the quantitative impairment test is necessary. This update becomes effective and will be adopted by Intevac in the first quarter of fiscal 2020. Early adoption is permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017. Intevac does not expect the adoption of this update to have a material impact on its consolidated financial statements.

In March 2016, the FASB issued ASU 2016-09 *Compensation Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting*. We have adopted these amendments beginning in the first quarter of 2017. Starting in the first quarter of fiscal 2017, stock-based compensation excess tax benefits or deficiencies are reflected in the Consolidated Statements of Operations as a component of the provision for income taxes, whereas they previously were recognized in equity. Additionally, our Consolidated Statements of Cash Flows now presents excess tax benefits as an operating activity. Finally, we have elected to account for forfeitures as they occur, rather than estimate expected forfeitures. The net cumulative effect of this change was recognized as a $1.1 million charge to the accumulated deficit as of January 1, 2017.

In May 2014, the FASB issued ASU 2014-09 *(Topic 606) Revenue from Contracts with Customers.* Topic 606 supersedes the revenue recognition requirements in Accounting Standards Codification Topic 605, Revenue Recognition , and requires entities to recognize revenue when they transfer control of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled to in exchange for those goods or services. We expect revenue recognition for our equipment sales arrangements, which includes systems, technology upgrades, service and spare parts, to remain materially consistent with our historical practice.

We expect to recognize revenue for equipment sales at a point in time following the transfer of control of such products to the customer, which typically occurs upon shipment or delivery depending on the terms of the underlying contracts. Our contracts with customers may include multiple performance obligations. For such arrangements, we expect to allocate revenue to each performance obligation based on its relative standalone selling price. We generally determine standalone selling prices based on the prices charged to customers or using expected cost plus margin. The expected costs associated with our base warranties will continue to be recognized as expense when the equipment is sold.

INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

We expect to recognize revenue for cost plus fixed fee and firm fixed priced government contracts over time under the cost-to-cost method for the majority of our government contracts, which is consistent with our current revenue recognition model. Revenue on the majority of our government contracts will continue to be recognized over time because of the continuous transfer of control to the customer. For U.S. government contracts, this continuous transfer of control to the customer is supported by clauses in the contract that allow the customer to unilaterally terminate the contract for convenience, pay us for costs incurred plus a reasonable profit and take control of any work in process. Similarly, for non-U.S. government contracts, the customer typically controls the work in process as evidenced either by contractual termination clauses or by our rights to payment for work performed to date to deliver products or services that do not have an alternative use to the company. Under the new standard, the cost-to-cost measure of progress continues to best depict the transfer of control of assets to the customer, which occurs as we incur costs.

The new standard must be adopted by Intevac in our fiscal year beginning December 31, 2017. We intend to adopt the new standard as of December 31, 2017, using the modified retrospective transition method applied to those contracts which were not completed as of that date. Upon adoption, we will recognize the cumulative effect of adopting this guidance as an adjustment to our opening balance of the accumulated deficit. Prior periods will not be retrospectively adjusted. Based on our preliminary assessment, we expect the adoption of Topic 606 will not have a material impact to our consolidated financial statements, including the presentation of revenues in our Consolidated Statements of Operations. We also do not expect the standard to have a material impact on our Consolidated Balance Sheets. The immaterial impact primarily relates to reclassifications among financial statement accounts to align with the new standard. Most notably, contracts in process, net will be reclassified as receivables or contract assets based on amounts billed or unbilled, respectively. Advance payments and billings in excess of costs incurred and deferred revenue will be combined and reclassified as contract liabilities. Our contract balances will be reported in a net contract asset or liability position on a contract-by-contract basis at the end of each reporting period.

2. Equity-Based Compensation

Intevac accounts for share-based awards in accordance with the provisions of the accounting guidance which requires the measurement and recognition of compensation expense for all share-based payment awards made to employees, consultants and directors based upon the grant-date fair value of those awards. The estimated fair value of Intevac s equity-based awards is amortized over the awards service periods using the graded vesting attribution method.

Descriptions of Plans

Equity Incentive Plans

At December 30, 2017, Intevac had equity-based awards outstanding under the 2012 Equity Incentive Plan and the 2004 Equity Incentive Plan (the Plans) and the 2003 Employee Stock Purchase Plan (the ESPP). Intevac s stockholders approved all of these plans.

The Plans are a broad-based, long-term retention program intended to attract and retain qualified management and employees, and align stockholder and employee interests. The Plans permit the grant of incentive or non-statutory stock options, restricted stock, stock appreciation rights, RSUs and performance shares. Option price, vesting period, and other terms are determined by the administrator of the Plans, but the option price shall generally not be less than 100% of the fair market value per share on the date of grant. As of December 30, 2017, 6.6 million shares of common stock were authorized for future issuance under the Plans. The 2012 Plan expires no later than May 8, 2022.

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INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2003 Employee Stock Purchase Plan

In 2003, Intevac s stockholders approved adoption of the ESPP, which serves as the successor to the Employee Stock Purchase Plan originally adopted in 1995. Upon adoption of the ESPP, all shares available for issuance under the prior plan were transferred to the ESPP. The ESPP provides that eligible employees may purchase Intevac common stock through payroll deductions at a price equal to 85% of the lower of the fair market value at the beginning of the applicable offering period or at the end of each applicable purchase interval. Offering periods are generally two years in length, and consist of a series of six-month purchase intervals. Eligible employees may join the ESPP at the beginning of any six-month purchase interval. Under the terms of the ESPP, employees can choose to have up to 15% of their base earnings withheld to purchase Intevac common stock. As of December 30, 2017, 336,000 shares remained available for issuance under the ESPP.

The effect of recording equity-based compensation for fiscal 2017, 2016 and 2015 was as follows (in thousands):

	2017	2016	2015
Equity-based compensation by type of award:			
Stock options	$ 1,176	$ 880	$ 963
RSUs	2,598	2,190	1,711
Employee stock purchase plan	404	674	946
Total equity-based compensation	$ 4,178	$ 3,744	$ 3,620

Equity-based compensation expense is based on awards ultimately expected to vest and such amount has been historically reduced for estimated forfeitures. Beginning January 1, 2017, Intevac accounts for forfeitures as they occur, rather than estimating expected forfeitures. The net cumulative effect of this change was recognized as a $1.1 million increase to the accumulated deficit as of January 1, 2017.

Stock Options

The exercise price of each stock option equals the market price of Intevac s stock on the date of grant. Most options are scheduled to vest over three and/or four years and expire no later than ten years after the grant date. The fair value of each option grant is estimated on the date of grant using the Black-Scholes option pricing model. This model was developed for use in estimating the value of publicly traded options that have no vesting restrictions and are fully transferable. Intevac s employee stock options have characteristics significantly different from those of publicly traded options. The weighted-average assumptions used in the model are outlined in the following table:

	2017	2016	2015
Stock Options:			

Weighted-average fair value of grants per share	$ 4.52	$ 1.76	$ 2.05
Expected volatility	40.49%	43.86%	46.12%
Risk free interest rate	1.81%	0.97%	1.42%
Expected term of options (in years)	4.22	4.28	3.99
Dividend yield	None	None	None

The computation of the expected volatility assumption used in the Black-Scholes calculations for new grants is based on historical volatility of Intevac s stock price. The risk-free interest rate is based on the yield available on U.S. Treasury Strips with an equivalent remaining term. The expected life of employee stock options

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INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

represents the weighted-average period that the stock options are expected to remain outstanding and was determined based on historical experience of similar awards, giving consideration to the contractual terms of the stock-based awards and vesting schedules. The dividend yield assumption is based on Intevac s history of not paying dividends and the assumption of not paying dividends in the future.

A summary of the stock option activity is as follows:

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
Options outstanding at December 31, 2016	2,740,364	$ 7.00	3.64	$ 5,837,900
Options granted	417,325	$ 12.28		
Options cancelled and forfeited	(96,546)	$ 11.82		
Options exercised	(135,282)	$ 6.49		
Options outstanding at December 30, 2017	2,925,861	$ 7.62	3.00	$ 2,292,521
Options exercisable at December 30, 2017	2,125,416	$ 7.17	2.04	$ 1,686,673

The total intrinsic value of options exercised during fiscal years 2017, 2016 and 2015 was $586,000, $13,000 and $65,000, respectively. At December 30, 2017, Intevac had $1.4 million of total unrecognized compensation expense related to stock option plans that will be recognized over the weighted-average period of 1.3 years.

RSUs

A summary of the RSU activity is as follows:

	Shares	Weighted Average Grant Date Fair Value	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
Non-vested RSUs at December 31, 2016	949,455	$ 4.64	1.04	$ 8,117,840
Granted	370,221	$ 11.37		
Vested	(504,841)	$ 4.47		
Cancelled	(45,384)	$ 7.06		
	769,451	$ 7.84	0.97	$ 5,270,739

Non-vested RSUs at December 30, 2017

Time-based RSUs are converted into shares of Intevac common stock upon vesting on a one-for-one basis. Time-based RSUs typically are scheduled to vest over three and/or four years. Vesting of time-based RSUs is subject to the grantee s continued service with Intevac. The compensation expense related to these awards is determined using the fair market value of Intevac common stock on the date of the grant, and the compensation expense is recognized over the vesting period. At December 30, 2017, Intevac had $2.5 million of total unrecognized compensation expense related to RSUs that will be recognized over the weighted-average period of 1.0 years.

Market condition-based RSUs vest upon the achievement of certain market conditions (our stock performance) during a set performance period (typically five years) subject to the grantee s continued service with Intevac through the date the applicable market condition is achieved. The fair value is based on the values calculated under the Monte Carlo simulation model on the grant date. Compensation cost is not adjusted in future

INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

periods for subsequent changes in the expected outcome of market related conditions. The compensation expense is recognized over the derived service period. Intevac granted 125,000 of such awards to certain executive officers in fiscal 2016. These awards have a derived service period of 2.8 years. The weighted-average assumptions used in the model are outlined in the following table.

	2016
Weighted-average fair value of grants per share	$ 2.46
Expected volatility	47.65%
Risk free interest rate	1.35%
Expected term (in years)	4.79
Dividend yield	None

The annual bonus for certain participants in the Company s annual incentive plan for fiscal 2016 was settled with RSUs with one year vesting issued in 2017. The Company recorded equity-based compensation expense related to the annual incentive plan of $102,000 in fiscal 2017 and $490,000 in fiscal 2016. In February 2017, 33 participants were granted stock awards to receive an aggregate of 134,000 shares of common stock with a weighted-average grant date fair value of $9.63 per share.

The annual bonus for certain participants in the Company s annual incentive plan for fiscal 2015 was settled with RSUs with one year vesting issued in 2016. The Company recorded equity-based compensation expense related to the annual incentive plan of $324,000 in fiscal 2015. In February 2016, 34 participants were granted stock awards to receive an aggregate of 266,000 shares of common stock with a weighted-average grant date fair value of $4.40 per share.

ESPP

The fair value of the employee stock purchase right is estimated on the date of grant using the Black-Scholes option pricing model with the following weighted-average assumptions:

	2017	2016	2015
Stock Purchase Rights:			
Weighted-average fair value of grants per share	$ 2.75	$ 1.55	$ 2.14
Expected volatility	43.51%	39.22%	43.45%
Risk free interest rate	1.22%	0.75%	0.45%
Expected term of purchase rights (in years)	0.65	1.87	1.36
Dividend yield	None	None	None

The expected life of purchase rights is the period of time remaining in the current offering period.

The ESPP activity during fiscal 2017, 2016 and 2015 is as follows:

	2017	2016	2015
	(in thousands, except per share amounts)		
Shares purchased	406	384	374
Weighted-average purchase price per share	$ 3.82	$ 3.78	$ 3.90
Aggregate intrinsic value of purchase rights exercised	$ 2,673	$ 514	$ 688

As of December 30, 2017, Intevac had $34,000 of total unrecognized compensation expense related to purchase rights that will be recognized over the weighted-average period of 0.08 years.

INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

3. Earnings Per Share

Intevac calculates basic earnings per share (EPS) using net income (loss) and the weighted-average number of shares outstanding during the reporting period. Diluted EPS includes the effect from potential issuance of common stock pursuant to the exercise of employee stock options and vesting of RSUs.

The following table sets forth the computation of basic and diluted net income (loss) per share:

	2017	2016	2015
	(in thousands, except per share amounts)		
Net income (loss)	$ 4,118	$ (7,441)	$ (9,166)
Weighted-average shares basic	21,555	20,761	22,218
Effect of dilutive potential common shares	1,365		
Weighted-average shares diluted	22,920	20,761	22,218
Net income (loss) per share basic	$ 0.19	$ (0.36)	$ (0.41)
Net income (loss) per share diluted	$ 0.18	$ (0.36)	$ (0.41)

The potentially dilutive securities were excluded (as common stock equivalents) from the computation of diluted net income (loss) per share for the periods presented as their effect would have been antidilutive:

	2017	2016	2015
	(in thousands, except per share amounts)		
Stock options to purchase common stock	867	2,740	2,434
RSUs	218	949	554
Employee stock purchase plan		181	168

4. Concentrations

Credit Risk and Significant Customers

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist of cash equivalents, short- and long-term investments, restricted cash, and accounts receivable. Intevac generally invests its excess cash in money market funds, certificates of deposit, commercial paper, obligations of the U.S. government and its agencies, corporate debt securities, asset backed securities and municipal bonds. The Company has adopted an investment policy and established guidelines relating to credit quality, diversification and maturities of its investments in order to preserve principal and maintain liquidity. All investment securities in Intevac s portfolio have an investment grade credit rating.

Intevac s accounts receivable tend to be concentrated in a limited number of customers. The following customers accounted for at least 10 percent of Intevac s accounts receivable at December 30, 2017 and December 31, 2016.

	2017	**2016**
Seagate Technology	70%	55%
HGST	*	10%

* Less than 10%

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INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Intevac s largest customers tend to change from period to period. Historically, a significant portion of Intevac s revenues in any particular period have been attributable to sales to a limited number of customers. Intevac performs credit evaluations of its customers financial condition and generally requires deposits on system orders but does not generally require collateral or other security to support customer receivables.

The following customers accounted for at least 10 percent of Intevac s consolidated net revenues in fiscal 2017, 2016, and/or 2015.

	2017	2016	2015
Seagate Technology	40%	34%	22%
U.S. Government	15%	22%	26%
Elbit Systems of America	*	10%	*
HGST	*	*	15%

* Less than 10%

Products

Disk manufacturing products contributed a significant portion of Intevac s revenues in fiscal 2017, 2016, and 2015. Intevac expects that the ability to maintain or expand its current levels of revenues in the future will depend upon continuing market demand for its products; its success in enhancing its existing systems and developing and manufacturing competitive disk manufacturing equipment, such as the 200 Lean; its success in utilizing Intevac s expertise in complex manufacturing equipment to develop and sell new equipment products for PV and DCP manufacturing and Intevac s success in developing military products based on its low-light technology.

5. Balance Sheet Details

Balance sheet details were as follows as of December 30, 2017 and December 31, 2016:

Trade and Other Accounts Receivable, Net

Receivables consisted of the following components:

	December 30, 2017	December 31, 2016
	(in thousands)	
Trade receivables and other	$ 17,479	$ 15,167
Unbilled costs and accrued profits	2,995	2,280

Less: allowance for doubtful accounts		
	$ 20,474	$ 17,447

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INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Inventories

Inventories are stated at the lower of average cost or market and consist of the following:

	December 30, 2017	December 31, 2016
	(in thousands)	
Raw materials	$ 19,881	$ 10,290
Work-in-progress	9,433	6,470
Finished goods	4,478	8,116
	$ 33,792	$ 24,876

Finished goods inventory consists primarily of completed systems at customer sites that are undergoing installation and acceptance testing.

Property, Plant and Equipment

	December 30, 2017	December 31, 2016
	(in thousands)	
Leasehold improvements	$ 15,035	$ 14,653
Machinery and equipment	44,766	41,678
	59,801	56,331
Less accumulated depreciation and amortization	47,323	45,094
Total property, plant and equipment, net	$ 12,478	$ 11,237

Customer Advances

Customer advances generally represent nonrefundable deposits invoiced by the Company in connection with receiving customer purchase orders and other events preceding acceptance of systems. Customer advances related to products that have not been shipped to customers and included in accounts receivable were $206,000 at December 30, 2017 and $53,000 at December 31, 2016, respectively.

Accounts Payable

Included in accounts payable is $163,000 and $349,000 of book overdraft at December 30, 2017 and December 31, 2016, respectively.

Other Accrued Liabilities

	December 30, 2017	December 31, 2016
	(in thousands)	
Deferred revenue	$ 5,287	$ 14,416
Other taxes payable	860	660
Accrued product warranties	757	829
Income taxes payable	262	246
Acquisition-related contingent consideration	103	329
Other	419	531
Total other accrued liabilities	$ 7,688	$ 17,011

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INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Other Long-Term Liabilities

	December 30, 2017	December 31 2016
	(in thousands)	
Deferred rent	$ 2,299	$ 2,392
Acquisition-related contingent consideration	259	430
Accrued product warranties	237	178
Accrued income taxes	84	82
Total other long-term liabilities	$ 2,879	$ 3,082

6. Purchased Intangible Assets, Net

Information regarding acquisition-related intangible assets is as follows:

	December 30, 2017			December 31, 2016		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
	(in thousands)					
Customer relationships	$ 3,119	$ 2,997	$ 122	$ 3,119	$ 2,869	$ 250
Purchased technology	5,148	3,767	1,381	5,148	3,140	2,008
Covenants not to compete	40	40		40	40	
Backlog	80	80		80	80	
Total amortizable intangible assets	$ 8,387	$ 6,884	$ 1,503	$ 8,387	$ 6,129	$ 2,258

Intangible assets by segment as of December 30, 2017 are as follows: Thin-film Equipment; $1.4 million and Photonics; $122,000.

Total amortization expense of purchased intangibles for fiscal 2017, 2016 and 2015 was $755,000, $854,000, and $854,000 respectively.

Estimated future amortization expense related to finite-lived purchased intangible assets as of December 30, 2017, is as follows.

(in thousands)	
2018	$ 615
2019	615
2020	273
	$ 1,503

7. Contingent Consideration

In connection with the acquisition of SIT, Intevac agreed to pay up to an aggregate of $7.0 million in cash to the selling shareholders if certain milestones were achieved over a specified period. Intevac has made payments to the selling shareholders for achievement of the first milestone in 2011, and for achievement of the second and third milestones in 2012. The fourth and final milestone was not achieved on the targeted date outlined in the acquisition agreement and will not be paid. There is no remaining contingent consideration obligation associated with the milestone agreement at December 30, 2017.

INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

In connection with the acquisition of SIT, Intevac also agreed to pay to the selling shareholders in cash a revenue earnout on Intevac s net revenue from commercial sales of certain products over a specified period up to an aggregate of $9.0 million. Intevac estimated the fair value of this contingent consideration on December 30, 2017 based on probability-based forecasted revenues reflecting Intevac s own assumptions concerning future revenue from such products.

The fair value measurement of contingent consideration is based on significant inputs not observable in the market and thus represents a Level 3 measurement. The following table represents the quantitative range of the significant unobservable inputs used in the calculation of fair value of the contingent consideration liability as of December 30, 2017. Significant increases or decreases in any of these inputs even in isolation would result in a significantly lower (higher) fair value measurement.

Quantitative Information about Level 3 Fair Value Measurements at December 30, 2017

	Fair Value	Valuation Technique	Unobservable Input	Range (Weighted Average)
	(in thousands, except for percentages)			
Revenue Earnout	$362	Discounted cash flow	Weighted-average cost of capital	12.1%
			Probability weighting of achieving revenue forecasts	10.0% - 80.0% (37.1%)

Any change in fair value of the contingent consideration subsequent to the acquisition date is recognized in operating income within the consolidated statement of operations. The following table represents a reconciliation of the change in the fair value measurement of the contingent consideration liability for fiscal 2017, 2016 and 2015:

	2017	2016	2015
	(in thousands)		
Beginning balance	$ 759	$ 890	$ 1,134
Changes in fair value	(223)	(100)	(244)
Cash payments made	(174)	(31)	
Ending balance	$ 362	$ 759	$ 890

INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

8. Financial Instruments

Cash, Cash Equivalents and Investments

Cash and cash equivalents, short-term investments and long-term investments consist of:

	December 30, 2017			
	Amortized Cost	Unrealized Holding Gains	Unrealized Holding Losses	Fair Value
	(in thousands)			
Cash and cash equivalents:				
Cash	$ 13,195	$	$	$ 13,195
Money market funds	6,746			6,746
Total cash and cash equivalents	$ 19,941	$	$	$ 19,941
Short-term investments:				
Certificates of deposit	$ 2,500	$ 1	$ 1	$ 2,500
Commercial paper	3,291			3,291
Corporate bonds and medium-term notes	4,502		5	4,497
Municipal bonds	500		3	497
U.S. treasury and agency securities	4,917		4	4,913
Total short-term investments	$ 15,710	$ 1	$ 13	$ 15,698
Long-term investments:				
Asset backed securities	$ 500	$	$	$ 500
Corporate bonds and medium-term notes	4,384		21	4,363
U.S. treasury and agency securities	1,998		12	1,986
Total long-term investments	$ 6,882	$	$ 33	$ 6,849
Total cash, cash equivalents, and investments	$ 42,533	$ 1	$ 46	$ 42,488

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INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

	December 31, 2016			
	Amortized Cost	Unrealized Holding Gains	Unrealized Holding Losses	Fair Value
	(in thousands)			
Cash and cash equivalents:				
Cash	$ 18,726	$	$	$ 18,726
Money market funds	8,317			8,317
Total cash and cash equivalents	$ 27,043	$	$	$ 27,043
Short-term investments:				
Commercial paper	$ 1,992	$	$ 1	$ 1,991
Corporate bonds and medium-term notes	8,586		6	8,580
Municipal bonds	600			600
U.S. treasury and agency securities	6,432		1	6,431
Total short-term investments	$ 17,610	$	$ 8	$ 17,602
Long-term investments:				
Corporate bonds and medium-term notes	$ 2,510	$	$ 11	$ 2,499
Municipal bonds	500		4	496
U.S. treasury and agency securities	597	1		598
Total long-term investments	$ 3,607	$ 1	$ 15	$ 3,593
Total cash, cash equivalents, and investments	$ 48,260	$ 1	$ 23	$ 48,238

The contractual maturities of available-for-sale securities at December 30, 2017 are presented in the following table.

	Amortized Cost	Fair Value
	(in thousands)	
Due in one year or less	$ 22,456	$ 22,444
Due after one through five years	6,882	6,849
	$ 29,338	$ 29,293

The following table provides the fair market value of Intevac s investments with unrealized losses that are not deemed to be other-than temporarily impaired as of December 30, 2017.

	December 30, 2017			
	In Loss Position for Less than 12 Months		In Loss Position for Greater than 12 Months	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
	(in thousands)			
Certificates of deposit	$ 1,249	$ 1	$	$
Corporate bonds and medium-term notes	7,446	23	1,099	3
Municipal bonds			497	3
U.S. treasury and agency securities	5,882	16		
	$ 14,577	$ 40	$ 1,596	$ 6

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INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

All prices for the fixed maturity securities including U.S. treasury and agency securities, certificates of deposit, commercial paper, corporate bonds, asset backed securities and municipal bonds are received from independent pricing services utilized by Intevac s outside investment manager. This investment manager performs a review of the pricing methodologies and inputs utilized by the independent pricing services for each asset type priced by the vendor. In addition, on at least an annual basis, the investment manager conducts due diligence visits and interviews with each pricing vendor to verify the inputs utilized for each asset class. The due diligence visits include a review of the procedures performed by each vendor to ensure that pricing evaluations are representative of the price that would be received to sell a security in an orderly transaction. Any pricing where the input is based solely on a broker price is deemed to be a Level 3 price. Intevac uses the pricing data obtained from its outside investment manager as the primary input to make its assessments and determinations as to the ultimate valuation of the above-mentioned securities and has not made, during the periods presented, any material adjustments to such inputs.

The following table represents the fair value hierarchy of Intevac s available-for-sale securities measured at fair value on a recurring basis as of December 30, 2017.

	Fair Value Measurements at December 30, 2017		
	Total	Level 1	Level 2
		(in thousands)	
Recurring fair value measurements:			
Available-for-sale securities			
Money market funds	$ 6,746	$ 6,746	$
U.S. treasury and agency securities	6,899	4,876	2,023
Certificates of deposit	2,500		2,500
Commercial paper	3,291		3,291
Asset backed securities	500		500
Corporate bonds and medium-term notes	8,860		8,860
Municipal bonds	497		497
Total recurring fair value measurements	$ 29,293	$ 11,622	$ 17,671

Derivatives

The Company uses foreign currency forward contracts to mitigate variability in gains and losses generated from the re-measurement of certain monetary assets and liabilities denominated in foreign currencies and to offset certain operational exposures from the impact of changes in foreign currency exchange rates. These derivatives are carried at fair value with changes recorded in interest income and other, net in the consolidated statements of operations. Changes in the fair value of these derivatives are largely offset by re-measurement of the underlying assets and liabilities. Cash flows from such derivatives are classified as operating activities. The derivatives have maturities of approximately 30 days.

INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The following table summarizes the Company s outstanding derivative instruments on a gross basis as recorded in its consolidated balance sheets as of December 30, 2017 and December 31, 2016:

Derivative Instrument	Notional Amounts December 30, 2017	Notional Amounts December 31, 2016	Derivative Liabilities December 30, 2017 Balance Sheet Line	Derivative Liabilities December 30, 2017 Fair Value	Derivative Liabilities December 31, 2016 Balance Sheet Line	Derivative Liabilities December 31, 2016 Fair Value
	(In thousands)					
Undesignated Hedges:						
Forward Foreign Currency Contracts	$1,276	$1,146	(a)	$5	(a)	$8
Total Hedges	$1,276	$1,146		$5		$8

(a) Other accrued liabilities

9. Equity

Stock Repurchase Program

On November 21, 2013, Intevac s Board of Directors approved a stock repurchase program authorizing up to $30.0 million in repurchases. Under this authorization, Intevac purchases shares of its common stock under a systematic stock repurchase program and may also make supplemental stock repurchases from time to time, depending on market conditions, stock price and other factors.

On November 12, 2015, Intevac entered into a Share Repurchase Agreement with Northern Right Capital Management, L.P. and certain of its affiliated funds, including on behalf of a managed account (collectively, NRC), whereby Intevac repurchased 1,483,171 shares of its common stock from NRC in a privately negotiated transaction at a purchase price of $4.98 per share, for an aggregate purchase price of $7.4 million. The repurchase was made in conjunction with Intevac s stock repurchase program.

At December 30, 2017, $1.5 million remains available for future stock repurchases under the repurchase program.

The following table summarizes Intevac s stock repurchases for fiscal 2017, 2016 and 2015:

	2017	2016	2015

	(in thousands, except per share amounts)			
Shares of common stock repurchased				3,419
Cost of stock repurchased	$	$	$	18,503
Average price paid per share	$	$	$	5.39

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

INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

10. Income Taxes

The provision for income taxes on loss from continuing operations for fiscal 2017, 2016 and 2015 consists of the following (in thousands):

	2017	2016	2015
Federal:			
Current	$	$	$
Deferred			
State:			
Current	13	5	6
Deferred			
	13	5	6
Foreign:			
Current	1,091	237	561
Deferred	(1)	9	(12)
	1,090	246	549
Total	$ 1,103	$ 251	$ 555

Income (loss) before income taxes for fiscal 2017, 2016 and 2015 consisted of the following (in thousands):

	2017	2016	2015
U.S	$ (794)	$ (8,703)	$ (9,538)
Foreign	6,015	1,513	927
	$ 5,221	$ (7,190)	$ (8,611)
Effective tax rate	21.1%	(3.5)%	(6.4)%

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INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts for income tax purposes. Significant components of deferred tax assets are as follows (in thousands):

	December 30, 2017	December 31, 2016
Deferred tax assets:		
Vacation, warranty and other accruals	$ 601	$ 926
Depreciation and amortization	91	600
Intangible amortization	1,071	2,060
Inventory valuation	1,341	3,091
Deferred income	22	29
Equity-based compensation	2,636	3,821
Net operating loss, research and other tax credit carryforwards	52,882	54,844
Other	543	918
	59,187	66,289
Valuation allowance for deferred tax assets	(58,455)	(65,189)
Total deferred tax assets	732	1,100
Deferred tax liabilities:		
Purchased technology	(307)	(720)
Unbilled revenue	(421)	(377)
Total deferred tax liabilities	(728)	(1,097)
Net deferred tax assets	$ 4	$ 3
As reported on the balance sheet:		
Non-current deferred tax assets	$ 4	$ 3

Intevac accounts for income taxes in accordance with accounting standards for such taxes, which requires that deferred tax assets and liabilities be recognized using enacted tax rates for the effect of temporary differences between the financial reporting and tax bases of recorded assets and liabilities.

Accounting standards also require that deferred tax assets be reduced by a valuation allowance if it is more likely than not that some portion of or all of the deferred tax asset will not be realized. Management assesses the available positive and negative evidence to estimate if sufficient future taxable income will be generated to use the existing deferred tax assets. In fiscal 2014, a valuation allowance of $9.4 million was established to record the portion of the

Singapore deferred tax asset that more likely than not will not be realized. The Company recorded valuation allowance decreases of $603,000 for fiscal 2017 and $136,000 for fiscal 2016, respectively, for the Singapore deferred tax asset. The Company recorded a valuation allowance increase of $631,000 for fiscal 2015 for the Singapore deferred tax asset.

In fiscal 2012, a valuation allowance of $23.4 million was established to record the portion of the U.S. federal deferred tax asset that more likely than not will not be realized. For fiscal 2017, a valuation allowance decrease of $6.9 million for the U.S. federal deferred tax asset was recorded. This decrease was a result of revaluing our deferred tax assets and liabilities at the newly enacted U.S federal tax rate. For fiscal 2016, 2015, 2014 and 2013, valuation allowance increases of $3.3 million, $1.6 million, $4.7 million and $7.2 million, respectively, for the U.S. federal deferred tax asset were recorded. A valuation allowance is recorded against the entire state deferred tax asset which consists of state income tax temporary differences and deferred research and other tax credits that are not realizable in the foreseeable future.

INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The amount of the deferred tax asset considered realizable, however, could be adjusted if estimates of future taxable income during the carryforward period are reduced or increased, or if objective negative evidence in the form of cumulative losses is no longer present and additional weight may be given to subjective evidence such as our projections for growth.

As of December 30, 2017, our federal, foreign and state net operating loss carryforwards for income tax purposes were approximately $65.1 million, $54.8 million and $56.2 million, respectively. The federal and state net operating loss carryforwards are subject to various limitations under Section 382 of the Internal Revenue Code and applicable state tax laws. If not utilized, the federal net operating loss carryforwards and the state net operating loss carryforwards will begin to expire in 2028. The foreign net operating loss carryforwards do not expire. As of December 30, 2017, our federal and state tax credit carryforwards for income tax purposes were approximately $15.5 million and $14.3 million, respectively. If not utilized, the federal tax credit carryforwards will begin to expire in 2019 and the state tax credits carry forward indefinitely.

The Tax Cuts and Jobs Act (the Act) was enacted on December 22, 2017. The Act reduces the U.S. federal corporate tax rate from 35% to 21%, requires companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously tax deferred and creates new taxes on certain foreign sourced earnings. At December 30, 2017, we have not completed our accounting for the tax effects of enactment of the Act; however, in certain cases, as described below, we have made a reasonable estimate of the effects on our existing deferred tax balances and the one-time transition tax. In other cases, we have not been able to make a reasonable estimate and continue to account for those items based on our existing accounting under ASC 740, Income Taxes. For the items for which we were able to determine a reasonable estimate, we recognized a provisional amount of $1.8 million, which is included as a component of income tax expense from continuing operations and fully offset by the current operating loss.

Deferred tax assets and liabilities: We re-measured certain deferred tax assets and liabilities based on the rates at which they are expected to reverse in the future, which is generally 21%. However, we are still analyzing certain aspects of the Act and refining our calculations, which could potentially affect the measurement of these balances or potentially give rise to new deferred tax amounts. The provisional amount recorded related to the re-measurement of our deferred tax balance was $9.2 million.

Foreign tax effects: The one-time transition tax is based on our total post-1986 earnings and profits (E&P) for which we have previously deferred from U.S. income taxes. We recorded a provisional amount for our one-time transition tax liability for seven of our foreign subsidiaries, resulting in no increase in income tax expense due to current losses. We have not yet completed our calculation of the total post-1986 foreign E&P for these foreign subsidiaries. Further, the transition tax is based in part on the amount of those earnings held in cash and other specified assets. This amount may change when we finalize the calculation of post-1986 foreign E&P previously deferred from U.S. federal taxation and finalize the amounts held in cash or other specified assets. No additional income taxes have been provided for any remaining undistributed foreign earnings not subject to the transition tax and any additional outside basis difference inherent in these entities as these amounts continue to be indefinitely reinvested in foreign operations. The Company did not have the necessary information prepared or analyzed to develop a reasonable estimate of the tax liability, if any, for its remaining outside basis difference including any deferred tax accounting that may be required due to other provisions in the Act beyond the one-time transition tax, including how that accounting may be affected by the Company s ongoing accounting position to indefinitely reinvest unremitted foreign earnings.

INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The difference between the tax provision (benefit) at the statutory federal income tax rate and the tax provision (benefit) for fiscal 2017, 2016 and 2015 was as follows (in thousands):

	2017	2016	2015
Income tax (benefit) at the federal statutory rate	$ 1,827	$ (2,517)	$ (3,014)
State income taxes, net of federal benefit	13	5	6
Change in valuation allowance:			
U.S	(6,873)	3,333	1,625
Foreign	(603)	(136)	631
Effect of foreign operations taxed at various rates	(1,036)	(232)	(140)
Research tax credits	(2,267)	(1,058)	(931)
Change in federal tax rate	9,201		
Effect of tax rate changes, permanent differences and adjustments of prior deferrals	639	1,137	2,114
Unrecognized tax benefits	202	(281)	264
Total	$ 1,103	$ 251	$ 555

Intevac has not provided for foreign withholding taxes on approximately $1.2 million of undistributed earnings from non-U.S. operations as of December 30, 2017 because Intevac intends to reinvest such earnings indefinitely outside of the United States. If Intevac were to distribute these earnings, foreign withholding tax would be payable. Intevac will remit the non-indefinitely reinvested earnings, if any, of Intevac s non-U.S. subsidiaries where excess cash has accumulated and Intevac determines that it is advantageous for business operations, tax or cash reasons.

The total amount of gross unrecognized tax benefits was $5.7 million as of December 30, 2017, of which $73,000 would affect Intevac s effective tax rate if realized. The aggregate changes in the balance of gross unrecognized tax benefits were as follows for fiscal 2017, 2016 and 2015:

	2017	2016 (in thousands)	2015
Beginning balance	$ 7,544	$ 7,173	$ 6,578
Additions based on tax positions related to the current year	898	652	574
Additions for tax positions of prior years			21
Settlements		(281)	
Change in federal tax rate	(2,764)		
Lapse of statute of limitations			

Ending balance	$ 5,678	$ 7,544	$ 7,173

The Company does not anticipate any changes in the amount of unrecognized tax benefits in the next twelve months. It is Intevac s policy to include interest and penalties related to unrecognized tax benefits in the provision for income taxes on the consolidated statements of operations. During fiscal 2017, 2016 and 2015, Intevac recognized a net tax expense (benefit) for interest of $2,000, ($1,000) and $2,000, respectively. As of December 30, 2017 Intevac had $11,000 of accrued interest related to unrecognized tax benefits, which was classified as a long-term liability in the consolidated balance sheets. Intevac did not accrue any penalties related to these unrecognized tax benefits because Intevac has other tax attributes which would offset any potential taxes due.

Intevac is subject to income taxes in the U.S. federal jurisdiction, and various state and foreign jurisdictions. Tax regulations within each jurisdiction are subject to the interpretation of the related tax laws and regulations

INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

and require significant judgment to apply. The material jurisdictions where Intevac is subject to potential examination by tax authorities for tax years after 2009 include the U.S. (Federal and California) and Singapore.

The Inland Revenue Authority of Singapore (IRAS) is currently conducting a review of the fiscal 2009 through 2012 tax returns of the Company s wholly-owned subsidiary, Intevac Asia Pte. Ltd. IRAS has challenged the Company s tax position with respect to certain aspects of the Company s transfer pricing. Under Singapore tax law, the Company must pay all contested taxes and the related interest to have the right to defend its position. As a result, the Company made deposits of $318,000 for the 2009 tax year in fiscal 2014 and $1.1 million for the 2010 tax year in fiscal 2015, respectively. In fiscal 2016, IRAS allowed the deduction of a portion of the challenged deductions and the Company received a partial refund of $517,000 of the contested taxes. Accordingly, the Company derecognized a portion of the tax accrual of approximately $281,000 by reducing the income tax provision by $281,000. The contested tax deposits of $743,000 and $871,000 are included in other long-term assets at December 30, 2017 and December 31, 2016, respectively, on the consolidated balance sheets. The ultimate outcome of this examination is subject to uncertainty. The Company s management and its advisors continue to believe that the Company is more likely than not to successfully defend that the tax treatment was proper and in accordance with Singapore tax regulations. Based on the information currently available, the Company does not anticipate a significant increase or decrease to its unrecognized tax benefits for this matter within the next twelve months. We believe that adequate amounts have been reserved for any adjustments that may ultimately result from this or other examinations. Presently, there are no other active income tax examinations in the jurisdictions where Intevac operates.

11. Employee Benefit Plans

Employee Savings and Retirement Plan

In 1991, Intevac established a defined contribution retirement plan with 401(k) plan features. The plan covers all United States employees eighteen years and older. Employees may make contributions by a percentage reduction in their salaries, not to exceed the statutorily prescribed annual limit. Intevac made cash contributions of $357,000 for fiscal 2017 and $310,000 for fiscal 2016. Intevac did not make any cash contributions for fiscal 2015. Employees may choose among several investment options for their contributions and their share of Intevac s contributions, and they are able to move funds between investment options at any time. Intevac s common stock is not one of the investment options. Administrative expenses relating to the plan are insignificant.

Employee Bonus Plans

Intevac has various employee bonus plans. A profit-sharing plan provides for the distribution of a percentage of pre-tax profits to substantially all of Intevac s employees not eligible for other performance-based incentive plans, up to a maximum percentage of compensation. Other plans award annual cash bonuses to Intevac s executives and key contributors based on the achievement of profitability and other specific performance criteria. Charges to expense under these plans were $2.8 million, $295,000 and $219,000, respectively, for fiscal 2017, 2016 and 2015. In fiscal 2016 and 2015 the annual bonus for certain participants in the Company s annual incentive plan was settled with RSUs with one year vesting. Charges for bonuses in the amount of $102,000, $490,000 and $324,000 for fiscal 2017, 2016 and 2015, respectively, were reported as stock-based compensation expense. In February 2017, 33 participants were granted stock awards to receive an aggregate of 134,000 shares of common stock with a weighted-average grant date fair value of $9.63 per share. In February 2016, 34 participants were granted stock awards to receive an aggregate of 266,000 shares of common stock with a weighted-average grant date fair value of $4.40 per share. See Note 2 Equity-Based Compensation.

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INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

12. Commitments and Contingencies

Leases

Intevac leases certain facilities under non-cancelable operating leases that expire at various times up to March 2024 and has options to renew most leases, with rentals to be negotiated. Certain of Intevac s leases contain provisions for rental adjustments. Included in other long-term liabilities on the consolidated balance sheet is $2.3 million of deferred rent as of December 30, 2017 related to the effective rent on Intevac s long-term lease for Intevac s Santa Clara, California facility. The terms of the Company s lease of its Santa Clara, California facility include a tenant improvement allowance of up to $1.7 million. Tenant improvement allowances are reimbursements received from the landlord for construction costs and are amortized on a straight-line basis over the lease term as a reduction in rent. The tenant improvement allowances are recorded when the Company has completed its obligations and the tenant improvement allowance is receivable. In addition, Intevac is required to maintain a standby letter of credit for $600,000 for this lease. This standby letter of credit is secured with $600,000 of restricted cash. The facility leases require Intevac to pay for all normal maintenance costs. Gross rental expense was approximately $3.8 million, $3.8 million and $4.0 million for fiscal 2017, 2016, and 2015, respectively.

As of December 30, 2017, future minimum lease payments are as follows.

(in thousands)	
2018	$ 3,154
2019	3,215
2020	2,858
2021	2,874
2022	2,960
Thereafter	3,816
	$ 18,877

Guarantees

Officer and Director Indemnifications

As permitted or required under Delaware law and to the maximum extent allowable under that law, Intevac has certain obligations to indemnify its current and former officers and directors for certain events or occurrences while the officer or director is, or was serving, at Intevac s request in such capacity. These indemnification obligations are valid as long as the director or officer acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the Company and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful. The maximum potential amount of future payments Intevac could be required to make under these indemnification obligations is unlimited; however, Intevac has a director and officer insurance policy that mitigates Intevac s exposure and enables Intevac to recover a portion of any future amounts paid. As a result of Intevac s insurance policy coverage, Intevac believes the estimated fair value of these indemnification obligations is not material.

Other Indemnifications

As is customary in Intevac s industry, many of Intevac s contracts provide remedies to certain third parties such as defense, settlement, or payment of judgment for intellectual property claims related to the use of its products. Such indemnification obligations may not be subject to maximum loss clauses. Historically, payments made related to these indemnifications have been immaterial.

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INTEVAC, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Letters of Credit

As of December 30, 2017, we had letters of credit and bank guarantees outstanding totaling $1.0 million, including the standby letter of credit outstanding under the Santa Clara, California facility lease and various other guarantees with its bank. These letters of credit and bank guarantees are collateralized by $1.0 million of restricted cash.

Warranty

Intevac provides for the estimated cost of warranty when revenue is recognized. Intevac s warranty is per contract terms and for its hard disk drive, PV and DCP manufacturing systems the warranty typically ranges between 12 and 24 months from customer acceptance. For systems sold through a distributor, Intevac offers a 3 month warranty. The remainder of any warranty period is the responsibility of the distributor. During this warranty period any defective non-consumable parts are replaced and installed at no charge to the customer. The warranty period on consumable parts is limited to their reasonable usable lives. Intevac uses estimated repair or replacement costs along with its historical warranty experience to determine its warranty obligation. The provision for the estimated future costs of warranty is based upon historical cost and product performance experience. Intevac exercises judgment in determining the underlying estimates.

On the consolidated balance sheets, the short-term portion of the warranty provision is included in other accrued liabilities, while the long-term portion is included in other long-term liabilities. The expense associated with product warranties issued or adjusted is included in cost of net revenues on the consolidated statements of operations.

The following table displays the activity in the warranty provision account for fiscal 2017 and 2016:

	2017	2016
	(in thousands)	
Beginning balance	$ 1,007	$ 982
Expenditures incurred under warranties	(773)	(488)
Accruals for product warranties	854	943