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: September 28, 2019

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: 1-36214

HOLOGIC, INC.

(Exact name of registrant as specified in its charter)

Delaware	**04-2902449**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**

250 Campus Drive, Marlborough, Massachusetts 01752
(Address of Principal Executive Offices) (Zip Code)

Registrant's Telephone Number, Including Area Code (508) 263-2900

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

Title of Each Class	Trading Symbol(s)	Name of Each Exchange on which Registered
Common Stock, $.01 par value	HOLX	The NASDAQ Global Select Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

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

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

The aggregate market value of the registrant's Common Stock held by non-affiliates of the registrant as of March 30, 2019 was $12,895,201,013 based on the price of the last reported sale on NASDAQ Global Select Market on that date.

As of November 21, 2019, 268,145,411 shares of the registrant's Common Stock, $0.01 par value, were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Proxy Statement for the registrant's annual meeting of stockholders to be filed within 120 days of the end of its fiscal year ended September 28, 2019 are incorporated into Part III (Items 10, 11, 12, 13 and 14) of this Annual Report on Form 10-K where indicated.

HOLOGIC, INC.

ANNUAL REPORT ON FORM 10-K
For the Fiscal Year Ended September 28, 2019

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Some of the statements contained in this report are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. These statements involve known and unknown risks, uncertainties and other factors which may cause our or our industry's actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Forward-looking statements may include, but are not limited to, statements regarding:

- the effect of the continuing worldwide macroeconomic uncertainty, including the UK's decision to leave the European Union (known as Brexit), on our business and results of operations;
- the effect of the current trade war between the U.S. and other nations, most notably China, and the impending impact of tariffs on the sale of our products in those countries and potential increased costs we may incur to purchase materials from our suppliers to manufacture our products;
- the development of new competitive technologies and products, and the impact and anticipated benefits of completed acquisitions;
- the ability to consolidate certain of our manufacturing and other operations on a timely basis and within budget, without disrupting our business and to achieve anticipated cost synergies related to such actions;
- the ability to successfully manage ongoing organizational and strategic changes, including our ability to attract, motivate and retain key employees;
- regulatory approvals and clearances for our products, including the implementation of the new European Union Medical Device Regulations;
- potential cybersecurity threats and targeted computer crime;
- the coverage and reimbursement decisions of third-party payors;
- the uncertainty of the impact of cost containment efforts and federal healthcare reform legislation on our business and results of operations;
- the guidelines, recommendations, and studies published by various organizations relating to the use of our products;
- the potential reinstatement of U.S. medical device excise tax;
- the effect of consolidation in the healthcare industry;
- production schedules for our products;
- the anticipated development of markets we sell our products into and the success of our products in these markets;
- the anticipated performance and benefits of our products;
- business strategies;
- estimated asset and liability values;
- the impact and costs and expenses of any litigation we may be subject to now or in the future;
- our compliance with covenants contained in our debt agreements;
- anticipated trends relating to our financial condition or results of operations, including the impact of interest rate and foreign currency exchange fluctuations, including the potential impact of the proposed phase out of LIBOR by the end of 2021; and
- our liquidity, capital resources and the adequacy thereof.

In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "could," "would," "expects," "plans," "anticipates," "believes," "estimates," "projects," "predicts," "potential" and similar expressions intended to identify forward-looking statements. These statements are only predictions and involve known and unknown risks, uncertainties, and other factors that may cause our actual results, levels of activity, performance, or achievements to be materially different from any future results, levels of activity, performance, or achievements expressed or implied by such forward-looking statements. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Also, these forward-looking statements represent our estimates and assumptions only as of the date of this report. Except as otherwise required by law, we expressly disclaim any obligation or undertaking to release publicly any updates or revisions to any forward-looking statement contained in this report to reflect any change in our expectations or any change in events, conditions or circumstances on which any of our forward-looking statements are based. Factors that could cause or contribute to differences in our future financial results include the cautionary statements set forth herein and in our other filings with the Securities and Exchange Commission including those set forth under "Risk Factors" set forth in Part I, Item 1A of this annual report on Form 10-K. We qualify all of our forward-looking statements by these cautionary statements.

TRADEMARK NOTICE

Hologic is a trademark of Hologic, Inc. Other trademarks, logos, and slogans registered or used by Hologic and its divisions and subsidiaries in the United States and other countries include, but are not limited to, the following: 2D Dimensions, 3Dimensions, 3D Mammography, 3D Performance, Accuprobe, Affirm Prone, Apogee, Aptima, Aptima Combo 2, ATEC, BioZorb, Brevera, C-View, Celero, Cellulaze, Cervista, Cynergy, Cynosure, Dimensions, Elite, Emsor, Eviva, Faxitron, Focal Therapeutics, Fluent, Fluoroscan, Icon, Insight FD, Genius, Genius 3D, Genius 3D Mammography, Horizon, Invader, Medicor, MedLite, MonaLisa Touch, MyoSure, Nitronox, NovaSure, Panther, PicoSure, PrecisionTx, PreservCyt, Progensa, RevLite, SculpSure, SecurView, Selenia, Sertera, SmartLipo Triplex, SuperSonic Imagine, Synchro REPLA:Y, Synthesized 2D, Tempsure, ThinPrep, Tigris, TLI IQ, Tomcat, TMA, and Vectus.

PART I

Item 1. Business

Overview

We are a developer, manufacturer and supplier of premium diagnostics products, medical imaging systems, surgical products and light-based aesthetic and medical treatment systems with an emphasis on women's health. We operate in five segments: Diagnostics, Breast Health, Medical Aesthetics, GYN Surgical and Skeletal Health. We sell and service our products through a combination of direct sales and service personnel and a network of independent distributors and sales representatives.

We offer a wide range of diagnostic products which are used primarily to aid in the diagnosis of human diseases. Our primary diagnostics products include our Aptima family of molecular diagnostic assays, which run on our advanced instrumentation systems (Panther and Tigris), our ThinPrep cytology system, and the Rapid Fetal Fibronectin Test. The Aptima family of molecular diagnostic assays is used to detect, among other things, the infectious microorganisms that cause common sexually transmitted diseases, or STDs, such as chlamydia and gonorrhea, certain high-risk strains of human papillomavirus, or HPV, and *Trichomonas vaginalis*, the parasite that causes trichomoniasis. In addition, in 2017 and 2018 we introduced the Aptima quantitative viral load tests for HIV, Hepatitis C and Hepatitis B. The Aptima portfolio also includes diagnostic tests for a range of acute respiratory ailments that are run on the Panther Fusion system, a field upgradeable instrument addition to Panther. The ThinPrep System is primarily used in cytology applications, such as cervical cancer screening, and the Rapid Fetal Fibronectin Test assists physicians in assessing the risk of pre-term birth. In January 2017, we sold our blood screening business to Grifols. We have continued to provide Grifols with instrumentation and certain raw materials, manufacture assays, and perform research and development services to support the blood screening business Grifols acquired from us.

Our Breast Health segment offers a broad portfolio of solutions for breast cancer care for radiology, pathology and surgery. These solutions include breast imaging and analytics, such as our 2D and 3D mammography systems and reading workstations, minimally invasive breast biopsy guidance systems and devices, breast biopsy site markers and localization, specimen radiology, ultrasound and connectivity solutions. Our most advanced breast imaging platforms, Selenia Dimensions and 3Dimensions, utilize a technology called tomosynthesis to produce 3D images that show multiple contiguous slice images of the breast, which we refer to as the Genius 3D Mammography exam, as well as conventional 2D full field digital mammography images. Our clinical results for FDA approval demonstrated that conventional 2D digital mammography with the addition of 3D tomosynthesis is superior to 2D digital mammography alone for both screening and diagnostics for women of all ages and breast densities. In addition, through our acquisitions of Faxitron Bioptics, LLC and Focal Therapeutics, Inc. we have expanded our product portfolio to include breast conserving surgery products.

Our Medical Aesthetics segment offers a portfolio of aesthetic treatment systems, including SculpSure, PicoSure and MonaLisa Touch that enable plastic surgeons, dermatologists and other medical practitioners to perform non-invasive and minimally invasive procedures to remove hair, treat vascular and benign pigmented lesions, remove multi-colored tattoos, revitalize the skin, reduce fat through laser lipolysis, reduce cellulite, clear nails infected by toe fungus, ablate sweat glands and improve gynecologic health. This segment also markets TempSure, a radio frequency, or RF, energy-sourced platform that offers both non-surgical and surgical aesthetic treatments and procedures. On November 20, 2019, we executed a definitive agreement to sell our Medical Aesthetics business for a sales price of $205 million in cash subject to certain closing adjustments. Net of these adjustments, we expect net proceeds of approximately $138 million. The definitive agreement contains representations and warranties and covenants customary for a transaction of this nature, and the completion of the sale is subject to customary closing conditions. We expect this disposition to be completed around the end of calendar year 2019. However, we cannot assure that we will be able to complete this transaction on a timely basis, if at all.

Our GYN Surgical products include our NovaSure Endometrial Ablation System, or NovaSure, and our MyoSure Hysteroscopic Tissue Removal System, or Myosure, as well as our Fluent Fluid Management system, or Fluent. The NovaSure portfolio is comprised of the NovaSure CLASSIC and NovaSure ADVANCED devices and involves a trans-cervical procedure for the treatment of abnormal uterine bleeding. The MyoSure suit of devices offers multiple options to provide incision-less removal of fibroids, polyps, and other pathology within the uterus. The Fluent system is a fluid management system that provides liquid distention during diagnostic and operative hysteroscopic procedures.

Our Skeletal Health segment's products includes the Horizon DXA, a dual energy x-ray system, which evaluates bone density and performs body composition assessments, and the Fluoroscan Insight FD mini C-arm, which assists in performing minimally invasive orthopedic surgical procedures on a patient's extremities, such as the hand, wrist, knee, foot, and ankle.

Available Information

Our Internet website address is http://www.hologic.com. Through our website, we make available, free of charge, our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and any amendments to those reports, as well as proxy statements, and, from time to time, other documents as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission, or SEC. These SEC reports can be accessed through the investor relations section of our website. The information found on our website is not part of this or any other report we file with or furnish to the SEC.

Investors and others should note that we announce material financial information to our investors using our investor relations website (http://investors.hologic.com), SEC filings, press releases, public conference calls and webcasts. We use these channels as well as social media to communicate with our members and the public about our company, our services and other issues. It is possible that the information we post on social media could be deemed to be material information. Therefore, we encourage investors, the media, and others interested in our company to review the information we post on the social media channels listed on our investor relations website. Hologic has used, and intends to continue to use, our investor relations website, as well as our Twitter account (@Hologic), as means of disclosing material non-public information and for complying with its disclosure obligations under Regulation FD. Further corporate governance information, including our certificate of incorporation, bylaws, governance guidelines, board committee charters, and code of business conduct and ethics, is also available on our investor relations website under the heading "Corporate Governance." The contents of our websites are not intended to be incorporated by reference into this Annual Report on Form 10-K or in any other report or document we file with the SEC, and any references to our websites are intended to be inactive textual references only.

The SEC maintains an Internet website that contains reports, proxy and information statements, and other information regarding Hologic and other issuers that file electronically with the SEC. The SEC's Internet website address is http://www.sec.gov.

Products

We view our operations and manage our business in five principal reporting segments: Diagnostics, Breast Health, Medical Aesthetics, GYN Surgical and Skeletal Health. Financial information concerning these segments is provided in Note 16 to our audited consolidated financial statements contained in Item 15 of this Annual Report. The following describes our principal products in each of our segments.

Diagnostics Products

Aptima Family of Molecular Diagnostic Assays

The Aptima family of molecular diagnostic assays is used to detect, among other things, the infectious microorganisms that cause the common sexually transmitted diseases, or STDs, such as chlamydia and gonorrhea, certain high-risk strains of human papillomavirus, or HPV, and *Trichomonas vaginalis*, the parasite that causes trichomoniasis. In addition, we also offer viral load assays for the quantitation of hepatitis B virus, or HBV, hepatitis C virus, or HCV, and human immunodeficiency virus, or HIV-1 for use on our Panther instrument system. All three of these viral load assays are both CE-marked and FDA approved. Our Aptima products integrate a proprietary number of core technologies, including our target capture technology, our Transcription Mediated Amplification, or TMA, technology, and our hybridization protection assay, or HPA, and dual kinetic assay, or DKA, technologies, to produce highly sensitive amplification assays that increase assay performance, improve laboratory efficiency and reduce laboratory costs. Each of these technologies is described in greater detail below.

Target Capture/Nucleic Acid Extraction Technology. The detection of target organisms that are present in small numbers in a large-volume clinical sample requires that target organisms be concentrated to a detectable level. One way to accomplish this is to isolate the particular nucleic acid of interest by binding it to a solid support. This support, with the target bound to it, can then be separated from the original sample. We refer to such techniques as "target capture." We have developed target capture techniques to immobilize nucleic acids on magnetic beads by using a "capture probe" that binds to the bead and to the target nucleic acid. We use magnetic separation to concentrate the target by drawing the magnetic beads to the sides of a sample tube, while the remainder of the sample is removed from the tube. When used in conjunction with our amplification procedures, target capture techniques concentrate the nucleic acid target(s) and also remove materials in the sample that might otherwise interfere with amplification.

Transcription-Mediated Amplification (TMA) Technology. The goal of amplification technologies is to increase the copy number of a target nucleic acid sequences that may be present in samples in small numbers. These copies can then be detected using nucleic acid probes. Amplification technologies can yield results in only a few hours versus the several days or weeks required for traditional culture methods. TMA is a transcription-based amplification system that uses two different

enzymes to drive the process. The first enzyme is a reverse transcriptase that creates a double-stranded DNA copy from an RNA or DNA template. The second enzyme, an RNA polymerase, makes thousands of copies of the complementary RNA sequence, known as the "RNA amplicon," from the double-stranded DNA template. Each RNA amplicon serves as a new target for the reverse transcriptase and the process repeats automatically, resulting in an exponential amplification of the original target that can produce over a billion copies of amplicon in less than thirty minutes.

Hybridization Protection Assay (HPA) and Dual Kinetic Assay (DKA) Technologies. With our HPA technology, we have simplified testing, further increased test sensitivity and specificity, and increased convenience. In the HPA process, the acridinium ester, or AE, molecule is protected within the double-stranded helix that is formed when the probe binds to its specific target. Prior to activating the AE molecule, known as "lighting off," a chemical is added that destroys the AE molecule on any unhybridized probes, leaving the label on the hybridized probes largely unaffected. When the "light off" or detection reagent is added to the specimen, only the label attached to the hybridized probe is left to produce a signal indicating that the target organism's DNA or RNA is present. All of these steps occur in a single tube and without any wash steps, which were required as part of conventional probe tests. Our DKA technology uses two types of AE molecules that can be differentiated from each other-one that "flashes" and another one that "glows." By using DKA technology, we have created nucleic acid test, or NAT, assays that can detect two separate targets simultaneously.

Instrumentation

We have developed and continue to develop instrumentation and software designed specifically for use with certain of our assays, including the Aptima family of molecular diagnostic assays. We also provide technical support and service to maintain these instrument systems in the field. By placing our proprietary instrumentation in laboratories and hospitals, we can establish a platform for future sales of our assays.

Our instrumentation includes the Tigris system, an integrated, fully-automated testing instrument for high-volume laboratories which is approved for use with a number of our Aptima assays, the Panther instrument system, an integrated, fully-automated testing instrument capable of serving both high- and low-volume laboratories, and our semi-automated direct tube sampling, or DTS, instruments which are used to run a number of infectious disease assays. Our instrumentation includes the Tomcat instrument, a fully-automated general purpose instrument designed to improve pre-analytical sample processing by eliminating the inefficient and error-prone activities associated with manually transferring samples from one tube to another. In fiscal 2017, we released our new Panther Fusion system and related Fusion assays for flu and respiratory testing, which extends the capabilities of the existing Panther system by adding the flexibility of polymerase chain reaction, or PCR, functionality to our existing TMA-based technology, all as a modular in-lab upgrade to the existing Panther system. We received CE-mark approval for the Panther Fusion system in the third quarter of fiscal 2017 and FDA clearance in October 2017.

Invader Chemistry Platform

Our Invader chemistry platform is a DNA probe-based system for highly sensitive detection of specific nucleic acid sequences. It is an accurate and specific method for detecting single-base pair changes, insertions, deletions, gene copy number, infectious agents, and gene expression. Invader reactions can be performed using genomic DNA, amplified RNA, PCR, or real-time PCR products. Our products and clinical diagnostic offerings based upon our Invader chemistry include our Cervista HPV tests and products to assist in the diagnosis of cardiovascular risk and other diseases.

ThinPrep System

The ThinPrep System is the most widely used method for cervical cancer screening in the U.S. The ThinPrep System has multiple configurations, including one or more of the following: the ThinPrep 2000 Processor, ThinPrep 5000 Processor, ThinPrep5000 Processor with Autoloader, ThinPrep Imaging System, and related reagents, filters and other supplies, such as the ThinPrep Pap Test and our ThinPrep PreservCyt Solution.

The ThinPrep Process. The ThinPrep process begins with the patient's cervical sample being obtained by the physician using a cervical sampling device that, rather than being smeared on a microscope slide as in a conventional Pap smear, is inserted into a vial filled with our proprietary ThinPrep PreservCyt Solution. This enables most of the patient's cell samples to be preserved before the cells can be damaged by air drying. The ThinPrep specimen vial is then labeled and sent to a laboratory equipped with a ThinPrep Processor for slide preparation. At the laboratory, the ThinPrep specimen vial is inserted into a ThinPrep Processor, a proprietary sample preparation device, which automates the process of preparing cervical slides for staining and microscopic examination.

In the case of manual screening, the cytotechnologist screens each Pap test slide with a microscope to first determine the adequacy of the slide and then to examine the entire slide to differentiate diseased or abnormal cells from normal cells.

With the ThinPrep Imaging System, the screening process has been automated to combine the power of computer imaging technology and human interpretive skills. Prior to human review, the ThinPrep Imaging System rapidly scans, locates and highlights areas of interest for review. By directing the cytotechnologist to areas of interest on a slide, the system may increase a cytology laboratory's screening productivity and diagnostic accuracy.

Additional Applications. In addition to serving as a replacement for the conventional Pap smear, the ThinPrep System can also be used for non-gynecological cytology screening applications including fine-needle aspiration specimens (e.g., breast, thyroid, lung or liver), body fluids (e.g., urine, pleural fluid, ascitic fluid or pericardial fluid), respiratory specimens (e.g., sputum or brushing of respiratory tracts) and ancillary testing (e.g., cell blocks, immunocytochemistry or special stains).

Rapid Fetal Fibronectin Test

The Rapid Fetal Fibronectin Test is a patented single-use disposable test used to determine a woman's risk of pre-term birth by detecting the presence of a specific protein, fetal fibronectin, in vaginal secretions during pregnancy. The test utilizes a single-use, disposable cassette and is analyzed on our patented instrument, the TLI IQ System.

Breast Health Products

Mammography Solutions

Our Dimensions platform includes the Selenia Dimensions and 3Dimensions gantries capable of performing both 2D and tomosynthesis image acquisition and display, which is referred to as 3D. When operating in tomosynthesis mode, each system acquires a series of low dose x-ray images taken in a scanning motion at various angles. The images are mathematically processed into a series of small slices, allowing for visualization of the breast in multiple contiguous slices. Our clinical results for FDA approval demonstrated that conventional 2D digital mammography with the addition of our Genius 3D Mammography is superior to 2D digital mammography alone for both screening and diagnostics. Our Synthesized 2D product has two offerings: C-View and Intelligent 2D. These software products provide a 2D image that is mathematically synthesized from the data within a tomosynthesis exam. Our current recommended clinical practice involves what we refer to as a "combo" exam involving a tomosynthesis exam and a conventional digital 2D exam, but performed under the same breast compression. The C-View product allows for the mathematical construction of a 2D image in standard resolution format from the tomosynthesis data, without the need for an actual 2D exposure. Elimination of the 2D exposure reduces the breast compression time and patient dose compared to the current combo exam. The new Intelligent 2D product, allows for the mathematical construction of a 2D image in high resolution format. The images captured by digital mammography systems are typically transmitted electronically for review by a radiologist at a reading workstation. To this end, we offer the SecurViewDX workstation and Unifi Workspace, approved for interpretation of digital mammograms from most vendors as well as images from other diagnostic breast modalities. We also offer computer-aided detection, or CAD, software tools for our mammography products. Mammography CAD is used by radiologists as "a second pair of eyes" when reading a woman's mammogram. Use of this technology provides reviewers with the potential to detect findings that might otherwise be overlooked during the review process, thus potentially increasing cancer detection.

Stereotactic Breast Biopsy Systems

We provide clinicians with the flexibility of choosing upright or prone systems for breast biopsy by offering two minimally invasive stereotactic breast biopsy guidance systems: Affirm Prone breast biopsy table and the Affirm upright attachment. The Affirm upright attachment is employed with our Dimensions systems. These breast biopsy systems provide an alternative to open surgical biopsy and can be performed as an outpatient procedure under local anesthesia, allowing shorter recovery times. The Affirm tomosynthesis option provides faster lesion targeting and reduced patient procedure time compared to traditional stereotactic biopsy procedures. The Affirm system is pre-programmed for use with our Brevera, Eviva and ATEC vacuum-assisted breast biopsy devices.

Breast Biopsy and Surgery Products

We offer a wide range of minimally invasive products for breast biopsy and breast surgery. Our breast biopsy portfolio includes three types of tethered vacuum-assisted breast biopsy products, the Brevera, ATEC, and Eviva devices. Each tethered device is powered by a console and utilizes our patented fluid management system. The ATEC device can be used under all standard imaging guidance modalities (stereotactic x-ray, ultrasound, MRI and molecular breast imaging) whereas our Brevera and Eviva devices are used exclusively under stereotactic x-ray guidance. We also offer the Celero and Sertera biopsy devices, both of which are non-tethered (no separate console), spring-loaded, disposable core biopsy devices, which are used exclusively under ultrasound-guidance. We also have products for marking, localizing and filling the void after surgery in addition to specimen imaging products for radiology, surgery and pathology.

Medical Aesthetics

SculpSure

Our SculpSure laser system is a hyperthermic laser treatment for non-invasive body contouring. Utilizing a 1060 nanometer (nm) diode laser, SculpSure is designed to reduce fat non-invasively by eliminating subcutaneous fat cells. Over time, the body naturally eliminates the fat cells that were disrupted by the SculpSure treatment. The hands-free device features a flexible applicator system to treat multiple anatomical areas of the body. SculpSure is currently approved for treatment on flanks, abdomen, submental (below the chin area) and back as well as inner and outer thighs. The SculpSure system requires the use of a Patented Applicator for Contouring, or PAC, to activate each applicator handpiece used in a treatment cycle.

PicoSure, MedLite and RevLite

Our PicoSure system uses a 755 nm wavelength laser for the removal of tattoos and benign pigmented lesions, as well as the reduction of wrinkles. PicoSure uses short bursts of energy which are measured in picoseconds (trillionths of a second) in contrast to nanosecond technology, used in our MedLite and RevLite products, which delivers pulses in billionths of a second. The bursts of energy cause the tattoo ink or other damage to break apart into tiny particles which are eliminated by the body. MedLite and RevLite are used for the removal of benign pigmented lesions and multi-colored tattoos. We also offer PicoSure 532 nm wavelength and the PicoSure 1064 nm wavelength to more effectively treat certain colors in tattoos.

MonaLisa Touch

The MonaLisa Touch is a CO_2 laser for incision, excision, ablation, vaporization and coagulation of body soft tissues in medical specialties including aesthetic (dermatology and plastic surgery), podiatry, otolaryngology (ENT), gynecology, neurosurgery, orthopedics, general and thoracic surgery (including open and endoscopic), dental and oral surgery and genitourinary surgery. We distribute and market the MonaLisa Touch in North America pursuant to an exclusive distribution agreement with El.En. S.p.A., or El.En. We and El.En. have agreed to market and distribute the MonaLisa Touch under separate distribution agreements with our respective wholly-owned subsidiaries in the United Kingdom and Germany.

Other Products

Other product offerings in our Medical Aesthetics business include, among others:

- the Icon aesthetic system for hair removal, wrinkle reduction and scar and stretch mark treatment;
- the Vectus diode laser for high volume hair removal;
- the TempSure system is a radiofrequency platform that offers both non-surgical and surgical aesthetic treatments and procedures;
- the Synchro REPLA:Y is a high-powered hair removal device that can be used across a variety of skin and hair types;
- Nitronox is a versatile nitrous oxide and oxygen analgesia system that can be used for a variety of medical and aesthetic procedures;
- the Cellulaze laser device for the treatment of cellulite;
- the Cynergy product line for the treatment of vascular lesions;
- the Elite product line for hair removal and treatment of facial and leg veins and pigmentations; and
- the SmartLipo product line for Laser Body Sculpting for the minimally invasive removal of unwanted fat.

System Components

Each of our Medical Aesthetics systems consists of a control console and one or more handpieces. Some of our systems consist of radio frequency, or RF, based control consoles where energy is transferred through a handpiece or electrode. Our control consoles are each comprised of a graphical user interface, control system software and high voltage electronics. Depending on the system, the laser or other light source may be within the control console or the handpiece. The graphical user interface allows the practitioner to set the appropriate laser or flash lamp parameters, such as energy and pulse duration, to meet the requirements of a particular application for each particular patient. The control system software communicates the operator's instructions from the graphical user interface to the system's components and manages system performance and calibration.

For many applications, practitioners use cooling to protect the skin. The cooling system may be a separate system or integrated into the laser or intense pulsed light system itself. When not integrated, we offer our customers the SmartCool treatment cooling system, which we purchase from a third-party supplier and sell as a private label product under the

SmartCool brand. The SmartCool handpiece, which is specially designed for use with our laser systems, interlocks with the laser handpiece.

GYN Surgical Products

NovaSure

The NovaSure endometrial ablation system allows physicians to treat women suffering from abnormal uterine bleeding. The system features Smart-Depth™ technology that continuously monitors and measures tissue impedance to provide a customized, reliable and reproducible depth of ablation for every patient. The NovaSure system consists of a disposable device and a controller that delivers RF energy to ablate the endometrial lining of the uterus in order to eliminate or reduce the patient's abnormal bleeding. The NovaSure disposable device is a hand-held, single-use device that incorporates a flexible gold-plated mesh electrode used to deliver the RF energy to the endometrial tissue. The NovaSure RF Controller generates and delivers the RF energy customized for each patient, monitors several critical treatment and safety parameters, and automatically controls the endpoint of the procedure. In the second quarter of fiscal 2017, we released the NovaSure ADVANCED device which has a slimmer diameter designed to improve patient comfort and physician ease-of-use while maintaining the clinical efficacy of the NovaSure system.

MyoSure

The MyoSure system is designed to provide efficient and effective hysteroscopic removal of tissue within the uterus, including fibroids and polyps. Removal of fibroids can provide effective relief of heavy menstrual bleeding commonly attributed to such pathology. Unlike other methods of tissue removal, the excavated tissue samples remain intact, which allows them to be tested for abnormalities. The MyoSure system consists of a tissue removal device, control unit, and hysteroscope. The MyoSure tissue removal device is single-use and features simultaneous tissue cutting and removal. The device incorporates a rapidly rotating cutting blade. During the procedure, the tissue removal device is inserted through the MyoSure hysteroscope. This tissue removal device is powered by a control unit, which features a simple user interface and is foot pedal activated. We offer multiple handpiece devices that differ in size and are focused on addressing different pathology types.

Fluent Fluid Management System

The Fluent Fluid Management System is utilized for diagnostic and operative hysteroscopic procedures. Fluent is designed for simplified setup and operation, and streamlined workflow for the operating room team.

Skeletal Health Products

Horizon DXA System

Bone densitometry is the measurement of bone density to assist in the diagnosis and monitoring of osteoporosis and other metabolic bone diseases that can lead to frailty and debilitating bone fractures. Osteoporosis is a disease that is most prevalent in post-menopausal women. Our Horizon line of x-ray bone densitometers incorporates advanced features designed for bone health screening and body composition assessment. Body composition assessment is the precise measurement of bone, lean mass, fat mass within the body. These measurements are valued within the human performance category, informing nutrition and exercise intervention decisions.

Fluoroscan Insight FD

Our Fluoroscan Insight FD is a mini C-arm imaging system that provides low intensity, real-time x-ray imaging, with high-resolution images at radiation levels and at a cost below those of conventional x-ray and standard sized fluoroscopic equipment. Mini C-arm systems are used primarily by orthopedic surgeons to assist in performing minimally invasive surgical procedures on a patient's extremities, such as the hand, wrist, knee, foot and ankle.

Marketing, Sales and Service

We sell and service our products through a combination of direct sales and service forces and a network of independent distributors and sales representatives. In fiscal 2019, 2018, and 2017, no customer accounted for more than 10% of our consolidated revenues. In fiscal 2019, 2018, and 2017 revenues from one customer accounted for 14.5%, 14.2% and 12.8%, respectively, of our Diagnostics segment revenue. In addition, in fiscal 2017, revenues generated from Grifols, to whom we sold our blood screening business in fiscal 2017, accounted for 11.7% of our Diagnostics segment revenue. No other customer accounted for more than 10% of our revenues in any other business segment in fiscal 2019, 2018, or 2017.

Our U.S. sales force is structured to specifically target the customers in each of our business segments. We maintain distinct teams focused on the Diagnostics, Breast Health, Medical Aesthetics, GYN Surgical, and Skeletal Health markets.

Our end customers include clinical laboratories, hospitals, healthcare providers and surgeons in both hospital and office settings, and we target various specialists at healthcare entities who use our products, such as ob-gyns, dermatologists, radiologists and breast surgeons.

A critical element of our strategy in the U.S. for our Diagnostics, Breast and Skeletal Health and GYN Surgical divisions has been to utilize the results of our clinical trials and expanded FDA labeling to demonstrate safety, efficacy and productivity improvements to our target customers. Our U.S. sales efforts for these divisions also include the use of national account managers focused on obtaining purchasing contracts from large purchasing entities, such as managed care organizations, integrated delivery networks and government healthcare facilities. In addition, in certain regions of the U.S., we use a limited number of independent dealers or distributors to sell and service certain of our products. Internationally, our products in all divisions are marketed and sold through a combination of a direct sales force and a network of distributors.

In our Medical Aesthetics division, we target potential customers through office visits, trade shows and trade journals. We also conduct clinical workshops and webinars featuring recognized expert panelists and opinion leaders to promote existing and new treatment techniques using our products. We also use direct mail programs to target specific segments of the market that we seek to access, such as members of medical societies and attendees at meetings sponsored by medical societies or associations. We actively maintain a public relations program to promote coverage of our products on daytime television shows in the U.S. and Europe and we are active on popular social media outlets.

Our service organization is responsible for installing our products and providing warranty and repair services, applications training and biomedical training. In our Medical Aesthetics business, we also provide business and practice development consulting. Products sold by our direct sales force typically carry limited warranties covering parts and labor for twelve months. Products sold through dealers also carry limited warranties that typically last for twelve months and cover only parts and components. We also offer service contracts that generally last one to three years after the original warranty period. We provide both repair services and routine maintenance services under these arrangements, and also offer repair and maintenance services on a time and materials basis to customers that do not have service contracts. Internationally, we primarily use distributors, sales representatives and third parties to provide maintenance service for our products, however, we do provide direct service in countries where we have a subsidiary (Germany, UK, France, Spain, Japan, China, Korea and Australia).

El.En. Commercial Relationship

We have several distribution agreements with El.En. S.p.A. Under one of these agreements, we purchase from El.En. its SmartLipo MPX system and its proprietary SLT II laser system. The SLT II laser system is an essential component of our SmartLipo Triplex, Cellulaze, and PrecisionTx systems, which also incorporate our proprietary software and delivery systems. We have exclusive worldwide rights under this agreement to sell the SmartLipo MPX system and our products containing the SLT II laser system. We have entered into separate agreements with El.En through certain of our wholly-owned subsidiaries related to distribution of the MonaLisa Touch laser system in the United Kingdom and Germany.

The prices at which we purchase these laser systems from El.En. are specified in the agreements; however, they may be changed by El.En. at its discretion upon 30 days' notice. El.En. is required to provide us with training for the products we distribute under these agreements, as well as marketing and other sales support for such products as we and El.En. may agree. We are required to use commercially reasonable efforts to sell and promote our systems containing these laser systems, and generally we are responsible for obtaining and maintaining regulatory approvals for such products. We or El.En. may terminate these agreements at any time based upon material uncured breaches by, or the insolvency of, the other party. In addition, El.En. may terminate each agreement if we do not meet annual minimum purchase obligations specified in the agreement and we may terminate if El.En. rejects a purchase order that is in line with our forecast.

Competition

The healthcare industry is highly competitive and characterized by continual change and improvements in technology. This is particularly the case in the market segments in which we operate. A number of companies have developed or are expected to develop products that compete or will compete with our products. Many of these competitors offer a broader product portfolio and have greater brand recognition than we do, which may make these competitors more attractive to hospitals, radiology clients, group purchasing organizations, laboratories, physicians and other potential customers. Competitors may develop superior products or products of similar quality for sale at the same or lower prices. Moreover, our products could be rendered obsolete by changes to industry standards or guidelines or advances in technology. We can give no assurance that we will be able to compete successfully with existing or new competitors.

In the current environment of managed care, economically-motivated buyers, consolidation among healthcare providers, increased competition and declining reimbursement rates, we have been increasingly required to compete on the basis of price, value, reliability and efficiency. We believe the current global economic conditions and healthcare reform measures are putting additional competitive pressure on us, including on our average selling prices, overall procedure rates and market sizes.

We believe that the success of our products depends on our ability to differentiate ourselves and to demonstrate that our products deliver the clinical and operational attributes that are most important and cost-effective to customers. These attributes include, but are not limited to, superiority in efficacy, ease of use, reliability, accuracy, quality and cost. We believe our continued success depends in large part upon our ability to invest in product enhancements and technologies that will help us distinguish ourselves from our competitors.

Diagnostics. Our ThinPrep liquid-based cytology product faces direct competition in the U.S. primarily from Becton, Dickinson and Company, or BD, which manufactures a competitive offering. We also compete with the conventional Pap smear and other alternative methods for detecting cervical cancer and/or its precursors. Internationally, our ThinPrep product competes with a variety of companies and other non-FDA approved tests, since fewer regulatory barriers exist in most international markets as compared to the U.S.

We believe that our Rapid Fetal Fibronectin Test is currently the only approved in vitro diagnostic test for predicting the risk of pre-term birth in the U.S. Internationally, our Rapid Fetal Fibronectin Test competes with Actim Partus manufactured by Medix Biochemical. However, this product could experience competition from companies that manufacture and market pregnancy-related diagnostic products and services. In addition, healthcare providers use diagnostic techniques such as clinical examination and ultrasound to diagnose the likelihood of pre-term birth and may choose these techniques rather than use the Rapid Fetal Fibronectin Test.

In the molecular diagnostics market, our products compete with many companies in the U.S. and abroad engaged in the development, commercialization and distribution of similar products intended for clinical molecular diagnostic applications. Clinical laboratories also may offer testing services that are competitive with our products and may use reagents purchased from us or others to develop their own diagnostic tests.

In the global clinical diagnostics market, we compete with several companies offering alternative technologies to our diagnostic products. For example, in the U.S., our Aptima Combo 2 test competes against BD and Roche Diagnostics Corporation, or Roche, and our Aptima HPV and Cervista HPV tests compete with tests marketed by Qiagen and Roche.

Breast Health. Our mammography and related products and subsystems compete on a worldwide basis with products offered by a number of competitors, including General Electric Company, or GE, Siemens, Koninklijke Philips NV, or Philips, Planmed Oy, or Planmed, Carestream Health, Inc., FUJIFILM Holdings Corporation, or Fuji, I.M.S., and Toshiba Corporation. In the U.S., our digital mammography systems compete with digital mammography systems from GE, Siemens, Fuji, I.M.S., Philips and Planmed. Our digital mammography systems also compete with Fuji's and Carestream Health's Computed Radiography, or CR mammography systems, and other lower-priced alternatives to 2D digital mammography and analog mammography systems. In the U.S., GE, Siemens and Fuji have received FDA approval for their breast tomosynthesis systems, and we believe that other competitors are developing tomosynthesis systems for commercial use in the U.S. Our Dimensions tomosynthesis systems also compete in certain countries outside of the U.S. with tomosynthesis systems developed by GE, Siemens, Fuji, and I.M.S.

The primary competitor for our breast biopsy product line is Devicor Medical Products, Inc., part of Danaher Corporation's Leica Biosystems division. In addition, other competitors include CareFusion, a BD Company, Sanarus Technologies, LLC and Intact Medical Corporation.

Medical Aesthetics. Our Medical Aesthetics products compete against laser and other energy-based products offered by companies such as Cutera, Inc., Syneron Medical Ltd. and ZELTIQ Aesthetics, Inc. (acquired by Allergan plc in April 2017), as well as several smaller specialized companies, such as Alma Lasers Inc. (acquired in May 2013 by Shanghai Fosun Pharmaceutical) and Lumenis Inc. Some of these competitors have strong financial and human resources and have established reputations, as well as established worldwide distribution channels and sales and marketing capabilities. Additional competitors may enter the Medical Aesthetics market, and we are likely to compete with new Medical Aesthetics companies in the future. Our Medical Aesthetics products also compete against non-laser and non-light-based medical products, such as BOTOX and collagen injections, and surgical and non-surgical aesthetic procedures, such as face lifts, chemical peels, abdominoplasty, liposuction, microdermabrasion, sclerotherapy and electrolysis.

GYN Surgical. Our NovaSure system currently faces direct competition from Boston Scientific Corporation, or Boston Scientific, The Cooper Companies, Inc., or CooperSurgical, and Minerva Surgical, Inc., or Minerva, each of which currently

markets an FDA approved endometrial ablation device for the treatment of abnormal uterine bleeding. In addition to these devices, we also compete with alternative treatments to our NovaSure system, such as drug therapy, intrauterine devices, hysterectomy, dilation and curettage and rollerball ablation. Because drug therapy is an alternative to our NovaSure procedure, NovaSure's competitors also include many major pharmaceutical companies that manufacture hormonal drugs for women.

Our MyoSure product competes directly with hysteroscopic loop resection, as well as hysteroscopic tissue removal systems such as Medtronic's TruClear device and Boston Scientific's Symphion device. The MyoSure product also competes with alternative therapeutic techniques such as hysteroscopic resection with a monopolar or bipolar loop, which is currently the most common technique for removing intrauterine fibroids and polyps.

Skeletal Health. GE is our primary competitor in the bone densitometry market, and we also compete with Orthoscan in the mini-C arm market.

Manufacturing

We purchase many of the components, subassemblies, and raw materials used in our products from numerous suppliers worldwide. For reasons of quality assurance, scarcity and/or cost effectiveness, certain components, subassemblies, and raw materials used in our products are available only from one or a limited number of suppliers. We work closely with our suppliers to develop contingency plans to ensure continuity of quality and reliable supply. We established long-term supply contracts with many of our suppliers and in other instances, we developed in-house capability to offset potential shortages caused by sole source suppliers. Due to the high standards and FDA requirements applicable to manufacturing our products, such as the FDA's Quality System Regulation and Good Manufacturing Practices, we may not be able to quickly establish additional or replacement sources for certain components or materials. In the event that we are unable to obtain sufficient quantities of raw materials or components or subassemblies on commercially reasonable terms or in a timely manner, our ability to manufacture our products on a timely and cost-competitive basis may be compromised, which may have a material adverse effect on our business, financial condition and results of operations.

Our current supplier of certain key raw materials for certain of our amplified NAT diagnostic assays is Roche Diagnostics Corporation. The parent company of Roche Diagnostics Corporation is F. Hoffmann-La Roche Ltd, a direct competitor of our Diagnostics business. Our Diagnostic business has two supply agreements with GE Healthcare Bio-Sciences Corp., an affiliate of GE, for membranes used in connection with our ThinPrep product line and for primers used in the manufacture of Aptima, Fusion, Cervista, Progensa and AccuProbe product lines. GE is a direct competitor with our Breast Health and Skeletal Health businesses.

We have sole-source third-party contract manufacturers for each of our molecular diagnostics instrument product lines and for our Skeletal Health products. KMC Systems, Inc., or KMC Systems, is the only manufacturer of the Tigris instrument spare parts, Stratec Biomedical AG, or Stratec, is the only manufacturer of the Panther instrument and Flextronics Medical Sales and Marketing, LTD, or Flextronics, is the only manufacturer of our Skeletal Health finished goods products. We are dependent on these sole source third-party manufacturers, and this dependence exposes us to increased risks associated with production delays, delivery schedules, manufacturing capability, quality control, quality assurance and costs. We have no firm long-term volume commitments with either KMC Systems, Stratec or Flextronics. If KMC Systems, Stratec, Flextronics or any of our other third-party manufacturers experiences delays, disruptions, capacity constraints or quality control problems in its development or manufacturing operations or becomes insolvent or otherwise fails to supply us with products in sufficient quantities, instrument and equipment shipments to our customers could be delayed, which would decrease our revenues and may harm our competitive position and reputation. Further, because we place orders with our manufacturers based on forecasts of expected demand for our instruments and Skeletal Health products, if we inaccurately forecast demand we may be unable to obtain adequate manufacturing capacity or adequate quantities of components to meet our customers' delivery requirements.

In our Medical Aesthetics business, we use Alexandrite rods in the lasers for our Elite+, Apogee+, and PicoSure systems and our sole source supplier is Northrop Grumman SYNOPTICS. We are aware of no alternative supplier of Alexandrite rods meeting our quality standards. We also offer our SmartCool cooling systems for use with our laser aesthetic treatment systems, and our sole source supplier is Zimmer Elektromedizin GmbH. We use diode laser bars from Coherent, Inc. to manufacture our Vectus diode laser, and we use diode laser modules from Dilas Diode Laser Inc. to manufacture our SculpSure laser system. Although alternative suppliers exist for the diode laser bars, it could take months for these suppliers to qualify and provide us with the needed materials. We also have El.En. as our sole source supplier for the MonaLisa Touch, as well as the SLT II laser system that we integrate with our own proprietary software and delivery systems for our SmartLipo Triplex, Cellulaze and PrecisionTx systems. We use one third-party to assemble and test many of the components

and subassemblies for our Cynergy, Accolade, MedLite, RevLite, and PicoSure product families. We also utilize one third-party to assemble and test Elite+, Apogee+, Icon, Vectus, and the SculpSure finished devices.

We, and our contract manufacturers, manufacture our products at a limited number of different facilities located in the U.S. and throughout the world. In most cases, the manufacturing of each of our products is concentrated in one or a few locations. An interruption in manufacturing capabilities at any of these facilities, as a result of equipment failure or other reasons, could reduce, delay or prevent the production of our products. Some of our manufacturing operations are located outside of the U.S., including in Costa Rica and the United Kingdom. Those manufacturing operations are also subject to additional challenges and risks associated with international operations described under the caption "Risk Factors" set forth in Part I, Item 1A of this annual report on Form 10-K.

From time to time new regulations are enacted that can affect the content and manufacturing of our products. We continue to evaluate the necessary steps for compliance with regulations as they are enacted. In August 2012, the SEC adopted a rule requiring disclosures of specified minerals, known as conflict minerals, that are necessary to the functionality or production of products manufactured or contracted to be manufactured by public companies. The conflict minerals rule requires companies annually to disclose and report whether or not such minerals originate from the Democratic Republic of Congo or an adjoining country. The conflict minerals rule could affect sourcing at competitive prices and availability in sufficient quantities of certain minerals used in the manufacture of our products, including tantalum, tin, gold and tungsten. The number of suppliers who provide conflict-free minerals may be limited. In addition, there may be material costs associated with complying with the disclosure requirements, such as costs related to determining the source of certain minerals used in our products, as well as costs of possible changes to products, processes, or sources of supply as a consequence of such verification activities. Since our supply chain is complex, we may not be able to sufficiently verify the origins of the relevant minerals used in our products through the due diligence procedures that we implement, which may harm our reputation. In addition, we may encounter challenges to satisfy those customers who require that all of the components of our products be certified as conflict-free, which could place us at a competitive disadvantage if we are unable to do so.

Other regulations which affect the content and manufacturing of our products include, for example, the Registration, Evaluation, Authorization and Restriction of Chemical substances, or REACH, the Restriction on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Directive, or RoHS, and the Waste Electrical and Electronic Equipment Directive, or WEEE, enacted in the European Union which require the registration of and regulate the use of certain hazardous substances and chemicals in, and require the collection, reuse and recycling of waste from, certain products we manufacture. Similar legislation that has been or is in the process of being enacted in Japan and China and various states of the U.S. may require us to re-design our products to ensure compliance with the applicable standards, for example by requiring the use of different types of materials. These redesigns or alternative materials may detrimentally impact the performance of our products, add greater testing lead-times for product introductions, result in additional costs or have other similar effects.

Backlog

Our backlog for products as of October 26, 2019 and October 27, 2018 totaled $229.3 million and $263.7 million, respectively. Backlog consists of customer orders for which a delivery schedule within the next twelve months has been specified. Orders included in backlog may be canceled or rescheduled by customers without significant penalty. Backlog as of any particular date should not be relied upon as indicative of our net revenues for any future period.

Research and Development

The markets in which we participate are characterized by rapid technological change, frequent product introductions and evolving customer requirements. Investment in research and development is critical to driving our future growth. Our research and development efforts are focused on the further development and improvement of our existing products, the design and development of innovative medical technologies and regulatory compliance.

In addition to product development, our research and development personnel play an active role in the review of product specifications, clinical protocols and FDA submissions, as well as ensuring that certain of our products conform to European health, safety and environmental requirements, or CE-marking.

Patents and Proprietary Rights

We rely primarily on a combination of trade secrets, patents, copyrights, trademarks and confidentiality procedures to protect our products and technology. Due to the rapid technological changes that characterize the markets we operate in, we believe that trade secrets and other unpatented know-how relied upon in connection with the development of new products and the enhancement of existing products are generally as important as patent protection in establishing and maintaining a competitive advantage. Nevertheless, we have obtained patents and will continue to make efforts to obtain patents, when

available, in connection with our product development programs. We do not consider our business to be materially dependent upon any individual patent.

We own numerous U.S. patents and have applied for numerous additional U.S. patents relating to our technologies. We also own or have applied for corresponding patents in selected foreign countries. These patents relate to various aspects of most of our products. We do not know if current or future patent applications will be issued with the full scope of the claims sought, if at all, or whether any patents issued will be challenged or invalidated. There is a risk that our patent applications will not result in granted patents or that granted patents will not provide significant protection for our products and technology. Third parties may infringe, misappropriate or otherwise violate our intellectual property rights, or copy or reverse engineer portions of our technology. Our competitors may independently develop similar or superior technology that our patents do not cover. In addition, because patent applications in the U.S. are not generally publicly disclosed until eighteen months after the application is filed, applications may have been filed by third parties that relate to our technology. Moreover, there is a risk that foreign intellectual property laws will not protect our intellectual property rights to the same extent as intellectual property laws in the U.S. The rights provided by a patent are finite in time. Over the coming years, certain patents relating to current products will expire in the U.S. and abroad which may allow third parties to exploit those technologies. In the absence of significant patent protection, we may be vulnerable to competitors who attempt to copy our products, processes or technology.

In addition to the patents we have been issued or we have acquired, we license patents from others on a variety of terms and conditions.

We are engaged in intellectual property litigation as described in Note 13 to our consolidated financial statements entitled "Litigation and Related Matters", and as may also be described herein, and we may be notified in the future of claims that we may be infringing, misappropriating or otherwise violating the intellectual property rights of third parties. In connection with any such claims, we may seek to enter into settlement and/or licensing arrangements. There is a risk in these situations that no license will be available or that a license will not be available on reasonable terms. Alternatively, we may decide or be required to litigate such claims. A successful claim by a third party may require us to remove the alleged infringing product from the market or to design around the patented technology, potentially resulting in less market demand for the product.

Regulatory and Reimbursement

Regulatory

The manufacture, sale, lease and service of medical diagnostic and surgical devices intended for commercial use are subject to extensive governmental regulation by the FDA in the U.S. and by a variety of regulatory agencies in other countries. Under the Federal Food, Drug and Cosmetic Act, known as the FD&C Act, manufacturers of medical products and devices must comply with certain regulations governing the design, testing, manufacturing, packaging, servicing and marketing of medical products. Some of our products are also subject to the Radiation Control for Health and Safety Act, administered by the FDA, which imposes performance standards and record keeping, reporting, product testing and product labeling requirements for devices that emit radiation, such as x-rays. FDA product approvals may be withdrawn or suspended if compliance with regulatory standards is not maintained or if problems occur following initial marketing.

The FDA classifies medical devices into three classes based on risk. Regulatory control increases from Class I (lowest risk) to Class III (highest risk). The FDA generally must clear or approve the commercial sale of new medical devices in Classes II and III. Commercial sales of our Class II (except for Class II exempt devices) and III medical devices within the U.S. must be preceded by either a pre-market notification filing pursuant to Section 510(k) of the FD&C Act (Class II) or the granting of a pre-market approval, or PMA (Class III). Our Class I and Class II exempt medical devices must follow Hologic’s internal Quality System processes prior to commercialization and throughout their product lifecycle. All classes of devices must meet FDA's quality system (QS), establishment registration, medical device listing, labeling and medical device reporting (MDR) regulations.

A 510(k) pre-market notification filing must contain information establishing that the device to be sold is substantially equivalent to a device commercially distributed prior to May 28, 1976 or to a device that has been determined by the FDA to be substantially equivalent. The PMA procedure involves a complex and lengthy testing process that is subject to review by the FDA and may require several years to obtain. We may need to first obtain an investigational device exemption (for significant risk devices), known as an IDE, in order to conduct extensive clinical testing of the device to obtain the necessary clinical data for submission to the FDA. The FDA will approve a PMA only if after evaluating the supporting technical data it finds that the PMA contains sufficient, valid scientific evidence to assure that the device is safe and effective for its intended use(s). This approval may be granted with post-approval requirements including inspection of manufacturing facilities and/or additional patient follow-up for an indefinite period of time. In the fourth quarter of fiscal 2018, we received a letter from the

FDA regarding the MonaLisa Touch laser and whether our existing 510(k) clearances adequately included certain claims made on our website. In connection with this inquiry, we voluntarily elected to recall Tempsure Vitalia handpieces and to suspend our marketing and distribution of our TempSure Vitalia handpieces and single-use probes until we assessed the implications of the FDA concerns for devices in this category. In November of 2018, we received confirmation from the FDA that we had adequately addressed all of the concerns expressed in their letter and we resumed marketing these products.

The laboratories that purchase certain of our products, including the ThinPrep System, ThinPrep Imaging System, Rapid Fetal Fibronectin Test, Aptima Combo 2, Aptima HPV tests and Aptima HIV-1 Quant, HCV Quant Dx, HBV Quant, Aptima Trichomonas Vaginalis (Trich), Aptima Mycoplasma Genitalium (MGen), Aptima HSV 1 & 2, Aptima BV, Aptima CV/TV, and Panther Fusion Assays are subject to extensive regulation under the Clinical Laboratory Improvement Amendments of 1988, or CLIA, which requires laboratories to meet specified standards in the areas of personnel qualifications, administration, participation in proficiency testing, patient test management, quality control, quality assurance and inspections. Adverse interpretations of current CLIA regulations or future changes in CLIA regulations could have an adverse effect on sales of any affected products.

Certain analyte specific reagents, referred to as ASR products, as with other Class I products, may be sold without 510(k) clearance or PMA approval. However, ASR products are subject to significant restrictions. The manufacturer may not make clinical or analytical performance claims for the ASR product, may not promote their use with specific laboratory equipment and may only sell the ASR product to clinical laboratories that are qualified to run high complexity tests under CLIA. Each laboratory must validate the ASR product for use in diagnostic procedures as a laboratory developed test.

We are also subject to a variety of federal, state and foreign laws which broadly relate to our interactions with healthcare practitioners and other participants in the healthcare system, including, among others, the following:

- anti-kickback and anti-bribery laws, such as the Foreign Corrupt Practices Act, or FCPA, the UK's Bribery Act 2010, or the UK Anti-Bribery Act;
- laws regulating the confidentiality of sensitive personal information and the circumstances under which such information may be released and/or collected, such as the Health Insurance Portability and Accountability Act of 1996, or HIPAA, the Health Information Technology for Economic and Clinical Health Act, or HITECH Act, and the European Union General Data Protection Regulation, or GDPR; and
- healthcare reform laws, such as the Patient Protection and Affordable Care Act and the Health Care and Education Affordability Reconciliation Act of 2010, which we refer to together as PPACA, which include new regulatory mandates and other measures designed to constrain medical costs, as well as stringent new reporting requirements of financial relationships between device manufacturers and physicians and teaching hospitals.

In addition, we are subject to numerous federal, state, foreign and local laws relating to safe working conditions, manufacturing practices, environmental protection, fire hazard control and disposal of hazardous or potentially hazardous substances, data privacy and protection among others. We may be required to incur significant costs to comply with these laws and regulations in the future and complying with these laws may result in a material adverse effect upon our business, financial condition and results of operations.

Sales of medical devices outside of the U.S. are subject to foreign requirements that vary widely from country to country. For example, our ability to market our products outside of the U.S. is contingent upon maintaining our International Standards Organization, or ISO, Quality System certification, complying with European directives and in some cases receiving specific marketing authorization from the appropriate foreign regulatory authorities. Foreign registration is an ongoing process as we register additional products and/or product modifications.

The time required to obtain approval from a foreign country to market and sell our products may be longer or shorter than that required for FDA approval and the requirements may differ. In addition, we may be required to meet the FDA's export requirements or receive FDA export approval for the export of our products to foreign countries.

Our products are also subject to approval and regulation by foreign regulatory and safety agencies. For example, the EU has adopted the EU Medical Device Regulation (the "EU MDR") and the In Vitro Diagnostic Regulation (the "EU IVDR"), each of which impose stricter requirements for the marketing and sale of medical devices, including in the area of clinical evaluation requirements, quality systems and post-market surveillance. Manufacturers of currently approved medical devices will have until May 2020 to meet the requirements of the EU MDR and until May 2022 to meet the EU IVDR. Complying with the requirements of these regulations may require us to incur significant expenditures. Failure to meet these requirements could adversely impact our business in the EU and other regions that tie their product registrations to the EU requirements.

The regulatory environment in China is evolving, and officials in the Chinese government exercise broad discretion in deciding how to interpret and apply regulations. It is possible that the Chinese government's current or future interpretation and application of existing or new regulations will negatively impact our China operations, result in regulatory investigations or lead to fines or penalties.

We anticipate that governmental authorities will continue to scrutinize the healthcare industry closely and that changes in laws, regulations or policies by governmental authorities may cause increases uncertainties and compliance costs, exposure to litigation and other adverse effects to our business and operations. Delays in receipt of, or failure to obtain, clearances or approvals for future products could delay or preclude realization of product revenues from new products or result in substantial additional costs which could decrease our profitability.

For additional information about the regulations to which our business is subject and the impact such regulations may have on our business, see the disclosures under the caption “Risk Factors” in Item 1A below.

Reimbursement

Market acceptance of our medical products in the U.S. and other countries is dependent upon the purchasing and procurement practices of our customers, patient need for our products and procedures, and, other than for our Medical Aesthetics products, the coverage and reimbursement of patients’ medical expenses by government healthcare programs, private insurers or other healthcare payors. In the U.S., the Centers for Medicare & Medicaid Services, known as CMS, establishes coverage policies and payment rates for Medicare beneficiaries. CMS publishes payment rates for physician, hospital, laboratory and ambulatory surgical center services on an annual basis. Under current CMS policies and regulations, varying payment levels have been established for tests and procedures performed using our products. Coverage policies for Medicare patients may vary by regional Medicare contractor in the absence of a national coverage determination and payment rates for procedures will vary based on the geographic price index. Coverage policies and reimbursement rates for Medicaid patients are dependent on each State Medicaid plan and will vary. Coverage policies and reimbursement rates for patients with private insurance is dependent on the individual private payor’s decisions. Moreover, private insurance carriers may choose not to follow the CMS coverage policies or payment rates. The use of our products outside of the U.S. is similarly affected by reimbursement policies adopted by foreign regulatory authorities and insurance carriers.

Healthcare policy and payment reform proposals and medical cost containment measures are being adopted in the U.S. and in many foreign countries. The ability of our customers to obtain adequate reimbursement for our products and services from private and governmental third-party payors is critical to the success of medical technology companies because it may affect which products customers purchase and the prices they are willing to pay. Reimbursement and coverage varies by country and can significantly impact acceptance of new products and technologies. Even if we develop a promising new product, we may find limited demand for the product unless reimbursement approval and coverage is obtained from private and governmental third-party payors. Further, ongoing legislative or administrative reform to the reimbursement system in the U.S. and other countries may impact reimbursement for procedures using our medical products and/or limit coverage for those procedures facilitated by our products. This includes price regulation, competitive bidding and tendering, coverage and payment policies, comparative effectiveness of therapies, technology assessments and managed-care arrangements. These trends could have a material adverse effect on our business, financial condition or results of operations.

Employees

As of September 28, 2019, we had 6,478 full-time employees, including 1,704 in manufacturing operations, 768 in research and development, 3,266 in marketing, sales and support services, and 740 in general administration. As of that date, the 57 employees (56 non-management and one management) of our Hitec-Imaging subsidiary located in Germany are represented by a union and are subject to collective bargaining agreements. In addition, Hitec-Imaging’s German employees are represented by a works council, a Betriebsrat, with respect to various shop agreements for social matters and working conditions. We believe that our relationship with our employees is good. Except as described herein, none of our other employees are represented by a union.

Seasonality

Worldwide sales, including U.S. sales, do not reflect any significant degree of seasonality; however, customer purchases of our GYN Surgical products have been historically lower in our second fiscal quarter as compared to our other fiscal quarters. Our respiratory infectious disease product line within our Diagnostics segment is also subject to significant seasonal and year-over-year fluctuations. In addition, the summer months, which occur during our fiscal fourth quarter, typically have had lower order rates internationally for most of our products.

Item 1A. Risk Factors

In evaluating our business, the risks described below, as well as other information contained in this Annual Report on Form 10-K and in our other filings with the Securities and Exchange Commission should be considered carefully. Additional risks not presently known to us or that we currently deem immaterial may also adversely affect our business. The occurrence of any of these events or circumstances could individually or in the aggregate have a material adverse effect on our business, financial condition, cash flow or results of operations. This report contains forward-looking statements; please refer to the cautionary statements made under the heading "Special Note Regarding Forward-Looking Statements" for more information on the qualifications and limitations on forward-looking statements.

Risks Relating to our Business

The continuing worldwide macroeconomic and political uncertainty, as well as existing tariffs and trade wars, may adversely affect our business and prospects, both domestically and internationally.

Continued concerns about the systemic impact of potential long-term and wide-spread recession and geopolitical issues have contributed to increased market volatility and diminished expectations for economic growth around the world. Uncertainty about global economic conditions, particularly in emerging markets and countries with government-sponsored healthcare systems, may cause decreased demand for our products and services and increased competition, which could result in lower sales volume and downward pressure on the prices for our products, longer sales cycles, and slower adoption of new technologies. A weakening of macroeconomic conditions may also adversely affect our suppliers, which could result in interruptions in supply.

Market acceptance of our medical products in the U.S. and other countries is dependent upon the medical equipment purchasing and procurement practices of our customers, patient need for our products and procedures, the reimbursement of patients' medical expenses by government healthcare programs and third-party payors. The continuing uncertainty surrounding global economic conditions and financial markets may cause the purchasers of medical equipment to decrease their medical equipment purchasing and procurement activities. Economic uncertainty as well as increasing health insurance premiums, co-payments and deductibles may continue to result in cost-conscious consumers making fewer elective trips to their physicians and specialists, which in turn would adversely affect demand for our products and procedures. Furthermore, governments and other third-party payors around the world facing tightening budgets could move to further reduce the reimbursement rates or the scope of coverage offered, which could adversely affect sales of our products. Also, the elective nature of the Medical Aesthetics procedures subjects our business to increased volatility due to macroeconomic conditions.

Changes in policy in the U.S. and other countries regarding international trade, including import and export regulation and international trade agreements, could also negatively impact our business. In 2018 and 2019, the U.S. imposed tariffs on goods imported from China and certain other countries, which has resulted in retaliatory tariffs by China and other countries. Additional tariffs or further retaliatory trade measures taken by China or other countries in response, could affect the demand for our products and services, impact the competitive position of our products, prevent us from being able to sell products in certain countries or otherwise adversely impact our results of operations. The implementation of more restrictive trade policies, such as more detailed inspections, higher tariffs or new barriers to entry, could negatively impact our business, results of operations and financial condition.

The impending exit of the United Kingdom ("UK") from the European Union ("EU") (commonly known as "Brexit"), has created uncertainties affecting business operations in the UK and the EU. Until the terms of the UK's exit from the EU are determined, including any transition period, it is difficult to predict its impact. For example, as a result of Brexit, we may face new regulatory costs and challenges. We have a manufacturing facility in the UK, and, depending on the terms of Brexit, we could become subject to export tariffs and regulatory restrictions that could increase the costs and time related to doing business in Europe. We have increased inventories of certain products and components in anticipation of Brexit, which has impacted our financial results. Additionally, Brexit could result in the UK or the EU significantly altering its regulations affecting the clearance or approval of our products that are developed or manufactured in the UK. Any new regulations could add time and expense to the conduct of our business, as well as the process by which our products receive regulatory approval in the UK, the EU and elsewhere. Given the lack of comparable precedent, it is unclear what economic, financial, trade and legal implications the withdrawal of the UK from the EU would have and how such withdrawal may affect us.

Our international sales are often denominated in foreign currencies, including the Euro, UK Pound and Renminbi. Changes in currency exchange rates, particularly the increase in the value of the dollar against any such foreign currencies, may reduce the reported value of our revenues outside the U.S and associated cash flows and our ability to compete effectively in foreign markets. In addition, such fluctuations can also result in foreign currency exchange losses. We cannot predict changes in currency exchange rates, the impact of exchange rate changes, nor the degree to which we will be able to manage the impact of currency exchange rate changes. We currently have limited hedging arrangements in place to mitigate some of the impact of negative exchange rates.

There is also uncertainty surrounding U.S. presidential and congressional elections in 2020 and the impact on existing and future healthcare legislation. While we cannot predict the outcome of the elections or any resulting legislative changes, such changes could have a material impact on our business.

Our long-term success will depend upon our ability to successfully develop and commercialize new products, enhance our existing products and integrate acquired businesses.

The markets for our products have been characterized by rapid technological change, frequent product introductions and evolving customer requirements. Our growth depends in large part on our ability to identify and develop new products or new indications for or enhancements of existing products, either through internal research and development or through collaborations, acquisitions, joint ventures or licensing or other arrangements with third parties.

The development of new products and enhancement of existing products requires significant investment in research and development, clinical trials and regulatory approvals. The results of our product development efforts may be affected by a number of factors, including our ability to anticipate customer needs, innovate and develop new products, complete clinical trials, obtain regulatory clearances and approvals and reimbursement in the U.S. and abroad, manufacture products in a cost-effective manner, obtain, maintain, protect and enforce appropriate intellectual property protection for our products, gain and maintain market approval of our products and access capital. If we are not able to successfully enhance existing products or develop new products, our products may be rendered obsolete or uncompetitive by new industry standards or changing technology. We cannot assure that any products now in development or that we may seek to develop in the future will achieve technological feasibility, obtain regulatory approval or gain market acceptance, and we may be unable to recover all or a meaningful part of our investment in such products and technologies.

Additionally, as part of our long-term strategy, we are engaged in business development activities including evaluating acquisitions, joint development opportunities, technology licensing arrangements and other opportunities to further expand our presence in or diversify into priority growth areas by accessing new products and technologies. We may not be able to identify appropriate acquisition candidates, consummate transactions or obtain agreements with favorable terms. Further, once we acquire a business, any inability to successfully integrate the business, decreases in customer loyalty or product orders, failure to retain and develop the acquired workforce, failure to establish and maintain appropriate controls or unknown or contingent liabilities could adversely affect our ability to realize the anticipated benefits of any acquisition. The integration of an acquired business whether or not successful, requires significant efforts which may result in additional expenses and divert the attention of our management and technical personnel from other projects. These transactions are inherently risky, and we cannot guarantee that any past or future transaction will be successful. For example, we were unable to achieve our anticipated benefits and results following our acquisition of Cynosure (our Medical Aesthetics business), and as a result, we recorded impairment charges in excess of $1.4 billion, in the aggregate, in fiscal 2018 and 2019.

If we are successful in pursuing future acquisitions, we may be required to expend significant funds, incur additional debt or other obligations, or issue additional securities, which may negatively affect our operating results and financial condition. If we spend significant funds or incur additional debt or other obligations, our ability to obtain financing for working capital or other purposes could be adversely affected, and we may be more vulnerable to economic downturns and competitive pressures. We cannot guarantee that we will be able to finance additional acquisitions or that we will realize any anticipated benefits from acquisitions that we complete.

If we fail to develop, successfully manufacture and launch new products, enhance existing products or identify, acquire and integrate complementary businesses and products, our business, results of operations and/or financial condition could be adversely affected.

If we or our contract manufacturers are unable to manufacture our products in sufficient quantities, on a timely basis, at acceptable costs and in compliance with regulatory and quality requirements, our ability to sell our products and our business will be harmed.

The manufacture of many of our products is highly complex and requires precise high quality manufacturing that is difficult to achieve. We have in the past and may in the future experience difficulties in manufacturing our products on a timely basis and in sufficient quantities. These difficulties have primarily related to delays and difficulties associated with ramping up production of newly introduced products and may result in increased delivery lead-times and increased costs of manufacturing these products. In addition, production of these newer products may require the development of new manufacturing technologies and expertise, which we may be unable to develop. Our failure, including the failure of our contract manufacturers, to achieve and maintain the required high manufacturing standards could result in further delays or failures in product testing or delivery, cost overruns, product recalls or withdrawals, increased warranty costs or other problems that could harm our business and prospects.

In determining the required quantities of our products and the manufacturing schedule, we must make significant judgments and estimates based on historical experience, inventory levels, current market trends and other related factors

(including the anticipation of Brexit). There could be significant differences between our estimates and the actual amounts of products we and our distributors require, which could harm our business and results of operations.

In addition, maintaining compliance with multiple regulators, and multiple centers within the FDA, adds complexity and cost to our manufacturing processes. Our manufacturing facilities and those of our contract manufacturers are subject to periodic regulatory inspections by the FDA and other regulatory agencies, and these facilities are subject to the FDA's Quality System Regulation and Good Manufacturing Practices. We or our contractors may fail to satisfy these regulatory requirements in the future, and any failure to do so may prevent us from selling our products.

If, despite internal testing and testing by customers, any of our products contain errors or defects or fail to meet applicable specifications, then we may be required to enhance or improve those products or technologies. We may not be able to do so on a timely basis, if at all, and may only be able to do so at considerable expense.

Additionally, a government mandated or voluntary recall by us could occur as a result of component failures, manufacturing errors or design defects, including defects in labeling. Any recall could divert managerial and financial resources, be difficult and costly to correct, result in the suspension of sales of certain of our products, harm our reputation and the reputation of our products and adversely affect our business and prospects.

Our reliance on one third-party manufacturer for certain of our product lines and a limited number of suppliers for some key raw materials, components and subassemblies for our products exposes us to increased risks associated with production delays, delivery schedules, manufacturing capability, quality control, quality assurance and costs.

We have sole source third-party manufacturers for each of our Panther and Tigris molecular diagnostics instruments and for our Skeletal Health products. Similarly, we rely on one or a limited number of suppliers for some key components or subassemblies for our products due to cost, quality, expertise or other considerations. For example, we rely on a single source supplier for Alexandrite rods used in the lasers for our Elite and PicoSure systems, our SmartCool cooling systems for our SculpSure laser system and the SLT II laser system that we integrate with our own proprietary software and delivery systems for our SmartLipo Triplex, Cellulaze and PrecisionTx systems. We have no firm long-term volume commitments with certain of our sole source suppliers, including the manufacturers of our Panther or Tigris instruments.

Similarly, we rely on one or a limited number of suppliers for some key raw materials for our products due to cost, quality, expertise or other considerations, and some of these suppliers are competitors. For example, F. Hoffmann-LaRoche Ltd, a direct competitor of our Diagnostics business, is the parent company of Roche Diagnostics Corporation, our current supplier of certain key raw materials for certain of our amplified NAT diagnostic assays. GE Healthcare Bio-Sciences Corp., an affiliate of GE, supplies us with the membranes used in connection with our ThinPrep product line. GE is a direct competitor with our Breast Health and Skeletal Health businesses.

If any of sole source manufacturers or suppliers, or our other of our third-party manufacturers or suppliers, experiences delays, disruptions, capacity constraints or quality control problems in its development or manufacturing operations or becomes insolvent or otherwise fails to supply us with goods in sufficient quantities, then shipments to our customers could be delayed, which would decrease our revenues and harm our competitive position and reputation. Moreover, the failure of a supplier to provide sufficient quantities, acceptable quality and timely delivery of goods at an acceptable price, or an interruption in the delivery of goods from such a supplier could adversely affect our business and results of operations. Obtaining alternative sources of supply of products, components, subassemblies or raw materials could involve significant delays and other costs and regulatory challenges and may not be available to us on reasonable terms, if at all.

We may in the future need to find new contract manufacturers or suppliers to replace existing manufacturers or suppliers, increase our volumes or reduce our costs. We may not be able to find contract manufacturers or suppliers that meet our needs, including regulatory requirements, and even if we do, the process of qualifying such alternative manufacturers and suppliers is often expensive and time consuming. As a result, we may lose revenues and our customer relationships may suffer.

Our success depends on our ability to attract and retain key personnel.

We constantly monitor the dynamics of the economy, the healthcare industry and the markets in which we compete, and we continue to assess the key personnel that we believe are essential to our long-term success. If we fail to effectively manage our ongoing organizational and strategic changes, our financial condition, results of operations, and reputation, as well as our ability to successfully attract, motivate and retain key employees, could be harmed. Additionally, facilitating seamless leadership transitions for key positions is a critical factor in sustaining the success of an organization. If our succession planning efforts are not effective, it could adversely impact our business.

Moreover, in our industry, there is substantial competition for key personnel in the regions in which we operate and we may face increased competition for such employees. The loss of any of our key personnel, particularly management or key research and development personnel, could harm our business and prospects and could impede the achievement of our research

and development, operational or strategic objectives. Our success also depends upon our ability to attract and retain other qualified managerial and technical personnel. Competition for such personnel is intense. We may not be able to attract and retain personnel necessary for the development of our business.

We face intense competition from other companies and may not be able to compete successfully.

The markets in which we sell our products are intensely competitive, subject to rapid technological change and may be significantly affected by new product introductions and other market activities of industry participants, and these competitive pressures may reduce our gross margins. Other companies may develop products that are superior to and/or less expensive than our products. Improvements in existing competitive products or the introduction of new competitive products may reduce our ability to compete for sales, particularly if those competitive products demonstrate better safety or effectiveness, clinical results, ease of use or lower costs.

Some companies may have significant competitive advantages over us, which may make them more attractive to hospitals, radiology clients, group purchasing organizations, laboratories, and physicians. Such competitive advantages may include:

- greater brand recognition;
- larger or more established distribution networks and customer bases;
- a broader product portfolio, resulting in the ability to offer rebates or bundle products to offer discounts or incentives to gain a competitive advantage;
- higher levels of automation and greater installed bases of such equipment;
- more extensive research, development, sales, marketing, and manufacturing capabilities and greater financial resources; and
- greater technical resources positioning them to continue to improve their technology in order to compete in an evolving industry.

The current environment of managed care, economically motivated buyers, consolidation among healthcare providers, increased competition and declining reimbursement rates, together with current global economic conditions and healthcare reform measures, may put additional competitive pressure on us, including on our average selling prices, overall procedure rates and market sizes. If we are unable to compete effectively against existing and future competitors and existing and future alternative products, our business and prospects could be harmed.

We operate in a highly regulated industry, and changes in healthcare-related laws and regulations or our inability to obtain in a timely manner or at all U.S. or foreign regulatory clearances or approvals for our newly developed products or product enhancements could adversely affect our business and prospects.

We operate in a highly regulated industry. As a result, governmental actions may adversely affect our business, operations or financial condition, including:

- new laws, regulations or judicial decisions, or new interpretations of existing laws, regulations or decisions, related to healthcare availability, method of delivery and payment for healthcare products and services;
- changes in the FDA and foreign regulatory approval processes that may delay or prevent the approval of new products and result in lost market opportunity;
- changes in FDA and foreign regulations that may require additional safety monitoring, labeling changes, restrictions on product distribution or use, or other measures after the introduction of our products to market, which could increase our costs of doing business, adversely affect the future permitted uses of approved products, or otherwise adversely affect the market for our products; and
- new laws, regulations and judicial decisions affecting pricing or marketing practices.

Given the high level of regulatory oversight to which our products are subject, the process of obtaining clearances and approvals can be costly and time-consuming. In addition, there is a risk that any approvals or clearances, once obtained, may be withdrawn. Most medical devices cannot be marketed in the U.S. without 510(k) clearance or premarket approval by the FDA. Any modifications to a device that has received a pre-market approval that affect the safety or effectiveness of the device require a pre-market approval supplement or possibly a separate pre-market approval, either of which is likely to be time-consuming, expensive and uncertain to obtain. If the FDA requires us to seek one or more pre-market approval supplements or new pre-market approvals for any modification to a previously approved device, we may be required to cease marketing or to recall the modified device until we obtain approval, and we may be subject to significant criminal and/or civil sanctions, including, but not limited to, regulatory fines or penalties. Last year, we received a letter from the FDA regarding the MonaLisa

Touch® laser and whether our existing 510(k) clearances adequately include certain claims made on our website. In connection with this inquiry, we elected to suspend marketing and distribution of our TempSure Vitalia handpieces and single-use probes until we assessed the implications of recent FDA considerations for devices in this category. This suspension had a negative impact on our revenue. States may also regulate the manufacture, sale and use of medical devices, particularly those that employ x-ray technology.

Our products are also subject to approval and regulation by foreign regulatory and safety agencies. For example, the EU has adopted the EU Medical Device Regulation (the "EU MDR") and the In Vitro Diagnostic Regulation (the "EU IVDR"), each of which impose stricter requirements for the marketing and sale of medical devices, including in the area of clinical evaluation requirements, quality systems and post-market surveillance. Manufacturers of currently approved medical devices will have until May 2020 to meet the requirements of the EU MDR and until May 2022 to meet the EU IVDR. Complying with the requirements of these regulations may require us to incur significant expenditures. Failure to meet these requirements could adversely impact our business in the EU and other regions that tie their product registrations to the EU requirements.

The regulatory environment in China is evolving, and officials in the Chinese government exercise broad discretion in deciding how to interpret and apply regulations. It is possible that the Chinese government's current or future interpretation and application of existing or new regulations will negatively impact our China operations, result in regulatory investigations or lead to fines or penalties.

We anticipate that governmental authorities will continue to scrutinize the healthcare industry closely and that changes in laws, regulations or policies by governmental authorities may cause increased uncertainties and compliance costs, exposure to litigation and other adverse effects to our business and operations. Delays in receipt of, or failure to obtain, clearances or approvals for future products could delay or preclude realization of product revenues from new products or result in substantial additional costs which could decrease our profitability.

Increased cybersecurity requirements, vulnerabilities, threats and more sophisticated and targeted computer crime could pose a risk to our systems, networks, products, solutions, services and data.

Increased global cybersecurity vulnerabilities, threats, computer viruses and more sophisticated and targeted cyber-related attacks, as well as cybersecurity failures resulting from human error and technological errors, pose a risk to the security of Hologic and its customers, business partners and suppliers products, systems and networks and the confidentiality, availability and integrity of data on these products, systems and networks. As the perpetrators of such attacks become more capable, and as critical infrastructure is increasingly becoming digitized, the risks in this area continue to grow. While we attempt to mitigate these risks by employing a number of measures, including employee training, monitoring and testing, and maintenance of protective systems and contingency plans, we remain potentially vulnerable to additional known or unknown threats, and there is no assurance that the impact from such threats will not be material. In addition to existing risks, the adoption of new technologies may also increase our exposure to cybersecurity breaches and failures. We also may have access to sensitive, confidential or personal data or information that is subject to privacy and security laws, regulations or customer-imposed controls. Despite our implementation of controls to protect our systems and sensitive, confidential or personal data or information, we may be vulnerable to material security breaches, theft, misplaced, lost or corrupted data, employee errors and/or malfeasance (including misappropriation by departing employees) that could potentially lead to the compromising of sensitive, confidential or personal data or information, improper use of our systems, software solutions or networks, unauthorized access, use, disclosure, modification or destruction of information, defective products, production downtimes and operational disruptions. Data privacy and protection laws are evolving and present increasing compliance challenges, which increase our costs, affect our competitiveness and can expose us to substantial fines or other penalties. In addition, a cyber-related attack could result in other negative consequences, including damage to our reputation or competitiveness, remediation or increased protection costs, litigation or regulatory action. Although we have experienced occasional actual or attempted breaches of our computer systems, to date we do not believe any of these breaches has had a material effect on our business, operations or reputation.

The failure of third-party payors to provide appropriate levels of coverage and reimbursement for the use of our diagnostics, breast and skeletal health and surgical products and treatments facilitated by our products could harm our business and prospects.

Sales and market acceptance of our diagnostics, breast and skeletal health and surgical products and the treatments facilitated by these products is dependent upon the coverage decisions and reimbursement policies established by government healthcare programs and private health insurers. These policies affect which products customers purchase and the prices they are willing to pay. Reimbursement varies by country and can significantly impact the acceptance of new products and technologies. Even if we develop a promising new product, we may find limited demand for the product unless appropriate reimbursement approval is obtained from private and governmental third-party payors. Further legislative or administrative reforms to the reimbursement systems in the U.S. and other countries in a manner that significantly reduces reimbursement for procedures using our diagnostics, breast and skeletal health and surgical products or denies coverage for those procedures

facilitated by our products, including price regulation, competitive bidding and tendering, coverage and payment policies, comparative effectiveness of therapies, technology assessments and managed-care arrangements, could have a material adverse effect on our business, financial condition or results of operations.

Healthcare cost containment legislation, including the associated rules and regulations, and the uncertainty surrounding the implementation of any such legislation, could harm our business and prospects.

The ongoing implementation of the Patient Protection and Affordable Care Act, in the U.S., as well as state-level healthcare reform proposals could reduce medical procedure volumes and impact the demand for our products or the prices at which we sell our products. These reforms include a national pilot program on payment bundling to encourage hospitals, physicians and other providers to improve the coordination, quality and efficiency of certain healthcare services through bundled payment models. The impact of this healthcare reform legislation, and practices including price regulation, competitive pricing, comparative effectiveness of therapies, technology assessments, and managed care arrangements could harm our business and prospects, results of operations and/or financial condition. Healthcare reform proposals and medical cost containment measures in the U.S. and in many foreign countries could limit the use of our products, reduce reimbursement available for such use, further tax the sale or use of our products, adversely affect the use of new therapies for which our products may be targeted, and further increase the administrative and financial burden of compliance.

These reforms and cost containment measures, including the uncertainty in the medical community regarding their nature and effect, could also have an adverse effect on our customers' purchasing decisions regarding our products and could harm our business, results of operations, financial condition and prospects. We cannot predict the specific healthcare programs and regulations that will be ultimately implemented by regional and national governments globally. However, any changes that lower reimbursements for our products and/or procedures using our products, reduce medical procedure volumes, increase cost containment pressures or impose taxes or additional costs on us or others in the healthcare sector could adversely affect our business and results of operations.

Guidelines, recommendations and studies published by various organizations may reduce the use of our products.

Professional societies, government agencies, practice management groups, private health/science foundations, and organizations involved in healthcare issues may publish guidelines, recommendations or studies to the healthcare and patient communities. Organizations like these have in the past made recommendations about our products and those of our competitors. If followed by healthcare providers and insurers, such publications could result in decreased use of our products. For example, in November 2012, the American Congress of Obstetrics and Gynecologists, known as the ACOG, released updates in which they have recommended less frequent cervical cancer screening similar to guidelines released in March 2012 by the U.S. Preventative Services Task Force, or the USPSTF, and the American Cancer Society. We believe that these recommendations and guidelines may have contributed to increased screening intervals for cervical cancer, which we believe has and may continue to adversely affect our ThinPrep revenues. In addition, on October 20, 2015, the American Cancer Society issued new guidelines recommending that women start annual mammograms at age 45 instead of 40 and have a mammogram every two years instead of annually. This recommendation could result in a decrease in purchases of our mammography systems.

If the U.S. medical device excise tax on medical devices is reinstated our business and results of operations will be adversely affected.

The United States imposed a 2.3% excise tax on U.S. sales of Class I, II and III medical devices beginning in January 2013. As such, this excise tax applied to the majority, if not all, of our products sold in the U.S. The implementation of the medical device tax was suspended for calendar years 2016, 2017, 2018, and 2019. The tax for sales after December 31, 2019 will be reinstated unless there is legislative effort to temporarily suspend or permanently repeal the tax. While the excise tax was in effect, it increased our costs of doing business, and its reinstatement would increase our operating expenses, impose significant additional administrative burdens and could adversely affect our business and results of operations.

Consolidation in the healthcare industry could lead to increased demands for price concessions or the exclusion of some suppliers from certain of our significant market segments, which could harm our business and prospects.

The cost of healthcare has risen significantly over the past decade and numerous initiatives and reforms by legislators, regulators and third-party payors to curb these costs have resulted in a consolidation trend in the healthcare industry, which we expect will continue, including with respect to hospitals and clinical laboratories. This consolidation has resulted in greater pricing pressures, decreased average selling prices, and the exclusion of certain suppliers from important market segments as group purchasing organizations, independent delivery networks and large single accounts continue to consolidate purchasing decisions for some of our customers. We are dependent upon a relatively small number of large clinical laboratory customers in the U.S. for a significant portion of our sales of diagnostics products. Due in part to a trend toward consolidation of clinical

laboratories in recent years and the relative size of the largest U.S. laboratories, it is likely that a significant portion of these sales will continue to be concentrated among a relatively small number of large clinical laboratories.

Interruptions, delays, shutdowns or damage at our manufacturing facilities could harm our business.

In most cases, the manufacturing of each of our products is concentrated in one or a few locations. An interruption in manufacturing capabilities at any of these facilities, as a result of equipment failure or other reasons, could reduce, delay or prevent the production of our products. Our manufacturing facilities and those of our contract manufacturers or suppliers are subject to the risk of catastrophic loss due to unanticipated events, such as fires, earthquakes, explosions, floods or weather conditions. Manufacturing facilities may experience plant shutdowns, strikes or other labor disruptions, or periods of reduced production as a result of equipment failures, loss of power, gray outs, delays in deliveries or extensive damage, which could harm our business and prospects. Some of our manufacturing operations are located outside the U.S., including in Costa Rica and the UK. Those manufacturing operations are also subject to additional challenges and risks associated with international operations described herein.

Some of our activities may subject us to risks under federal and state laws prohibiting "kickbacks" and false or fraudulent claims.

We are subject to the provisions of a federal law commonly known as the anti-kickback statute, and several similar state laws, which prohibit payments intended to induce physicians or others either to refer patients or to acquire or arrange for or recommend the acquisition of healthcare products or services. While the federal law applies only to products or services for which payment may be made by a federal healthcare program, state laws often apply regardless of whether federal funds may be involved. These laws constrain the sales, marketing and other promotional activities of manufacturers of medical devices by limiting the kinds of financial arrangements, including sales programs that may be used with hospitals, physicians, laboratories and other potential purchasers of medical devices. Other federal and state laws generally prohibit individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payors that are false or fraudulent, or are for items or services that were not provided as claimed. Similarly, the Patient Protection and Affordable Care Act also includes stringent reporting requirements of financial relationships between device manufacturers and physicians and teaching hospitals. Specifically, under one provision of the law, which is commonly referred to as the Physician Payment Sunshine Act, we are required to collect data on and annually report to CMS certain payments or other transfers of value to physicians and teaching hospitals and annually report certain ownership and investment interests held by physicians or their immediate family members. Anti-kickback and false claims laws and the Physician Payment Sunshine Act prescribe civil and criminal penalties (including fines) for noncompliance that can be substantial.

Similarly, our international operations are subject to the provisions of the U.S. Foreign Corrupt Practices Act of 1977, as amended ("FCPA"), which prohibits U.S. companies and their representatives from offering or making improper payments to foreign officials for the purpose of obtaining or retaining business. In many countries, the healthcare professionals we regularly interact with may meet the definition of a foreign official for purposes of the FCPA. Our international operations are also subject to various other international anti-bribery laws such as the UK Anti-Bribery Act. Despite meaningful measures that we undertake to facilitate lawful conduct, which include training and compliance programs and internal policies and procedures, we may not always prevent unauthorized, reckless or criminal acts by our employees or agents, or employees or agents of businesses or operations we may acquire. Violations of these laws, or allegations of such violations, could disrupt our operations, involve significant management distraction and have a material adverse effect on our business, financial condition and results of operations. We also could be subject to adverse publicity, severe penalties, including criminal and civil penalties, disgorgement, further changes or enhancements to our procedures, policies and controls, personnel changes and other remedial actions. Moreover, our failure to comply with domestic or foreign laws could result in various adverse consequences, including possible delay in approval or refusal to approve a product, recalls, seizures, and withdrawal of an approved product from the market.

Our international operations and foreign acquisitions expose us to additional operational challenges that we might not otherwise face.

International expansion is a key component of our growth strategy. In fiscal 2019, 24.7% of our revenue came from outside of the U.S. As we grow internationally, our future and existing international operations may subject us to a number of additional risks and expenses, any of which could harm our operating results. These risks and expenses include:

- political and economic changes and disruptions, export/import controls and tariff regulations;
- difficulties in developing staffing and simultaneously managing operations in multiple locations as a result of, among other things, distance, language and cultural differences;
- governmental currency controls;

- multiple, conflicting and changing government laws and regulations (including, among other things, antitrust and tax requirements);
- protectionist laws and business practices that favor local companies;
- difficulties in the collection of trade accounts receivable;
- difficulties and expenses related to implementing internal controls over financial reporting and disclosure controls and procedures;
- expenses associated with customizing products for clients in foreign countries;
- possible adverse tax consequences;
- the inability to obtain and maintain required regulatory approvals or favorable third-party reimbursement;
- operation in parts of the world where strict compliance with anti-bribery laws may conflict with local customs and practices;
- the inability to effectively obtain, maintain, protect or enforce intellectual property rights, reduced protection for intellectual property rights in some countries, and the inability to otherwise protect against clone or "knock off" products;
- the lack of ability to enforce non-compete agreements with former owners of acquired businesses competing with us in China and other foreign countries; and
- lower margins on a number of our products sold outside of the U.S.

Our Diagnostics segment depends on a small number of customers for a significant portion of its product sales, the loss of any of these customers or any cancellation or delay of a large purchase by any of these customers could significantly reduce revenues in our Diagnostics segment.

Although we do not currently have any customers that represent more than 10% of our consolidated revenues, a material portion of product sales in our Diagnostics segment comes from (and we anticipate will continue to come from) a limited number of customers, one of whom accounted for 14.5% of our Diagnostics segment revenue in fiscal 2019. The loss of any of these key customers, or a significant reduction in sales volume or pricing to these customers, could significantly reduce our Diagnostics segment revenues or profitability.

If we cannot maintain our current corporate collaborations and enter into new corporate collaborations, our product development could be delayed and our revenue could be adversely impacted.

We have relied and/or expect to rely on corporate collaborators for funding development, marketing, distribution, and the commercialization of certain products. If any of our corporate collaborators were to breach, terminate, fail to renew our agreements or otherwise fail to properly conduct its obligations in a timely manner, the development or commercialization and subsequent marketing of the products contemplated by the collaboration could be delayed or terminated. Further, we would be required to devote additional resources to product development or marketing, to terminate some development programs or to seek alternative corporate collaborations. Any corporate collaboration may divert management time and resources. In some instances, we have entered into corporate collaborations with certain partners or companies that could make it more difficult for us to enter into advantageous business transactions or relationships with others. Any of the foregoing risks could harm our business and prospects.

The markets for our newly developed products and newly introduced enhancements to our existing products may not develop as expected.

The successful commercialization of our newly developed products and newly introduced enhancements to our existing products are subject to numerous risks, both known and unknown, including:

- uncertainty of the development of a market for such product;
- trends relating to, or the introduction or existence of, competing products or technologies that may be more effective, safer or easier to use than our products or technologies;
- the perception of our products as compared to other products;
- recommendation and support for the use of our products by influential customers, such as highly regarded hospitals, physicians and treatment centers;
- the availability and extent of data demonstrating the clinical efficacy of our products or treatments;

- competition, including the presence of competing products sold by companies with longer operating histories, more recognizable names and more established distribution networks; and
- other technological developments.

Often, the development of a significant market for a product will depend upon the establishment of a reimbursement code or an advantageous reimbursement level for use of the product. Moreover, even if addressed, such reimbursement codes or levels frequently are not established until after a product is developed and commercially introduced, which can delay the successful commercialization of a product.

If we are unable to successfully commercialize and create a significant market for our newly developed products and newly introduced enhancements to our existing products our business and prospects could be harmed.

Our business is dependent on technologies we license, and if we fail to maintain these licenses or license new technologies and rights to particular nucleic acid sequences for targeted diseases in the future, we may be limited in our ability to develop new products.

Our business is dependent on licenses from third parties for some of our key technologies. For example, our patented TMA technology is based on technology we licensed from Stanford University. We anticipate that we will enter into new licensing arrangements in the ordinary course of business to expand our product portfolio and access new technologies to enhance our products and develop new products. Many of these licenses will provide us with exclusive rights to the subject technology or disease marker. If our license with respect to any of these technologies or markers is terminated for any reason, we may not be able to sell products that incorporate the technology. Similarly, we may lose competitive advantages if we fail to maintain exclusivity under an exclusive license.

Our ability to develop additional diagnostic tests for diseases may depend on the ability of third parties to discover particular sequences or markers and correlate them with disease, as well as the rate at which such discoveries are made. Our ability to design products that target these diseases may depend on our ability to obtain the necessary rights from the third parties that make any of these discoveries. In addition, there are a finite number of diseases and conditions for which our NAT diagnostic assays may be economically viable. If we are unable to access new technologies or the rights to particular sequences or markers necessary for additional diagnostic products on commercially reasonable terms, we may be limited in our ability to develop new diagnostic products.

Our products and manufacturing processes may require access to technologies and materials that may be subject to patents or other intellectual property rights held by third parties. Our business could be adversely affected if we are unable to obtain the additional intellectual property rights necessary to commercialize our products.

Our business could be harmed if we are unable to protect our proprietary technology.

We have relied primarily on a combination of trade secrets, patents, copyrights, trademarks and confidentiality procedures to protect our products and technology. Despite these precautions, unauthorized third parties may infringe, misappropriate or otherwise violate our intellectual property, or copy or reverse engineer portions of our technology. The pursuit and assertion of a patent right, particularly in areas like nucleic acid diagnostics and biotechnology, involve complex determinations and, therefore, are characterized by substantial uncertainty. We do not know if current or future patent applications will be issued with the full scope of the claims sought, if at all, or whether any patents that do issue will be challenged or invalidated. The patents that we own or license could also be subjected to invalidation proceedings or similar disputes, and an unfavorable outcome could require us to cease using the related technology or to attempt to license rights to the technology from the prevailing party. In addition, the laws governing patentability and the scope of patent coverage continue to evolve, particularly in the field of biotechnology. As a result, patents might not issue from certain of our patent applications or from applications licensed to us.

We have obtained or applied for corresponding patents and patent applications in several foreign countries for some of our U.S. patents and patent applications. There is a risk that these patent applications will not be granted or that the patent or patent application will not provide significant protection for our products and technology. Moreover, there is a risk that foreign intellectual property laws will not protect our intellectual property rights to the same extent as intellectual property laws in the U.S.

The rights provided by a patent are finite in time. Over the coming years, certain patents relating to current products will expire in the U.S. and abroad thus allowing third parties to utilize certain of our technologies.

Our competitors may independently develop similar or superior technology that our patents do not cover. In addition, because patent applications in the U.S. are not generally publicly disclosed until eighteen months after the application is filed, applications may have been filed by third parties that relate to our technology. Even if our proprietary information is protected

by patents or otherwise, the initiation of actions to protect our proprietary information could be costly and divert the efforts and attention of our management and technical personnel, and the outcome of such litigation is often uncertain. As a result of these uncertainties, we could also elect to forego such litigation or settle such litigation without fully enforcing our proprietary rights. In the absence of significant patent protection, we may be vulnerable to competitors who attempt to copy our products, processes or technology.

Within our Medical Aesthetics business, we jointly own certain patents and patent applications with third parties. In the absence of an agreement with each co-owner of jointly owned patent rights, we will be subject to default rules pertaining to joint ownership. Some countries require the consent of all joint owners to exploit, license or assign jointly owned patents, and if we are unable to obtain that consent from the joint owners, we may be unable to exploit the invention or to license or assign our rights under these patents and patent applications in those countries.

Our business could be harmed if we infringe upon the intellectual property rights of others.

There has been substantial litigation regarding patent and other intellectual property rights in the medical device, diagnostic products and related industries. We are and have been involved in patent litigation and may in the future be subject to further claims of infringement of intellectual property rights possessed by third parties. In connection with claims of patent infringement, we may seek to enter into settlement and/or licensing arrangements. There is a risk in these situations that no license will be available or that a license will not be available on reasonable terms. Alternatively, we may decide to litigate such claims or to design around the patented technology. These actions could be costly and would divert the efforts and attention of our management and technical personnel. As a result, any infringement claims by third parties or claims for indemnification by customers resulting from infringement claims, whether or not proven to be true, may harm our business and prospects.

We utilize distributors for a portion of our sales, the loss of which could harm our revenues in the territory serviced by these distributors.

We rely on strategic relationships with a number of key distributors for sales and service of our products. If any of our strategic relationships terminate without replacement or if our strategic partners fail to perform their contractual obligations, our revenues and/or ability to service our products in the territories serviced by these distributors could be adversely affected. We do not control our distributors, and these parties may not be successful in marketing our products. These parties may fail to commit the necessary resources to market and sell our products to the level of our expectations.

If we elect to distribute new products directly, we will have to invest in additional sales and marketing resources, including additional field sales personnel, which would significantly increase future selling, general and administrative expenses. If we fail to successfully market our products, our product sales will decrease. We may also be exposed to risks as a result of transitioning a territory from a distributor sales model to a direct sales model, such as difficulties maintaining relationships with specific customers, hiring appropriately trained personnel or ensuring compliance with local product registration requirements, any of which could result in lower revenues than previously received from the distributor in that territory.

Our results of operations are subject to significant quarterly variation.

Our results of operations have been and may continue to be subject to significant quarterly variation. Our results for a particular quarter may also vary due to a number of factors, including:

- the overall state of healthcare and cost containment efforts;
- the timing and level of reimbursement for our products domestically and internationally;
- the development status and demand for our products;
- the development status and demand for therapies to treat the health concerns addressed by our products;
- economic conditions in our markets;
- foreign exchange rates;
- the timing of orders;
- the timing of expenditures in anticipation of future sales;
- the mix of products we sell and markets we serve;
- regulatory approval and compliance of products;
- the introduction of new products and product enhancements by us or our competitors;
- pricing and other competitive conditions;
- unanticipated expenses;

- complex revenue recognition rules pursuant to U.S. generally accepted accounting principles, which we refer to as U.S. GAAP;
- asset impairments;
- contingent consideration charges;
- restructuring and consolidation charges;
- debt refinancing charges and expenses; and
- seasonality of sales of certain of our products.

Customers may also cancel or reschedule shipments. Production difficulties could also delay shipments. Any of these factors also could harm our business and prospects.

Failure to comply with laws relating to the confidentiality of sensitive personal information or standards related to the transmission of electronic health data, may require us to make significant changes to our products, or incur penalties or other liabilities.

State, federal and foreign laws, such as the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, regulate the confidentiality of sensitive personal information and the circumstances under which such information may be released. These measures may govern the disclosure and use of personal and patient medical record information and may require users of such information to implement specified security measures, and to notify individuals in the event of privacy and security breaches. Evolving laws and regulations in this area could restrict the ability of our customers to obtain, use or disseminate patient information, or could require us to incur significant additional costs to re-design our products in a timely manner, either of which could have an adverse impact on our results of operations. Other health information standards, such as regulations under HIPAA, establish standards regarding electronic health data transmissions and transaction code set rules for specified electronic transactions, for example transactions involving submission of claims to third-party payors. These standards also continue to evolve and are often unclear and difficult to apply.

Outside the U.S., we are impacted by privacy and data security requirements at the international, national and regional level, and on an industry specific basis. More privacy and security laws and regulations are being adopted, and more are being enforced, with potential for significant financial penalties. In the EU, increasingly stringent data protection and privacy rules have been enacted. The EU General Data Protection Regulation (GDPR) applies uniformly across the EU and includes, among other things, a requirement for prompt notice of data breaches to data subjects and supervisory authorities in certain circumstances. The GDPR also requires companies processing personal data of individuals residing in the EU to comply with EU privacy and data protection rules.

Failure to maintain the confidentiality of sensitive personal information in accordance with the applicable regulatory requirements, or to abide by electronic health data transmission standards, could expose us to breach of contract claims, fines and penalties, costs for remediation and harm to our reputation.

We are subject to the risk of product liability claims relating to our products for which we may not have adequate insurance.

Our business involves the risk of product liability and other claims inherent to the medical device business. If even one of our products is found to have caused or contributed to injuries or deaths, we could be held liable for substantial damages. We maintain product liability insurance subject to deductibles and exclusions. There is a risk that the insurance coverage will not be sufficient to protect us from product and other liability claims, or that product liability insurance will not be available to us at a reasonable cost, if at all. An under-insured or uninsured claim could harm our business and prospects. In addition, claims could adversely affect the reputation of the related product, which could damage that product's competitive position in the market.

The sale and use of our diagnostic products could also lead to the filing of product liability claims if someone were to allege that one of our products contained a design or manufacturing defect that resulted in inaccurate test results or the failure to detect a disorder for which it was being used to screen, or caused injuries to a patient. Any product liability claim brought against us, with or without merit, could result in an increase in our product liability insurance rates or the inability to secure additional coverage in the future. Also, even a meritless or unsuccessful product liability claim could be time consuming and expensive to defend, which could result in a diversion of management's attention from our business and could adversely affect the perceived safety and efficacy of our products and could harm our business and prospects.

Because we do not require training for users of our non-invasive Medical Aesthetics products, and we sell these products to non-physicians, there exists an increased potential for misuse of these products, which could harm our reputation and our business.

Federal regulations allow us to sell our Medical Aesthetics products to or on the order of practitioners licensed by law to use or order the use of a prescription device. The definition of "licensed practitioners" varies from state to state. As a result, our products may be purchased or operated by physicians with varying levels of training and, in many states, by non-physicians, including nurse practitioners, chiropractors and technicians. Outside the U.S., many jurisdictions do not require specific qualifications or training for purchasers or operators of our products. We do not supervise the procedures performed with our products, nor can we require that direct medical supervision occur. We and our distributors offer product training sessions, but neither we nor our distributors require purchasers or operators of our non-invasive products to attend training sessions. The lack of required training and the purchase and use of our non-invasive products by non-physicians may result in product misuse and adverse treatment outcomes, which could harm our reputation and expose us to costly product liability litigation.

We are subject to environmental, health and safety laws and regulations, including related to our use and recycling of hazardous materials and the composition of our products.

Our research and development and manufacturing processes involve the controlled use of hazardous materials, such as toxic and carcinogenic chemicals and various radioactive compounds, and the risk of contamination or injury from these materials cannot be eliminated. In such event, we could be held liable for any resulting damages, and any such liability could be extensive. From time to time new regulations are enacted, and it is difficult to anticipate how such regulations will be implemented and enforced. We continue to evaluate the necessary steps for compliance with regulations as they are enacted. These regulations include, for example, regulations enacted in the EU such as the Registration, Evaluation, Authorization and Restriction of Chemical Substances, or REACH, which requires the registration of and regulates use of certain chemicals, the Restriction on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Directive, or RoHS, which regulates the use of certain hazardous substances in certain products we manufacture, and the Waste Electrical and Electronic Equipment Directive, or WEEE, which requires the collection, reuse and recycling of waste from certain products we manufacture. These and similar legislation that has been or is in the process of being enacted in Japan, China and various states of the U.S. may require us to re-design our products to ensure compliance with the applicable standards, for example by requiring the use of different types of materials. These redesigns or the use of alternative materials may detrimentally impact the performance of our products, add greater testing lead-times for product introductions, result in additional costs or have other similar effects. We are also subject to other substantial regulation relating to environmental, health and safety matters, including occupational health and safety, environmental protection, hazardous substance control, and waste management and disposal. The failure to comply with such regulations could subject us to, among other things, fines and criminal liability. We may also be required to incur significant costs to comply with these and future regulations, which may result in a material adverse effect upon our business, financial condition and results of operation.

An adverse change in the projected cash flows from our business units or the business climate in which they operate could require us to record an impairment charge, which could have an adverse impact on our operating results.

At least annually, we review the carrying value of our goodwill, and for other long-lived assets when indicators of impairment are present, to determine if any adverse conditions exist or a change in circumstances has occurred that would indicate impairment of the value of these assets. Conditions that could indicate impairment and necessitate an evaluation of these assets include, but are not limited to, a significant adverse change in the business climate or the legal or regulatory environment within which we operate. In addition, the deterioration of a company's market capitalization significantly below its net book value is an indicator of impairment. We assess goodwill for impairment at the reporting unit level and in evaluating the potential impairment of goodwill, we make assumptions regarding the amount and timing of future cash flows, terminal value growth rates and appropriate discount rates.

During fiscal 2019, we identified indicators of impairment for our Medical Aesthetics reporting unit as a result of reductions in forecasts during the year, and in connection with our efforts to sell the business that began prior to the end of fiscal 2019. We executed a definitive agreement on November 20, 2019 to sell the business. The definitive agreement contains representations and warranties and covenants customary for a transaction of this nature, and the completion of the sale is subject to customary closing conditions. However, we cannot assure that we will be able to complete this transaction on a timely basis, if at all. Although this agreement was signed subsequent to the balance sheet date, we concluded that it provided evidence regarding the estimate of fair value of the asset group at September 28, 2019 and that there were no events that occurred between September 28, 2019 and the date we entered into the definitive agreement that would significantly affect the fair value of the asset group. As a result of these indicators of impairment, we recorded total impairment charges of $685.4 million in fiscal 2019.

Although we believe that we use reasonable methodologies for developing assumptions and estimates underlying the fair value calculations used in our impairment tests, these estimates are uncertain by nature and can vary from actual results. Any significant adverse change regarding the amount and timing of future cash flows, terminal value growth rates and discount rates used in valuing our reporting units could require us to record an impairment charge, which could have an adverse effect on our operating results. It is possible that the continuation of the current global financial and economic uncertainty could negatively affect our anticipated future cash flows, or the discount rates used to value the cash flows for each of our reporting units to such an extent that we could be required to perform an interim impairment test during fiscal 2020.

We cannot assure we will be able to close our pending sale of Cynosure on a timely basis, if at all.

Our pending sale of Cynosure is subject to a number of risks and uncertainties, many of which are outside of our control, including the occurrence of any event, change or other circumstance that could give rise to the termination of the purchase and sale agreement, the failure of the parties to the transaction to satisfy conditions to completion of the proposed transaction, the risk that regulatory or other approvals are delayed or subject to terms and conditions that are not anticipated. As a result, we cannot assure that the pending transaction will be completed on a timely basis, if at all. The purchase price is subject to adjustment and may be different than we anticipate, and we may incur unexpected liabilities in connection with the transaction.

Changes in tax laws or exposures to additional tax liabilities could negatively impact the Company's operating results.

We are subject to income taxes, as well as non-income based taxes, in both the U.S. and various foreign jurisdictions. We are also subject to ongoing tax audits in various jurisdictions, and tax authorities may disagree with certain positions we have taken and assess additional taxes. Our future effective tax rate could be unfavorably affected by numerous factors including a change in, or the interpretation of, tax rules and regulations in the jurisdictions in which we operate, a change in our geographic earnings mix, or a change in the measurement of our deferred taxes.

Risks Relating to our Indebtedness

We have a significant amount of indebtedness outstanding, which limits our operating flexibility, and could adversely affect our operations and financial results and prevent us from fulfilling our obligations.

As of September 28, 2019, we had approximately $3.1 billion aggregate principal of indebtedness outstanding. We also have other contractual obligations. This significant level of indebtedness and our other obligations may:

- make it more difficult for us to satisfy our obligations with respect to our outstanding indebtedness;
- increase our vulnerability to general adverse economic and industry conditions, including increases in interest rates;
- require us to dedicate a substantial portion of our cash flow from operations to interest and principal payments on our indebtedness, which would reduce the availability of our cash flow to fund working capital, capital expenditures, expansion efforts, strategic transactions and other general corporate purposes;
- limit our flexibility in planning for, or reacting to, changes in our business and the markets in which we participate;
- place us at a competitive disadvantage compared to our competitors that have less debt; and
- limit our ability to borrow additional funds for working capital, capital expenditures, expansion efforts, strategic transactions or other general corporate purposes.

In addition, the terms of our financing obligations contain certain covenants that restrict our ability, and that of our subsidiaries, to engage in certain transactions and may impair our ability to respond to changing business and economic conditions, including, among other things, limitations on our ability to:

- incur indebtedness or issue certain preferred equity;
- pay dividends, repurchase our common stock, or make other distributions or restricted payments;
- make certain investments;
- agree to payment restrictions affecting the restricted subsidiaries;
- sell or otherwise transfer or dispose of assets, including equity interests of our subsidiaries;
- enter into transactions with our affiliates;
- create liens;
- designate our subsidiaries as unrestricted subsidiaries;
- consolidate, merge or sell substantially all of our assets; and
- use the proceeds of permitted sales of our assets.

Our amended and restated credit facilities also require us to satisfy certain financial covenants. Our ability to comply with these provisions may be affected by general economic conditions, political decisions, industry conditions and other events beyond our control. Our failure to comply with the covenants contained in our amended and restated credit facilities, including financial covenants, could result in an event of default, which could materially and adversely affect our results of operations and financial condition.

If there were an event of default under one of our debt instruments or a change of control, the holders of the defaulted debt could cause all amounts outstanding with respect to that debt to be due and payable immediately and may be cross-defaulted to other debt, including our outstanding notes. Our assets or cash flow may not be sufficient to fully repay borrowings under our outstanding debt instruments if accelerated upon an event of default or a change of control, and there is no guarantee that we would be able to repay, refinance or restructure the payments on such debt. See "Management's Discussion and Analysis of Financial Condition and Results of Operations-Liquidity and Capital Resources."

We may not be able to generate sufficient cash flow to service all of our indebtedness and other obligations.

Our ability to make payments on and to refinance our indebtedness and to fund planned capital expenditures, strategic transactions and expansion efforts will depend on our ability to generate cash in the future. This, to a certain extent, is subject to general economic, financial, competitive, legislative, regulatory and other factors that are beyond our control.

Our business may not be able to generate sufficient cash flow from operations, and we can give no assurance that future borrowings will be available to us in amounts sufficient to enable us to pay our indebtedness as such indebtedness matures and to fund our other liquidity needs. If this occurs, we will need to refinance all or a portion of our indebtedness on or before maturity, and there can be no assurance that we will be able to refinance any of our indebtedness on commercially reasonable terms, or at all. We may need to adopt one or more alternatives, such as reducing or delaying planned expenses and capital expenditures, selling assets, restructuring debt, or obtaining additional equity or debt financing. These alternative strategies may not be affected on satisfactory terms, if at all. Our ability to refinance our indebtedness or obtain additional financing, or to do so on commercially reasonable terms, will depend on, among other things, our financial condition at the time, restrictions in agreements governing our indebtedness, and other factors, including the condition of the financial markets and the markets in which we compete.

If we do not generate sufficient cash flow from operations, and additional borrowings, refinancings or proceeds from asset sales are not available to us, we may not have sufficient cash to enable us to meet all of our obligations.

A significant portion of our indebtedness is subject to floating interest rates, which may expose us to higher interest payments.

A significant portion of our indebtedness is subject to floating interest rates, which makes us more vulnerable in the event of adverse economic conditions, increases in prevailing interest rates, or a downturn in our business. As of September 28, 2019, approximately $1.7 billion aggregate principal of our indebtedness, which represented the outstanding principal under our Term Loan under our 2018 Credit Agreement and amounts outstanding under our Accounts Receivable Securitization Program, was subject to floating interest rates. We currently have certain hedging arrangements in the form of interest rate cap and interest rate swap agreements in place to mitigate the impact of higher interest rates. The interest rate cap agreements hedge $1.0 billion of principal under our Amended and Restated Credit Agreement and have a December 2019 termination date and December 2020 termination date for the interest rate cap agreements entered into in fiscal 2018 and fiscal 2019, respectively. In fiscal 2019, we entered into an interest rate swap agreement to hedge $1.0 billion of principal under our Amended and Restated Credit Agreement with an effective date of December 2020 and termination date of December 2023.

The proposed discontinuation or replacement of LIBOR would require us to amend certain agreements and may otherwise adversely affect our business.

The UK Financial Conduct Authority announced in 2017 that it intends to phase out LIBOR by the end of 2021. Changes in the method of calculating LIBOR, or the replacement of LIBOR with an alternative rate or benchmark, may adversely affect interest rates and result in higher borrowing costs. This could materially and adversely affect our results of operations, cash flows and liquidity. If changes are made to the method of calculating LIBOR or LIBOR ceases to exist, we may need to amend certain contracts, including our Credit Agreement and related interest rate swap agreements, and we cannot predict what alternative rate or benchmark would be negotiated. This may result in an increase to our interest expense.

Risks Relating to our Common Stock

Provisions in our charter, bylaws, and indebtedness may have the effect of discouraging advantageous offers for our business or common stock and limit the price that investors might be willing to pay in the future for shares of our common stock.

Our charter, bylaws, and the provisions of the Delaware General Corporation Law include provisions that may have the effect of discouraging or preventing a change of control. Our indebtedness also contains provisions which either accelerate or require us to offer to repurchase the indebtedness at a premium upon a change of control. These provisions could limit the price that our stockholders might receive in the future for shares of our common stock.

Our stock price is volatile.

The market price of our common stock has been, and may continue to be, highly volatile. We believe that a variety of factors could cause the price of our common stock to fluctuate, perhaps substantially, including:

- new, or changes in, recommendations, guidelines or studies that could affect the use of our products;
- announcements and rumors of developments related to our business, including changes in reimbursement rates or regulatory requirements, proposed and completed acquisitions, or the industry in which we compete;
- published studies and reports relating to the comparative efficacy of products and markets in which we participate;
- quarterly fluctuations in our actual or anticipated operating results and order levels;
- general conditions in the U.S. or worldwide economy;
- our stock repurchase program;
- announcements of technological innovations;
- new products or product enhancements by us or our competitors;
- developments in patents or other intellectual property rights and litigation;
- developments in relationships with our customers and suppliers;
- the implementation of healthcare reform legislation and the adoption of additional reform legislation in the future; and
- the success or lack of success of integrating our acquisitions.

In addition, the stock market in general and the markets for shares of “high-tech” and life sciences companies, have historically experienced extreme price fluctuations which have often been unrelated to the operating performance of affected companies. Any such fluctuations in the future could adversely affect the market price of our common stock, and the market price of our common stock may decline.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We own and lease real property to support our business, including manufacturing, marketing, research and development, logistical support and administration. The following lists those properties that we own or lease that we believe are material to our business. We believe that we have adequate space for our anticipated needs and that suitable additional space will be available at commercially reasonable prices as needed.

Material Properties Owned:	Primary Use
Newark, DE	DirectRay digital detector research and development and plate manufacturing operations
Warstein, Germany	Hitec-Imaging's manufacturing operations, research and development and administrative functions
Livingston, UK	Manufacturing operations and research and development
Manchester, UK	Administrative and supply chain operations
Londonderry, NH	Manufacturing operations
San Diego, CA	Diagnostics headquarters, including administrative and manufacturing operations
San Diego, CA	Diagnostics research and development, administrative and manufacturing operations

Material Properties Leased:	Primary Use	Lease Expiration (fiscal year)	Renewals
Danbury, CT	Manufacturing facility	2022	4, five-yr. periods
Danbury, CT	Manufacturing operations and research and development	2021	1, five-yr. period
Marlborough, MA	Headquarters, including research and development, manufacturing and distribution operations	2025	2, five-yr. periods
Marlborough, MA	Manufacturing operations	2024	1, five-yr. period
Alajuela, Costa Rica	Manufacturing facility	2028	2, five-yr. periods
Manchester, England	Manufacturing operations and research and development	2035	None
Westford, MA	Administrative, research and development, and manufacturing operations	2028	None

The Company also leases various administrative and customer support centers throughout the world including in Brussels, Belgium, Kerpen, Germany, Madrid, Spain, Suzhou, China, Wiesbaden, Germany, and also maintains specialized research and development and manufacturing operations at various additional locations.

Item 3. Legal Proceedings

For a discussion of legal matters as of September 28, 2019, please see Note 14 to our consolidated financial statements entitled "Litigation and Related Matters," which is incorporated by reference into this item.

Item 4. Mine Safety Disclosures

Not Applicable.

PART II

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

Market Information. Our common stock is traded on the Nasdaq Global Select Market under the symbol "HOLX."

Number of Holders. As of November 21, 2019, there were approximately 987 holders of record of our common stock, including multiple beneficial holders at depositories, banks and brokers listed as a single holder in the street name of each respective depositary, bank or broker.

Dividend Policy. We have never declared or paid cash dividends on our capital stock, and we currently have no plans to do so. Our current policy is to retain all of our earnings to finance future growth, pay down our existing indebtedness and repurchase our common stock. The existing covenants under certain of our debt instruments also place limits on our ability to issue dividends and repurchase stock.

Recent Sales of Unregistered Securities. We did not sell unregistered equity securities during the fourth quarter of fiscal 2019.

Issuer's Purchases of Equity Securities

Period of Repurchase	Total Number of Shares Purchased (#) (1)	Average Price Paid Per Share ($) (1)	Total Number of Shares Purchased As Part of Publicly Announced Plans or Programs (#) (2)	Average Price Paid Per Share As Part of Publicly Announced Plans or Programs ($) (2)	Maximum Number (or Approximate Dollar Value) of Shares That May Yet Be Purchased Under Our Programs (in millions) ($) (2)
June 30, 2019 – July 27, 2019	3,998	$ 48.23	—	$ —	$ 211.5
July 28, 2019 – August 24, 2019	1,298	50.83	—	—	211.5
August 25, 2019 – September 28, 2019	2,017	49.37	—	—	211.5
Total	7,313	$ 49.01	—	$ —	$ 211.5

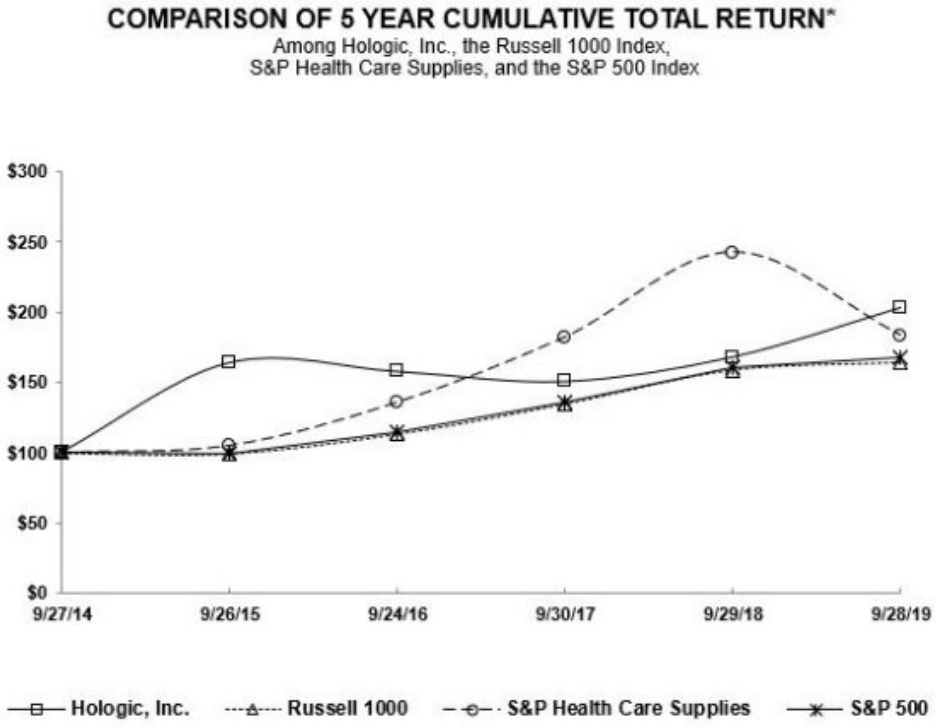
(1) For the majority of restricted stock units granted, the number of shares issued on the date that the restricted stock units vest is net of the minimum statutory tax withholding requirements that we pay in cash to the appropriate tax authorities on behalf of our employees. These repurchases of our common stock were to cover employee income tax withholding obligations in connection with the vesting of restricted stock units under our equity incentive plans.

(2) On June 13, 2018, the Company's Board of Directors authorized a share repurchase plan to repurchase up to $500.0 million of our outstanding common stock. This share repurchase plan, which replaced a prior plan, was effective August 1, 2018 and expires on June 13, 2023.

Stock Performance Graph

The following information shall not be deemed to be "filed" with the SEC nor shall the information be incorporated by reference into any future filings under the Securities Act of 1934, as amended, except to the extent that we specifically incorporate it by reference into a document filed under the Securities Act of 1933 or the Securities Exchange Act of 1934.

The following graph compares cumulative total shareholder return on our common stock since September 27, 2014 with the cumulative total return of the Russell 1000 Index and the Standard & Poor's Health Care Supplies Index. This graph assumes the investment of $100 on September 27, 2014 in our common stock, the Russell 1000 Index and the S&P Health Care Supplies Index. Measurement points are the last trading day of each respective fiscal year.



*$100 invested on 9/27/14 in stock or index, including reinvestment of dividends.
Fiscal year ending September 28.

Item 6. Selected Financial Data

The following selected financial data should be read in conjunction with our consolidated financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K, beginning on page F-1. In the second quarter of fiscal 2017, we acquired Cynosure, and in the third quarter of fiscal 2017 we acquired Medicor. In the first and fourth quarters of fiscal 2018, we acquired Emsor and Faxitron, respectively. In the first quarter of fiscal 2019, we acquired Focal Therapeutics. Results of operations for these businesses are included in our consolidated financial statements from the date of acquisition.

	Fiscal Years Ended				
	September 28, 2019 (5)	September 30, 2018 (4)	September 24, 2017 (3)	September 26, 2016 (2)	September 27, 2015 (1)
	(In millions, except per share data)				
Consolidated Statement of Operations Data					
Total revenues	$ 3,367.3	$ 3,217.9	$ 3,058.8	$ 2,832.7	$ 2,705.0
Total operating costs and expenses	$ 3,491.1	$ 3,455.8	$ 1,688.6	$ 2,284.1	$ 2,249.9
Net (loss) income	$ (203.6)	$ (111.3)	$ 755.5	$ 330.8	$ 131.6
Basic net (loss) income per common share	$ (0.76)	$ (0.40)	$ 2.70	$ 1.18	$ 0.47
Diluted net (loss) income per common share	$ (0.76)	$ (0.40)	$ 2.64	$ 1.16	$ 0.45
Consolidated Balance Sheet Data					
Working capital	$ 723.0	$ 320.6	$ (386.9)	$ 424.7	$ 322.4
Total assets	$ 6,442.1	$ 7,230.9	$ 7,979.6	$ 7,317.0	$ 7,642.5
Long-term debt obligations, less current portion (6)	$ 2,812.3	$ 2,736.1	$ 2,198.9	$ 3,058.7	$ 3,227.3
Total stockholders' equity	$ 2,115.7	$ 2,428.8	$ 2,784.7	$ 2,142.7	$ 2,079.2

(1) Fiscal 2015 total operating costs and expenses include restructuring and divestiture charges of $28.5 million. Included in net income was a debt extinguishment loss of $62.7 million and related transaction costs of $9.3 million.
(2) Fiscal 2016 total operating costs and expenses include restructuring and divestiture charges of $10.5 million. Included in net income was a gain on the sale of a marketable security of $25.1 million partially offset by a debt extinguishment loss of $5.3 million.
(3) Fiscal 2017 total operating costs and expenses include a gain on sale of the blood screening business of $899.7 million (reduces operating costs and expenses), inventory step-up costs of $39.7 million, transaction expenses for acquisitions of $23.2 million, and restructuring charges of $13.3 million.
(4) Fiscal 2018 total operating costs and expenses include a goodwill impairment charge of $685.7 million, an intangible asset impairment charge of $46.0 million, a legal settlement charge of $34.8 million and restructuring charges of $14.2 million. Included in net loss was a debt extinguishment loss of $45.9 million and related transaction costs of $4.3 million.
(5) Fiscal 2019 total operating costs and expenses include intangible assets and equipment impairment charges of $685.4 million, inventory step-up costs of $7.1 million, a net legal settlement charge of $4.5 million and restructuring charges of $6.6 million. Included in net loss was a $3.3 million loss for the Company's proportionate share of its equity method investment in SuperSonic Imagine.
(6) Long-term obligations are net of unamortized debt discounts and deferred issuance costs aggregating $29.0 million, $32.9 million, $27.9 million, $62.9 million and $95.7 million for fiscal years 2019, 2018, 2017, 2016, and 2015, respectively.

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

The following discussion and analysis should be read in conjunction with the Consolidated Financial Statements, the information described under the caption "Risk Factors" in Part I, Item 1A of this report and our Special Note Regarding Forward-Looking Statements at the outset of this report.

OVERVIEW

We are a developer, manufacturer and supplier of premium diagnostics products, medical imaging systems, surgical products and light-based aesthetic and medical treatment systems with an emphasis on women's health. We operate in five segments: Diagnostics, Breast Health, Medical Aesthetics, GYN Surgical and Skeletal Health. We sell and service our products through a combination of direct sales and service personnel and a network of independent distributors and sales representatives.

We offer a wide range of diagnostic products which are used primarily to aid in the diagnosis of human diseases, and through January 31, 2017, we offered products that screened donated human blood and plasma. Our primary diagnostics products include our Aptima family of molecular diagnostic assays, which run on our advanced instrumentation systems (Panther and Tigris), our ThinPrep cytology system, and the Rapid Fetal Fibronectin Test. The Aptima family of molecular diagnostic assays is used to detect, among other things, the infectious microorganisms that cause common sexually transmitted diseases, or STDs, chlamydia and gonorrhea, certain high-risk strains of human papillomavirus, or HPV, and *Trichomonas vaginalis*, the parasite that causes trichomoniasis. In addition, in 2017 and 2018 we introduced Aptima quantitative viral load tests for HIV, Hepatitis C and Hepatitis B. The Aptima portfolio also includes diagnostic tests for a range of acute respiratory ailments that are run on the Panther Fusion system, a field upgradeable instrument addition to Panther. The ThinPrep System is primarily used in cytology applications, such as cervical cancer screening, and the Rapid Fetal Fibronectin Test assists physicians in assessing the risk of pre-term birth.

Our Breast Health products include a broad portfolio of solutions for breast cancer care for radiology, pathology and surgery. These solutions include breast imaging and analytics, such as our 2D and 3D mammography systems and reading workstations, minimally invasive breast biopsy guidance systems and devices, breast surgery and biopsy site markers and localization, specimen radiology, ultrasound and connectivity solutions. Our most advanced breast imaging platforms, Selenia Dimensions and 3Dimensions, utilizes a technology called tomosynthesis to produce 3D images that show multiple contiguous slice images of the breast, which we refer to as the Genius 3D Mammography exam, as well as conventional 2D full field digital mammography images. Our clinical results for FDA approval demonstrated that conventional 2D digital mammography with the addition of 3D tomosynthesis is superior to 2D digital mammography alone for both screening and diagnostics for women of all ages and breast densities. In addition, through our recent acquisitions of Faxitron and Focal we have expanded our product portfolio to include breast conserving surgery products.

Our Medical Aesthetics segment offers a portfolio of aesthetic treatment systems, including SculpSure, PicoSure and MonaLisa Touch that enable plastic surgeons, dermatologists and other medical practitioners to perform non-invasive and minimally invasive procedures to remove hair, treat vascular and benign pigmented lesions, remove multi-colored tattoos, revitalize the skin, reduce fat through laser lipolysis, reduce cellulite, clear nails infected by toe fungus, ablate sweat glands and improve gynecologic health. This segment also markets TempSure, a radio frequency (or "RF") energy sourced platform that offers both non-surgical and surgical aesthetic treatments and procedures. On November 20, 2019, we executed a definitive agreement to sell our Medical Aesthetics business for a sales price of $205 million in cash subject to certain closing adjustments. Net of these adjustments, we expect net proceeds of approximately $138 million. We expect this disposition to be completed around the end of calendar year 2019. The definitive agreement contains representations and warranties and covenants customary for a transaction of this nature, and the completion of the sale is subject to customary closing conditions, including, among others, the expiration or termination of the applicable waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and certain other competition and regulatory approvals. The definitive agreement also contains certain termination rights for us and the purchaser, including, among other events, (i) if the transaction has not been completed on or prior to March 18, 2020, (ii) following a breach by the other party that would cause a closing condition not to be satisfied and is not or cannot be cured within 60 days' notice of that breach or (ii) if there is any law, injunction or other judgment permanently prohibiting the Transaction. We cannot assure that we will be able to complete this transaction on a timely basis.

Our GYN Surgical products include our NovaSure Endometrial Ablation System, or NovaSure, and our MyoSure Hysteroscopic Tissue Removal System, or MyoSure, as well as our Fluent Fluid Management system, or Fluent. The NovaSure portfolio is comprised of the NovaSure CLASSIC and NovaSure ADVANCED devices and involves a trans-cervical procedure for the treatment of abnormal uterine bleeding. The MyoSure suite of devices offers four options to provide incision-less removal of fibroids, polyps, and other pathology within the uterus. The Fluent system is a fluid management system that provides liquid distention during diagnostic and operative hysteroscopic procedures.

Our Skeletal Health segment's products includes the Horizon DXA, a dual energy x-ray system, which evaluates bone density and performs body composition assessments, and the Fluoroscan Insight FD mini C-arm, which assists in performing minimally invasive orthopedic surgical procedures on a patient's extremities, such as the hand, wrist, knee, foot, and ankle.

Unless the context otherwise requires, references to we, us, Hologic or our company refer to Hologic, Inc. and its consolidated subsidiaries.

Acquisitions and Dispositions

Cynosure, Inc.

On March 22, 2017, we completed the acquisition of Cynosure pursuant to which we acquired all of the outstanding shares of Cynosure. The acquisition was funded through available cash, and the total purchase price was $1.66 billion.

The allocation of the purchase price was based on estimates of the fair value of assets acquired and liabilities assumed as of March 22, 2017. As part of the purchase price allocation, we determined the identifiable intangible assets were developed technology of $736.0 million, in-process research and development of $107.0 million, trade names of $74.0 million, a distribution agreement of $42.0 million and customer relationships of $35.0 million. The fair values of the intangible assets were estimated using the income approach, specifically the excess earning method and relief from royalty method, and the cash flow projections were discounted using rates ranging from 11% to 12%. The cash flows were based on estimates used to price the transaction, and the discount rates applied were benchmarked with reference to the implied rate of return from the transaction model and the weighted average cost of capital.

The developed technology assets comprised know-how, patents and technologies embedded in Cynosure's products and relate to currently marketed products. In-process research and development projects related to in-process projects that have not reached technological feasibility as of the acquisition date and have no alternative future use. The primary basis for determining technological feasibility of these projects is obtaining regulatory approval to market the underlying product or expected commercial release depending on the project. We recorded $107.0 million of in-process research and development assets related to three projects, which were expected to be completed during fiscal 2018 and 2019 with a preliminary cost to complete of approximately $18.0 million. All of the in-process research and development assets were valued using the multiple-period excess earnings method approach using discount rates ranging from 14% to 22%.

During the fourth quarter of fiscal 2017, we obtained regulatory approval for two projects with an aggregate fair value of $61.0 million and these assets were reclassified to developed technology. The remaining project, which had an initial fair value of $46.0 million, was abandoned in the second quarter of fiscal 2018 due to unsuccessful clinical results. As a result, the Company recorded a $46.0 million impairment charge in the second quarter of fiscal 2018.

The calculation of the excess of the purchase price over the estimated fair value of the tangible net assets and intangible assets acquired was recorded to goodwill. The factors contributing to the recognition of the amount of goodwill were based on several strategic and synergistic benefits that were expected to be realized from the Cynosure acquisition. These benefits included the expectation that our entry into the aesthetics market would significantly broaden our offering in women's health. The combined company was expected to benefit from a broader global presence, synergistic utilization of Hologic's direct sales force, primarily its GYN Surgical sales force, with certain Cynosure products and entry into an adjacent, cash-pay segment. During the second quarter of fiscal 2018, we identified indicators of impairment and performed an interim goodwill impairment test. This analysis resulted in a goodwill impairment charge of $685.7 million recorded in the second quarter of fiscal 2018.

During fiscal 2019, we identified indicators of impairment for our Medical Aesthetics reporting unit as a result of reductions in forecasts during the year, and in connection with our efforts to sell the business that began prior to the end of fiscal 2019. We executed a definitive agreement on November 20, 2019 to sell the business. Although this agreement was signed subsequent to the balance sheet date, we concluded that it provided evidence regarding the estimate of fair value of the asset group at September 28, 2019 and that there were no events that occurred between September 28, 2019 and the date we entered into the definitive agreement that would significantly affect the fair value of the asset group. As a result of these indicators of impairment we recorded total impairment charges of $685.4 million in fiscal 2019 to record the asset group to its fair value.

For additional information, please refer to Note 2 and 4 to our consolidated financial statements contained in Item 15 of this Annual Report.

Medicor Medical Supply

On April 7, 2017, we completed the acquisition of MMS Medicor Medical Supplies GmbH, or Medicor, for a purchase price of $19.0 million. Medicor was a long-standing distributor of our Breast and Skeletal Health products in Germany, Austria and Switzerland.

Emsor, S.A.

On December 11, 2017, we completed the acquisition of Emsor S.A., or Emsor, for a purchase price of $16.3 million, which included contingent consideration estimated at $4.9 million as of the measurement date. The contingent consideration is payable upon Emsor achieving predefined amounts of cumulative revenue over a two year period from the date of acquisition. Emsor was a distributor of our Breast and Skeletal Health products in Spain and Portugal.

Faxitron

On July 31, 2018, we completed the acquisition of Faxitron Bioptics, LLC, or Faxitron, for a purchase price of $89.5 million, which included hold-backs of $11.7 million that were payable up to one year from the date of acquisition, and contingent consideration which we estimated at $2.9 million as of the measurement date. The contingent consideration is payable upon meeting certain revenue growth metrics. In the fourth quarter of fiscal 2019, we increased the contingent consideration liability by $1.7 million based on updated projections. In fiscal 2019, we paid $6.5 million of the hold-back and have withheld the remaining $5.2 million under the indemnification provisions of the purchase agreement, which the former shareholders are disputing. Faxitron, headquartered in Tucson, Arizona, develops, manufactures, and markets digital radiography systems. Faxitron's results of operations are reported in our Breast Health reportable segment from the date of acquisition. Based on our valuation, we allocated $53.2 million of the purchase price to the value of intangible assets and $45.6 million to goodwill.

Focal Therapeutics

On October 1, 2018, we completed the acquisition of Focal Therapeutics, Inc., or Focal, for a purchase price of $120.1 million, which included hold-backs of $14.0 million payable up to one year from the date of acquisition. In the second quarter of fiscal 2019, $1.5 million of the hold-back was paid, and the remaining $12.5 million was paid on October 1, 2019. Focal, headquartered in California, manufactures and markets its BioZorb marker, which is an implantable three-dimensional marker that helps clinicians overcome certain challenges in breast conserving surgery. Based on our valuation, we allocated $97.2 million of the purchase price to the value of intangible assets and $31.1 million to goodwill.

SuperSonic Imagine

On August 1, 2019, we acquired approximately 46% of the outstanding shares of SuperSonic Imagine S. A., or SSI. SSI, headquartered in France, specializes in ultrasound imaging and designs, develops and markets an ultrasound platform used in the non-invasive care path for the characterization of breast, liver or prostate diseases. We have accounted for this investment as an equity method investment and as a result we recorded a loss of $3.3 million within other income, net, representing our proportionate share of SSI's loss for the two months ended September 28, 2019. In September 2019, we launched a tender offer to acquire all of the remaining shares of SSI that we did not already own for a price of €1.50 per share in cash. Effective November 21, 2019, we acquired an additional 7.6 million shares for $12.5 million. As a result, we own approximately 78% of the outstanding shares and will launch a second tender offer with similar terms to acquire the remaining shares. We will perform purchase accounting in the first quarter of fiscal 2020 and expect to begin consolidating SSI's results effective November 21, 2019.

Blood Screening Business Disposition

In the first quarter of fiscal 2017, we entered into a definitive agreement to sell our blood screening business to Grifols for a sales price of $1.85 billion in cash, subject to adjustment based on the closing amount of inventory. The transaction closed on January 31, 2017 and we received $1.865 billion. The sale resulted in a gain of $899.7 million recorded in the second quarter of fiscal 2017. As a result of this disposition and proceeds received, we recorded a tax obligation of $649.5 million, which was paid in fiscal 2017. Upon the closing of the transaction, our existing collaboration agreement with Grifols terminated, and a new collaboration agreement was executed as part of this transaction for us to provide certain research and development services to Grifols. In addition, we agreed to provide transition services to Grifols over a two to three year period depending on the nature of the respective service, including the manufacture of inventory, and we are in effect serving as a contract manufacturer of assays for Grifols for a two to three year period from the disposal date. We also agreed to sell Panther

instrumentation and certain supplies to Grifols as part of a long term supply agreement. Following the closing of this disposition, we no longer operate our blood screening business, except to the limited extent we have agreed to support Grifols. Under the long term supply agreement, transition services agreement to manufacture assays, and research and development services, we recognized revenues of $58.5 million and $55.4 million in fiscal 2019 and 2018, respectively. For the disposed blood screening business, in fiscal 2017, revenue was $96.5 million, gross profit was $64.8 million and operating income was $45.8 million. Revenue, gross profit and operating income of the disposed business represents the financial impact of the business as it was operated prior to the date of disposition. The operating expenses include only those that were directly incurred and retained by the disposed business and are now incurred by Grifols. See Note 15 to our consolidated financial statements included herein.

RESULTS OF OPERATIONS

The following table sets forth, for the periods indicated, the percentage of total revenues represented by items as shown in our Consolidated Statements of Operations. All dollar amounts in tables are presented in millions.

	Fiscal Years Ended		
	September 28, 2019	September 29, 2018	September 30, 2017
Revenues:			
Product	82.3 %	82.2 %	83.0 %
Service and other	17.7 %	17.8 %	17.0 %
	100.0 %	100.0 %	100.0 %
Costs of revenues:			
Product	28.2 %	27.6 %	28.8 %
Amortization of intangible assets	9.5 %	9.9 %	9.7 %
Impairment of intangible assets and equipment	17.2 %	— %	— %
Service and other	10.4 %	9.8 %	8.5 %
Gross Profit	34.8 %	52.7 %	53.0 %
Operating expenses:			
Research and development	6.9 %	6.8 %	7.6 %
Selling and marketing	16.8 %	16.9 %	16.3 %
General and administrative	9.9 %	11.4 %	11.2 %
Amortization of intangible assets	1.5 %	1.8 %	2.0 %
Impairment of intangible assets and equipment	3.2 %	1.4 %	— %
Impairment of goodwill	— %	21.3 %	— %
Gain on sale of business	— %	— %	(29.4)%
Restructuring charges	0.2 %	0.4 %	0.4 %
	38.5 %	60.1 %	8.1 %
Income (loss) from operations	(3.7)%	(7.4)%	44.8 %
Interest income	0.1 %	0.2 %	0.1 %
Interest expense	(4.2)%	(4.6)%	(5.0)%
Debt extinguishment losses	— %	(1.4)%	(0.1)%
Other income, net	0.1 %	0.2 %	0.4 %
(Loss) income before income taxes	(7.7)%	(13.0)%	40.2 %
(Benefit) provision for income taxes	(1.6)%	(9.5)%	15.5 %
Net (loss) income	(6.1)%	(3.5)%	24.7 %

Fiscal Year Ended September 28, 2019 Compared to Fiscal Year Ended September 29, 2018

Product Revenues.

	Years Ended					
	September 28, 2019		September 29, 2018		Change	
	Amount	% of Total Revenue	Amount	% of Total Revenue	Amount	%
Product Revenues						
Diagnostics	$ 1,179.9	35.0%	$ 1,123.6	34.9%	$ 56.3	5.0 %
Breast Health	836.8	24.9%	758.5	23.6%	78.3	10.3 %
Medical Aesthetics	252.9	7.5%	278.4	8.7%	(25.5)	(9.2)%
GYN Surgical	436.2	13.0%	421.1	13.1%	15.1	3.6 %
Skeletal Health	65.5	1.9%	62.3	1.9%	3.2	5.1 %
	$ 2,771.3	82.3%	$ 2,643.9	82.2%	$ 127.4	4.8 %

We generated a 4.8% increase in product revenues in fiscal 2019 compared to fiscal 2018 due to increases across all our business segments except Medical Aesthetics, which experienced a decline primarily attributable to a reduction in volume of SculpSure and MonaLisa Touch system sales. In the Breast Health business segment, the acquisitions of Faxitron and Focal contributed combined product revenues of $49.2 million in fiscal 2019.

Diagnostics product revenues increased 5.0% in fiscal 2019 compared to fiscal 2018 primarily due to increases in Molecular Diagnostics (excluding blood screening) of $64.2 million partially offset by decreases in Cytology & Perinatal of $8.6 million. In addition, product revenue from blood screening, which we divested in the second quarter of fiscal 2017, increased $0.6 million under our agreement to provide Grifols manufacturing support through a transition services period and long term access to Panther instrumentation and certain raw material supplies. Molecular Diagnostics product revenue was $665.4 million in fiscal 2019 compared to $601.2 million in fiscal 2018. The increase was primarily attributable to sales volume of our Aptima family of assays, which increased $41.9 million on a worldwide basis primarily due to our increased installed base of Panther instruments. This installed base is driving higher volumes of assay testing. In addition, we had an increase in worldwide sales of our virology and Fusion products for which we have recently received certain international regulatory approvals as part of our strategy to expand our menu of assays on the Panther platform. Cytology and Perinatal product revenue decreased $8.6 million primarily due to lower Perinatal volumes, which we primarily attribute to a shift in ordering patterns, and lower domestic ThinPrep test volumes, which we primarily attribute to screening interval expansion as well as a slight decline in average selling prices, partially offset by an increase in international volumes on a worldwide basis. The increase in revenue was partially offset by the negative foreign currency exchange impact on foreign sales of the strengthening U.S. dollar against a number of currencies.

Breast Health product revenues increased 10.3% in fiscal 2019 compared to fiscal 2018 primarily due to the inclusion of Faxitron and Focal products which contributed $44.7 million of the increase in revenues in fiscal 2019. In addition, we had increased unit volumes of our digital mammography systems, primarily our newest 3Dimensions and 3D Performance systems, which complement our older 3D systems for which we had lower sales, and an increase in our newer workflow products, consisting of Intelligent 2D, Clarity HD, and SmartCurve upgrades, partially offset by lower sales of our Brevera breast biopsy system due to supply constraints, Affirm Prone table and software features, and 3D software upgrades. The increase in revenue was partially offset by the negative foreign currency exchange impact on foreign sales of the strengthening U.S. dollar against a number of currencies.

Medical Aesthetics product revenues decreased (9.2)% in fiscal 2019 compared to fiscal 2018 primarily due to a decrease in Body Contouring product revenues on a worldwide basis primarily driven by lower volumes of SculpSure lasers, Submental upgrades and related PAC keys, which we believe was partially due to challenges in our domestic sales force earlier in the year and increased competition in the non-invasive fat reduction category. Our Medical Aesthetics product revenues were also adversely affected by lower Women's Health product sales primarily from lower sales volume of our MonaLisa Touch device, which we believe is primarily driven by the FDA's public letter in the fourth quarter of fiscal 2018 challenging various medical aesthetics companies' marketing of devices for so called "vaginal rejuvenation" procedures relative to their FDA approvals. In November of 2018, we received confirmation from the FDA that we had adequately addressed all of the concerns expressed in their letter and we continue to market our Women’s Health products accordingly. These decreases were partially offset by higher Skin product revenue in fiscal 2019 compared to fiscal 2018 primarily driven by Icon and TempSure system sales. In the fourth quarter of fiscal 2018 in response to the FDA letter referred to above we voluntarily recalled the Tempsure Vitalia handpieces and reversed revenue for refunds and rebates totaling $6.8 million. In the first quarter of fiscal 2019, we relaunched the TempSure product line. The decrease in revenue was also partly due to the negative foreign currency exchange impact on foreign sales of the strengthening U.S. dollar against a number of currencies.

GYN Surgical product revenues increased 3.6% in fiscal 2019 compared to fiscal 2018 primarily due to increases in the volume of MyoSure system sales of $9.7 million and increases in Fluent systems sales of $10.8 million. We launched our Fluent system in the fourth quarter of fiscal 2018. In addition, we had an increase in revenues in fiscal 2019 from the launch of our new Omni scope product. These increases were partially offset by decreases in NovaSure systems sales of $14.0 million in fiscal 2019 compared to fiscal 2018. We attribute the decrease in NovaSure sales primarily to increased competition and a stagnant market for endometrial ablation. In addition, we have experienced a slight reduction in average selling prices across many of our MyoSure and Novasure devices, which were partially offset by an increase in sales volume for the higher priced NovaSure ADVANCED device.

Skeletal Health product revenues increased 5.1% in fiscal 2019 compared to fiscal 2018 primarily due to higher sales volume of our Horizon DXA systems.

In fiscal 2019, 74.6% of product revenues were generated in the United States, 12.0% in Europe, 8.8% in Asia-Pacific, and 4.6% in other international markets. In fiscal 2018, 74.2% of product revenues were generated in the United States, 12.0% in Europe, 9.0% in Asia-Pacific, and 4.8% in other international markets. The slight increase in the percentage of U.S. revenues was primarily due to the Faxitron and Focal acquisitions which generate the majority of their revenue in the U.S.

Service and Other Revenues.

	Years Ended					
	September 28, 2019		September 29, 2018		Change	
	Amount	% of Total Revenue	Amount	% of Total Revenue	Amount	%
Service and Other Revenues	$ 596.0	17.7%	$ 574.0	17.8%	$ 22.0	3.8%

Service and other revenues are primarily comprised of revenue generated from our field service organization to provide ongoing service, installation and repair of our products. The majority of these revenues are generated within our Breast Health segment, and to a lesser extent, our Medical Aesthetics business. The Breast Health business continues to convert a high percentage of our installed base of digital mammography systems to service contracts upon expiration of the warranty period. Our Medical Aesthetics business represented 10.5% and 10.6% of service and other revenues in fiscal 2019 and fiscal 2018, respectively. Service and other revenues increased 3.8% in fiscal 2019 compared to fiscal 2018 primarily due to higher installation, spare parts, and service contract conversion and renewal rates for our Breast Health business. In addition, in the current year, Breast Health had higher license revenue.

Cost of Product Revenues.

	Years Ended					
	September 28, 2019		September 29, 2018		Change	
	Amount	% of Product Sales	Amount	% of Product Sales	Amount	%
Cost of Product Revenues	$ 948.7	34.2%	$ 886.6	33.5%	$ 62.1	7.0 %
Amortization of Intangible Assets	318.5	11.5%	319.4	12.1%	(0.9)	(0.3)%
Impairment of Intangible Assets and Equipment	578.7	20.9%	—	—%	578.7	100.0 %
	$ 1,845.9	66.6%	$ 1,206.0	45.6%	$ 639.9	53.1 %

Product gross margin was 33.4% in fiscal 2019 compared to 54.4% in fiscal 2018. Excluding the impairment of intangible assets and equipment, product gross margin would have been 54.3%

Cost of Product Revenues. The cost of product revenues as a percentage of product revenues was 34.2% in the current year compared to 33.5% in the prior year. Cost of product revenues as a percentage of product revenues increased in fiscal 2019 compared to fiscal 2018 primarily due to unfavorable manufacturing variances, product mix, step-up in fair value of inventory acquired in the Focal acquisition that resulted in additional costs of $7.1 million, increased tariff costs for products imported into China of $7.5 million and higher international freight costs.

Diagnostics' product costs as a percentage of revenue increased in fiscal 2019 compared to fiscal 2018 primarily due to lower ThinPrep Pap test and Perinatal sales, unfavorable manufacturing variances, and lower gross margin from blood screening based on the increase in sales under our long-term supply agreement with Grifols. These cost increases were partially offset by improved molecular diagnostics' gross margin from increased volume of Aptima assays and viral assays.

Breast Health's product costs as a percentage of revenue increased in fiscal 2019 compared to fiscal 2018 primarily due to unfavorable manufacturing and purchase price variances, the acquisition of Focal in the first quarter of fiscal 2019 and the related impact of stepping-up the acquired inventory to fair value in purchase accounting that resulted in additional costs of $7.1 million in fiscal 2019, tariff costs in China, an increase in the sales volume of digital mammography systems internationally, which generally have lower average selling prices than domestic system sales, and lower software sales. The increases in costs as a percentage of revenue were partially offset by higher domestic sales volume of the higher margin 3Dimensions system sales and increased sales of the higher margin workflow products, consisting of Intelligent 2D, Clarity HD, and SmartCurve upgrades.

Medical Aesthetics' product costs as a percentage of revenue decreased in fiscal 2019 compared to fiscal 2018 primarily due to fiscal 2018 including a $6.8 million revenue reserve recorded in the fourth quarter of fiscal 2018 for the voluntary TempSure Vitalia recall in response to the FDA letter and related inventory charges in fiscal 2018. This was partially offset by lower sales volume, unfavorable product mix as we sold fewer units of our higher margin SculpSure laser and related PAC keys and MonaLisa Touch device, unfavorable manufacturing variances, increased inventory reserves and tariff costs in China.

GYN Surgical's product costs as a percentage of revenue decreased slightly in fiscal 2019 compared to fiscal 2018 primarily due to favorable manufacturing variances from overall increased volumes. Product costs were relatively consistent in fiscal 2019 compared to fiscal 2018. While there is a continued mix shift to the lower margin MyoSure products from NovaSure comprising a higher percentage of GYN Surgical product sales and increased sales of Fluent, this trend was offset by an increase in sales volume in fiscal 2019 for the higher margin NovaSure ADVANCED device compared to the Classic device.

Skeletal Health's product costs as a percentage of revenue were relatively consistent in fiscal 2019 compared to fiscal 2018.

Amortization of Intangible Assets. Amortization of intangible assets included in cost of product revenues relates to acquired developed technology, which is generally amortized over its estimated useful life of between 5 and 15 years using a straight-line method or, if reliably determinable, based on the pattern in which the economic benefits of the assets are expected to be consumed. Amortization expense decreased in fiscal 2019 compared to fiscal 2018 primarily due to lower amortization from intangible assets acquired in the Cynosure acquisition which were written down in the second quarter of fiscal 2019 (partially offset by shortening the remaining life of certain assets) and lower amortization of intangible assets acquired in the Cytyc acquisition which reduce over time. These decreases were partially offset by combined amortization expense related to intangible assets acquired in the Faxitron and Focal acquisitions of $12.9 million in the fiscal 2019.

Impairment of Intangible Assets and Equipment. During fiscal 2019, we identified indicators of impairment for our Medical Aesthetics reporting unit as a result of reductions in forecasts during the year, and in connection with our efforts to sell the business that began prior to the end of fiscal 2019 as described above. As a result of these indicators of impairment, we recorded total impairment charges of $685.4 million in fiscal 2019. The impairment charge was allocated to developed technology for $576.9 million and equipment assets for $1.8 million, which is included in cost of revenues. In the first quarter of fiscal 2020, this asset group will meet the assets held-for-sale criteria and will be recorded at fair value less the costs to sell, which could result in additional charges.

Cost of Service and Other Revenues.

	Years Ended					
	September 28, 2019		September 29, 2018		Change	
	Amount	% of Service and Other Revenues	Amount	% of Service and Other Revenues	Amount	%
Cost of Service and Other Revenues	$ 350.5	58.8%	$ 315.2	54.9%	$ 35.3	11.2%

Service and other revenues gross margin was 41.2% in fiscal 2019 compared to 45.1% in fiscal 2018. The decrease in gross margin is primarily due to an increase in costs in Breast Health to repair digital mammography systems under service contracts, including an increase in spare parts revenue with unfavorable margins, increased departmental spend and higher

freight costs, and increased field service costs in Medical Aesthetics. In fiscal 2019, the reduced gross margin was partially offset by an increase in Breast Health license revenue, which has a higher gross margin.

Operating Expenses.

	Years Ended					
	September 28, 2019		September 29, 2018		Change	
	Amount	% of Total Revenue	Amount	% of Total Revenue	Amount	%
Operating Expenses						
Research and development	$ 232.2	6.9%	$ 218.7	6.8%	$ 13.5	6.2 %
Selling and marketing	564.9	16.8%	544.6	16.9%	20.3	3.7 %
General and administrative	332.3	9.9%	366.1	11.4%	(33.8)	(9.2)%
Amortization of intangible assets	52.0	1.5%	59.3	1.8%	(7.3)	(12.3)%
Impairment of intangible assets and equipment	106.7	3.2%	46.0	1.4%	60.7	132.0 %
Impairment of goodwill	—	—%	685.7	21.3%	(685.7)	(100.0)%
Restructuring charges	6.6	0.2%	14.2	0.4%	(7.6)	(53.5)%
	$ 1,294.7	38.5%	$ 1,934.6	60.0%	$ (639.9)	(33.1)%

Research and Development Expenses. Research and development expenses increased 6.2% in fiscal 2019 compared to fiscal 2018 primarily due to a $4.5 million charge related to the purchase of intellectual property in the third quarter of fiscal 2019, higher compensation expense in Breast Health due to increased headcount and the inclusion of expenses from the Faxitron and Focal acquisitions contributing a $4.8 million increase, and an increase in consulting spend, partially offset by a decrease in project spend and a reduction in Diagnostics from lower headcount. At any point in time, we have a number of different research projects and clinical trials being conducted and the timing of these projects and related costs can vary from period to period.

Selling and Marketing Expenses. Selling and marketing expenses increased 3.7% in fiscal 2019 compared to fiscal 2018 primarily due to expenses attributable to the Faxitron and Focal acquisitions contributing a $19.7 million increase in fiscal 2019, increased sales personnel headcount in Surgical, increased marketing initiatives in Diagnostic, and higher travel partially offset by lower Medical Aesthetics expenses primarily due to lower compensation expense as a result of lower headcount, and a reduction in marketing initiatives spend and trade shows.

General and Administrative Expenses. General and administrative expenses decreased 9.2% in fiscal 2019 compared to fiscal 2018 primarily due to the inclusion in fiscal 2018 of a $34.8 million legal settlement charge related to the Smith & Nephew patent infringement lawsuit related regarding our MyoSure system. Excluding the impact of the Smith & Nephew settlement, general and administrative expenses were consistent in fiscal 2019 compared to fiscal 2018. Fiscal 2019 included higher compensation and benefits due to increased headcount and improved results, higher facility and infrastructure costs, increased acquisition and transactional related expenses including contingent consideration, and an increase in accounting and consulting fees related to the adoption of new accounting standards. Additionally, the first quarter of fiscal 2018 included a $4.0 million benefit due to resolution of a non-income tax matter. Offsetting these increases in fiscal 2019 was lower depreciation expense as fiscal 2018 included accelerated depreciation of Cynosure's SAP ERP system, and a net decrease in legal fees and charges primarily related to the Fuji and Minerva lawsuits, partially offset by settling the Enzo lawsuit in the second quarter of fiscal 2019.

Amortization of Intangible Assets. Amortization of intangible assets results from customer relationships, trade names, distributor relationships and business licenses related to our acquisitions. These intangible assets are generally amortized over their estimated useful lives of between 5 and 30 years using a straight-line method or, if reliably determinable, based on the pattern in which the economic benefits of the assets are expected to be consumed utilizing expected undiscounted future cash flows. Amortization expense decreased 12.3% in fiscal 2019 compared to fiscal 2018 primarily due to lower amortization from the intangible assets acquired in the Cynosure acquisition which were written down in the second quarter of fiscal 2019.

Impairment of Intangible Assets and Equipment. As discussed above, we recorded aggregate impairment charges of $685.4 million during fiscal 2019. The impairment charges were allocated to the long-lived assets and written off to operating expenses in the amounts of $22.4 million to customer relationships, $48.6 million to trade names, $27.7 million to distribution agreements and $8.0 million to equipment.

In the second quarter of fiscal 2018, we decided to cancel and abandon an in-process research and development project that was recorded as an intangible asset in the Cynosure acquisition purchase accounting. The project was abandoned due to unsuccessful clinical results. As a result, we recorded a $46.0 million impairment charge to write-off the full value of the asset.

Impairment of Goodwill. During the second quarter of fiscal 2018, in connection with commencing our company-wide annual budgeting and strategic planning process, evaluating the current operating performance of our Medical Aesthetics reporting unit, and abandoning an in-process research and development project, we reduced the short term and long term revenue and operating income forecasts and determined that indicators of impairment existed in our Medical Aesthetics reporting unit. The updated forecast reflected significantly reduced volume and market penetration projections resulting in lower short-term and long-term profitability than expected at the time of the Cynosure acquisition. As a result of those current events and circumstances, we determined that it was more likely than not that this change would reduce the fair value of the reporting unit below its carrying amount. In performing the impairment test, we utilized the single step approach under Accounting Standards Update No. 2017-04, *Intangibles-Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment* (ASU 2017-04). The goodwill impairment test requires a comparison of the carrying value of the Medical Aesthetics reporting unit to its estimated fair value. To estimate the fair value of the reporting unit, we utilized a DCF analysis. The forecasted cash flows were based on our most recent budget and strategic plan and for periods beyond the strategic plan, our estimates were based on assumed growth rates expected as of the measurement date. We believe our assumptions were consistent with the plans and estimates used to manage the underlying business. The basis of fair value for Medical Aesthetics assumed the reporting unit would be purchased or sold in a non-taxable transaction, and the discount rate of 12.0% applied to the after-tax cash flows was consistent with that used in the purchase accounting performed in fiscal 2017. We believe our assumptions used to determine the fair value of the reporting unit were reasonable. For additional information pertaining to impairment of goodwill, please refer to Note 2 to our consolidated financial statements contained in Item 15 of this Annual Report.

Restructuring Charges. In fiscal 2017, in connection with our acquisition of Cynosure, we implemented certain organizational changes, and we also eliminated certain research and development positions in Breast Health and manufacturing positions primarily in our Diagnostics division. In fiscal 2018, we finalized our decision to consolidate legacy international accounting and customer service organizations into our Manchester, UK location and decided to eliminate positions in Belgium, France, Italy, Spain and Germany. This transition was completed in fiscal 2019. We also eliminated certain sales and marketing personnel in our Diagnostics and Medical Aesthetics divisions. Additionally, we decided to close our Hicksville, New York facility which manufactured certain Cynosure products and the employees were notified of termination and related benefits in the third quarter of fiscal 2018. In fiscal 2019, we decided to transfer certain shared services positions to our Costa Rica facility from our Marlborough location and made other employee termination actions. Pursuant to U.S. GAAP, the related severance and benefit charges are recognized either ratably over the respective required employee service periods or up-front for contractual benefits. In fiscal 2019 and 2018, we recorded aggregate charges of $6.6 million and $14.2 million, respectively, from these actions, primarily for severance and benefits and to a lesser extent lease obligation charges for facility closure costs. For additional information, please refer to Note 6 to our consolidated financial statements contained in Item 15 of this Annual Report.

Interest Expense.

	Years Ended			
	September 28, 2019	September 29, 2018	Change	
	Amount	Amount	Amount	%
Interest Expense	$ (140.8)	$ (148.7)	$ 7.9	(5.3)%

Interest expense in fiscal 2019 and 2018 consists primarily of the cash interest costs and the related amortization of the debt discount and deferred issuance costs on our outstanding debt. Interest expense in fiscal 2019 decreased compared to fiscal 2018 primarily from refinancing our 2022 Senior Notes with our 2025 and 2028 Senior Notes that carry lower rates, extinguishing our Convertible Notes in fiscal 2017 and 2018. Fiscal 2018 interest expense also included issuance costs expensed from refinancing of our credit facilities and issuance of the 2025 Senior Notes and 2028 Senior Notes in fiscal 2018. These decreases in fiscal 2019 were partially offset by increased interest expense under our 2018 Credit Agreement due to an increase in LIBOR and average amounts outstanding and net lower gains earned under our interest rate cap agreements that hedge the variable interest rate under our credit facilities in fiscal 2019 as compared to fiscal 2018.

Debt Extinguishment Losses.

	Years Ended			
	September 28, 2019	September 29, 2018	Change	
	Amount	Amount	Amount	%
Debt Extinguishment Losses	$ (0.8)	$ (45.9)	$ 45.1	(98.3)%

In the first quarter of fiscal 2019, we entered into the 2018 Credit Agreement with Bank of America, N.A. The proceeds under the 2018 Agreement were used to pay off the Term Loan and Revolver outstanding under the 2017 Credit Agreement. In connection with this transaction, we recorded a debt extinguishment loss of $0.8 million in the first quarter of fiscal 2019.

In the first quarter of fiscal 2018, we entered into the 2017 Credit Agreement with Bank of America, N.A. The proceeds under the 2017 Credit Agreement were used to pay off the Term Loan and Revolver outstanding under the Prior Credit Agreement. In connection with this transaction, we recorded a debt extinguishment loss of $1.0 million in the first quarter of fiscal 2018. In the second quarter of fiscal 2018, we completed a private placement of $1.0 billion aggregate principal amount of senior notes allocated between the 2025 Senior Notes and 2028 Senior Notes. The proceeds under the 2025 Senior Notes and 2028 Senior Notes offering and our available cash were used to redeem the 2022 Senior Notes in the same principal amount. In connection with this transaction, we recorded a debt extinguishment loss of $44.9 million in the second quarter of fiscal 2018.

Other Income, net.

	Years Ended			
	September 28, 2019	September 29, 2018	Change	
	Amount	Amount	Amount	%
Other Income, net	$ 3.1	$ 7.6	$ (4.5)	(59.2)%

In fiscal 2019, this account primarily consisted of net foreign currency exchange gains of $5.1 million primarily due to hedging activities, a gain of $0.9 million on the sale of an investment and a gain of $0.4 million on the cash surrender value of life insurance contracts related to our deferred compensation plans, partially offset by a $3.3 million loss related to our proportionate share of investment in SSI, which is being accounted for an equity method investment.

In fiscal 2018, this account primarily consisted of net foreign currency exchange gains of $5.9 million primarily due to hedging activities, a gain of $3.2 million on the cash surrender value of life insurance contracts related to our deferred compensation plan, partially offset by a realized loss of $0.6 million on the sale of a marketable security.

(Benefit) for Income Taxes.

	Years Ended			
	September 28, 2019	September 29, 2018	Change	
	Amount	Amount	Amount	%
(Benefit) for Income Taxes	$ (54.1)	$ (307.3)	$ 253.2	(82.4)%

Our effective tax rate for fiscal 2019 was 21.0% compared to 73.4% in fiscal 2018. Our effective tax rate in fiscal 2019, applied to an overall pre-tax loss resulting in a benefit, was equal to the statutory tax rate primarily due to the offsetting impacts of a discrete benefit related to an internal restructuring, earnings in jurisdictions subject to lower tax rates, reserves for uncertain tax positions and releases resulting from statute of limitations expirations and favorable audit settlements, a valuation allowance resulting from the Medical Aesthetics impairment charge, and finalizing the impact of the enactment of the Tax Cuts and Jobs Act (the "Act") in the first quarter of fiscal 2019. As of December 29, 2018, we completed our accounting for the tax effects of enactment of the Act, recording a benefit reduction of $5.0 million in the three months ended December 29, 2018. We recognized a final net benefit amount of $341.2 million related to the Act, which was included as a component of income tax expense.

Our effective tax rate in fiscal 2018, applied to an overall pre-tax loss resulting in a benefit, differed from the statutory tax rate primarily due to the favorable impact of the Tax Cuts and Jobs Act (the "Act"), which required us to remeasure our U.S. net deferred tax liabilities at a lower rate, partially offset by the unfavorable impact of the Medical Aesthetics goodwill impairment charge, substantially all of which was non-deductible. The net result of implementing the Act was a benefit of $346.2 million representing our best estimate based on our interpretation of the Act. As of September 29, 2018, we were still accumulating data to finalize the underlying calculations, and the U.S. Treasury was expected to issue further guidance on the application of certain provisions of the Act.

Segment Results of Operations

We report our business as five segments: Diagnostics, Breast Health, Medical Aesthetics, GYN Surgical and Skeletal Health. The accounting policies of the segments are the same as those described in the footnotes to the accompanying consolidated financial statements contained in Item 15 of this Annual Report. We measure segment performance based on total revenues and operating income. Revenues from product sales of each of these segments are described in further detail above. The discussion that follows is a summary analysis of total revenues and the primary changes in operating income or loss by segment.

Diagnostics.

	Years Ended			
	September 28, 2019	September 29, 2018	Change	
	Amount	Amount	Amount	%
Total Revenues	$ 1,205.5	$ 1,147.4	$ 58.1	5.1%
Operating Income	$ 163.1	$ 145.5	$ 17.6	12.1%
Operating Income as a % of Segment Revenue	13.5%	12.7%		

Diagnostics revenues increased in fiscal 2019 compared to fiscal 2018 primarily due to the increase in product revenues discussed above.

Operating income for this business segment increased in fiscal 2019 compared to fiscal 2018 primarily due to an increase in gross profit from higher revenues partially offset by an increase in operating expenses. Gross margin was 47.3% in the current year compared with 47.1% in the prior year. The increase in gross margin was primarily due to improved molecular diagnostics' gross margin from increased volume of Aptima assays and lower amortization expense, partially offset by lower ThinPrep Pap test and Perinatal volumes, unfavorable manufacturing variances, lower gross margins on blood screening revenues, and the negative foreign currency impact of the strengthening U. S. dollar.

Operating expenses increased in fiscal 2019 compared to fiscal 2018 primarily due to the $10.5 million settlement charge recorded in the second quarter of fiscal 2019 related to the Enzo litigation, an increase in marketing initiatives and trade shows, an increase in consulting spend and higher sales expense partially offset by lower compensation expense due to a decrease in headcount, lower clinical trial expenses based on the timing of projects, a reduction in legal fees, lower restructuring costs and lower amortization expense.

Breast Health.

	Years Ended			
	September 28, 2019	September 29, 2018	Change	
	Amount	Amount	Amount	%
Total Revenues	$ 1,314.2	$ 1,218.2	$ 96.0	7.9 %
Operating Income	$ 399.3	$ 399.7	$ (0.4)	(0.1)%
Operating Income as a % of Segment Revenue	30.4%	32.8%		

Breast Health revenues increased in fiscal 2019 compared to fiscal 2018 primarily due to an increase of $78.3 million in product revenue and a $17.7 million in service and other revenue as discussed above.

Operating income for this business segment was consistent in fiscal 2019 compared to fiscal 2018 primarily due to an increase in gross profit from higher revenue offset by an increase in operating expenses in the current year. The overall gross margin decreased to 57.8% in the current year compared to 60.2% in the prior year primarily due to a $12.9 million increase in amortization expense from the Faxitron and Focal acquisitions, the fair value adjustment related to Focal inventory of $7.1 million, an increase in lower margin service revenue, increased service costs related primarily to spare parts, tariff costs in China, lower software sales and the negative foreign currency impact of the strengthening U. S. dollar. These reductions in gross margins were partially offset by favorable product gross margins from sales volume increases in the 3Dimensions and 3D Performance systems, which have higher average selling prices, and an increase in license revenue.

Operating expenses increased in fiscal 2019 compared to fiscal 2018 due to an increase in compensation from higher headcount in the Breast Health segment, the inclusion of expenses from the Faxitron and Focal acquisitions aggregating $29.4 million, increased travel expenses, increased R&D project expenses, higher acquisition related expenses including integration,

a $1.7 million increase to contingent consideration related to Faxitron, increased commissions from higher sales. These increases were partially offset by lower legal expenses as a result of a benefit from settling the Fuji litigation and lower activity in fiscal 2019 compared to fiscal 2018.

Medical Aesthetics.

	Years Ended			
	September 28, 2019	September 29, 2018	Change	
	Amount	Amount	Amount	%
Total Revenues	$ 315.6	$ 339.1	$ (23.5)	(6.9)%
Operating Loss	$ (781.2)	$ (844.7)	$ 63.5	(7.5)%
Operating Loss as a % of Segment Revenue	(247.5)%	(249.1)%		

Medical Aesthetics revenue decreased in fiscal 2019 compared to fiscal 2018 primarily due to decrease of $25.5 million in product revenue discussed above, partially offset by increase of $1.9 million in service revenue.

The operating loss in fiscal 2019 included intangible asset and equipment impairment charges of $443.8 million and $241.6 million recorded in the second quarter and fourth quarter of fiscal 2019, respectively. The operating loss in fiscal 2018 included impairment charges aggregating $731.7 million for goodwill and an in-process research and development intangible asset recorded in the second quarter of fiscal 2018. Excluding the impairment charges, the operating loss for this business segment would have been $95.8 million in fiscal 2019 compared to $113.0 million in fiscal 2018, a decrease of $17.2 million. The reduction of the operating loss was primarily due to a decrease in operating expenses partially offset by a reduction in gross profit from lower revenues. Gross margin, excluding impairment charges, decreased primarily due to lower sales volume of our higher margin MonaLisa Touch device and SculpSure laser and related PAC keys, higher sales of lower margin Icon and TempSure systems, unfavorable manufacturing variances, an increase in inventory reserves, increased service costs, and tariffs in China. These decreases in gross profit were partially offset by the effect of the revenue reversal of $6.8 million in the prior year period related to the TempSure Vitalia voluntary recall.

Offsetting the decrease in gross profit, operating expenses other than impairment charges were lower in fiscal 2019 compared to fiscal 2018 primarily due to a decrease in compensation related to lower headcount across the organization from attrition and initiatives to right-size spending relative to operating results, lower depreciation expense as the prior year period included accelerated depreciation expense related to the abandonment of Cynosure's SAP ERP system, a reduction in restructuring and integration charges, lower amortization expense as a result of impairing the intangible assets in the second quarter of fiscal 2019, lower marketing initiative spend, lower travel and trade show spend, and lower consulting, partially offset by an increase in legal fees.

GYN Surgical.

	Years Ended			
	September 28, 2019	September 29, 2018	Change	
	Amount	Amount	Amount	%
Total Revenues	$ 437.2	$ 422.0	$ 15.2	3.6%
Operating Income	$ 99.2	$ 58.3	$ 40.9	70.2%
Operating Income as a % of Segment Revenue	22.7%	13.8%		

GYN Surgical revenues increased in fiscal 2019 compared to fiscal 2018 due to the increase in product revenues discussed above.

Operating income for this business segment increased in fiscal 2019 compared to fiscal 2018 primarily due to the inclusion of a legal settlement charge of $34.8 million related to settling the Smith & Nephew patent infringement lawsuit related to the MyoSure system in fiscal 2018. Excluding the impact of the Smith & Nephew settlement, operating income increased $6.1 million in fiscal 2019 compared to fiscal 2018 primarily due to increased gross profit driven by higher revenue. Gross margin increased to 64.3% in the current year compared to 63.1% in the prior year primarily due to lower amortization expense, increased volumes and favorable manufacturing variances.

Excluding the impact of the Smith & Nephew settlement, operating expenses increased in fiscal 2019 compared to fiscal 2018 primarily due to increased compensation from higher sales headcount and increased commissions, a $4.5 million charge in research and development expenses related to the purchase of certain intellectual property in the third quarter of fiscal 2019,

higher research project spend and because the prior year period included a $3.2 million benefit related to the resolution of a tax matter, partially offset by a decrease in marketing initiatives.

Skeletal Health.

	Years Ended			
	September 28, 2019	September 29, 2018	Change	
	Amount	Amount	Amount	%
Total Revenues	$ 94.8	$ 91.2	$ 3.6	3.9 %
Operating (Loss) Income	$ (4.2)	$ 3.3	$ (7.5)	(227.3)%
Operating (Loss) Income as a % of Segment Revenue	(4.4)%	3.6%		

Skeletal Health revenues increased in fiscal 2019 compared to fiscal 2018 primarily due to the increase in product revenues discussed above.

Operating income decreased in fiscal 2019 compared to the prior year primarily due to higher operating expenses. Gross margin decreased to 37.4% in the current year compared to 39.7% in the prior year primarily due to pricing pressures and unfavorable manufacturing variances. Operating expenses increased in fiscal 2019 compared to fiscal 2018 primarily due to facility closure costs incurred for the Bedford facility of $1.4 million in fiscal 2019, increased research and development spending and consulting spend.

Fiscal Year Ended September 29, 2018 Compared to Fiscal Year Ended September 30, 2017

Product Revenues.

	Years Ended					
	September 29, 2018		September 30, 2017		Change	
	Amount	% of Total Revenue	Amount	% of Total Revenue	Amount	%
Product Revenues						
Diagnostics	$ 1,123.6	34.9%	$ 1,165.1	38.1%	$ (41.5)	(3.6)%
Breast Health	758.5	23.6%	708.0	23.2%	50.4	7.1 %
Medical Aesthetics	278.4	8.7%	178.3	5.8%	100.1	56.1 %
GYN Surgical	421.1	13.1%	426.1	13.9%	(5.0)	(1.2)%
Skeletal Health	62.3	1.9%	60.4	2.0%	1.9	3.1 %
	$ 2,643.9	82.2%	$ 2,538.0	83.0%	$ 105.9	4.2 %

We generated a 4.2% increase in product revenues in fiscal 2018 compared to fiscal 2017 primarily due to our acquisition of Cynosure on March 22, 2017 and an increase in Breast Health sales. Cynosure's results (after the date of the acquisition) are reported in our Medical Aesthetics segment. Cynosure is the sole business in this segment. Partially offsetting the increase, our Diagnostics business product revenues declined as a result of the sale of our blood screening business effective January 31, 2017, and we had lower revenues in GYN Surgical. Excluding blood screening, Diagnostics revenues increased $46.6 million in fiscal 2018 compared to fiscal 2017. In addition, fiscal 2018 was a 52-week year compared to a 53-week year in fiscal 2017.

Diagnostics product revenues decreased 3.6% in fiscal 2018 compared to fiscal 2017 primarily due to the decrease in blood screening revenues of $88.2 million in the fiscal 2018 as a result of the divestiture of the business during the second quarter of fiscal 17. In connection with the divestiture agreement, we committed to providing Grifols manufacturing support through the defined transition services period and long term access to Panther instrumentation and certain supplies. Product revenue under the long term supply agreement and transition services agreement to manufacture assays for Grifols was $45.4 million and $37.1 million for fiscal 2018 and fiscal 2017, respectively. Excluding the divestiture of the blood screening business, diagnostic product revenues grew driven by increases in Molecular Diagnostics of $43.6 million in fiscal 2018, while Cytology & Perinatal revenues were slightly higher by $3.0 million year over year primarily due to higher international sales volume.

Molecular Diagnostics product revenue was $601.2 million in fiscal 2018 compared to $557.6 million in fiscal 2017. The increase was primarily attributable to sales of our Aptima family of assays on a worldwide basis due to our increased installed base of Panther instruments, which is driving higher volumes of assay testing. In addition, we had an increase in the number of our virology products, as we received additional international regulatory approvals. These increases were partially offset by a slight decline in average selling prices, lower instrument sales and the loss of one week in fiscal 2018 compared to fiscal 2017. Cytology & Perinatal product revenue increased due to higher international ThinPrep volumes, partially offset by lower domestic ThinPrep test volumes, which we primarily attribute to screening internal expansion, as well as a slight decline in average selling prices on a worldwide basis.

Breast Health product revenues increased 7.1% in fiscal 2018 compared to fiscal 2017 primarily due to increased unit volumes of our newest 3Dimensions, which also have higher average selling prices, and 3D Performance systems, both of which complement our older 3D systems, increased sales volume of our Affirm Prone table and Brevera breast biopsy system, which was recently commercially released in the U.S., an increase in Eviva and ATEC volumes internationally, and the positive foreign currency exchange impact of the weakening U.S. dollar against a number of currencies. In addition, the acquisition of Medicor and Emsor, former distributors of our products, resulted in higher mammography system revenues, primarily attributable to higher direct sales prices in their respective territories. These increases were partially offset by lower sales volume of our 2D Dimensions systems on a worldwide basis and lower 3D upgrades primarily as a result of a shift to 3D systems.

Our Medical Aesthetics business commenced in fiscal 2017 as a result of the acquisition of Cynosure effective March 22, 2017. Product revenue increased 56.1% in fiscal 2018 compared to fiscal 2017 primarily due to year over year increases in Body Contouring, Skin, Women’s Health and Other product revenues as fiscal 2018 was a full year period compared to slightly more than six months of activity in fiscal 2017. The fourth quarter and annual period were affected by our decision to voluntary recall the TempSure Vitalia system in response to a letter we received from the FDA expressing concerns regarding “vaginal rejuvenation” procedures using energy-based devices, which specifically mentioned our MonaLisa Touch laser. We believed our MonaLisa Touch laser had the appropriate FDA approvals. However, in considering the FDA’s broader concerns we elected to suspend marketing and distribution of our TempSure Vitalia handpieces and single-use probes until we have assessed the

implications of recent FDA considerations for devices in this category. As a result, we requested our customers to return any Vitalia handpieces and unused probes they purchased and we recorded a $6.8 million reserve to revenue for issuing refunds and rebates.

GYN Surgical product revenues decreased 1.2% in fiscal 2018 compared to fiscal 2017 primarily due to lower NovaSure system sales of $25.0 million from lower U.S. volumes partially offset by an increase in MyoSure system sales on a worldwide basis of $14.6 million. We attributed the decrease in NovaSure sales primarily to increased competition and a stagnant market for endometrial ablation, partially offset by a slight increase in average selling prices from a mix shift to the higher priced NovaSure ADVANCED device. In addition, fiscal 2018 was a 52-week year compared to a 53-week year in fiscal 2017. Offsetting these decreases is the positive effect of foreign currency exchange rates from a weaker U.S. dollar.

Skeletal Health product revenues increased 3.1% in fiscal 2018 compared to fiscal 2017 primarily due to higher sales volume of our Horizon osteoporosis assessment product revenues in the U.S., which was partially offset by a decrease in our mini C-arm sales, which we attributed primarily to competitive pressures.

In fiscal 2018, 74.2% of product revenues were generated in the United States, 12.0% in Europe, 9.0% in Asia-Pacific, and 4.8% in other international markets. In fiscal 2017, 76.7% of product revenues were generated in the United States, 10.3% in Europe, 8.5% in Asia-Pacific, and 4.5% in other international markets. The slight decrease in the percentage of U.S. revenues was primarily due higher revenues in other international markets as a result of our Cynosure, Medicor, and Emsor acquisitions, and increased international sales volume of 3Dimensions systems, ThinPrep Pap tests and Aptima products in Europe and Asia-Pacific.

Service and Other Revenues.

	Years Ended					
	September 29, 2018		September 30, 2017		Change	
	Amount	% of Total Revenue	Amount	% of Total Revenue	Amount	%
Service and Other Revenues	$ 574.0	17.8%	$ 520.8	17.0%	$ 53.2	10.2%

Service and other revenues are primarily comprised of revenue generated from our field service organization to provide ongoing service, installation and repair of our products. The majority of these revenues are generated within our Breast Health segment, and to a lesser extent, our Medical Aesthetics business. The Breast Health business continues to convert a high percentage of our installed base of digital mammography systems to service contracts upon expiration of the warranty period. Our Medical Aesthetics business represented 10.6% and 5.6% of service and other revenues in fiscal 2018 and fiscal 2017, respectively. Service and other revenues increased 10.2% in fiscal 2018 compared to fiscal 2017 primarily due to higher service contract conversion and renewal rates, higher spare parts sales, and the Cynosure acquisition contributing an additional $31.5 million of revenue due to a full year of operations in fiscal 2018 compared to slightly more than six months of activity in fiscal 2017. Partially offsetting these increases was the prior year included $9.5 million of non-recurring royalty revenue recorded in the fourth quarter of fiscal 2017.

Cost of Product Revenues.

	Years Ended					
	September 29, 2018		September 30, 2017		Change	
	Amount	% of Product Revenue	Amount	% of Product Revenue	Amount	%
Cost of Product Revenues	$ 886.6	33.5%	$ 881.8	34.7%	$ 4.8	0.5%
Amortization of Intangible Assets	319.4	12.1%	297.1	11.7%	22.3	7.5%
	$ 1,206.0	45.6%	$ 1,178.9	46.4%	$ 27.1	2.3%

Product gross margin increased to 54.4% in fiscal 2018 compared to 53.6% in fiscal 2017.

Cost of Product Revenues. The cost of product revenues as a percentage of product revenues was 33.5% in fiscal 2018, compared to 34.7% in fiscal 2017. Cost of product revenues as a percentage of product revenues in fiscal 2018 was lower than fiscal 2017 primarily due to the acquisition of Cynosure in the prior year and the related impact of stepping-up the acquired inventory to fair value in purchase accounting, resulting in additional costs of $39.3 million in fiscal 2017.

Diagnostics' product costs as a percentage of revenue decreased slightly in fiscal 2018 compared to fiscal 2017 primarily due to increased Aptima assay volumes and higher volumes of our newer virology products, partially offset by an increase in

international sales which have lower average selling prices and the divestiture of the higher margin blood screening business that occurred during the second quarter of fiscal 2017. The products that we supply to Grifols under the supply and collaboration agreements are at significantly lower gross margins than we earned in the disposed business.

Breast Health's product costs as a percentage of revenue increased slightly in fiscal 2018 compared to fiscal 2017 primarily due to decrease in 3D upgrades and C-View software sales, which have higher gross margins than capital equipment sales, lower average sales prices of 3D Dimensions systems in the U.S. from a mix shift to our lower margin 3D Performance system and increase in the sales volume of digital mammography systems internationally, which have lower average selling prices. The decreases were partially offset by higher sales volume of the new 3Dimensions system, Affirm Prone table and the Brevera breast biopsy system, higher average selling prices for Eviva and ATEC devices.

Medical Aesthetics product costs as a percentage of revenue decreased in fiscal 2018 compared to fiscal 2017 primarily due to the impact of the step-up in inventory recorded in fiscal 2017 from the application of purchase accounting. Partially offsetting this impact, in the current year we recorded a revenue reserve for the Tempsure Vitalia recall of $6.8 million and additional inventory charges.

GYN Surgical's product costs as a percentage of revenue increased slightly in fiscal 2018 compared to fiscal 2017 primarily due to lower NovaSure volumes and continued mix shift to MyoSure products comprising a higher percentage of GYN Surgical product sales. MyoSure devices have a lower gross margin than NovaSure devices. In addition, we had higher international sales which have lower average selling prices.

Skeletal Health's product costs as a percentage of revenue increased in fiscal 2018 compared to fiscal 2017 primarily due to unfavorable manufacturing variances and to a lesser extent pricing pressures on our Horizon system.

Amortization of Intangible Assets. Amortization of intangible assets relates to acquired developed technology. These intangible assets are generally amortized over their estimated useful lives of between 8 and 15 years using a straight-line method or, if reliably determinable, based on the pattern in which the economic benefits of the assets are expected to be consumed. Amortization expense increased in fiscal 2018 compared to fiscal 2017 primarily due to an increase of $36.2 million related to intangible assets acquired in the Cynosure acquisition, partially offset by a decrease in amortization expense related to the divestiture of the blood screening business of $5.4 million, lower amortization expense related to the Cytyc acquisition intangibles, which are being amortized based on the pattern of economic benefits, and having one less week of expense in fiscal 2018 compared to fiscal 2017.

Cost of Service and Other Revenues.

	Years Ended					
	September 29, 2018		September 30, 2017		Change	
	Amount	% of Service and Other Revenues	Amount	% of Service and Other Revenues	Amount	%
Cost of Service and Other Revenues	$ 315.2	54.9%	$ 258.9	49.7%	$ 56.3	21.7%

Service and other revenues gross margin was 45.1% in fiscal 2018 compared to 50.3% in fiscal 2017. The decrease in gross margin is primarily related to the lower margin Cynosure service business being a higher percentage of the overall service business in fiscal 2018 from a full year of operations, the inclusion in fiscal 2017 of $9.5 million of non-recurring royalty revenue that had no corresponding costs, and to a lesser extent an increase in costs to repair older digital mammography systems under service contracts in our Breast Health business. The decrease was partially offset by the Breast Health business continued strength to convert a high percentage of our installed base of digital mammography systems to service contracts upon expiration of the warranty period leveraging our service infrastructure.

Operating Expenses.

	Years Ended					
	September 29, 2018		September 30, 2017		Change	
	Amount	% of Total Revenue	Amount	% of Total Revenue	Amount	%
Operating Expenses						
Research and development	$ 218.7	6.8%	$ 232.8	7.6 %	$ (14.1)	(6.1)%
Selling and marketing	544.6	16.9%	498.6	16.3 %	46.0	9.2 %
General and administrative	366.1	11.4%	343.3	11.2 %	22.8	6.6 %
Amortization of intangible assets	59.3	1.8%	62.5	2.0 %	(3.2)	(5.1)%
Impairment of intangible assets	46.0	1.4%	—	— %	46.0	100.0 %
Impairment of goodwill	685.7	21.3%	—	— %	685.7	100.0 %
Gain on sale of business	—	—%	(899.7)	(29.4)%	899.7	(100.0)%
Restructuring charges	14.2	0.4%	13.3	0.4 %	0.9	6.8 %
	$ 1,934.6	60.0%	$ 250.8	8.1 %	$ 1,683.8	**

** - Percentage not meaningful

Research and Development Expenses. Research and development expenses decreased 6.1% in fiscal 2018 compared to fiscal 2017 primarily due to lower project spend, including development materials and clinical spending, a reduction of outside consulting spend across the divisions and a reduction in headcount primarily in Diagnostics, Breast Health and Medical Aesthetics. Expenses were also lower in fiscal 2018 primarily due to the divestiture of the blood screening business and one less week of expenses partially offset by an increase of Cynosure research and development expenses of $9.0 million due to a full year in fiscal 2018 compared to slightly more than six months of activity in the prior year. At any point in time, we have a number of different research projects and clinical trials being conducted and the timing of these projects and related costs can vary from period to period.

Selling and Marketing Expenses. Selling and marketing expenses increased 9.2% in fiscal 2018 compared to fiscal 2017 primarily due to the inclusion of Cynosure, which increased $49.9 million in fiscal 2018 representing a full year of activity; however, headcount was lower compared to the prior year as this business's expenses were aligned to reflect its operating results. Excluding Cynosure, selling and marketing expenses related to Hologic's legacy business decreased $5.0 million in fiscal 2018 compared to fiscal 2017 primarily due to lower marketing initiatives and consulting expenses, lower spend on travel, a decline in sales personnel headcount in Diagnostics and one less week of expenses, partially offset by higher salary compensation from increased headcount in Breast Health and to a lesser extent GYN Surgical, and an increase in commissions and third-party commissions primarily in Breast Health.

General and Administrative Expenses. General and administrative expenses increased 6.6% in fiscal 2018 compared to fiscal 2017 primarily due to the inclusion of Cynosure, which increased $22.1 million in fiscal 2018 representing a full year of activity; however, headcount has been reduced as this business is integrated into our corporate structure. Excluding the impact of Cynosure, expenses related to Hologic’s legacy business increased slightly in fiscal 2018 compared to fiscal 2017 primarily due to increased legal fees including settling the Smith & Nephew patent infringement lawsuit related to the MyoSure system for $34.8 million, fees incurred in the Fuji and Minerva lawsuits, increased international infrastructure costs, increased bad debt expense primarily from international and Cynosure customers, higher tax consulting and accounting fees and increased information systems infrastructure and project costs. These increases were partially offset by lower costs in fiscal 2018 as fiscal 2017 expenses included a $23.2 million net charge for non-income tax related matters, which was net of the benefit from the Medical Device Excise tax refunds, acquisition and divestiture transaction expenses of $23.2 million, higher integration and consolidation charges primarily related to the Cynosure acquisition, and the prior year period included an additional week of expenses.

Amortization of Intangible Assets. Amortization of intangible assets results from customer relationships, trade names, distributor relationships and business licenses related to our acquisitions. These intangible assets are generally amortized over their estimated useful lives of between 2 and 30 years using a straight-line method or, if reliably determinable, based on the pattern in which the economic benefits of the assets are expected to be consumed utilizing expected undiscounted future cash flows. Amortization expense decreased 5.1% in fiscal 2018 compared to fiscal 2017 primarily due to lower amortization from intangible assets related to the blood screening business of $10.4 million that was disposed of in the second quarter of fiscal 2017 and one less week of expenses. This decrease was partially offset by an increase of $8.9 million of amortization expense related to Cynosure intangible assets, and increases from the Medicor and Emsor acquisitions.

Impairment of Intangible Asset. In the second quarter of fiscal 2018, we decided to cancel and abandon an in-process research and development project that was recorded as an intangible asset in the Cynosure acquisition purchase accounting. The project was abandoned due to unsuccessful clinical results. As a result, we recorded a $46.0 million impairment charge to write-off the full value of the asset.

Impairment of Goodwill. During the second quarter of fiscal 2018, in connection with commencing our company-wide annual budgeting and strategic planning process, evaluating the current operating performance of our Medical Aesthetics reporting unit, and abandoning an in-process research and development project, we reduced the short term and long term revenue and operating income forecasts and determined that indicators of impairment existed in our Medical Aesthetics reporting unit. The Medical Aesthetics reporting unit is solely comprised of the Cynosure business, which we acquired on March 22, 2017. The updated forecast reflected significantly reduced volume and market penetration projections resulting in lower short-term and long-term profitability than expected at the time of the Cynosure acquisition. As a result of these current events and circumstances, we determined that it was more likely than not that this change would reduce the fair value of the reporting unit below its carrying amount. To estimate the fair value of the reporting unit, we utilized the income approach. The income approach is based on a discounted cash flow (DCF) analysis and calculates the fair value by estimating the after-tax cash flows attributable to the reporting unit and then discounting the after-tax cash flows to present value using a risk-adjusted discount rate. Assumptions used in the DCF require significant judgment, including judgment about appropriate discount rates and terminal values, growth rates, and the amount and timing of expected future cash flows. The forecasted cash flows were based on our most recent budget and strategic plan. For the period beyond the strategic plan period, our estimates were based on assumed growth rates expected as of the measurement date. We believed our assumptions are consistent with the plans and estimates used to manage the underlying business. The discount rate used was intended to reflect the risks inherent in future cash flow projections and was based on an estimate of the weighted average cost of capital (WACC) of market participants relative to the reporting unit. The basis of fair value for Medical Aesthetics assumed the reporting unit would be purchased or sold in a non-taxable transaction, and the discount rate of 12.0% applied to the after-tax cash flows was consistent with that used in the purchase accounting performed in fiscal 2017. For additional information pertaining to impairment of goodwill, please refer to Note 2 to our consolidated financial statements contained in Item 15 of this Annual Report.

Gain on Sale of Business. In the second quarter of fiscal 2017, we completed the sale of our blood screening business to Grifols and recorded a gain of $899.7 million.

Restructuring Charges. In fiscal 2016, we implemented organizational changes to our international operations. In fiscal 2017, in connection with our acquisition of Cynosure, we implemented certain organizational changes, and we also eliminated certain research and development positions in Breast Health and manufacturing positions primarily in our Diagnostics division. In fiscal 2018, we finalized our decision to consolidate legacy international accounting and customer service organizations into our Manchester, UK location and will be eliminating positions in Belgium, France, Italy, Spain and Germany. This transition was completed in fiscal 2019. We also eliminated certain sales and marketing personnel in our Diagnostics and Medical Aesthetics divisions. Additionally, we decided to close our Hicksville, New York facility which manufactures certain Cynosure products and the employees were notified of termination and related benefits in the third quarter of fiscal 2018. Pursuant to U.S. GAAP, the related severance and benefit charges were recognized either ratably over the respective required employee service periods or up-front for contractual benefits. In fiscal 2018 and 2017, we recorded aggregate charges of $14.2 million and $13.3 million, respectively, from these actions, primarily for severance and benefits and to a lesser extent lease obligation charges for facility closure costs. For additional information, please refer to Note 6 to our consolidated financial statements contained in Item 15 of this Annual Report.

Interest Expense.

	Years Ended			
	September 29, 2018	September 30, 2017	Change	
	Amount	Amount	Amount	%
Interest Expense	$ (148.7)	$ (153.2)	$ 4.5	(2.9)%

Interest expense in fiscal 2018 and 2017 consists primarily of the cash interest costs and the related amortization of the debt discount and deferred issuance costs on our outstanding debt. Interest expense in fiscal 2018 decreased compared to fiscal 2017 primarily due to refinancing our 2022 Senior Notes with our 2025 and 2028 Senior Notes that carry lower rates, extinguishing our Convertible Notes in fiscal 2017 and 2018, receiving interest payments under our interest rate cap agreements, and fiscal 2017 included an additional week of expense. These decreases were partially offset by issuance costs expensed from the refinancing of our credit facilities in the first quarter of fiscal 2018, issuance costs expensed from the issuance of the 2025 Senior Notes and 2028 Senior Notes in the second quarter of fiscal 2018, and an increase in the LIBOR rate under our Amended and Restated Credit Agreement.

Debt Extinguishment Losses.

	Years Ended			
	September 29, 2018	September 30, 2017	Change	
	Amount	Amount	Amount	%
Debt Extinguishment Losses	$ (45.9)	$ (3.2)	$ (42.7)	1,334.4%

In the first quarter of fiscal 2018, we entered into the 2017 Credit Agreement with Bank of America, N.A. The proceeds under the 2017 Credit Agreement of were used to pay off the Term Loan and Revolver outstanding under the Prior Credit Agreement. In connection with this transaction, we recorded a debt extinguishment loss of $1.0 million in the first quarter of fiscal 2018. In the second quarter of fiscal 2018, we completed private placement of $1.0 billion aggregate principal of senior notes allocated between the 2025 Senior Notes and 2028 Senior Notes. The proceeds under the 2025 Senior Notes and 2028 Senior Notes offering and our available cash were used to redeem the 2022 Senior Notes in the same principal amount. In connection with this transaction, we recorded a debt extinguishment loss of $44.9 million in the second quarter of fiscal 2018.

On various dates during the third and fourth quarters of fiscal 2017, we entered into privately negotiated repurchase transactions and extinguished $117.9 million and $168.0 million principal amount of our 2012 and 2013 Notes, respectively, for an aggregate payment of $375.1 million, which includes a premium conversion resulting from our stock price on the date of the transactions being in excess of the conversion prices. In connection with these transactions, we recorded a debt extinguishment loss of $0.9 million and $2.3 million on the 2012 and 2013 Notes, respectively, related to the difference between the fair value of their respective liability components and carrying values at the repurchase dates. The remaining cash payments were allocated to the reacquisition of the equity component and recorded within additional paid-in capital, a component of stockholders' equity.

Other Income, net.

	Years Ended			
	September 29, 2018	September 30, 2017	Change	
	Amount	Amount	Amount	%
Other Income, net	$ 7.6	$ 12.9	$ (5.3)	(41.1)%

In fiscal 2018, this account primarily consisted of net foreign currency exchange gains of $5.9 million primarily due to hedging activities, a gain of $3.2 million on the cash surrender value of life insurance contracts related to our deferred compensation plan, partially offset by a realized loss of $0.6 million on the sale of a marketable security.

In fiscal 2017, this account primarily consisted of a gain of $4.9 million on the cash surrender value of life insurance contracts related to our deferred compensation plan, $2.3 million in net foreign currency exchange gains partially due to hedging activities and $5.6 million of net realized gains on the sale of investments.

(Benefit) Provision for Income Taxes.

	Years Ended			
	September 29, 2018	September 30, 2017	Change	
	Amount	Amount	Amount	%
(Benefit) Provision for Income Taxes	$ (307.3)	$ 475.0	$ (782.3)	(164.7)%

Our effective tax rate for fiscal 2018 was 73.4% compared to 38.6% in fiscal 2017. Our effective tax rate in fiscal 2018, applied to an overall pre-tax loss resulting in a benefit, was higher than the statutory rate primarily due to the favorable impact of the Tax Cuts and Jobs Act (the "Act"), which required us to remeasure our U.S. net deferred tax liabilities at a lower rate, partially offset by the unfavorable impact of the Medical Aesthetics goodwill impairment charge, substantially all of which is non-deductible. The net result of implementing the Act was a benefit of $346.2 million representing our best estimate based on our interpretation of the Act.

Our effective tax rate in fiscal 2017 was higher than the statutory rate primarily due to non-deductible goodwill related to the sale of the Blood Screening business, partially offset by the release of valuation allowances for capital losses utilized against the capital gain generated on the sale of the Blood Screening business, earnings in jurisdictions subject to lower tax rates, the domestic production activities deduction benefit, the release of reserves for uncertain tax positions due to statutes of limitations expirations and audit settlements, stock compensation benefits, and federal and state tax credits.

Segment Results of Operations

Diagnostics.

	Years Ended			
	September 29, 2018	September 30, 2017	Change	
	Amount	Amount	Amount	%
Total Revenues	$ 1,147.4	$ 1,197.1	$ (49.7)	(4.2)%
Operating Income	$ 145.5	$ 1,054.2	$ (908.7)	(86.2)%
Operating Income as a % of Segment Revenue	12.7%	88.1%		

Diagnostics revenues decreased in fiscal 2018 compared to fiscal 2017 primarily due to the decrease in product revenues discussed above. The primary driver of the reduction in revenues was the divestiture of the blood screening business in the second quarter of fiscal 2017.

Operating income for this business segment decreased in fiscal 2018 compared to fiscal 2017 primarily due to fiscal 2017 including a one-time gain on the disposition of the blood screening business of $899.7 million in the second quarter of fiscal 2017 and a decrease in gross profit in fiscal 2018 primarily due to the blood screening divestiture. Excluding the impact of the gain from this divestiture, operating income decreased $9.0 million in the current year compared to the prior year primarily due to the blood screening divestiture, partially offset by the improvements in sales of our Aptima assays. Gross margin was 47.1% in the current year compared with 47.8% in the prior year. The decrease in gross margin was primarily due to lower revenues as a result of the disposition of the higher-margin blood screening business and lower margins generated under the new supply and collaboration arrangement with Grifols. This gross margin decrease was partially offset by the impact of the increase in Aptima assay volumes, and lower amortization expense.

Exclusive of the impact of the gain on the sale of the blood screening business, operating expenses decreased in fiscal 2018 compared to fiscal 2017 primarily due to lower amortization expense primarily as a result of the blood screening divestiture, lower research and development expenses related to a reduction in project spending as well as the divestiture of the blood screening business, lower headcount in research and development and sales, no disposition transaction fees in fiscal 2018, and one less week of expenses in fiscal 2018, partially offset by restructuring charges for fiscal 2018. In addition, fiscal 2017 included a $5.5 million credit related to a refund received from amending our Medical Device Excise tax filings.

Breast Health.

	Years Ended			
	September 29, 2018	September 30, 2017	Change	
	Amount	Amount	Amount	%
Total Revenues	$ 1,218.2	$ 1,138.3	$ 79.9	7.0%
Operating Income	$ 399.7	$ 373.4	$ 26.3	7.0%
Operating Income as a % of Segment Revenue	32.8%	32.8%		

Breast Health revenues increased in fiscal 2018 compared to fiscal 2017 primarily due to an increase of $50.4 million in product revenue discussed above and $29.5 million in service revenue.

Operating income for this business segment increased in fiscal 2018 compared to fiscal 2017 primarily due to an increase in gross profit from higher revenue partially offset by an increase in operating expenses in the current year. The overall gross margin decreased slightly to 60.2% in the current year compared to 60.9% in the prior year primarily due to the increase in service revenue which has lower margins, decrease in C-View software and 3D upgrades, which have higher gross margins than capital equipment sales, and an increase in international sales, which have lower average selling prices. The gross margin decreases were partially offset by higher gross margins from sales volume increases in the Affirm Prone table and the Brevera breast biopsy system, and higher average selling prices of Eviva and ATEC devices, and sales volume increase in the 3Dimensions and 3D Performance systems.

Operating expenses increased in fiscal 2018 compared to fiscal 2017 primarily due to an increase in salary compensation from increased headcount in the Breast Health sales organization as well as higher commissions and third-party commissions as a result of sales growth, an increase in legal expenses for the Fuji litigation, increased expenses from the Faxitron, Medicor and Emsor acquisitions, higher restructuring expenses and the fiscal 2017 included a credit of $4.5 million from amending the our Medical Device Excise tax filings partially offset by a reduction in marketing initiatives. These increases in operating expenses were partially offset by one less week of expenses in fiscal 2018 and the fiscal 2017 included charges for non-income tax related matters of $5.8 million.

Medical Aesthetics.

	Years Ended			
	September 29, 2018	September 30, 2017	Change	
	Amount	Amount	Amount	%
Total Revenues	$ 339.1	$ 207.5	$ 131.6	63.4%
Operating Loss	$ (844.7)	$ (115.9)	$ (728.8)	**
Operating Loss as a % of Segment Revenue	(249.1)%	(55.9)%		

** - Percentage not meaningful

Medical Aesthetics revenue increased in fiscal 2018 compared to fiscal 2017 primarily due an increase of $100.1 million in product revenue discussed above and $31.5 million in service revenue. We had Cynosure for the full year period in fiscal 2018 compared to slightly more than six months of activity in fiscal 2017.

The operating loss in fiscal 2018 includes impairment charges for goodwill of $685.7 million and an in-process research and development intangible asset of $46.0 million recorded in the second quarter of fiscal 2018, intangible asset amortization expense of $88.8 million and restructuring and integration charges of $9.5 million. These expenses combined with functional operating expenses are partially offset by gross profit, which increased due to a full year of operating activity and the prior year period included a $39.3 million charge from the step-up to fair value for inventory from the application of purchase accounting.

The operating loss in fiscal 2017 was primarily due to acquisition expenses of $18.8 million, amortization of intangible assets of $43.7 million, step-up to fair value of inventory sold of $39.3 million, restructuring and retention costs and integration expenses, including legal and professional consulting fees and accelerated depreciation expense, aggregating $25.7 million partially offset by gross profit from revenues.

GYN Surgical.

	Years Ended			
	September 29, 2018	September 30, 2017	Change	
	Amount	Amount	Amount	%
Total Revenues	$ 422.0	$ 427.1	$ (5.1)	(1.2)%
Operating Income	$ 58.3	$ 65.0	$ (6.7)	(10.3)%
Operating Income as a % of Segment Revenue	13.8%	15.2%		

GYN Surgical revenues decreased in fiscal 2018 compared to fiscal 2017 due to the decrease in product revenues discussed above.

Operating income for this business segment decreased in fiscal 2018 compared to fiscal 2017 primarily due to increase in operating expense related to a legal settlement charge of $34.8 million recorded in the fourth quarter of 2018. Fiscal 2017 also included a charge recorded for non-income tax matters of $26.1 million. Excluding the impact of the legal settlement and non-income tax matter, operating income in fiscal 2018 compared to fiscal 2017 would have increased $2.1 million due to a decrease in operating expenses primarily due to lower compensation from a decrease in sales personnel headcount, lower product development spend, and one less week of expenses in fiscal 2018. Gross margin was relatively consistent at 63.1% in fiscal 2018 compared to 63.6% in fiscal 2017. The decline is driven by lower Novasure sales, which carry higher gross margins than Myosure system sales, partially offset by lower amortization expense.

Skeletal Health.

	Years Ended			
	September 29, 2018	September 30, 2017	Change	
	Amount	Amount	Amount	%
Total Revenues	$ 91.2	$ 88.8	$ 2.4	2.7 %
Operating (Loss) Income	$ 3.3	$ (6.5)	$ 9.8	(150.8)%
Operating (Loss) Income as a % of Segment Revenue	3.6%	(7.3)%		

Skeletal Health revenues increased in fiscal 2018 compared to fiscal 2017 primarily due to the increase in product revenues discussed above.

Operating income increased in fiscal 2018 compared to the prior year primarily due to lower operating expenses. Gross margin rate was 39.7% in fiscal 2018 compared to 42.2% in fiscal 2017 primarily due to pricing pressures and negative manufacturing variances. This business also had lower operating expenses from lower research and development project spend, one less week of expenses, and the prior year included facility closure costs incurred for the Bedford facility of $4.8 million.

LIQUIDITY AND CAPITAL RESOURCES

At September 28, 2019, we had working capital of $723.0 million, and our cash and cash equivalents totaled $601.8 million. Our cash and cash equivalents balance decreased by $64.9 million during fiscal 2019 principally due to cash used in financing and investing activities related to net repayments of debt, repurchases of common stock and net cash paid for acquisitions, partially offset by cash generated through cash flow from our core operating activities.

In fiscal 2019, our operating activities provided us with $649.5 million of cash. We incurred a net loss of $203.6 million which was offset by non-cash intangible asset and equipment impairment charges aggregating $685.4 million, non-cash charges for depreciation and amortization aggregating $463.1 million, stock-based compensation expense of $62.0, and non-cash interest expense of $8.6 million related to our outstanding debt. These adjustments to net loss were partially offset by a decrease in net deferred tax liabilities of $235.7 million primarily from the impairment of intangible assets and to a lesser extent amortization of intangible assets. Cash provided by operations included a net cash outflow of $156.3 million from changes in our operating assets and liabilities. Changes in our operating assets and liabilities were driven primarily by an increase in accounts receivable of $76.5 million as a result of an increase in fourth quarter revenues of $52.3 million compared to the fourth quarter of fiscal 2018 and an increase in days sales outstanding, an increase in inventory of $63.0 million primarily to meet anticipated demand, build up safety stock, and launch newer products, and a decrease in accrued expenses of $16.5 million primarily due to the Smith & Nephew legal settlement payment of $34.8 million partially offset by an increase to the bonus accrual for fiscal 2019. Partially offsetting these cash outflows was an increase in deferred revenue of $14.4 million

primarily due to an increase in deferred revenue for service contracts as the Breast Health business continues to convert a high percentage of our installed base of digital mammography systems to service contracts upon expiration of the warranty period.

In fiscal 2019, our investing activities used cash of $280.7 million primarily related to acquisition payments of $110.6 million principally for the Focal acquisition, $109.1 million for capital expenditures, which consisted of the placement of equipment under customer usage agreements and purchases of manufacturing equipment and computer hardware, an $18.2 million payment for our investment in SSI and $28.4 million in loans to SSI to assist them in paying off some debt and to support their operations.

In fiscal 2019, our financing activities used cash of $431.5 million, primarily for payments of $1.46 billion to pay off the term loan outstanding under the 2017 Credit Agreement, $300.0 million of net repayments on amounts borrowed under our revolving credit line, $200.1 million for repurchases of our common stock, and payments of $12.8 million for employee-related taxes withheld for the net share settlement of vested restricted stock units. Partially offsetting these uses of cash were proceeds of $1.5 billion from the term loan under the 2018 Credit Agreement and $49.8 million from our equity plans, primarily the exercise of stock options.

Debt

We had total recorded debt outstanding of $3.1 billion at September 28, 2019, which was comprised of our Term Loan under our 2018 Credit Agreement of $1.49 billion (principal $1.50 billion), 2025 Senior Notes of $937.3 million (principal of $950.0 million), 2028 Senior Notes of $393.9 million (principal of $400.0 million), and amounts outstanding under the accounts receivable securitization program of $234.0 million.

2018 Credit Agreement

On December 17, 2018, we refinanced our term loan and revolving credit facility by entering into an Amended and Restated Credit and Guaranty Agreement, dated as of December 17, 2018 (the "2018 Credit Agreement") with Bank of America, N.A. in its capacity as Administrative Agent, Swing Line Lender and L/C Issuer, and certain other lenders. The 2018 Credit Agreement amended and restated our prior credit and guaranty agreement, dated as of October 3, 2017 ("2017 Credit Agreement").

The credit facilities under the 2018 Credit Agreement consist of:

- A $1.5 billion secured term loan ("2018 Amended Term Loan") with a maturity date of December 17, 2023; and
- A secured revolving credit facility ("2018 Amended Revolver"; together with the 2018 Amended Term Loan, the "Amended Credit Facilities") under which the Company may borrow up to $1.5 billion, subject to certain sublimits, with a maturity date of December 17, 2023.

Borrowings made under the 2018 Credit Agreement, bear interest, at a variable rate plus an applicable margin. The applicable margin is based upon our total net leverage ratio as defined in the 2018 Credit Agreement. As of September 28, 2019, we had no amounts outstanding under our 2018 Amendment Revolver and the interest rate under our Term loan was 3.43%.

We are required to make scheduled principal payments under the 2018 Amended Term Loan in increasing amounts ranging from $9.375 million per three-month period commencing with the three-month period ending on December 27, 2019 to $28.125 million per three-month period commencing with the three-month period ending on December 29, 2022 and ending on September 29, 2023. The remaining balance of the 2018 Amended Term Loan after the scheduled principal payments, which is $1.2 billion as of September 28, 2019, and any amounts outstanding under the 2018 Amended Revolver are due at maturity. In addition, subject to the terms and conditions set forth in the 2018 Credit Agreement, we may be required to make certain mandatory prepayments from the net proceeds of specified types of asset sales (subject to certain reinvestment rights), debt issuances and insurance recoveries (subject to certain reinvestment rights). These mandatory prepayments are required to be applied by us, first, to the 2018 Amended Term Loan, second, to any outstanding amount under any Swing Line Loans, third, to the 2018 Amended Revolver, fourth to prepay any outstanding reimbursement obligations with respect to Letters of Credit and fifth, to cash collateralize any Letters of Credit. Subject to certain limitations, the Company may voluntarily prepay any of the 2018 Credit Facilities without premium or penalty.

Borrowings are secured by first-priority liens on, and a first-priority security interest in, substantially all of the assets of the Company and its U.S. subsidiaries, with certain exceptions. For example, borrowings under the 2018 Credit Agreement are not secured by those accounts receivable that are transferred to the special purpose entity under our Accounts Receivable Securitization program.

The 2018 Credit Agreement contains affirmative and negative covenants customarily applicable to senior secured credit facilities, including covenants restricting our ability, subject to negotiated exceptions, to incur additional indebtedness and grant additional liens on its assets, engage in mergers or acquisitions or dispose of assets, enter into sale-leaseback transactions, pay dividends or make other distributions, voluntarily prepay other indebtedness, enter into transactions with affiliated persons, make investments, and change the nature of their businesses. In addition, the 2018 Credit Agreement requires us to maintain certain financial ratios. The 2018 Credit Agreement also contains customary representations and warranties and events of default, including payment defaults, breach of representations and warranties, covenant defaults, cross defaults and an event of default upon a change of control of the company.

The 2018 Credit Agreement contains two financial covenants (a total net leverage ratio and an interest coverage ratio) measured as of the last day of each fiscal quarter. As of September 28, 2019, we were in compliance with these covenants.

2025 Senior Notes

The total aggregate principal balance of 2025 Senior Notes is $950.0 million. The 2025 Senior Notes are general senior unsecured obligations of the Company and are guaranteed on a senior unsecured basis by certain of the Company's domestic subsidiaries. The 2025 Senior Notes were issued pursuant to an indenture, dated as of October 10, 2017 and a supplement to such indenture, dated as of January 19, 2018, each among the Company, the guarantors and Wells Fargo Bank, National Association, as trustee. The 2025 Senior Notes mature on October 15, 2025 and bear interest at the rate of 4.375% per year, payable semi-annually on April 15 and October 15 of each year, commencing on April 15, 2018. We may redeem the 2025 Senior Notes at any time prior to October 15, 2020 at a price equal to 100% of the aggregate principal amount so redeemed, plus accrued and unpaid interest, if any, to the redemption date and a make-whole premium set forth in the Indenture. We may also redeem up to 35% of the aggregate principal amount of the 2025 Senior Notes with the net cash proceeds of certain equity offerings at any time and from time to time before October 15, 2020, at a redemption price equal to 104.375% of the aggregate principal amount so redeemed, plus accrued and unpaid interest, if any, to the redemption date. We also have the option to redeem the 2025 Senior Notes on or after: October 15, 2020 through October 14, 2021 at 102.188% of par; October 15, 2021 through October 14, 2022 at 101.094% of par; and October 15, 2022 and thereafter at 100% of par. In addition, if there is a change of control coupled with a decline in ratings, as provided in the indenture, we will be required to make an offer to purchase each holder’s 2025 Senior Notes at a price equal to 101% of their principal amount, plus accrued and unpaid interest, if any, to the repurchase date.

2028 Senior Notes

The total aggregate principal balance of the 2028 Senior Notes is $400.0 million. The 2028 Senior Notes are general senior unsecured obligations of the Company and are guaranteed on a senior unsecured basis by certain of the Company's domestic subsidiaries. The 2028 Senior Notes were issued pursuant to an indenture, dated as of January 19, 2018, among the Company, the guarantors and Wells Fargo Bank, National Association, as trustee. The 2028 Senior Notes mature on February 1, 2028 and bear interest at the rate of 4.625% per year, payable semi-annually on February 1 and August 1 of each year, commencing on August 1, 2018. We may redeem the 2028 Senior Notes at any time prior to February 1, 2023 at a price equal to 100% of the aggregate principal amount so redeemed, plus accrued and unpaid interest, if any, to the redemption date and a make-whole premium set forth in the indenture. We may also redeem up to 35% of the aggregate principal amount of the 2028 Senior Notes with the net cash proceeds of certain equity offerings at any time and from time to time before February 1, 2021, at a redemption price equal to 104.625% of the aggregate principal amount so redeemed, plus accrued and unpaid interest, if any, to the redemption date. We also have the option to redeem the 2028 Senior Notes on or after: February 1, 2023 through February 1, 2024 at 102.312% of par; February 1, 2024 through February 1, 2025 at 101.541% of par; February 1, 2025 through February 1, 2026 at 100.770% of par; and February 1, 2026 and thereafter at 100% of par. In addition, if there is a change of control coupled with a decline in ratings, as provided in the indenture, we will be required to make an offer to purchase each holder’s 2028 Senior Notes at a price equal to 101% of their principal amount, plus accrued and unpaid interest, if any, to the repurchase date.

Accounts Receivable Securitization Program

On April 25, 2016, we entered into a one-year $200.0 million accounts receivable securitization program (the "Securitization Program") with several of our wholly owned subsidiaries and certain financial institutions. Under the terms of the Securitization Program, we and certain of our wholly-owned subsidiaries sell our customer receivables to a bankruptcy remote special purpose entity, which is wholly-owned by us. In addition, we also contributed a portion of our customer receivables to the special purpose entity in connection with its establishment. We retain servicing responsibility. The special purpose entity, as borrower, and we, as servicer, have entered into a Credit and Security Agreement with several lenders pursuant to which the special purpose entity may borrow from the lenders up to the maximum borrowing amount allowed, with

the loans secured by the receivables. The amount that the special purpose entity may borrow at a given point in time is determined based on the amount of qualifying receivables that are present in the special purpose entity at such point in time. The assets of the special purpose entity secure the amounts borrowed and cannot be used to pay our other debts or liabilities.

We extended the program for an additional year in April 2017 and again in April 2018. Effective April 18, 2019, we entered into another amendment to extend the Securitization Program an additional year to April 17, 2020. Under the amendment, the maximum borrowing amount increased from $225.0 million to $250.0 million. As of September 28, 2019, $234.0 million was outstanding under this program.

Borrowings outstanding under the Securitization Program bear interest at LIBOR plus the applicable margin of 0.7% and are included as a component of current liabilities in our consolidated balance sheet, while the accounts receivable securing these obligations remain as a component of net receivables in our consolidated balance sheet. As of September 28, 2019, the interest rate under the Securitization Program was 2.76% on the outstanding amounts. We and the special purpose entity are operated and maintained as separate legal entities. The assets of the special purpose entity secure the amounts borrowed and cannot be used to pay our other debts or liabilities. The special purpose entity was not a guarantor under our Credit Agreement and is not a guarantor under our Amended and Restated Credit Agreement or of our 2022 and 2025 Senior Notes.

The Credit and Security Agreement contains customary representations and warranties and events of default, including payment defaults, breach of representations and warranties, covenant defaults, and an event of default upon a change of control. In addition, it contains financial covenants consistent with that of the Credit Agreement. As of September 28, 2019, the Company was in compliance with the Credit and Security Agreement covenants.

Investment in SSI

On August 1, 2019, we acquired 46% of the outstanding shares of SSI for $18.2 million. In September 2019, we launched a cash tender offer to acquire the remaining shares outstanding, which we expect will be completed in the first quarter of fiscal 2020. As of September 28, 2019, the value of the remaining shares at the cash tender offer price was approximately $20.9 million. Effective November 21, 2019, we acquired an additional 7.6 million shares for $12.5 million. As a result, we own approximately 78% of the outstanding shares and will launch a second tender offer with similar terms to acquire the remaining shares.

Stock Repurchase Program

On June 13, 2018, the Board of Directors authorized a share repurchase plan to repurchase up to $500.0 million of our outstanding common stock. This share repurchase plan, which replaced the prior plan, was effective August 1, 2018 and expires on June 13, 2023. Under this authorization, during fiscal 2019, we repurchased 4.8 million shares of our common stock for a total consideration of $200.1 million. As of September 28, 2019, $211.5 million was available under this authorization.

On November 19, 2019, our Board of Directors authorized us to repurchase up to $205 million of our outstanding shares, to be in addition to the prior authorization. Pursuant to this authorization, we entered into a definitive agreement to conduct a $205 million accelerated share repurchase. On November 25, 2019, we have initially repurchased 3.3 million shares pursuant to this arrangement, subject to adjustment on the settlement date pursuant to customary terms.

Contractual Obligations

The following table summarizes our contractual obligations and commitments as of September 28, 2019:

	Payments Due by Period				
Contractual Obligations	**Less than 1 year**	**1-3 years**	**3-5 years**	**More than 5 years**	**Total**
Long-Term Debt Obligations	$ 271.5	$ 150.0	$ 1,312.5	$ 1,350.0	$ 3,084.0
Interest on Long-Term Debt Obligations	111.4	216.6	174.7	105.4	608.1
Operating Leases	20.5	30.6	12.5	14.6	78.2
Capital Leases	2.8	5.8	6.0	11.4	26.0
Finance Leases (1)	3.0	6.1	5.7	8.1	22.9
Purchase Obligations (2)	111.0	27.6	6.6	1.5	146.7
Pension Obligations (3)	0.3	0.7	0.8	8.2	10.0
Total Contractual Obligations	$ 520.5	$ 437.4	$ 1,518.8	$ 1,499.2	$ 3,975.9

(1) The financing leases represent two leases for two separate manufacturing facilities, which were required to be recorded on our balance sheet under U.S. GAAP. See Note 13 to our consolidated financial statements contained in Item 15 of this Annual Report.

(2) Purchase obligations primarily represent minimum purchase commitments for inventory and instruments and, to a lesser extent, other operating expense commitments.

(3) Pension obligations do not include our obligation under our deferred compensation plans of $51.9 million at September 28, 2019, which is recorded as a current liability. Deferred compensation plan benefits are generally paid out at retirement or termination of employment.

The above table does not reflect our long-term liabilities associated with reserves for uncertain tax positions recorded under FIN 48 (codified primarily in ASC 740, *Income Taxes*) totaling $101.6 million. Due to the complexity associated with tax uncertainties, we cannot reasonably make a reliable estimate of the period in which we expect to settle these non-current liabilities. See Note 9 to our consolidated financial statements contained in Item 15 of this Annual Report for more information on our unrecognized tax benefits.

Future Liquidity Considerations

We expect to continue to review and evaluate potential strategic transactions (both acquisitions and dispositions) and alliances that we believe will complement or enhance our business and stockholder value. Subject to the Risk Factors set forth in Part I, Item 1A of this Annual Report and the general disclaimers set forth in our Special Note Regarding Forward-Looking Statements at the outset of this Annual Report, we believe that our cash and cash equivalents, cash flows from operations, the cash available under our 2018 Amended Revolver and our Securitization Program will provide us with sufficient funds in order to fund our expected normal operations and debt payments over the next twelve months. Our longer-term liquidity is contingent upon future operating performance. We may also require additional capital in the future to fund capital expenditures, repayment of debt, acquisitions, strategic transactions or other investments. As described above, we have significant indebtedness outstanding under our 2018 Credit Agreement, 2025 Senior Notes, 2028 Senior Notes and the Securitization Program. These capital requirements could be substantial. Our operating performance may also be affected by matters discussed under the above-referenced Risk Factors set forth elsewhere in this report. These risks, trends and uncertainties may also adversely affect our long-term liquidity.

Legal Contingencies

We are currently involved in certain legal proceedings and claims. In connection with these legal proceedings and claims, management periodically reviews estimates of potential costs to be incurred by us in connection with the adjudication or settlement, if any, of these proceedings. These estimates are based on an analysis of potential litigation outcomes and settlement strategies. In accordance with ASC 450, *Contingencies*, loss contingencies are accrued if, in the opinion of management, an adverse outcome is probable and such outcome can be reasonably estimated. It is possible that future results for any particular quarter or annual period may be materially affected by changes in our assumptions or the effectiveness of our strategies relating to these proceedings.

Guarantees and Other Off-Balance Sheet Arrangements

We do not have guarantees or other off-balance sheet financing arrangements, including variable interest entities, of a magnitude that we believe could have a material impact on our financial condition or liquidity.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles. The preparation of these consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. On an on-going basis, we evaluate our estimates, including those related to revenue recognition for multiple element arrangements, allowance for doubtful accounts, reserves for excess and obsolete inventories, valuations, purchase price allocations and contingent consideration related to business combinations, expected future cash flows including growth rates, discount rates, terminal values and other assumptions used to evaluate the recoverability of long-lived assets and goodwill, estimated fair values of intangible assets and goodwill, amortization methods and periods, warranty reserves, certain accrued expenses, restructuring and other related charges, stock-based compensation, contingent liabilities, tax reserves and recoverability of our net deferred tax assets and related valuation allowances. We base our estimates on historical experience and various other assumptions that are believed to be reasonable under the circumstances. Actual results could differ from these estimates if past experience or other assumptions do not turn out to be substantially accurate. Any differences may have a material impact on our financial condition and results of operations.

The following is a discussion of what we believe to be the more significant critical accounting policies and estimates used in the preparation of our consolidated financial statements.

Inventory

Our inventories include material, labor and overhead, and are stated at the lower of cost (first-in, first-out) or market. As a developer and manufacturer of high technology medical equipment and diagnostic test kits, we may be exposed to a number of economic and industry factors that could result in portions of our inventory becoming either obsolete or in excess of anticipated usage. Our policy is to establish inventory reserves when conditions exist that suggest that our inventory may be in excess of anticipated demand or is obsolete based upon our assumptions about future demand for our products and market conditions. Although considerable effort is made to ensure the accuracy of our forecasts of future product demand, any significant unanticipated changes in demand or expected usage could have a significant negative impact on the value of our inventory and our operating results.

Business Combinations

We record tangible and intangible assets acquired and liabilities assumed in business combinations under the purchase method of accounting. Amounts paid for each acquisition are allocated to the assets acquired and liabilities assumed based on their fair values at the dates of acquisition. Contingent consideration, which is not deemed to be linked to continuing employment, is recorded at fair value as measured on the date of acquisition. The value recorded is based on estimates of future financial projections under various potential scenarios, which are generally probability weighted as to the outcome of each scenario. These cash flow projections are discounted with a risk adjusted rate. Quarterly until such contingent amounts are earned, the fair value of the liability is reassessed at each reporting period and adjusted as a component of operating expenses based on changes to the underlying assumptions. The estimates used to determine the fair value of the contingent consideration liability are subject to significant judgment and actual results are likely to differ from the amounts originally recorded.

The fair value of identifiable intangible assets is based on detailed valuations that use information and assumptions provided by management, which consider management's best estimate of inputs and assumptions that a market participant would use. We allocate any excess purchase price over the fair value of the net tangible and intangible assets acquired and liabilities assumed to goodwill.

We generally use the income approach in which cash flow projections on an after-tax basis are discounted using a risk adjusted rate to determine the estimated fair value of certain identifiable intangible assets including developed technology, in-process research and development projects, customer relationships, and trade names.

With respect to property, plant and equipment, we estimate the fair value of these assets using a combination of the cost and market approaches, depending on the component. Generally, we apply the cost or income approach as the primary methods in estimating the fair value of land and buildings as the market approach is less reliable based on potential significant differences between the property being valued and the potentially comparable sales of similar properties.

Goodwill

We test goodwill at the reporting unit level for impairment on an annual basis and between annual tests if events and circumstances indicate it is more likely than not that the fair value of a reporting unit is less than its carrying value. Events that could indicate impairment and trigger an interim impairment assessment include, but are not limited to current economic and market conditions, including a decline in market capitalization, a significant adverse change in legal factors, business climate, operational performance of the business or key personnel, and an adverse action or assessment by a regulator. Our annual impairment test date is the first day of our fiscal fourth quarter.

In performing the test, we either use the qualitative assessment permitted by ASC 350 or the single step quantitative approach prescribed under ASC 350 including amendments under ASU 2017-04. Under the qualitative approach we consider a number of factors, including the amount by which the previous quantitative test's fair value exceeded the carrying value of the reporting units, the forecasts in our current 5 year strategic plan compared to the forecasts in the previous quantitative test, an evaluation of discount rates, long-term growth rates including the terminal year rate, if tax rates would have significantly changed, an evaluation of current economic factors for both the worldwide economy and specifically the medical device industry, and any significant changes in customer and supplier relationships. We weigh these factors to determine if it is more likely than not that the fair value of the reporting unit exceeds its carrying value. If after performing a qualitative assessment, indicators are present, or we identify factors that cause us to believe it is appropriate to perform a more precise calculation of fair value, we would move beyond the qualitative assessment and perform a quantitative impairment test.

Under the quantitative impairment test, we perform a comparison of the reporting unit’s carrying value to its fair value. We consider a number of factors to determine the fair value of a reporting unit, including an independent valuation to conduct this test. The valuation is based upon expected future discounted operating cash flows of the reporting unit as well as analysis of recent sales and ratio comparisons of similar companies. We base the discount rate on the weighted average cost of capital, or WACC, of market participants. If the carrying value of a reporting unit exceeds its estimated fair value, we apply the single step approach under ASU 2017-04. As a result of this simplified approach the goodwill impairment is calculated as the amount by which the carrying value of the reporting unit exceeds its fair value to the extent of the goodwill balance. We adopted this ASU in fiscal 2018.

We conducted our fiscal 2019 annual impairment test on the first day of the fourth quarter and utilized the qualitative approach. As a result of completing the qualitative assessment for each of our reporting units, we concluded that it was more likely than not that the fair value of each reporting exceeded its carrying value by a significant amount and the performance of a discounted cash flow analysis to estimate fair value was unnecessary.

At September 28, 2019, we believe that our reporting units, with goodwill aggregating $2.6 billion, were not at risk of failing Step 1 of the goodwill impairment test based on the current forecasts.

If the current economic environment were to deteriorate or if there was a significant negative impact on the factors considered for the qualitative assessment, this would likely result in a lower fair value and we may be required to perform a DCF to estimate the fair value of our reporting units. When there is a deterioration in such factors, this typically results in a higher WACC because market participants would require a higher rate of return. In the DCF as the WACC increases, the fair value decreases. The other significant factor in the DCF is our projected financial information (i.e., amount and timing of expected future cash flows and growth rates) and if these assumptions were to be adversely impacted, this could result in a reduction of the fair value of a reporting unit.

Intangible Assets

Intangible assets are initially recorded at fair value and stated net of accumulated amortization and impairments. We amortize intangible assets that have finite lives using either the straight-line method, or if reliably determinable, based on the pattern in which the economic benefit of the asset is expected to be utilized. We evaluate the recoverability of our definite lived intangible assets whenever events or changes in circumstances or business conditions indicate that the carrying value of these assets may not be recoverable based on expectations of future undiscounted cash flows for each asset group. If the carrying value of an asset or asset group exceeds its undiscounted cash flows, the Company estimates the fair value of the assets, generally utilizing a discounted cash flow analysis based on the present value of estimated future cash flows to be generated by the assets using a risk-adjusted discount rate. To estimate the fair value of the assets, the Company uses market participant assumptions pursuant to ASC 820.

Revenue Recognition

We generate revenue from the sale of our products, primarily medical imaging systems, aesthetic treatment systems and diagnostic and surgical disposable products, and related services, which are primarily support and maintenance services on our medical imaging systems. See Note 3 for further discussion of revenue recognition.

We consider revenue to be earned when all of the following criteria are met: we have a contract with a customer that creates enforceable rights and obligations; promised products or services are identified; the transaction price, or the amount that we expect to receive, including an estimate of uncertain amounts subject to a constraint to ensure revenue is not recognized in an amount that would result in a significant reversal upon resolution of the uncertainty, is determinable; and we have transferred control of the promised items to the customer. A performance obligation is a promise in a contract to transfer a distinct good or service to the customer, and is the unit of account in the contract. The transaction price for the contract is measured as the amount of consideration we expect to receive in exchange for the goods and services expected to be transferred. A contract's transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, control of the distinct good or service is transferred. Transfer of control for our products is generally at shipment or delivery, depending on contractual terms, but occurs when title and risk of loss transfers to the customer which represents the point in time when the customer obtains the use of and substantially all of the remaining benefit of the product. As such, the performance obligation related to product sales is satisfied at a point in time. Revenue from support and maintenance contracts and extended warranties are recognized over time based on the contract term, which represents a faithful depiction of the transfer of goods and services given the stand-ready nature of the performance obligations. Service revenue related to professional services for installation, training and repairs is recognized as the services are performed based on the specific nature of the service.

We recognize receivables when we have an unconditional right to payment. Payment terms are typically 30 days in the U.S. but may be longer in international markets. We treat shipping and handling costs performed after a customer obtains control of the good as a fulfillment cost and record these costs within costs of product revenue when the corresponding revenue is recognized.

Some of our contracts have multiple performance obligations. For contracts with multiple performance obligations, we are required to allocate the transaction price to each performance obligation using our best estimate of the standalone selling price of each distinct good or service in the contract. We determine the best estimate of standalone selling price using average selling prices over 3 to 12 month periods of data depending on the products or nature of the services coupled with current market considerations. If the product or service does not have a history of sales or if sales volume is not sufficient, we rely on prices set by our pricing committees or applicable marketing department adjusted for expected discounts.

We also place instruments (or equipment) at customer sites but retain title to the instrument (for example, the ThinPrep Processor, ThinPrep Imaging System, and the Panther system). The customer has the right to use the instrument for a period of time, and then we recover the cost of providing the instrument through the sales of disposables, namely tests and assays in Diagnostics and handpieces in GYN Surgical. These types of agreements include an embedded operating lease for the right to use an instrument and no instrument revenue is recognized at the time of instrument delivery. We recognize a portion of the revenue allocated to the embedded lease concurrent with the sale of disposables over the term of the agreement.

Income Taxes

We use the asset and liability method for accounting for income taxes in accordance with ASC 740, *Income Taxes*. Under this method, we recognize deferred income taxes for the future tax consequences of differences between the tax and financial accounting bases of assets and liabilities at each reporting period. We measure deferred tax assets and liabilities using enacted tax rates and laws applicable to the period in which we expect the differences to affect taxable income. We establish a valuation allowance when necessary to reduce deferred tax assets to the amounts expected to be realized.

We have recognized $258.1 million in net deferred tax liabilities at September 28, 2019 and $485.3 million at September 29, 2018. The significant reduction was primarily due to intangible asset impairment charges recorded in fiscal 2019. The liabilities primarily relate to deferred taxes associated with our acquisitions. The tax assets relate primarily to net operating loss carryforwards, accruals and reserves, stock-based compensation, and research credits. We record a valuation allowance to reduce our deferred tax assets to the amount that is more likely than not to be realized. While we have considered future taxable income and the character of such income in assessing the need for the valuation allowance, in the event we determine that we could realize our deferred tax assets in the future in excess of the net recorded amount, an adjustment to the deferred tax assets would increase income in the period such determination is made. Likewise, should we determine that we would not be able to realize all or part of our net deferred tax assets in the future, an adjustment to the deferred tax assets would be charged to income in the period such determination is made.

At September 28, 2019, we had $101.6 million in gross unrecognized tax benefits excluding interest, of which $87.3 million, if recognized, would reduce our effective tax rate. At September 29, 2018, we had $89.5 million in gross unrecognized tax benefits excluding interest, of which $79.0 million, if recognized, would have reduced our effective tax rate. The $12.1 million increase in gross unrecognized tax benefits from fiscal 2018 primarily related to our internal restructuring and other current year tax positions, partially offset by audit settlements and the expiration of statutes of limitations. In the next twelve

months it is reasonably possible that we will reduce our gross unrecognized tax benefits by up to $13.4 million due to expiring statutes of limitations.

In the ordinary course of business, there are many transactions and calculations where the ultimate tax outcome is uncertain. Judgment is required in determining our worldwide income tax provision. In our opinion, we have made adequate provisions for income taxes for all years subject to audit. While we consider our estimates reasonable, no assurance can be given that the final tax outcome will not be different than amounts reflected in our historical income tax provisions and accruals. If our assumptions are incorrect, the differences could have a material impact on our income tax provision and operating results in the period in which such determination is made.

Recent Accounting Pronouncements

See Note 2 to our consolidated financial statements contained in Item 15 of this Annual Report.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Financial Instruments, Other Financial Instruments, and Derivative Commodity Instruments. Financial instruments consist of cash and cash equivalents, accounts receivable, equity investments, forward foreign exchange and option contracts, interest rate cap and interest rate swap agreements, insurance contracts, accounts payable and debt obligations. Except for our outstanding 2025 and 2028 Senior Notes, the fair value of these financial instruments approximate their carrying amount. The fair value of our 2025 and 2028 Senior Notes was approximately $975.5 million and $417.0 million, respectively. Amounts outstanding under our 2018 Credit Agreement and Securitization Program of $1.50 billion and $234.0 million aggregate principal, respectively, as of September 28, 2019 are subject to variable rates of interest based on current market rates, and as such, we believe the carrying amount of these obligations approximates fair value.

Primary Market Risk Exposures. Our primary market risk exposure is in the areas of interest rate risk and foreign currency exchange rate risk. We incur interest expense on borrowings outstanding under our 2025 and 2028 Senior Notes and 2018 Credit Agreement, as well as under our accounts receivable securitization program. The 2025 and 2028 Senior Notes have fixed interest rates. Borrowings under our 2018 Credit Agreement currently bear interest at the Eurocurrency Rate (i.e., Libor) plus the applicable margin of 1.375% per annum. Borrowings under our accounts receivable securitization program currently bear interest at Libor plus the applicable margin of 0.7%.

As of September 28, 2019, there was $1.50 billion of aggregate principal outstanding under the 2018 Credit Agreement and $234.0 million aggregate principal outstanding under the securitization program. Since these debt obligations are variable rate instruments, our interest expense associated with these instruments is subject to change. A 10% adverse movement (increase in LIBOR rate) would increase annual interest expense by approximately $3.6 million. We entered into multiple interest rate cap agreements and an interest rate swap agreement to help mitigate the interest rate volatility associated with the variable rate interest on the amounts outstanding. The critical terms of the interest rate caps and interest rate swap were designed to mirror the terms of our LIBOR-based borrowings under the 2018 Credit Agreement and prior credit agreements, and therefore the interest rate caps and interest rate swap are highly effective at offsetting the cash flows being hedged. We designated these derivatives as cash flow hedges of the variability of the Libor-based interest payments on $1.0 billion of principal. The interest rate cap contracts expire on December 27, 2019 and December 23, 2020, and the interest rate swap contract expires on December 17, 2023.

The return from cash and cash equivalents will vary as short-term interest rates change. A hypothetical 10% increase or decrease in interest rates, however, would not have a material adverse effect on our financial condition.

Foreign Currency Exchange Risk. Our international business is subject to risks, including, but not limited to: unique economic conditions, changes in political climate, differing tax structures, other regulations and restrictions, and foreign exchange rate volatility. Accordingly, our future results could be materially adversely impacted by changes in these or other factors.

We conduct business worldwide and maintain sales and service offices outside the United States as well as manufacturing facilities in Costa Rica and the United Kingdom. Our international sales are denominated in a number of currencies, primarily the Euro, U.S. dollar, UK Pound and Renminbi. The majority of our foreign subsidiaries functional currency is the local currency, although certain foreign subsidiaries functional currency is the U.S. dollar based on the nature of their operations or functions. Fluctuations in the foreign currency rates could affect our sales, cost of goods and operating margins and could result in exchange losses. In addition, currency devaluations can result in a loss if we hold deposits of that currency. We have executed forward foreign currency contracts to hedge a portion of results denominated in the Euro, UK Pound, Australian dollar, Japanese Yen, Canadian dollar and Chinese Renminbi. These contracts do not qualify for hedge accounting. As a result, we may experience volatility in our Consolidated Statements of Operations due to (i) the impact of unrealized gains and losses

reported in other income, net on the mark-to-market of outstanding contracts and (ii) realized gains and losses recognized in other income, net, whereas the offsetting economic gains and losses are reported in the line item of the underlying cash flow, for example, revenue.

We believe that the operating expenses of our international subsidiaries that are incurred in local currencies will not have a material adverse effect on our business, results of operations or financial condition. Our operating results and certain assets and liabilities that are denominated in foreign currencies are affected by changes in the relative strength of the U.S. dollar against those currencies. Our expenses, denominated in foreign currencies, are positively affected when the U.S. dollar strengthens against those currencies and adversely affected when the U.S. dollar weakens. However, we believe that the foreign currency exchange risk is not significant. We believe a hypothetical 10% increase or decrease in foreign currencies that we transact in would not have a material adverse impact on our financial condition or results of operations. During fiscal 2019, 2018 and 2017, we incurred net foreign exchange gains (losses) of $5.1 million, $5.9 million and $2.3 million, respectively.

Item 8. Financial Statements and Supplementary Data

Our Consolidated Financial Statements and Supplementary Data are set forth under Part IV, Item 15, which is incorporated herein by reference.

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

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our Securities Exchange Act reports is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, as ours are designed to do, and management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

As of September 28, 2019, we carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934. Based upon that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures are effective.

Report of Management on Internal Control over Financial Reporting

We are responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rule 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended, as a process designed by, or under the supervision of our principal executive and principal financial officers and effected by our board of directors, management and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and includes those policies and procedures that:

- pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and disposition of our assets;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorization of our management and directors; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Our internal control system was designed to provide reasonable assurance to our management and board of directors regarding the preparation and fair presentation of published financial statements. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Projections of any evaluation of effectiveness to future periods are subject to the risks that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management has assessed the effectiveness of our internal control over financial reporting as of September 28, 2019. In making this assessment, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (COSO) in Internal Control-Integrated Framework.

Subject to the foregoing, based on management's assessment, we believe that, as of September 28, 2019, our internal control over financial reporting is effective at a reasonable assurance level based on these criteria.

Ernst & Young LLP, an independent registered public accounting firm, has issued an attestation report on the effectiveness of our internal control over financial reporting. This report in which they expressed an unqualified opinion is included below.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Hologic, Inc.

Opinion on Internal Control over Financial Reporting

We have audited Hologic, Inc.'s internal control over financial reporting as of September 28, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Hologic, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of September 28, 2019, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the 2019 consolidated financial statements of the Company and our report dated November 27, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Report of Management on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

Boston, Massachusetts
November 27, 2019

Changes in Internal Control over Financial Reporting

During the quarter ended September 28, 2019, there have been no changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Pursuant to Section 406 of the Sarbanes-Oxley Act of 2002, we have adopted a Code of Ethics for Senior Financial Officers that applies to our principal executive officer, principal financial officer, and principal accounting officer and controller, and other persons performing similar functions. Our Code of Ethics for Senior Financial Officers is publicly available on our website at *investors.hologic.com* as Appendix A to our Code of Conduct. We intend to satisfy the disclosure requirement under Item 5.05 of Current Report on Form 8-K regarding an amendment to, or waiver from, a provision of this code by posting such information on our website, at the address specified above.

The additional information required by this item is incorporated by reference to our Definitive Proxy Statement for our annual meeting of stockholders to be filed with the Securities and Exchange Commission within 120 days after the close of our fiscal year.

Item 11. Executive Compensation

The information required by this item is incorporated by reference to our Definitive Proxy Statement for our annual meeting of stockholders to be filed with the Securities and Exchange Commission within 120 days after the close of our fiscal year.

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

We maintain a number of equity compensation plans for employees, officers, directors and others whose efforts contribute to our success. The table below sets forth certain information as of the end of our fiscal year ended September 28, 2019 regarding the shares of our common stock available for grant or granted under stock option plans and equity incentives that (i) were approved by our stockholders, and (ii) were not approved by our stockholders.

Equity Compensation Plan Information

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)		Weighted-average exercise price of outstanding options, warrants and rights (b) (2)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders (1)	9,195,293	$	35.23	7,032,927
Equity compensation plans not approved by security holders	—	$	—	—
Total	9,195,293	$	35.23	7,032,927

(1) Includes 3,744,600 shares that are issuable upon restricted stock units (RSUs), performance stock units (PSUs) and market stock units (MSUs) vesting. The remaining balance consists of outstanding stock option grants.

(2) The weighted average exercise price does not take into account the shares issuable upon vesting of outstanding RSUs, PSUs and MSUs, which have no exercise price.

The additional information required by this item is incorporated by reference to our Definitive Proxy Statement for our annual meeting of stockholders to be filed with the Securities and Exchange Commission within 120 days after the close of our fiscal year.

Item 13. Certain Relationships and Related Transactions and Director Independence

The information required by this item is incorporated by reference to our Definitive Proxy Statement for our annual meeting of stockholders to be filed with the Securities and Exchange Commission within 120 days after the close of our fiscal year.

Item 14. Principal Accounting Fees and Services

The information required by this item is incorporated by reference to our Definitive Proxy Statement for our annual meeting of stockholders to be filed with the Securities and Exchange Commission within 120 days after the close of our fiscal year.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) The following documents are filed as part of this report:

(1) Financial Statements

Report of Independent Registered Public Accounting Firm on Consolidated Financial Statements

Consolidated Statements of Operations for the years ended September 28, 2019, September 29, 2018 and September 30, 2017

Consolidated Statements of Comprehensive Income (Loss) for the years ended September 28, 2019, September 29, 2018 and September 30, 2017

Consolidated Balance Sheets as of September 28, 2019 and September 29, 2018

Consolidated Statements of Stockholders' Equity for the years ended September 28, 2019, September 29, 2018 and September 30, 2017

Consolidated Statements of Cash Flows for the years ended September 28, 2019, September 29, 2018 and September 30, 2017

Notes to Consolidated Financial Statements

(2) Financial Statement Schedules

All schedules have been omitted because they are not required or because the required information is given in the Consolidated Financial Statements or Notes thereto.

(b) Listing of Exhibits

Exhibit Number	Exhibit Description	Incorporated by Reference	
		Form	Filing Date/ Period End Date
2.1	Asset Purchase Agreement, dated December 14, 2016, by and among Hologic, Inc., Grifols Diagnostic Solutions Inc. and Grifols, S.A.	8-K	12/15/2016
2.2	Agreement and Plan of Merger, dated February 14, 2017, by and among Hologic, Inc., Cynosure, Inc. and Minuteman Merger Sub, Inc.	8-K	02/14/2017
2.3	Securities Purchase Agreement, dated as of November 20, 2019, by and among Hologic, Inc., Hologic Holdings Limited and Lotus Buyer, Inc.	8-K	11/20/2019
3.1	Certificate of Incorporation of Hologic, with amendments	10-K	09/30/2017
3.2	Seventh Amended and Restated Bylaws of Hologic, Inc.	8-K	06/25/2019
4.1	Specimen Certificate for Shares of Hologic's Common Stock (filed in paper format)	8-A	01/31/1990
4.2	Indenture, dated October 10, 2017, by and among Hologic, the Guarantors party thereto and Wells Fargo Bank, National Association, as Trustee.	8-K	10/10/2017
4.3	Form of 4.375% Senior Note due 2025 (included in Exhibit 4.3)	8-K	10/10/2017
4.4	Indenture dated January 19, 2018, by and among Hologic, the Guarantors party thereto and Wells Fargo Bank, National Association, as Trustee	8-K	01/19/2018
4.5	First Supplemental Indenture dated January, 19, 2018, by and among Hologic, the Guarantors party thereto and Wells Fargo Bank, National Association, as Trustee	8-K	01/19/2018
4.6	Form of 4.625% Senior Note due 2028 (included in Exhibit 4.5)	8-K	01/19/2018

Exhibit Number	Exhibit Description	Incorporated by Reference	
		Form	Filing Date/ Period End Date
4.7	Description of Securities	Filed Herewith	
10.1*	Second Amended and Restated 1999 Equity Incentive Plan.	10-Q	03/25/2006
10.2*	Amendment No. 1 to Second Amended and Restated 1999 Equity Incentive Plan.	S-8	10/23/2007
10.3*	Amendment No. 2 to Second Amended and Restated 1999 Equity Incentive Plan.	8-K	10/22/2007
10.4*	Amendment No. 3 to Second Amended and Restated 1999 Equity Incentive Plan.	8-K	12/12/2008
10.5*	The 2003 Incentive Award Plan of Gen-Probe Incorporated as amended and restated.	S-8	08/02/2012
10.6*	Hologic Amended and Restated 2008 Equity Incentive Plan.	8-K	03/15/2018
10.7*	Form of Stock Option Award Agreement Under 2008 Equity Incentive Plan (adopted fiscal 2014).	8-K	11/12/2013
10.8*	Form of Stock Option Award Agreement Under 2008 Equity Incentive Plan (adopted fiscal 2015).	8-K	11/05/2014
10.9*	Form of Stock Option Award Agreement Under 2008 Equity Incentive Plan (adopted fiscal 2016).	8-K	10/14/2015
10.10*	Form of Stock Option Award Agreement Under 2008 Equity Incentive Plan (adopted fiscal 2017).	8-K	11/09/2016
10.11*	Form of Restricted Stock Unit Award Agreement Under 2008 Equity Incentive Plan (adopted fiscal 2016).	8-K	10/14/2015
10.12*	Form of Restricted Stock Unit Award Agreement Under 2008 Equity Incentive Plan (adopted fiscal 2017).	8-K	11/09/2016
10.13*	Form of Performance Stock Unit Award Agreement Under 2008 Equity Incentive Plan (ROIC) (adopted fiscal 2018).	8-K	11/09/2017
10.14*	Form of Performance Stock Unit Award Agreement Under 2008 Equity Incentive Plan (relative TSR) (adopted fiscal 2018).	8-K	11/09/2017
10.15*	Form of Performance Stock Unit Award Agreement Under 2008 Equity Incentive Plan (relative TSR) (adopted fiscal 2019).	8-K	11/07/2018
10.16*	Form of Performance Stock Unit Award Agreement Under 2008 Equity Incentive Plan (ROIC) (adopted fiscal 2019).	8-K	11/07/2018
10.17*	Form of Performance Stock Unit Award Agreement Under 2008 Equity Incentive Plan (relative TSR) (adopted fiscal 2020).	8-K	11/08/2019
10.18*	Form of Performance Stock Unit Award Agreement Under 2008 Equity Incentive Plan (ROIC) (adopted fiscal 2020).	8-K	11/08/2019
10.19*	Form of Performance Stock Unit Award Agreement Under 2008 Equity Incentive Plan (Free Cash Flow) (adopted fiscal 2020).	8-K	11/08/2019
10.20*	Form of Independent Director Stock Option Award Agreement Under 2008 Equity Incentive Plan (annual grant, adopted fiscal 2014).	10-K	09/28/2013
10.21*	Form of Independent Director Stock Option Award Agreement Under 2008 Equity Incentive Plan (annual grant, adopted fiscal 2015).	10-K	09/27/2014

Exhibit Number	Exhibit Description	Incorporated by Reference	
		Form	Filing Date/ Period End Date
10.22*	Form of Independent Director Restricted Stock Unit Award Agreement Under 2008 Equity Incentive Plan (annual grant).	10-K	09/28/2013
10.23*	Form of Independent Director Stock Option Award Agreement Under 2008 Equity Incentive Plan (initial grant, adopted fiscal 2014).	10-K	09/28/2013
10.24*	Form of Independent Director Stock Option Award Agreement Under 2008 Equity Incentive Plan (initial grant, adopted fiscal 2015).	10-K	09/27/2014
10.25*	Form of Independent Director Restricted Stock Unit Award Agreement Under 2008 Equity Incentive Plan (initial grant).	10-K	09/28/2013
10.26*	Hologic, Inc. 2012 Employee Stock Purchase Plan, as amended	8-K	03/04/2016
10.27*	Hologic Short-Term Incentive Plan, as amended and restated	8-K	11/07/2018
10.28*	Hologic Amended and Restated Deferred Equity Plan	8-K	12/16/2015
10.29*	Rabbi Trust Agreement.	10-K	09/28/2013
10.30*	Form of Indemnification Agreement (as executed with each director of Hologic).	8-K	03/06/2009
10.31*	Form of Senior Vice President Change of Control Agreement. (1)	10-Q	12/29/2012
10.32*	Employment Agreement dated December 6, 2013 by and between Stephen P. MacMillan and Hologic.	8-K	12/09/2013
10.33*	Amended and Restated Employment Agreement by and between the Company and Stephen P. MacMillan, dated September 18, 2015.	8-K	09/21/2015
10.34*	Amendment No. 1 to Amended and Restated Employment Agreement by and between the Company and Stephen P. MacMillan, dated September 24, 2016.	10-K	11/17/2016
10.35*	Form of Matching Restricted Stock Unit Award Agreement	8-K	12/09/2013
10.36*	Change of Control Agreement dated December 6, 2013 by and between Stephen P. MacMillan and Hologic.	8-K	12/09/2013
10.37*	Severance and Change of Control Agreement dated July 31, 2018 by and between Karleen M. Oberton and Hologic, Inc.	8-K	07/31/2018
10.38*	Offer Letter dated May 4, 2014 by and between Peter J. Valenti and Hologic.	10-Q	06/28/2014
10.39*	Senior Vice President Severance Agreement dated May 26, 2014 by and between Peter J. Valenti and Hologic.	10-K	09/27/2014
10.40*	Severance and Change of Control Agreement dated September 13, 2017 by and between Allison Bebo and Hologic.	10-K	09/30/2017
10.41*	Offer Letter dated January 6, 2015 by and between John M. Griffin and Hologic.	10-Q	03/28/2015
10.42*	Severance and Change of Control Agreement dated February 2, 2015 by and between John M. Griffin and Hologic.	10-Q	03/28/2015
10.43*	Division President Severance Agreement dated July 20, 2017 by and between Kevin R. Thornal and Hologic	10-Q	07/31/2019
10.44*	Change of Control Agreement dated July 20, 2017 by and between Kevin R. Thornal and Hologic	10-Q	07/31/2019
10.45	Facility Lease (Danbury) dated December 20, 1995 by and among Melvin J. Powers and Mary P. Powers D/B/A M&N Realty and Lorad (filed in paper format).	Trex Medical Corporation S-1	03/29/1996

Exhibit Number	Exhibit Description	Incorporated by Reference	
		Form	Filing Date/ Period End Date
10.46	First Addendum to Lease Agreement by and between Melvyn J. Powers and Mary P. Powers d/b/a M&M Realty and Lorad, a Division of Trex-Medical Corporation dated as of March 1, 1996.	Filed Herewith	
10.47	Second Addendum to Lease Agreement by and between Melvyn J. Powers and Mary P. Powers d/b/a M&M Realty and Lorad, a Division of Trex-Medical Corporation dated as of April 1, 1996.	Filed Herewith	
10.48	Third Addendum to Lease Agreement by and between Melvyn J. Powers and Mary P. Powers d/b/a M&M Realty and Lorad, a Division of Trex-Medical Corporation dated as of May 1, 1996. (3)	Filed Herewith	
10.49	Notice of Lease by Commerce Park Realty, LLC, successor-in-interest to Melvyn J. Powers and Mary P. Powers d/b/a M&M Realty and Hologic, Inc. dated as of October 7, 2005 and Fourth Addendum to Lease. (3)	Filed Herewith	
10.50	Fifth Addendum to Agreement of Lease by and between Commerce Park Realty, LLC and Hologic, Inc. dated as of March 2012. (3)	Filed Herewith	
10.51	Sixth Addendum to Agreement of Lease by and between Commerce Park Realty, LLC and Hologic, Inc. dated as of July 2016. (3)	Filed Herewith	
10.52	Lease Agreement (Danbury and Bedford) by and between BONE (DE) QRS 15-12, INC., and Hologic dated August 28, 2002.	10-K	09/28/2002
10.53	First Amendment to Lease Agreement (Danbury and Bedford) by and between BONE (DE) QRS 15-12, INC., and Hologic dated October 29, 2007.	10-K	09/29/2007
10.54	Office Lease dated December 31, 2003 between Cytyc and Marlborough Campus Limited Partnership.	Cytyc Corporation 10-K	12/31/2003
10.55	First Amendment to that Office Lease dated December 31, 2003 between Cytyc and Marlborough Campus Limited Partnership, entered into August 23, 2017, by and between Hines Global REIT Marlborough Campus LLC and Hologic, Inc. (2)	10-K	09/30/2017
10.56	Lease Agreement by and between Zona Franca Coyol S.A. and Cytyc Surgical Products Costa Rica S.A. dated April 23, 2007.	10-K	09/29/2007
10.57	Addendum 1 to Lease Agreement by and between Zona Franca Coyol S.A. and Cytyc Surgical Products Costa Rica S.A. dated July 22, 2007. (3) (4)	Filed Herewith	
10.58	Addendum 2 to Lease Agreement by and between Zona Franca Coyol S.A. and Cytyc Surgical Products Costa Rica S.A. dated September 22, 2008. (3) (4)	Filed Herewith	
10.59	Addendum No. 3 to Current Lease by and Between BCR Fondo de Inversion Inmobiliario and Hologic Surgical Products Costa Rica S.R.L. (2)	10-Q	12/30/2017
10.60	Lease Agreement by and between 445 Simarano Drive, Marlborough LLC and Cytyc dated July 11, 2006.	10-K	09/29/2007
10.61	First Amendment to Lease by and between 445 Simarano Drive Marlborough LLC and Hologic, Inc. dated July 14, 2016. (3)	Filed herewith	
10.62	Amended and Restated Credit and Guaranty Agreement, originally dated May 29, 2015, and amended and restated as of October 3, 2017 among Hologic, Hologic GGO 4 Ltd, each Designated Borrower from time to time party thereto, the Guarantors from time to time party thereto, each Lender from time to time party thereto and Bank of America, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer.	8-K	10/04/2017
10.63	Refinancing Amendment No. 1 dated as of December 17, 2018 to the Amended and Restated Credit and Guaranty Agreement dated as of October 3, 2017.	8-K	12/18/2018

Exhibit Number	Exhibit Description	Incorporated by Reference	
		Form	Filing Date/ Period End Date
10.64	Supply Agreement for Panther Instrument System effective November 22, 2006 between Gen-Probe Incorporated and STRATEC Biomedical Systems AG. (2)	Gen-Probe 10-Q	09/30/2007
10.65	Amendment No. 1 dated June 1, 2011 to Supply Agreement for Panther Instrument System. (2)	10-K	09/24/2016
10.66	Amendment No. 2 dated February 28, 2013 to Supply Agreement for Panther Instrument System. (2)	10-K	09/24/2016
10.67	Intellectual Property License, dated as of January 31, 2017, by and among Hologic, Inc., Gen-Probe Incorporated and Grifols Diagnostics Solutions Inc.	8-K	02/02/2017
10.68	First Amendment, dated as of April 9, 2019, to Intellectual Property License, dated as of January 31, 2017, by and among Hologic, Inc., Gen-Probe Incorporated and Grifols Diagnostic Solutions.	10-Q	05/01/2019
21.1	Subsidiaries of Hologic.	Filed herewith	
23.1	Consent of Independent Registered Public Accounting Firm.	Filed herewith	
31.1	Certification of Hologic's CEO pursuant to Item 601(b)(31) of Regulation S-K, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	Filed herewith	
31.2	Certification of Hologic's CFO pursuant to Item 601(b)(31) of Regulation S-K, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	Filed herewith	
32.1	Certification of Hologic's CEO pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	Furnished herewith	
32.2	Certification of Hologic's CFO pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	Furnished herewith	
101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.	Filed herewith	
101.SCH	Inline XBRL Taxonomy Extension Schema Document.	Filed herewith	
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document.	Filed herewith	
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.	Filed herewith	
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.	Filed herewith	
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document.	Filed herewith	
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)	Filed herewith	

* *Indicates management contract or compensatory plan, contract or arrangement.*

(1) *The registrant has entered into this agreement with the following executive officers: Peter J. Valenti.*

(2) *Confidential treatment has been granted with respect to certain portions of this exhibit. A complete version of this exhibit has been filed separately with the U.S. Securities and Exchange Commission.*

(3) *Certain portions of this exhibit are considered confidential and have been omitted as permitted under SEC rules and regulations.*

(4) *Schedules and exhibits have been omitted pursuant to Item 601(b)(2) of Regulation S-K.*

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

HOLOGIC, INC.

By: /S/ STEPHEN P. MACMILLAN

Stephen P. MacMillan

Chairman, President and Chief Executive Officer

Date: November 27, 2019

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/S/ STEPHEN P. MACMILLAN **STEPHEN P. MACMILLAN**	Chairman, President and Chief Executive Officer (Principal Executive Officer)	November 27, 2019
/S/ KARLEEN M. OBERTON **KARLEEN M. OBERTON**	Chief Financial Officer (Principal Financial Officer)	November 27, 2019
/S/ BENJAMIN J. COHN **BENJAMIN J. COHN**	Vice President, Corporate Controller (Principal Accounting Officer)	November 27, 2019
/S/ SALLY W. CRAWFORD **SALLY W. CRAWFORD**	Lead Independent Director	November 27, 2019
/S/ CHARLES DOCKENDORFF **CHARLES DOCKENDORFF**	Director	November 27, 2019
/S/ SCOTT T. GARRETT **SCOTT T. GARRETT**	Director	November 27, 2019
/S/ LUDWIG N. HANTSON **LUDWIG N. HANTSON**	Director	November 27, 2019
/S/ NAMAL NAWANA **NAMAL NAWANA**	Director	November 27, 2019
/S/ CHRISTIANA STAMOULIS **CHRISTIANA STAMOULIS**	Director	November 27, 2019
/S/ AMY M. WENDELL **AMY M. WENDELL**	Director	November 27, 2019

Hologic, Inc.

Consolidated Financial Statements

Years ended September 28, 2019, September 29, 2018 and September 30, 2017

Contents

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Hologic, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Hologic, Inc. (the Company) as of September 28, 2019 and September 29, 2018, the related consolidated statements of operations, comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended September 28, 2019, 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 at September 28, 2019 and September 29, 2018, and the results of its operations and its cash flows for each of the three years in the period ended September 28, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of September 28, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated November 27, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

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

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

Critical Audit Matters

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

Income Taxes - Uncertain Tax Positions

Description of the Matter

As described in Note 9 to the consolidated financial statements, at September 28, 2019 the Company had $101.6 million in gross unrecognized tax benefits excluding interest. The Company is a party to many transactions in the ordinary course of business where the ultimate tax outcome is uncertain. To account for this uncertainty, the Company must determine whether each tax position's technical merits are more-likely-than-not to be sustained in an audit by a taxing authority and then measure the amount of tax benefit that qualifies for recognition.

Auditing the recognition and measurement of uncertain tax positions requires significant auditor judgment because the determination of whether a tax position's technical merits are more likely than not to be sustained in an audit is judgmental and is based on interpretations of tax laws and legal rulings. In addition, measuring the amount of tax benefit that qualifies for recognition for each uncertain tax position requires judgment in assessing the potential outcomes that could occur when a tax position undergoes an audit by a taxing authority.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's processes to assess and measure uncertain tax positions, including management's controls to determine if a tax position's technical merits are more likely than not to be sustained in an audit and, if so, measure the amount of tax benefit that qualifies for recognition.

To test the Company's assessment and measurement of uncertain tax positions, we involved our tax professionals to assess whether the uncertain tax positions identified by the Company are more-likely-than-not to be sustained upon audit and, if so, to assist in testing the assumptions made by the Company in measuring the amount of tax benefit that qualifies for recognition. Our procedures included, among others, assessing the Company's correspondence with the relevant tax authorities and evaluating income tax opinions or other third-party advice obtained by the Company. We also used our knowledge of, and experience with, the application of domestic and international income tax laws by the relevant income tax authorities to evaluate the Company's assessments of whether the uncertain tax position is more-likely-than-not to be sustained and, if so, the potential outcomes that could occur upon an audit by a taxing authority. We tested the completeness and accuracy of the data and calculations used to determine the amount of tax benefit to recognize. We also compared the Company's income tax disclosures included in Note 9 to the consolidated financial statements to disclosures required by the relevant accounting guidance.

Capital Product Revenue Recognition

Description of the Matter

As discussed in Note 3 to the consolidated financial statements, the Company generates product revenue from the sale of medical imaging systems, aesthetic treatment systems and diagnostic and surgical disposable products. The Company's contracts for capital equipment sales generally have multiple performance obligations.

Auditing the timing and amount of revenue recognized for sales of capital equipment required significant auditor judgment because it involves several subjective management assumptions and estimates including the identification of performance obligations within the contracts, the estimation of the standalone selling price of each performance obligation, the allocation of transaction price to each performance obligation, and a determination of the point in time at which those performance obligations were satisfied.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's processes to account for capital product revenue recognition, including management's controls over the identification of performance obligations in revenue contracts, the estimation of the standalone selling price for each performance obligation, the allocation of the transaction price to each performance obligation, and the determination of the point in time at which the Company transferred control of the promised items to the customer.

To test capital equipment revenue, we evaluated whether management's revenue recognition policies are appropriate and in accordance with ASC 606 *Revenue from Contracts with Customers*. We tested management's identification of the performance obligations and the allocation of transaction price to each performance obligation by performing an independent assessment, in comparison to the standard, on a sample of customer contracts and comparing our assessment to that of management. We tested management's estimated standalone selling prices for its identified performance obligations based on actual prices charged for similar products and services sold on a standalone basis. We also tested management's assertion that control was transferred to the customer by inspecting documentation supporting the transfer of control on a sample of contracts. In addition, we performed other analytical procedures over product revenue and tested a higher volume of capital revenue transactions that occurred near the end of the fiscal year to evaluate accounting cut-off.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2002.

Boston, Massachusetts
November 27, 2019

Hologic, Inc.

Consolidated Statements of Operations

(In millions, except number of shares, which are reflected in thousands, and per share data)

	Years ended		
	September 28, 2019	September 29, 2018	September 30, 2017
Revenues:			
Product	$ 2,771.3	$ 2,643.9	$ 2,538.0
Service and other	596.0	574.0	520.8
	3,367.3	3,217.9	3,058.8
Costs of revenues:			
Product	948.7	886.6	881.8
Amortization of intangible assets	318.5	319.4	297.1
Impairment of intangible assets and equipment	578.7	—	—
Service and other	350.5	315.2	258.9
Gross Profit	1,170.9	1,696.7	1,621.0
Operating expenses:			
Research and development	232.2	218.7	232.8
Selling and marketing	564.9	544.6	498.6
General and administrative	332.3	366.1	343.3
Amortization of intangible assets	52.0	59.3	62.5
Impairment of intangible assets and equipment	106.7	46.0	—
Impairment of goodwill	—	685.7	—
Gain on sale of business	—	—	(899.7)
Restructuring charges	6.6	14.2	13.3
	1,294.7	1,934.6	250.8
(Income) loss from operations	(123.8)	(237.9)	1,370.2
Interest income	4.6	6.3	3.8
Interest expense	(140.8)	(148.7)	(153.2)
Debt extinguishment losses	(0.8)	(45.9)	(3.2)
Other income, net	3.1	7.6	12.9
(Loss) income before income taxes	(257.7)	(418.6)	1,230.5
(Benefit) provision for income taxes	(54.1)	(307.3)	475.0
Net (loss) income	$ (203.6)	$ (111.3)	$ 755.5
Net (loss) income per common share:			
Basic	$ (0.76)	$ (0.40)	$ 2.70
Diluted	$ (0.76)	$ (0.40)	$ 2.64
Weighted average number of shares outstanding:			
Basic	269,413	275,105	279,811
Diluted	269,413	275,105	285,653

See accompanying notes.

Hologic, Inc.

Consolidated Statements of Comprehensive Income (Loss)

(In millions)

	Years ended		
	September 28, 2019	**September 29, 2018**	**September 30, 2017**
Net (loss) income	$ (203.6)	$ (111.3)	$ 755.5
Changes in foreign currency translation adjustment	(14.8)	(8.1)	7.6
Changes in unrealized holding gains and losses on available-for-sale securities, net of tax of $0.2 in 2018 and $0.1 in 2017:			
Gain recognized in accumulated other comprehensive loss	—	—	2.3
Loss (gain) reclassified from accumulated other comprehensive loss to the statement of operations	—	0.4	(2.4)
Changes in pension plans, net of taxes of $0.3 in 2019, ($0.6) in 2018, and $1.1 in 2017	(0.6)	0.5	0.9
Gain recognized, net of tax of $1.2 million in 2019 for interest rate swaps	3.5	—	—
Changes in value of hedged interest rate caps, net of tax of $1.1 in 2019, $(5.0) in 2018, and $0.6 in 2017			
(Loss) gain recognized in other comprehensive (loss) income, net	(8.0)	(5.7)	0.8
Loss reclassified from accumulated other comprehensive loss to the statement of operations, net	3.1	3.6	6.9
Other comprehensive (loss) income	(16.8)	(9.3)	16.1
Comprehensive (loss) income	$ (220.4)	$ (120.6)	$ 771.6

See accompanying notes.

Hologic, Inc.

Consolidated Balance Sheets

(In millions, except number of shares, which are reflected in thousands, and par value)

	September 28, 2019	September 29, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	$ 601.8	$ 666.7
Accounts receivable, less reserves of $17.8 and $16.2, respectively	648.7	579.2
Inventories	444.9	384.1
Prepaid income taxes	34.9	31.7
Prepaid expenses and other current assets	62.8	61.5
Total current assets	1,793.1	1,723.2
Property, plant and equipment, net	470.9	478.2
Intangible assets, net	1,459.8	2,398.6
Goodwill	2,563.7	2,533.2
Other assets	154.6	97.7
Total assets	$ 6,442.1	$ 7,230.9
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Current portion of long-term debt	$ 271.4	$ 599.7
Accounts payable	186.5	192.2
Accrued expenses	430.9	436.1
Deferred revenue	179.5	172.9
Current portion of capital lease obligations	1.8	1.7
Total current liabilities	1,070.1	1,402.6
Long-term debt, net of current portion	2,783.6	2,704.6
Capital lease obligations, net of current portion	19.2	20.9
Deferred income tax liabilities	275.3	498.2
Deferred revenue	15.8	18.2
Other long-term liabilities	162.4	157.6
Commitments and contingencies (Note 13)		
Stockholders' equity:		
Preferred stock, $0.01 par value – 1,623 shares authorized; 0 shares issued	—	—
Common stock, $0.01 par value – 750,000 shares authorized; 292,323 and 289,900 shares issued, respectively	2.9	2.9
Additional paid-in-capital	5,769.8	5,671.3
Accumulated deficit	(2,688.7)	(2,494.0)
Treasury stock, at cost – 24,638 and 19,812 shares, respectively	(926.0)	(725.9)
Accumulated other comprehensive loss	(42.3)	(25.5)
Total stockholders' equity	2,115.7	2,428.8
Total liabilities and stockholders' equity	$ 6,442.1	$ 7,230.9

See accompanying notes.

Hologic, Inc.

Consolidated Statements of Stockholders' Equity

(In millions, except number of shares, which are reflected in thousands)

	Common Stock		Additional Paid-in-Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Treasury Stock		Total Stockholders' Equity
	Number of Shares	Par Value				Number of Shares	Amount	
Balance at September 24, 2016	285,015	2.9	5,560.3	(3,138.2)	(32.3)	7,289	(250.0)	2,142.7
Exercise of stock options	1,427	—	33.1	—	—	—	—	33.1
Vesting of restricted stock units, net of shares withheld for employee taxes	939	—	(19.7)	—	—	—	—	(19.7)
Common stock issued under the employee stock purchase plan	472	—	15.0	—	—	—	—	15.0
Stock-based compensation expense	—	—	68.2	—	—	—	—	68.2
Reclassification of liability award to equity	—	—	7.8	—	—	—	—	7.8
Reacquisition of equity component from convertible notes repurchase, net of taxes	—	—	(33.9)	—	—	—	—	(33.9)
Net income	—	—	—	755.5	—	—	—	755.5
Foreign currency translation adjustment	—	—	—	—	7.6	—	—	7.6
Adjustment to minimum pension liability, net	—	—	—	—	0.9	—	—	0.9
Repurchase of common stock	—	—	—	—	—	5,271	(200.1)	(200.1)
Unrealized gains on derivatives, net of taxes	—	—	—	—	0.8	—	—	0.8
Unrealized gains on marketable securities	—	—	—	—	2.3	—	—	2.3
Interest cost of interest rate cap reclassified to statement of operations	—	—	—	—	6.9	—	—	6.9
Net realized gains on marketable securities reclassified out of accumulated other comprehensive loss	—	—	—	—	(2.4)	—	—	(2.4)
Balance at September 30, 2017	287,853	$ 2.9	$ 5,630.8	$ (2,382.7)	$ (16.2)	12,560	$ (450.1)	$ 2,784.7
Exercise of stock options	795	—	17.3	—	—	—	—	17.3
Vesting of restricted stock units, net of shares withheld for employee taxes	804	—	(16.7)	—	—	—	—	(16.7)
Common stock issued under the employee stock purchase plan	448	—	15.6	—	—	—	—	15.6
Stock-based compensation expense	—	—	65.0	—	—	—	—	65.0
Reacquisition of equity component from convertible notes repurchase, net of taxes	—	—	(40.7)	—	—	—	—	(40.7)
Net loss	—	—	—	(111.3)	—	—	—	(111.3)
Foreign currency translation adjustment	—	—	—	—	(8.1)	—	—	(8.1)
Adjustment to minimum pension liability, net	—	—	—	—	0.5	—	—	0.5
Repurchase of common stock	—	—	—	—	—	7,252	(275.8)	(275.8)
Unrealized losses on derivatives, net of taxes	—	—	—	—	(5.7)	—	—	(5.7)
Interest cost of interest rate cap reclassified to statement of operations	—	—	—	—	3.6	—	—	3.6
Net realized loss on marketable securities reclassified out of accumulated other comprehensive loss	—	—	—	—	0.4	—	—	0.4
Balance at September 29, 2018	289,900	$ 2.9	$ 5,671.3	$ (2,494.0)	$ (25.5)	19,812	$ (725.9)	$ 2,428.8
Accounting standard transition adjustment - ASC 606	—	—	—	6.4	—	—	—	6.4
Accounting standard transition adjustment - ASU 2016-16	—	—	—	2.5	—	—	—	2.5
Exercise of stock options	1,304	—	32.8		—	—	—	32.8
Vesting of restricted stock units, net of shares withheld for employee taxes	645	—	(12.8)	—	—	—	—	(12.8)
Common stock issued under the employee stock purchase plan	474	—	16.5	—	—	—	—	16.5

Stock-based compensation expense	—	—	62.0	—	—	—	—	62.0
Net loss	—	—	—	(203.6)	—	—	—	(203.6)
Foreign currency translation adjustment	—	—	—	—	(14.8)	—	—	(14.8)
Adjustment to minimum pension liability, net	—	—	—	—	(0.6)	—	—	(0.6)
Repurchase of common stock	—	—	—	—	—	4,826	(200.1)	(200.1)
Unrealized loss on derivatives, net of taxes	—	—	—	—	(8.0)	—	—	(8.0)
Unrealized gain on interest rate swap	—	—	—	—	3.5	—	—	3.5
Interest cost of interest rate cap reclassified to statement of operations	—	—	—	—	3.1	—	—	3.1
Balance at September 28, 2019	292,323	$ 2.9	$ 5,769.8	$ (2,688.7)	$ (42.3)	24,638	$ (926.0)	$ 2,115.7

See accompanying notes.

Hologic, Inc.

Consolidated Statements of Cash Flows

(In millions)

	Years ended		
	September 28, 2019	September 29, 2018	September 30, 2017
OPERATING ACTIVITIES			
Net (loss) income	$ (203.6)	$ (111.3)	$ 755.5
Adjustments to reconcile net (loss) income to net cash provided by operating activities:			
Depreciation	92.5	101.6	89.6
Amortization	370.6	378.7	359.6
Non-cash interest expense	8.6	15.0	49.4
Stock-based compensation expense	62.0	65.0	68.2
Deferred income taxes and other non-cash taxes	(235.7)	(477.3)	(357.2)
Goodwill impairment charge	—	685.7	—
Intangible asset and equipment impairment charges	685.4	46.0	—
Fair value write-up of inventory sold	7.1	1.1	39.7
Debt extinguishment losses	0.8	45.9	3.2
Gain on sale of business	—	—	(899.7)
Other adjustments and non-cash items	18.1	8.7	3.2
Changes in operating assets and liabilities, excluding the effect of acquisitions and dispositions:			
Accounts receivable	(76.5)	(38.2)	(41.5)
Inventories	(63.0)	(50.6)	(11.6)
Prepaid income taxes	(3.2)	(9.4)	(8.7)
Prepaid expenses and other assets	(6.0)	(4.2)	(2.4)
Accounts payable	(5.5)	23.9	(10.6)
Accrued expenses and other liabilities	(16.5)	53.8	(17.8)
Deferred revenue	14.4	(1.5)	(10.6)
Net cash provided by operating activities	649.5	732.9	8.3
INVESTING ACTIVITIES			
Acquisition of businesses, net of cash acquired	(110.6)	(76.5)	(1,558.1)
Proceeds from sale of business	—	—	1,865.0
Purchase of equity method investment in SSI	(18.2)	—	—
Loans to SSI	(28.4)	—	—
Purchase of property and equipment	(57.0)	(58.4)	(57.8)
Increase in equipment under customer usage agreements	(52.1)	(47.2)	(49.8)
Proceeds from sale of available-for-sale marketable securities	—	—	87.1
Purchase of cost-method investment	(3.0)	(6.0)	—
Purchase of intellectual property	(4.5)	—	—
Other activity	(6.9)	(7.1)	(0.6)
Net cash (used in) provided by investing activities	(280.7)	(195.2)	285.8
FINANCING ACTIVITIES			
Proceeds from long-term debt	1,500.0	1,500.0	—
Repayment of long-term debt	(1,462.5)	(1,359.4)	(84.4)
Proceeds from senior notes	—	1,350.0	—
Repayment of senior notes	—	(1,037.7)	—
Payments to extinguish convertible notes	—	(546.2)	(396.2)
Payment of acquired long-term debt	(2.5)	(3.3)	—
Proceeds from amounts borrowed under revolving credit line	480.0	1,150.0	345.0
Repayment of amounts borrowed under revolving credit line	(780.0)	(1,195.0)	—
Proceeds from accounts receivable securitization program	43.0	34.0	48.0
Repayments under accounts receivable securitization program	(34.0)	(9.0)	(48.0)
Repurchase of common stock	(200.1)	(275.8)	(200.1)
Payment of debt issuance costs	(2.7)	(23.5)	—
Payment of deferred acquisition consideration	(6.5)	—	—
Purchase of interest rate caps	(1.5)	(3.7)	(1.9)
Net proceeds from issuance of common stock under employee stock plans	49.8	33.2	49.0
Payments under capital lease obligations	(1.7)	(1.7)	(0.9)

Payment of minimum tax withholdings on net share settlements of equity awards	(12.8)	(16.7)	(19.7)
Net cash used in financing activities	(431.5)	(404.8)	(309.2)
Effect of exchange rate changes on cash and cash equivalents	(2.2)	(6.8)	7.3
Net (decrease) increase in cash and cash equivalents	(64.9)	126.1	(7.8)
Cash and cash equivalents, beginning of period	666.7	540.6	548.4
Cash and cash equivalents, end of period	$ 601.8	$ 666.7	$ 540.6

See accompanying notes.

Hologic, Inc.

Notes to Consolidated Financial Statements

(all tabular amounts in millions, except number of shares which are reflected in thousands)

1. Operations

Hologic, Inc. (the “Company” or “Hologic”) develops, manufactures and supplies premium diagnostics products, medical imaging systems, surgical products and light-based aesthetic and medical treatment systems with an emphasis on women's health. The Company operates in five segments: Diagnostics, Breast Health, Medical Aesthetics, GYN Surgical and Skeletal Health.

2. Summary of Significant Accounting Policies

Principles of Consolidation

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. All intercompany transactions and balances have been eliminated in consolidation. The Company’s fiscal year ends on the last Saturday in September. Fiscal 2019, 2018 and 2017 ended on September 28, 2019, September 29, 2018 and September 30, 2017, respectively. Fiscal 2019 and 2018 were 52-week years, and fiscal 2017 was a 53-week year.

Subsequent Events Consideration

The Company considers events or transactions that occur after the balance sheet date but prior to the issuance of the financial statements to provide additional evidence for certain estimates or to identify matters that may require additional disclosure. Subsequent events have been evaluated as required. There were no material recognized or unrecognized subsequent events, except as described below, recorded in the consolidated financial statements as of and for the year ended September 28, 2019.

On November 20, 2019, the Company executed a definitive agreement to sell its Medical Aesthetics business for a sales price of $205 million in cash subject to certain closing adjustments. Net of these adjustments, the Company expects net proceeds of approximately $138 million. As of this date, the assets held-for-sale criteria was met. The Company expects this disposition to be completed around the end of calendar year 2019. Refer to "Medical Aesthetics Impairment" in Note 2 and also Note 15 for further discussion of the asset group meeting the assets held-for-sale criteria.

On November 19, 2019, the Board of Directors authorized the Company to enter into an accelerated share repurchase program. See Note 10.

On November 21, 2019, the Company obtained voting control of SuperSonic Imagine, SA. See Note 5.

Management’s Estimates and Uncertainties

The preparation of financial statements in conformity with U.S. generally accepted accounting principles ("GAAP") requires management to make significant estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting periods. Significant estimates and assumptions by management affect the Company’s revenue recognition for multiple performance obligation arrangements, estimated fair value of cost-method equity investments, valuations, purchase price allocations and contingent consideration related to business combinations, expected future cash flows including growth rates, discount rates, terminal values and other assumptions and estimates used to evaluate the recoverability of long-lived assets and goodwill, estimated fair values of intangible assets and goodwill, amortization methods and periods, warranty reserves, certain accrued expenses, restructuring and other related charges, contingent liabilities, tax reserves, deferred tax rates and recoverability of the Company’s net deferred tax assets and related valuation allowances.

Although the Company regularly assesses these estimates, actual results could differ materially from these estimates. Changes in estimates are recorded in the period in which they become known. The Company bases its estimates on historical experience and various other assumptions that it believes to be reasonable under the circumstances.

The Company is subject to a number of risks similar to those of other companies of similar size in its industry, including dependence on third-party reimbursements to support the markets of the Company’s products, early stage of development of certain products, rapid technological changes, recoverability of long-lived assets (including intangible assets and goodwill), competition, stability of world financial markets, ability to obtain regulatory approvals, changes in the regulatory environment, limited number of suppliers, customer concentration, integration of acquisitions, substantial indebtedness, government

regulations, management of international activities, protection of proprietary rights, patent and other litigation, dependence on contract manufacturers and dependence on key individuals.

Cash Equivalents

Cash equivalents are highly liquid investments with insignificant interest rate risk and maturities of three months or less at the time of acquisition.

Concentrations of Credit Risk

Financial instruments that subject the Company to credit risk primarily consist of cash and cash equivalents, cost-method and equity method investments, and trade accounts receivable. The Company invests its cash and cash equivalents with high credit quality financial institutions.

The Company's customers are principally located in the United States, Europe and Asia. The Company performs ongoing credit evaluations of the financial condition of its customers and generally does not require collateral. Although the Company is directly affected by the overall financial condition of the healthcare industry, as well as global economic conditions, management does not believe significant credit risk exists as of September 28, 2019. The Company generally has not experienced any material losses related to receivables from individual customers or groups of customers in the healthcare industry. The Company maintains an allowance for doubtful accounts based on accounts past due and historical collection experience.

There were no customers with balances greater than 10% of accounts receivable as of September 28, 2019 and September 29, 2018, or any customers that represented greater than 10% of consolidated revenues for fiscal years 2019, 2018 and 2017.

Supplemental Cash Flow Statement Information

	Years ended		
	September 28, 2019	September 29, 2018	September 30, 2017
Cash paid during the period for income taxes	$ 180.6	$ 178.2	$ 867.8
Cash paid during the period for interest	$ 132.5	$ 122.1	$ 102.4

Inventories

Inventories are valued at the lower of cost or market on a first in, first out basis. Work-in-process and finished goods inventories consist of materials, labor and manufacturing overhead. The valuation of inventory requires management to estimate excess and obsolete inventory. The Company employs a variety of methodologies to determine the net realizable value of its inventory. Provisions for excess and obsolete inventory are primarily based on management's estimates of forecasted sales, usage levels and expiration dates, as applicable for disposable products. A significant change in the timing or level of demand for the Company's products compared to forecasted amounts may result in recording additional charges for excess and obsolete inventory in the future. The Company records charges for excess and obsolete inventory within cost of product revenues.

Inventories consisted of the following:

	September 28, 2019	September 29, 2018
Raw materials	$ 166.1	$ 134.9
Work-in-process	54.5	52.1
Finished goods	224.3	197.1
	$ 444.9	$ 384.1

Property, Plant and Equipment

Property, plant and equipment is recorded at cost less allowances for depreciation and impairments. The straight-line method of depreciation is used for all property and equipment.

Property, plant and equipment consisted of the following:

	Estimated Useful Life	September 28, 2019	September 29, 2018
Equipment	3–10 years	$ 379.2	$ 391.9
Equipment under customer usage agreements	3–8 years	435.5	399.6
Buildings and improvements	20–35 years	196.7	175.1
Leasehold improvements	Shorter of the Original Term of Lease or Estimated Useful Life	61.7	63.0
Land		46.3	46.3
Furniture and fixtures	5–7 years	17.5	18.4
		1,136.9	1,094.3
Less - accumulated depreciation and amortization		(666.0)	(616.1)
		$ 470.9	$ 478.2

Equipment under customer usage agreements primarily consists of diagnostic instrumentation and imaging equipment located at customer sites but owned by the Company. Generally, the customer has the right to use the equipment for a period of time provided they meet certain agreed to conditions. The Company recovers the cost of providing the equipment from the sale of disposables. The depreciation costs associated with equipment under customer usage agreements are charged to cost of product revenues over the estimated useful life of the equipment. The costs to maintain the equipment in the field are charged to cost of product revenue as incurred.

Long-Lived Assets

The Company reviews its long-lived assets, which includes property, plant and equipment and identifiable intangible assets (see below for discussion of intangible assets), for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable in accordance with ASC 360-10-35-15, *Property, Plant and Equipment—Impairment or Disposal of Long-Lived Assets* (ASC 360). Recoverability of these assets is evaluated by comparing the carrying value of the assets to the undiscounted cash flows estimated to be generated by those assets over their remaining economic life. If the undiscounted cash flows are not sufficient to recover the carrying value of the assets, the assets are considered impaired. The impairment loss is measured by comparing the fair value of the assets to their carrying value. Fair value is determined by either a quoted market price, if any, or a value determined by a discounted cash flow technique.

Business Combinations and Acquisition of Intangible Assets

The Company accounts for the acquisition of a business in accordance with ASC 805, *Business Combinations* (ASC 805). Amounts paid to acquire a business are allocated to the assets acquired and liabilities assumed based on their fair values at the date of acquisition. The Company determines the fair value of acquired intangible assets based on detailed valuations that use certain information and assumptions provided by management. The Company allocates any excess purchase price over the fair value of the net tangible and intangible assets acquired to goodwill.

The Company uses the income approach to determine the fair value of developed technology and in-process research and development ("IPR&D") acquired in a business combination. This approach determines fair value by estimating the after-tax cash flows attributable to the respective asset over its useful life and then discounting these after-tax cash flows back to a present value. The Company bases its revenue assumptions on estimates of relevant market sizes, expected market growth rates, expected trends in technology and expected product introductions by competitors. Developed technology represents patented and unpatented technology and know-how. The value of the in-process projects is based on the project's stage of completion, the complexity of the work completed as of the acquisition date, the projected costs to complete, the contribution of core technologies and other acquired assets, the expected introduction date, the estimated cash flows to be generated upon commercial release and the estimated useful life of the technology. The Company believes that the estimated developed technology and IPR&D amounts represent the fair value at the date of acquisition and do not exceed the amount a third-party would pay for the assets.

The Company also uses the income approach, as described above, to determine the estimated fair value of certain other identifiable intangible assets including customer relationships, distribution agreements, trade names and business licenses. Customer relationships represent established relationships with customers, which provide a ready channel for the sale of additional products and services. Trade names represent acquired company and product names, and distribution agreements generally pertain to exclusive distribution of certain products manufactured by third parties.

Intangible Assets and Goodwill

Intangible Assets

Intangible assets are initially recorded at fair value and stated net of accumulated amortization and impairments. The Company amortizes its intangible assets that have finite lives using either the straight-line method, or if reliably determinable, based on the pattern in which the economic benefit of the asset is expected to be utilized. Amortization is recorded over the estimated useful lives ranging from 2 to 30 years. The Company evaluates the recoverability of its definite lived intangible assets whenever events or changes in circumstances or business conditions indicate that the carrying value of these assets may not be recoverable based on expectations of future undiscounted cash flows for each asset group. If the carrying value of an asset or asset group exceeds its undiscounted cash flows, the Company estimates the fair value of the assets, generally utilizing a discounted cash flow analysis based on the present value of estimated future cash flows to be generated by the assets using a risk-adjusted discount rate. To estimate the fair value of the assets, the Company uses market participant assumptions pursuant to ASC 820, *Fair Value Measurements*.

Indefinite lived intangible assets, such as IPR&D assets, are required to be tested for impairment annually, or more frequently if indicators of impairment are present. The Company's annual impairment test date is as of the first day of its fourth quarter.

Intangible assets consisted of the following:

	September 28, 2019		September 29, 2018	
Description	Gross Carrying Value	Accumulated Amortization	Gross Carrying Value	Accumulated Amortization
Acquired intangible assets:				
Developed technology	$ 3,927.7	$ 2,654.8	$ 4,573.3	$ 2,505.8
In-process research and development	—	—	5.5	—
Customer relationships	525.5	447.5	556.5	428.1
Trade names	245.4	171.1	312.5	175.0
Distribution agreement	2.5	—	42.0	8.0
Non-competition agreements	1.4	0.9	1.5	0.5
Business licenses	2.3	2.2	2.4	2.2
Total acquired intangible assets	$ 4,704.8	$ 3,276.5	$ 5,493.7	$ 3,119.6
Internal-use software	53.9	43.4	58.5	49.3
Capitalized software embedded in products	27.9	6.9	19.6	4.3
Total intangible assets	$ 4,786.6	$ 3,326.8	$ 5,571.8	$ 3,173.2

Medical Aesthetics Impairment

During fiscal 2019, the Company identified indicators of impairment for its Medical Aesthetics reporting unit as a result of reductions in forecasts during the year, and in connection with the Company's efforts to sell the business that began prior to the end of fiscal 2019. In performing the undiscounted cash flow analysis pursuant to ASC 360, the expected undiscounted cash flows of the asset group were determined using a probability-weighted approach taking into consideration the planned disposition, which was deemed to be highly probable as of the balance sheet date. Based on this analysis, the undiscounted cash flows were not sufficient to recover the carrying value of the asset group. As a result, the Company was required to perform Step 3 of the impairment test and determine the fair value of the asset group. The Company executed a definitive agreement on November 20, 2019 to sell the business. Although this agreement was signed subsequent to the balance sheet date, the Company concluded that it provided evidence regarding the estimate of fair value of the asset group at September 28, 2019 and that there were no events that occurred between September 28, 2019 and the date the Company entered into the definitive agreement that would significantly affect the fair value of the asset group. As a result, the Company recorded total impairment charges of $685.4 million in fiscal 2019. The impairment charge was allocated to the long-lived assets as follows: $576.9 million to developed technology, $22.4 million to customer relationships, $48.6 million to trade names, $27.7 million to distribution agreements and $9.8 million to equipment. On November 20, 2019, this asset group met the assets held-for-sale criteria and will be recorded at fair value less the costs to sell, which could result in additional charges. See Note 15. The definitive agreement contains representations and warranties and covenants customary for a transaction of this nature, and the

completion of the sale is subject to customary closing conditions, The Company cannot assure that it will be able to complete this transaction on a timely basis, if at all.

During the second quarter of fiscal 2018, the Company abandoned an in-process research and development project acquired in the Cynosure acquisition and recorded an impairment charge of $46.0 million. The Company abandoned the project as a result of unsuccessful clinical results.

The Company had identified certain software acquired in the Cynosure acquisition that would be abandoned in fiscal 2018 and shortened the useful life. As such, the Company accelerated depreciation of the asset resulting in an additional $5.9 million and $3.0 million of expense recorded in fiscal 2018 and 2017, respectively.

Other Activity

During the first quarter of fiscal 2019, the Company acquired Focal Therapeutics, Inc. and recorded $83.1 million of developed technology, $11.4 million of in-process research and development and $2.7 million of trade names. In the fourth quarter of fiscal 2019, the Company obtained FDA approval for the in-process research and development project and reclassified this value to developed technology. During fiscal 2019, the two in-process research and development projects acquired in the Faxitron acquisition aggregating $5.5 million were completed and reclassified to developed technology.

During first quarter of fiscal 2018, the Company acquired Emsor S.A. and recorded $4.6 million of customer relationship intangible assets. In the fourth quarter of fiscal 2018, the Company acquired Faxitron Bioptics, LLC and recorded an aggregate of $53.4 million of intangible assets.

Amortization expense related to developed technology is classified as cost of product revenues—amortization of intangible assets. Amortization expense related to customer relationships, contracts, trade names, distribution agreements, and business licenses is classified as a component of amortization of intangible assets within operating expenses.

The estimated amortization expense at September 28, 2019 for each of the five succeeding fiscal years was as follows:

Fiscal 2020	$	295.5
Fiscal 2021	$	274.2
Fiscal 2022	$	263.8
Fiscal 2023	$	166.2
Fiscal 2024	$	143.1

Goodwill

In accordance with ASC 350, *Intangibles—Goodwill and Other* (ASC 350), the Company tests goodwill for impairment annually at the reporting unit level and between annual tests if events and circumstances indicate it is more likely than not that the fair value of a reporting unit is less than its carrying value. Events that could indicate impairment and trigger an interim impairment assessment include, but are not limited to, current economic and market conditions, including a decline in market capitalization, a significant adverse change in legal factors, business climate, operational performance of the business or key personnel, and an adverse action or assessment by a regulator. If the carrying value of a reporting unit exceeds its estimated fair value, the Company applies the single step approach under Accounting Standards Update No. 2017-04, *Intangibles-Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment* (ASU 2017-04). As a result of this simplified approach the goodwill impairment is calculated as the amount by which the carrying value of the reporting unit exceeds its fair value to the extent of the goodwill balance. The Company adopted this ASU in fiscal 2018.

In fiscal 2019, the Company used the qualitative approach. Under this approach the Company considers a number of factors, including the amount by which the previous quantitative test's fair value exceeded the carrying value of the reporting units, the forecasts in the Company's current year strategic plan compared to the forecast used in the previous quantitative test, an evaluation of discount rates, long-term growth rates including the terminal year rate, if tax rates would have significantly changed, an evaluation of current economic factors for both the worldwide economy and specifically the medical device industry, and any significant changes in customer and supplier relationships. The Company weighs these factors to determine if it is more likely than not that the fair value of the reporting unit exceeds its carrying value. If after performing a qualitative assessment, indicators are present, or we identify factors that cause us to believe it is appropriate to perform a more precise calculation of fair value, we would move beyond the qualitative assessment and perform a quantitative impairment test. As a result of completing the qualitative assessment for each of its reporting units, the Company concluded that it was more likely than not that the fair value of each reporting exceeded its carrying value by a significant amount and a quantitative test was unnecessary.

When a quantitative test is necessary, the test requires a comparison of the carrying value of each reporting unit to its estimated fair value. To estimate the fair value of its reporting units, the Company primarily utilizes the income approach. The income approach is based on a DCF analysis and calculates the fair value by estimating the after-tax cash flows attributable to a reporting unit and then discounting the after-tax cash flows to present value using a risk-adjusted discount rate. Assumptions used in the DCF require significant judgment, including judgment about appropriate discount rates and terminal values, growth rates, and the amount and timing of expected future cash flows. The forecasted cash flows are based on the Company's most recent budget and strategic plan. For years beyond this period, the Company's estimates are based on assumed growth rates expected as of the measurement date and ensures its assumptions are consistent with the plans and estimates used to manage the underlying businesses. The discount rates used are intended to reflect the risks inherent in future cash flow projections and are based on estimates of the WACC of market participants relative to each respective reporting unit. The market approach considers comparable market data based on multiples of revenue or earnings before interest, taxes, depreciation and amortization ("EBITDA") and is primarily used as a corroborative analysis to the results of the DCF analysis. The Company believes its assumptions used to determine the fair value of its reporting units are reasonable. If different assumptions were used, particularly with respect to forecasted cash flows, terminal values, WACCs, or market multiples, different estimates of fair value may result and there could be the potential that an impairment charge could result. Actual operating results and the related cash flows of the reporting units could differ from the estimated operating results and related cash flows.

During the second quarter of fiscal 2018, in connection with commencing its company-wide annual budgeting and strategic planning process, evaluating its current operating performance of its Medical Aesthetics reporting unit, and abandoning an in-process research and development project, the Company reduced its short term and long term revenue and operating income forecasts and determined that indicators of impairment existed in its Medical Aesthetics reporting unit. The Medical Aesthetics reporting unit is solely comprised of the Cynosure business, which the Company acquired on March 22, 2017. The updated forecast reflected significantly reduced volume and market penetration projections resulting in lower short-term and long-term profitability than expected at the time of the Cynosure acquisition. As a result of those current events and circumstances, the Company determined that it was more likely than not that this change would reduce the fair value of the reporting unit below its carrying amount. To estimate the fair value of the reporting unit, the Company utilized the DCF analysis. The forecasted cash flows were based on the Company's most recent budget and strategic plan and for period beyond the strategic plan, the Company's estimates were based on assumed growth rates expected as of the measurement date. The Company believed its assumptions were consistent with the plans and estimates used to manage the underlying business. The discount rate used is intended to reflect the risks inherent in future cash flow projections and was based on an estimate of the weighted average cost of capital (WACC) of market participants relative to the reporting unit. The basis of fair value for Medical Aesthetics assumed the reporting unit would be purchased or sold in a non-taxable transaction, and the discount rate of 12.0% applied to the after-tax cash flows was consistent with that used in the purchase accounting performed in fiscal 2017. As a result of this analysis, the fair value of the Medical Aesthetic reporting unit was significantly below its carrying value, and the Company recorded a goodwill impairment charge of $685.7 million during the second quarter of fiscal 2018. This reporting unit now has a goodwill value of zero. Actual operating results and the related cash flows of the reporting units could differ from the estimated operating results and related cash flows.

In connection with the goodwill impairment test in the second quarter of fiscal 2018, the Company also performed an impairment test of this reporting unit's long-lived assets. This impairment evaluation was based on expectations of future undiscounted cash flows compared to the carrying value of the long-lived assets. The Company's cash flow estimates were consistent with those used in the goodwill impairment test discussed above. Based on this analysis, the undiscounted cash flows of the Medical Aesthetics long-lived assets were in excess of their carrying value and thus deemed to not be impaired. The Company believed its procedures for estimating future cash flows were reasonable and consistent with market conditions at the time of estimation.

At September 28, 2019, the Company believes that its reporting units, with goodwill aggregating $2.6 billion, were not at risk of failing Step 1 of the goodwill impairment test based on its current forecasts and qualitative assessment.

The Company conducted its fiscal 2018 and 2017 impairment tests on the first day of the respective year's fourth quarter, and as noted above used DCF and market approaches to estimate the fair value of its reporting units as of July 1, 2018 and July 2, 2017, respectively, and ultimately used the fair value determined by the DCF approach in making its impairment test conclusions. As a result of completing Step 1, all of the Company's reporting units had fair values exceeding their carrying values, and as such, Step 2 of the impairment test under the applicable goodwill impairment standard at these dates was not required.

A rollforward of goodwill activity by reportable segment from September 29, 2018 to September 28, 2019 is as follows:

	Diagnostics	Breast Health	Medical Aesthetics	GYN Surgical	Skeletal Health	Total
Balance at September 29, 2018	$ 821.2	$ 689.5	$ —	$ 1,014.4	$ 8.1	$ 2,533.2
Faxitron acquisition adjustment	—	3.9	—	—	—	3.9
Focal acquisition	—	31.1	—	—	—	31.1
Foreign currency and other adjustments	(2.0)	(2.3)	—	(0.2)	—	(4.5)
Balance at September 28, 2019	$ 819.2	$ 722.2	$ —	$ 1,014.2	$ 8.1	$ 2,563.7

Other Assets

Other assets consisted of the following:

	September 28, 2019	September 29, 2018
Other Assets		
Life insurance contracts	$ 44.6	$ 44.2
Deferred tax assets	17.2	12.9
Cost-method equity investments	11.4	8.8
Equity-method investment and loans to SSI (note 4)	42.7	—
Other	38.7	31.8
	$ 154.6	$ 97.7

Life insurance contracts were purchased in connection with the Company's Nonqualified Deferred Compensation Plan ("DCP") and are recorded at their cash surrender value (see Note 12 for further discussion).

Research and Software Development Costs

Costs incurred for the research and development of the Company's products are expensed as incurred. Nonrefundable advance payments for goods or services to be received in the future by the Company for use in research and development activities are deferred. The deferred costs are expensed as the related goods are delivered or the services are performed.

The Company accounts for the development costs of software embedded in the Company's products in accordance with ASC 985, *Software.* Costs incurred in the research, design and development of software embedded in products to be sold to customers are charged to expense until technological feasibility of the ultimate product to be sold is established. The Company's policy is that technological feasibility is achieved when a working model, with the key features and functions of the product, is available for customer testing. Software development costs incurred after the establishment of technological feasibility and until the product is available for general release are capitalized, provided recoverability is reasonably assured. Capitalized software development costs are amortized over their estimate useful life and recorded within cost of revenues - product.

Foreign Currency Translation

The financial statements of the Company's foreign subsidiaries are translated in accordance with ASC 830, *Foreign Currency Matters.* The reporting currency for the Company is the U.S. dollar. The functional currency of the Company's foreign subsidiaries is determined based on the guidance in ASC 830. The majority of the Company's foreign subsidiaries' functional currency is the applicable local currency, although certain of the Company's foreign subsidiaries' functional currency is the U.S. dollar based on the nature of their operations or functions. Assets and liabilities of subsidiaries whose functional currency is the local currency are translated at the exchange rate in effect at each balance sheet date. Before translation, the Company re-measures foreign currency denominated assets and liabilities, including inter-company accounts receivable and payable, into the functional currency of the respective entity, resulting in unrealized gains or losses recorded in other income, net in the Consolidated Statements of Operations. Revenues and expenses are translated using average exchange rates during the respective period. Foreign currency translation adjustments are accumulated as a component of other comprehensive income (loss) as a separate component of stockholders' equity. Gains and losses arising from transactions denominated in

foreign currencies are included in other income, net in the Consolidated Statements of Operations and were not significant in any of the reporting periods presented.

Accumulated Other Comprehensive Loss

Other comprehensive income (loss) includes certain transactions that have generally been reported in the statement of stockholders' equity. The following tables summarize the components and changes in accumulated balances of other comprehensive loss for the periods presented:

	Year Ended September 28, 2019					Year Ended September 29, 2018				
	Foreign Currency Translation	Pension Plans	Hedged Interest Rate Caps	Hedged Interest Rate Swaps	Total	Foreign Currency Translation	Marketable Securities	Pension Plans	Hedged Interest Rate Caps	Total
Beginning Balance	$ (26.6)	$ (1.1)	$ 2.2	$ —	$ (25.5)	$ (18.5)	$ (0.4)	$ (1.6)	$ 4.3	$ (16.2)
Other comprehensive loss before reclassifications	(14.8)	(0.6)	(8.0)	3.5	(19.9)	(8.1)	—	0.5	(5.7)	(13.3)
Charges (gains) reclassified to statement of operations	—	—	3.1	—	3.1	—	0.4	—	3.6	4.0
Ending Balance	$ (41.4)	$ (1.7)	$ (2.7)	$ 3.5	$ (42.3)	$ (26.6)	$ —	$ (1.1)	$ 2.2	$ (25.5)

Derivatives

Interest Rate Cap - Cash Flow Hedge

The Company is exposed to certain risks arising from both its business operations and economic conditions. The Company manages its exposure to some of its interest rate risk through the use of interest rate caps, which are derivative financial instruments. The Company does not use derivatives for speculative purposes. For a derivative that is designated as a cash flow hedge, changes in the fair value of the derivative are recognized in accumulated other comprehensive income ("AOCI") to the extent the derivative is effective at offsetting the changes in the cash flows being hedged until the hedged item affects earnings. To the extent there is any hedge ineffectiveness, changes in fair value relating to the ineffective portion are immediately recognized in earnings in other income, net in the Consolidated Statements of Operations.

During fiscal 2015, the Company entered into separate interest rate cap agreements with multiple counter-parties to help mitigate the interest rate volatility associated with the variable rate interest on its credit facilities under the term loan feature of its credit facilities (see Note 7). Interest rate cap agreements provide the right to receive cash if the reference interest rate rises above a contractual rate. The aggregate premium paid for the interest rate cap agreements was $13.2 million, which was the initial fair value of the instruments recorded in the Company's financial statements. Certain of these cap agreements expired during fiscal 2017.

The Company purchased similar separate interest rate cap agreements in fiscal 2017, 2018, and 2019, and paid premiums of $1.9 million, $3.7 million, $1.5 million, respectively.

The critical terms of the interest rate caps were designed to mirror the terms of the Company's LIBOR-based borrowings under its credit agreement, that has been amended multiple times, and therefore are highly effective at offsetting the cash flows being hedged. The Company designated these derivatives as cash flow hedges of the variability of the LIBOR-based interest payments on $1.0 billion of principal, which for the outstanding contracts will expire on December 27, 2019 and December 23, 2020 for the interest rate cap agreements entered into in fiscal 2018 and fiscal 2019, respectively.

As of September 28, 2019, the Company determined that the existence of hedge ineffectiveness, if any, was immaterial and all changes in the fair value of the interest rate caps were recorded within AOCI.

During fiscal 2019, 2018 and 2017, interest expense of $3.1 million, $3.6 million and $6.9 million, respectively, was reclassified from AOCI to the Company's Consolidated Statements of Operations related to the interest rate cap agreements. The Company expects to similarly reclassify approximately $2.3 million from AOCI to the Consolidated Statements of Operations in the next twelve months.

The aggregate fair value of these interest rate caps was $0.1 million and $7.7 million at September 28, 2019 and September 29, 2018, respectively, and is included in both Prepaid expenses and other current assets and Other assets on the Company's Consolidated Balance Sheet. Refer to Note 8 "Fair Value Measurements" below for related fair value disclosures.

Interest Rate Swap - Cash Flow Hedge

In fiscal 2019, in order to hedge a portion of its variable rate debt, the Company entered into an interest rate swap contract with an effective date of December 23, 2020 and a termination date of December 17, 2023. The initial notional amount of this swap was $1.0 billion. The interest rate swap effectively fixes the variable interest rate on $1.0 billion of the notional amount under the 2018 Credit Agreement swap at 1.23%. The critical terms of the interest rate swap are designed to mirror the terms of the Company's LIBOR-based borrowings under its credit agreement and therefore are highly effective at offsetting the cash flows being hedged. The Company designated this derivative as cash flow hedges of the variability of the LIBOR-based interest payments on $1.0 billion of principal. Therefore, changes in the fair value of the swap are recorded in accumulated other comprehensive income (loss). The fair value of this derivative is $4.7 million as of September 28, 2019.

Forward Foreign Currency Contracts and Foreign Currency Option Contracts

The Company enters into forward foreign currency exchange contracts and foreign currency option contracts to mitigate certain operational exposures from the impact of changes in foreign currency exchange rates. Such exposures result from the portion of the Company's operations that are denominated in currencies other than the U.S. dollar, primarily the Euro, the UK Pound, the Australian dollar, the Canadian dollar, the Chinese Yuan and the Japanese Yen. These foreign currency exchange contracts are entered into to support transactions made in the ordinary course of business and are not speculative in nature. The contracts are generally for periods of one year or less. The Company did not elect hedge accounting for these forward foreign currency contracts and foreign currency option contracts; however, the Company may seek to apply hedge accounting in future scenarios. The change in the fair value of these contracts is recognized directly in earnings as a component of other income, net. During fiscal 2019, 2018 and 2017, for the forward foreign currency exchange contracts the Company recorded net realized gains of $11.0 million, net realized losses of $1.3 million, and net realized gains of $3.1 million, respectively from settling forward foreign currency contracts, and net unrealized losses of $2.2 million, net unrealized gains of $6.6 million, and net unrealized losses of $3.6 million in fiscal 2019, 2018 and 2017, respectively, on outstanding forward contracts. During fiscal 2019, for the foreign currency option contracts the Company recorded net unrealized gains of $0.1 million on outstanding option contracts.

As of September 28, 2019, the Company had outstanding forward foreign currency contracts that were not designated for hedge accounting and are used to hedge fluctuations in the U.S dollar of forecasted transactions denominated in the Australian Dollar, Canadian Dollar, Chinese Yuan and Japanese Yen with a notional amount of $104.2 million. As of September 28, 2019, the Company had outstanding foreign currency option contracts that were not designated for hedge accounting and are used to hedge fluctuations in the U.S dollar of forecasted transactions denominated in the Euro and UK Pound with a notional amount of $166.7 million.

Financial Instrument Presentation

The table below presents the fair value of the Company's derivative financial instruments as well as their classification on the balance sheet as of September 28, 2019:

	Balance Sheet Location	September 28, 2019	September 29, 2018
Assets:			
Derivative instruments designated as a cash flow hedge:			
Interest rate cap agreements	Prepaid expenses and other current assets	$ 0.1	$ 6.0
Interest rate cap agreements	Other assets	—	1.7
Interest rate swap contract	Other assets	$ 4.7	$ —
		$ 4.8	$ 7.7
Derivatives not designated as hedging instruments:			
Forward foreign currency contracts	Prepaid expenses and other current assets	$ 0.9	$ 3.2
Foreign currency option contracts	Prepaid expenses and other current assets	2.0	—
		$ 2.9	$ 3.2
Liabilities:			
Derivatives not designated as hedging instruments:			
Forward foreign currency contracts	Accrued expenses	$ 0.1	$ 0.2

The following table presents the unrealized gain (loss) recognized in AOCI related to the interest rate caps and interest rate swap for the following reporting periods:

	Year Ended September 28, 2019	Year Ended September 29, 2018	Year Ended September 30, 2017
Amount of gain (loss) recognized in other comprehensive income (loss), net of taxes:			
Interest rate swap	$ 3.5	$ —	$ —
Interest rate cap agreements	(8.0)	(5.7)	0.8
Total	$ (4.5)	$ (5.7)	$ 0.8

The following table presents the adjustment to fair value (realized and unrealized) recorded within the Consolidated Statements of Operations for derivative instruments for which the Company did not elect hedge accounting:

Derivatives not classified as hedging instruments	Year Ended September 28, 2019	Year Ended September 29, 2018	Year Ended September 30, 2017	Location of Gain Recognized in Income
Forward foreign currency contracts	$ 8.8	$ 5.3	$ 0.5	Other income, net
Foreign currency option contracts	0.1	—	—	Other income, net
	$ 8.9	$ 5.3	$ 0.5	

Accounts Receivable and Reserves

The Company records reserves for doubtful accounts based upon a specific review of all outstanding invoices, known collection issues and historical experience. The Company regularly evaluates the collectability of its trade accounts receivables and performs ongoing credit evaluations of its customers and adjusts credit limits based upon payment history and its assessment of the customer's current credit worthiness.

Accounts receivable reserve activity for fiscal 2019, 2018 and 2017 was as follows:

	Balance at Beginning of Period	Charged to Costs and Expenses	Write-offs and Payments	Balance at End of Period
Period Ended:				
September 28, 2019	$ 16.2	$ 4.4	$ (2.8)	$ 17.8
September 29, 2018	$ 9.8	$ 7.0	$ (0.6)	$ 16.2
September 30, 2017	$ 12.7	$ 1.8	$ (4.7)	$ 9.8

Cost of Service and Other Revenues

Cost of service and other revenues primarily represents payroll and related costs associated with the Company's professional services' employees, consultants, infrastructure costs and overhead allocations, including depreciation, rent and materials consumed in providing the service.

Stock-Based Compensation

The Company accounts for share-based payments in accordance with ASC 718, *Stock Compensation* (ASC 718). As such, all share-based payments to employees, including grants of stock options, restricted stock units, performance stock units and market stock units and shares issued under the Company's employee stock purchase plan, are recognized in the Consolidated Statements of Operations based on their fair values on the date of grant. In addition, as a result of the adoption of ASU 2016-09 in fiscal 2017, all excess tax benefits and deficiencies are recognized as a component of the provision for income taxes on a discrete basis in the period in which the equity awards vest and/or are settled.

Net Income (Loss) Per Share

Basic net income (loss) per share is computed by dividing net income (loss) by the weighted average number of common shares outstanding. Diluted net income per share is computed by dividing net income by the weighted average number of common shares and the dilutive effect of potential future issuances of common stock from outstanding stock options, restricted stock units and convertible debt for the period outstanding determined by applying the treasury stock method. In accordance with ASC 718, the assumed proceeds under the treasury stock method include the average unrecognized compensation expense of in-the-money stock options and restricted stock units. This results in the assumed buyback of additional shares, thereby reducing the dilutive impact of equity awards.

The Company applied the provisions of ASC 260, *Earnings Per Share,* to determine the diluted weighted average shares outstanding as it related to its convertible notes that were outstanding in fiscal 2017 and a portion of fiscal 2018, and due to the type of debt instrument issued and its accounting policy, the Company applied the treasury stock method and not the if-converted method. The dilutive impact of the Company's convertible notes was based on the difference between the Company's current period average stock price and the conversion price of the convertible notes, provided there was a premium. As such, dilution related to the conversion premium on the convertible notes was included in the calculation of diluted weighted-average shares outstanding in fiscal 2018 and 2017 to the extent each issuance was dilutive based on the average stock price during each reporting period being greater than the conversion price of the respective Notes.

A reconciliation of basic and diluted share amounts for fiscal 2019, 2018, and 2017 was as follows:

	September 28, 2019	September 29, 2018	September 30, 2017
Basic weighted average common shares outstanding	269,413	275,105	279,811
Weighted average common stock equivalents from assumed exercise of stock options and restricted stock units	—	—	2,885
Incremental shares from convertible notes premium	—	—	2,957
Diluted weighted average common shares outstanding	269,413	275,105	285,653
Weighted-average anti-dilutive shares related to:			
Outstanding stock options and stock units	4,098	5,073	1,677
Convertible notes	—	703	12

In those reporting periods in which the Company has reported net income, anti-dilutive shares include those stock options that either have an exercise price above the average stock price for the period or the stock options' combined exercise price and average unrecognized stock compensation expense upon exercise is greater than the average stock price. In those reporting periods in which the Company has a net loss, anti-dilutive shares are comprised of the impact of those number of shares that would have been dilutive had the Company had net income plus the number of common stock equivalents that would be antidilutive had the company had net income.

Product Warranties

The Company generally offers a one-year warranty for its products. The Company provides for the estimated cost of product warranties at the time product revenue is recognized. Factors that affect the Company's warranty reserves include the number of units sold, historical and anticipated rates of warranty repairs and the cost per repair. The Company periodically assesses the adequacy of the warranty reserve and adjusts the amount as necessary.

Product warranty activity for fiscal 2019 and 2018 was as follows:

	Balance at Beginning of Period	Provisions	Settlements/ Adjustments	Balance at End of Period
Period ended:				
September 28, 2019	$ 15.9	$ 14.1	$ (16.1)	$ 13.9
September 29, 2018	$ 17.0	$ 18.3	$ (19.4)	$ 15.9

Advertising Costs

Advertising costs are charged to operations as incurred. The Company does not have any direct-response advertising. Advertising costs, which include trade shows and conventions, were approximately $29.5 million, $26.9 million and $22.5 million for fiscal 2019, 2018 and 2017, respectively, and were included in selling and marketing expense in the Consolidated Statements of Income.

Recently Adopted Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Codification ("ASC") Update No. 2014-09, *Revenue from Contracts with Customers* (ASC 606), which was subsequently amended. The Company adopted this standard as of September 30, 2018 using the modified retrospective method for contracts that were not complete as of September 30, 2018. The Company's adoption of ASC 606 is more fully described in Note 3.

In October 2016, the FASB issued Accounting Standards Update ("ASU") No. 2016-16, *Income Taxes* (Topic 740). The guidance requires companies to recognize the income tax effects of intercompany sales and transfers of assets, other than inventory, in the income statement as income tax expense (or benefit) in the period in which the transfer occurs. The Company adopted the standard in the first quarter of fiscal 2019 (see Note 9).

In August 2016, the FASB issued ASU No. 2016-15, *Statement of Cash Flow* (Topic 230). The guidance reduces diversity in how certain cash receipts and cash payments are presented and classified in the Statements of Cash Flows. Certain of ASU 2016-15 requirements are as follows: 1) cash payments for debt prepayment or debt extinguishment costs should be classified as cash outflows for financing activities, 2) contingent consideration payments made soon after a business combination should be classified as cash outflows for investing activities and cash payments made thereafter should be classified as cash outflows for financing up to the amount of the contingent consideration liability recognized at the acquisition date with any excess classified as operating activities, 3) cash proceeds from the settlement of insurance claims should be classified on the basis of the nature of the loss, 4) cash proceeds from the settlement of Corporate-Owned Life Insurance (COLI) Policies should be classified as cash inflows from investing activities and cash payments for premiums on COLI policies may be classified as cash outflows for investing activities, operating activities, or a combination of investing and operating activities, and 5) cash paid to a tax authority by an employer when withholding shares from an employee's award for tax-withholding purposes should be classified as cash outflows for financing activities. The guidance is effective for annual periods beginning after December 15, 2017, and was applicable to the Company in fiscal 2019. The adoption of ASU 2016-15 did not have a material effect on the Company's consolidated financial statements.

In January 2016, the FASB issued ASU No. 2016-01, *Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities*. This guidance changes how entities measure equity investments that do not result in consolidation and are not accounted for under the equity method. Entities are required to

measure these investments at fair value at the end of each reporting period and recognize changes in fair value in net income. A practicability exception is available for equity investments that do not have readily determinable fair values (e.g. cost method investments), however, the exception requires the Company to consider relevant transactions that can be reasonably known to identify any observable price changes that would impact the fair value. This guidance also changes certain disclosure requirements and other aspects of current GAAP. This guidance is effective for annual periods beginning after December 15, 2017, and was applicable to the Company in fiscal 2019. The adoption of ASU 2016-01 did not have a material effect on the Company's consolidated financial statements.

Recently Issued Accounting Pronouncements

In August 2017, the FASB issued ASU No. 2017-12, *Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities*. The ASU requires certain changes to the presentation of hedge accounting in the financial statements and certain new or modified disclosures. The ASU also simplifies the application of hedge accounting and expands the strategies that qualify for hedge accounting. This guidance is effective for annual periods beginning after December 15, 2018, and is applicable to the Company in fiscal 2020. The Company is currently evaluating the anticipated impact of the adoption of ASU 2017-12 on its consolidated financial position and results of operations.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments - Credit Losses (Topic 326)*. The guidance requires that financial assets measured at amortized cost be presented at the net amount expected to be collected. The allowance for credit losses is a valuation account that is deducted from the amortized cost basis. The income statement reflects the measurement of credit losses for newly recognized financial assets, as well as the expected credit losses during the period. The measurement of expected credit losses is based upon historical experience, current conditions, and reasonable and supportable forecasts that affect the collectability of the reported amount. Credit losses relating to available-for-sale debt securities will be recorded through an allowance for credit losses rather than as a direct write-down to the security. The updated guidance is effective for annual periods beginning after December 15, 2019, and is applicable to the Company in fiscal 2021. Early adoption is permitted. The Company is currently evaluating the impact of the adoption of ASU 2016-13 on its consolidated financial position and results of operations.

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842).* The purpose of ASU 2016-02 is to increase the transparency and comparability among organizations by recognizing lease assets and liabilities on the balance sheet, including those previously classified as operating leases under current U.S. GAAP, and disclosing key information about leasing arrangements. ASC 842, as amended, is effective for public entities for annual periods beginning after December 15, 2018, including interim periods within those annual periods and is effective for the Company in fiscal 2020.The Company will adopt the standard using the transition method provided by ASC Update No. 2018-11, *Leases (Topic 842): Targeted Improvements*. Under this method, the Company will initially apply the new leasing rules on September 29, 2019, rather than at the earliest comparative period presented in the financial statements. Prior periods presented will be in accordance with the existing lease guidance.

Upon transition, the Company will apply the package of practical expedients permitted under ASC 842 transition guidance to its entire lease portfolio at September 29, 2019. As a result, the Company is not required to reassess (i) whether any expired or existing contracts are or contain leases, (ii) the classification of any expired or existing leases, and (iii) initial direct costs for any existing leases. Furthermore, as a lessee the Company will elect to combine lease and non-lease components together for the majority of its leases. As a result, for these applicable classes of underlying assets, the Company will account for each separate lease component and the non-lease components associated with that lease component as a single lease component.

As a result of adopting ASC 842, the Company expects to recognize additional right-of-use assets and corresponding liabilities for its existing operating lease portfolio on its consolidated balance sheet. The impact of the additional right-of-use assets and corresponding liabilities is expected to be less than 5% of total assets and 5% of total liabilities and have no material impact to its consolidated statements of operations or consolidated statements of cash flows. For the first quarter of 2020, the Company will provide additional disclosures in the notes to its consolidated financial statements regarding its leasing portfolio, including key judgments and assumptions and the discount rate used in calculating its right-of-use assets and corresponding liabilities. Please refer to Note 13 - Commitments and Contingencies for information regarding the Company's lease portfolio as of September 28, 2019.

As a lessor, in instances where the Company placed instruments (or equipment) at customer sites as part of its reagent rental contracts, the Company expects ASC 842 will require it to classify new instrument placements for certain reagent rental contracts as sales-type leases and thus accelerate instrument revenue and cost recognition at the time of placement. Under current U.S. GAAP, instruments placed under the Company's reagent rental programs are classified as operating leases and

instrument revenue and cost is recognized over the term of the contract. The Company does not expect this change to have a material impact on its financial statements. See Note 3 - Revenue Recognition for a description of our reagent rental contracts.

3. Revenue

In May 2014, the FASB issued ASC 606. The Company adopted the standard, which superseded ASC Topic 605, *Revenue Recognition* (ASC 605), as of September 30, 2018 using the modified retrospective method for contracts that were not complete as of September 30, 2018. Under this method, the Company recognized the cumulative effect of initially applying the standard to its open contracts and recorded an adjustment to decrease the opening balance of accumulated deficit within stockholders' equity by $6.4 million, which is net of taxes of $2.4 million, as of September 30, 2018 (the first day of fiscal 2019). The cumulative effect adjustment was primarily due to the Company applying the principles of ASC 606 to contracts for which the Company had deferred revenue as of September 29, 2018 for collectability uncertainty and providing extended payment terms resulting in the fee not being fixed or determinable under ASC 605. Under ASC 606, revenue from certain arrangements may be recognized earlier than under ASC 605 as a result of the ability to apply additional judgment in evaluating collectability and the elimination of the requirement to assess whether a fee is fixed or determinable, specifically as it relates to providing customers with extended payment terms. Results for reporting periods beginning September 30, 2018 and after are presented in accordance with ASC 606. Prior period results were not adjusted and will continue to be reported in accordance with the legacy GAAP requirements of ASC 605. As the adoption of this standard did not have a material impact on the Company's revenue recorded in the twelve months ended September 28, 2019 and September 29, 2018, transitional disclosures have not been presented.

The Company generates revenue from the sale of its products, primarily medical imaging systems and related components and software, medical aesthetic treatment systems, diagnostic tests/assays and surgical disposable products, and related services, which are primarily support and maintenance services on its medical imaging systems and aesthetic treatment systems, and to a lesser extent installation, training and repairs. The Company's products are sold primarily through a direct sales force, and within international markets, there is more reliance on distributors and resellers. Revenue is recorded net of sales tax. The following table provides revenue from contracts with customers by business and geographic region on a disaggregated basis:

	Year Ended September 28, 2019			Year Ended September 29, 2018			Year Ended September 30, 2017		
Business (in millions)	**United States**	**Intl.**	**Total**	**United States**	**Intl.**	**Total**	**United States**	**Intl.**	**Total**
Diagnostics:									
Cytology & Perinatal	$ 312.9	$ 159.1	$ 472.0	$ 322.9	$ 157.4	$ 480.3	$ 329.3	$ 147.8	$ 477.1
Molecular Diagnostics	549.9	125.1	675.0	503.4	108.4	611.8	490.9	88.6	579.5
Blood Screening	58.5	—	58.5	55.3	—	55.3	99.0	41.5	140.5
Total	921.3	284.2	1,205.5	881.6	265.8	1,147.4	919.2	277.9	1,197.1
Breast Health:									
Breast Imaging	853.1	241.5	1,094.6	782.0	234.5	1,016.5	777.5	184.7	962.2
Interventional Breast Solutions	184.8	34.8	219.6	169.4	32.3	201.7	152.6	23.5	176.1
Total	1,037.9	276.3	1,314.2	951.4	266.8	1,218.2	930.1	208.2	1,138.3
Medical Aesthetics	155.4	160.2	315.6	172.4	166.7	339.1	103.0	104.5	207.5
GYN Surgical	362.8	74.4	437.2	352.8	69.2	422.0	367.2	59.9	427.1
Skeletal Health	58.6	36.2	94.8	59.4	31.8	91.2	55.3	33.5	88.8
Total	$ 2,536.0	$ 831.3	$ 3,367.3	$ 2,417.6	$ 800.3	$ 3,217.9	$ 2,374.8	$ 684.0	$ 3,058.8

Geographic Regions (*in millions*)	Year Ended September 28, 2019	September 29, 2018	September 30, 2017
United States	$ 2,536.0	$ 2,417.6	$ 2,374.8
Europe	396.0	377.5	305.1
Asia-Pacific	286.0	275.6	247.2
Rest of World	149.3	147.2	131.7
	$ 3,367.3	$ 3,217.9	$ 3,058.8

The following table provides revenue recognized by source:

Revenue by type (*in millions*)	Year Ended September 28, 2019	September 29, 2018	September 30, 2017
Capital equipment, components and software	$ 984.9	$ 977.2	$ 798.9
Consumables	1,786.4	1,666.7	1,739.1
Service	568.3	551.8	484.2
Other	27.7	22.2	36.6
	$ 3,367.3	$ 3,217.9	$ 3,058.8

The Company considers revenue to be earned when all of the following criteria are met: the Company has a contract with a customer that creates enforceable rights and obligations; promised products or services are identified; the transaction price, or the amount the Company expects to receive, including an estimate of uncertain amounts subject to a constraint to ensure revenue is not recognized in an amount that would result in a significant reversal upon resolution of the uncertainty, is determinable; and the Company has transferred control of the promised items to the customer. A performance obligation is a promise in a contract to transfer a distinct good or service to the customer, and is the unit of account in the contract. The transaction price for the contract is measured as the amount of consideration the Company expects to receive in exchange for the goods and services expected to be transferred. A contract's transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, control of the distinct good or service is transferred. Transfer of control for the Company's products is generally at shipment or delivery, depending on contractual terms, but occurs when title and risk of loss transfers to the customer which represents the point in time when the customer obtains the use of and substantially all of the remaining benefit of the product. As such the Company's performance obligation related to product sales is satisfied at a point in time. Revenue from support and maintenance contracts, extended warranty and professional services for installation, training and repairs is recognized over time based on the period contracted or as the services are performed as these methods represent a faithful depiction of the transfer of goods and services.

Revenue from support and maintenance contracts and extended warranties are recognized over time based on the contract term, which represents a faithful depiction of the transfer of goods and services given the stand-ready nature of the performance obligations. Service revenue related to professional services for installation, training and repairs is recognized as the services are performed based on the specific nature of the service.

The Company recognizes a receivable when it has an unconditional right to payment. Payment terms are typically 30 days in the U.S. but may be longer in international markets. The Company treats shipping and handling costs performed after a customer obtains control of the good as a fulfillment cost and records these costs within costs of product revenue when the corresponding revenue is recognized.

The Company also places instruments (or equipment) at customer sites but retains title to the instrument. The customer has the right to use the instrument for a period of time, and the Company recovers the cost of providing the instrument through the sales of disposables, namely tests and assays in Diagnostics and handpieces in GYN Surgical. These types of agreements include an embedded operating lease for the right to use an instrument and no instrument revenue is recognized at the time of instrument delivery. The Company recognizes a portion of the revenue allocated to the embedded lease concurrent with the sale of disposables over the term of the agreement.

Some of the Company's contracts have multiple performance obligations. For contracts with multiple performance obligations, the Company allocates the transaction price to each performance obligation using its best estimate of the standalone selling price of each distinct good or service in the contract. The Company determines its best estimate of standalone selling price using average selling prices over 3 to 12 month periods of data depending on the products or nature of the services coupled with current market considerations. If the product or service does not have a history of sales or if sales volume is not sufficient, the Company relies on prices set by its pricing committees or applicable marketing department adjusted for expected discounts.

Variable Consideration

The Company exercises judgment in estimating variable consideration, which includes volume discounts, sales rebates, product returns and other adjustments. These amounts are recorded as a reduction to revenue and classified as a current liability. The Company bases its estimates for volume discounts and sales rebates on historical information to the extent it is reasonable to be used as a predictive tool of expected future rebates. To the extent the transaction price includes variable consideration, the Company applies judgment in constraining the estimated variable consideration due to factors that may cause reversal of revenue recognized. The Company evaluates constraints based on its historical and projected experience with similar customer contracts.

The Company's contracts typically do not provide for product returns. In general, estimates of variable consideration and constraints are not material to the Company's financial statements.

Remaining Performance Obligations

As of September 28, 2019, the estimated revenue expected to be recognized in the future related to performance obligations that are unsatisfied was approximately $438.4 million. These remaining performance obligations primarily relate to extended warranty and support and maintenance obligations in the Company's Breast Health, Skeletal Health and Medical Aesthetics reportable segments. The Company expects to recognize approximately 38% of this amount as revenue in 2020, 27% in 2021, 21% in 2022, 10% in 2023, and 5% thereafter. The Company has applied the practical expedient to not include remaining performance obligations related to contracts with original expected durations of one year or less in the amounts above.

Contract Assets and Liabilities

The Company discloses accounts receivable separately in the Consolidated Balance Sheets at their net realizable value. Contract assets primarily relate to the Company's conditional right to consideration for work completed but not billed at the reporting date. Contract assets at the beginning and end of the period, as well as the changes in the balance, were immaterial.

Contract liabilities primarily relate to payments received from customers in advance of performance under the contract. The Company records a contract liability, or deferred revenue, when it has an obligation to provide service, and to a much lesser extent product, to the customer and payment is received or due in advance of performance. Deferred revenue primarily relates to support and maintenance contracts and extended warranty obligations within the Company's Breast Health, Medical Aesthetics and Skeletal Health reportable segments. Contract liabilities are classified as other current liabilities and other long-term liabilities on the Consolidated Balance Sheets. The Company recognized revenue of $158.9 million in the twelve months ended September 28, 2019 that was included in the contract liability balance at September 29, 2018.

Practical Expedients

With the adoption of ASC 606, the Company elected to apply certain permitted practical expedients. In evaluating the cumulative-effect adjustment to retained earnings, the Company adopted the standard only for contracts that were not complete as of the date of adoption. For contracts that were modified prior to the adoption date, the Company elected to present the aggregate effect of all contract modifications in determining the transaction price and for the allocation to the satisfied and unsatisfied performance obligations.

The Company applies a practical expedient to expense costs as incurred for costs to obtain a contract with a customer when the amortization period would have been one year or less. These costs solely comprise sales commissions and typically the commissions are incurred at the time of shipment of product and upon billings for support and maintenance contracts.

Revenue Recognition under ASC 605 (prior to the adoption of ASC 606)

Under ASC 605, the Company recognized product revenue upon shipment provided that there was persuasive evidence of an arrangement, there were no uncertainties regarding acceptance, the sales price was fixed or determinable, and collection of the resulting receivable was reasonably assured. Generally, the Company’s product arrangements for capital

equipment sales, primarily in its Breast Health, Medical Aesthetics and Skeletal Health reporting segments, were multiple-element arrangements, including services, such as installation, training and support and maintenance, and multiple products. Based on the terms and conditions of the product arrangements, the Company believed that these services and undelivered products could be accounted for separately from the delivered product element as the Company's delivered products have value to its customers on a stand-alone basis. Accordingly, revenue for services not yet performed at the time of product delivery were deferred and recognized as such services were performed. The relative selling price of any undelivered products was also deferred at the time of shipment and recognized as revenue when these products were delivered. There was no customer right of return in the Company's sales agreements for its capital equipment.

Service revenues primarily consist of amounts recorded under service and maintenance contracts and repairs not covered under warranty, installation and training, and shipping and handling costs billed to customers. Service and maintenance contract revenues were recognized ratably over the term of the contract. Other service revenues were recognized as the services were completed using the specific performance method. Service and other revenue also included royalties which were recognized in the period the payments were due to the Company.

For revenue arrangements with multiple deliverables, the Company recorded revenue as separate units of accounting if the delivered items had value to the customer on a stand-alone basis and the delivery or performance of the undelivered items was considered probable and substantially within the Company's control. Some of the Company's products have both software and non-software components that function together to deliver the product's essential functionality. The Company determined that except for its computer-aided detection ("CAD") products and C-View and Intelligent 2D products, the software element in its other products was not within the scope of the software revenue recognition rules, ASC 985-605, *Software—Revenue Recognition*. The Company determined that given the significance of the software component's functionality to its CAD, C-View and Intelligent 2D components, which are sold by its Breast Health segment, these products were within the scope of the software revenue recognition rules. The Company evaluated the appropriate revenue recognition treatment of it hardware products, including its Dimensions digital mammography systems, which had both software and non-software components that function together to deliver the products' essential functionality (i.e., it is a tangible product), and determined they were not within the scope of ASC 985-605.

The Company was required to allocate revenue to its multiple element arrangements based on the relative fair value of each element's selling price. The Company typically determined the selling price of its products based on its best estimate of selling prices ("ESP") and services based on vendor-specific objective evidence of selling price ("VSOE"). The Company determined VSOE based on its normal pricing and discounting practices for the specific product or service when sold on a stand-alone basis. In determining VSOE, the Company's policy was to require a substantial majority of selling prices for a product or service to be within a reasonably narrow range. The Company also considered the class of customer, method of distribution, and the geographies into which its products and services were sold when determining VSOE. If VSOE could not be established, which could occur in instances when a product or service had not been sold separately, stand-alone sales were too infrequent, or product pricing was not within a relatively narrow range, the Company would generally establish the selling price using ESP to allocate arrangement consideration. The objective of ESP was to determine the price at which the Company would typically transact a stand-alone sale of the product or service. ESP was determined by considering a number of factors including Company pricing policies, internal costs and gross margin objectives, method of distribution, information gathered from experience in customer negotiations, market research and information, recent technological trends, competitive landscape and geographies.

For those arrangements accounted for under the software revenue recognition rules, ASC 985-605 generally required revenue earned on software arrangements involving multiple elements to be allocated to each element based on their relative VSOE of fair value. If VSOE did not exist for a delivered element, the residual method was applied in which the arrangement consideration was allocated to the undelivered elements based on their VSOE with the remaining consideration recognized as revenue for the delivered elements. For multiple-element software arrangements where VSOE of fair value of Post-Contract Customer Support ("PCS") had been established, the Company recognized revenue using the residual method at the time all other revenue recognition criteria were met.

While the majority of its instruments are placed at customer sites, in certain instances the Company sold instruments to its clinical diagnostics customers and recorded sales of these instruments upon shipment or delivery, depending on the terms of the arrangement.

Within its Diagnostics business, and to a lesser extent, its GYN Surgical business, the Company provided its instrumentation (for example, the ThinPrep Processor, ThinPrep Imaging System, and the Panther and Tigris systems) and certain other hardware to customers without requiring them to purchase the equipment or enter into a lease. The Company installed the instrumentation or equipment at the customer's site and recovered the cost of providing the instrumentation or equipment in the amount it charged for its diagnostic tests, assays and other disposables. Customers entered into a customer

usage agreement and typically committed to purchasing minimum quantities of disposable products at a stated price over a defined contract term, which was typically between three and five years. Revenue was recognized over the term of the customer usage agreement as tests, assays and other disposable products are shipped or delivered, depending on the customer's arrangement.

4. Business Combinations

Cynosure, Inc.

On March 22, 2017, the Company completed the acquisition of Cynosure and acquired all of the outstanding shares of Cynosure. Pursuant to the terms and conditions of the merger agreement, each share of common stock of Cynosure outstanding immediately prior to the effective time of the acquisition was canceled and converted into the right to receive $66.00 in cash. The acquisition was funded through available cash, and the total purchase price was $1.66 billion. The Company incurred $18.8 million of direct transaction costs recorded within general and administrative expenses.

Cynosure, headquartered in Westford, Massachusetts, develops, manufactures, and markets aesthetic treatment systems that enable plastic surgeons, dermatologists and other medical practitioners to perform non-invasive and minimally invasive procedures to remove hair, treat vascular and benign pigmented lesions, remove multi-colored tattoos, revitalize the skin, reduce fat through laser lipolysis, reduce cellulite, clear nails infected by toe fungus, ablate sweat glands and improve women’s health. Cynosure also markets radiofrequency (RF) energy-sourced platforms that offer both non-surgical and surgical aesthetic treatments and procedures. Cynosure's results of operations are reported in the Company's Medical Aesthetics reportable segment from the date of acquisition.

The total purchase price was allocated to Cynosure’s tangible and identifiable intangible assets and liabilities based on the estimated fair values of those assets as of March 22, 2017, as set forth below:

Cash	$	107.2
Marketable securities		82.9
Accounts receivable		40.2
Inventory		120.0
Property, plant and equipment		44.1
Other assets and liabilities, net		11.9
Accounts payable and accrued expenses		(76.6)
Deferred revenue		(11.2)
Capital lease obligation		(25.2)
Identifiable intangible assets:		
Developed technology		736.0
In-process research and development		107.0
Distribution agreement		42.0
Customer relationships		35.0
Trade names		74.0
Deferred income taxes, net		(315.2)
Goodwill		685.7
Purchase Price	$	1,657.8

In performing the purchase price allocation, the Company considered, among other factors, the intended future use of acquired assets, analysis of historical financial performance and estimates of future performance of Cynosure’s business.

As part of the purchase price allocation, the Company determined the identifiable intangible assets were developed technology, in-process research and development ("IPR&D"), a distribution agreement, customer relationships, and trade names. The fair value of the intangible assets was estimated using the income approach, and the cash flow projections were discounted using rates ranging from 11% to 12%, except for the IPR&D assets in which the Company used a range of 14% to 22%. The cash flows were based on estimates used to price the transaction, and the discount rates applied were benchmarked with reference to the implied rate of return from the transaction model and the weighted average cost of capital.

The developed technology assets were comprised of know-how, patents and technologies embedded in Cynosure's products and relate to currently marketed products. The developed technology assets comprise the significant product families of Cynosure, primarily SculpSure, Icon, and PicoSure.

IPR&D projects related to in-process projects that had not reached technological feasibility as of the acquisition date and had no alternative future use. The primary basis for determining technological feasibility of these projects is obtaining regulatory approval to market the underlying product or expected commercial release depending on the project. The Company recorded $107.0 million of IPR&D related to three projects, which were expected to be completed during fiscal 2018 and 2019 with a cost to complete of approximately $18.0 million. All of the IPR&D assets were valued using the multiple-period excess earnings method approach.

During the fourth quarter of fiscal 2017, the Company obtained regulatory approval for two projects with an aggregate fair value of $61.0 million and these assets were reclassified to developed technology. The remaining project, which had a fair value of $46.0 million, was abandoned in the second quarter of fiscal 2018 due to unsuccessful clinical results. As a result, the Company recorded a $46.0 million impairment charge in the second quarter of fiscal 2018.

The distribution agreement intangible asset relates to Cynosure's exclusive distribution rights for the MonaLisa Touch device in certain geographic regions. The customer relationships intangible asset pertains to Cynosure's relationships with its end customers and related service arrangements and distributors throughout the world. Trade names relate to the Cynosure corporate name and primary product names, and the Company used the Relief-from-Royalty Method to estimate the fair value of this asset.

Developed technology, distribution agreement, customer relationships and trade names are being amortized on a straight-line basis over a weighted average period of 11.8 years, 8 years, 7.7 years and 8.9 years, respectively.

The calculation of the excess of the purchase price over the estimated fair value of the tangible net assets and intangible assets acquired was recorded to goodwill. The factors contributing to the recognition of goodwill were based on several strategic and synergistic benefits that were expected to be realized from the Cynosure acquisition. These benefits included the expectation that the Company's entry into the aesthetics market would significantly broaden the Company's offering in women's health. The combined company was expected to benefit from a broader global presence, synergistic utilization of Hologic's direct sales force, primarily its GYN Surgical sales force, with certain Cynosure products, and the Company's entry into an adjacent cash-pay segment. During the second quarter of fiscal 2018, the Company identified indicators of impairment and performed an interim goodwill impairment analysis. This analysis resulted in the Company recording a goodwill impairment charge of $685.7 million in the second quarter of fiscal 2018 (see Note 2). In fiscal 2019, the Company recorded intangible asset and equipment impairment charges of $685.4 million (see Note 2).

Cynosure's revenue and pre-tax loss, which excluded acquisition expenses incurred by the Company, for the period from the acquisition date to September 30, 2017, were $207.5 million and $96.4 million, respectively. The pre-tax loss included amortization expense, the impact of the step-up in inventory, retention and integration expenses including legal and consulting fees, and restructuring charges. The following unaudited pro forma information presents the combined financial results for the Company and Cynosure as if the acquisition of Cynosure had been completed at the beginning of the prior fiscal year, September 26, 2015 (the first day of fiscal 2016):

	Year Ended September 30, 2017
Revenue	$ 3,241.4
Net income	$ 768.5
Basic earnings per common share	$ 2.75
Diluted earnings per common share	$ 2.69

The pro forma information for fiscal 2017 was calculated after applying the Company's accounting policies and the impact of acquisition date fair value adjustments. Fiscal 2017 pro forma net income was adjusted to exclude acquisition-related transaction costs and restructuring costs solely related to the consolidation of the Medical Aesthetics business, which would have been included in fiscal 2016 pro forma net income. In addition, the fiscal 2017 pro forma net income was adjusted to exclude expenses related to the fair value adjustments associated with the acquisition of Cynosure that were recorded by the Company. The pro forma condensed consolidated financial results have been prepared for comparative purposes only and include certain adjustments to reflect pro forma results of operations as if the acquisition occurred on September 27, 2015 (the beginning of fiscal 2016), such as increased amortization for the fair value of acquired intangible assets. The pro forma information does not reflect the effect of costs or synergies that would have been expected to result from the integration of the acquisition. The pro forma information does not purport to be indicative of the results of operations that actually would have resulted had the combination occurred at the beginning of the period presented, or of future results of the consolidated entities.

Medicor Medical Supply

On April 7, 2017, the Company completed the acquisition of MMS Medicor Medical Supplies GmbH ("Medicor") for a purchase price of $19.0 million, which included a working capital adjustment of $2.0 million that was paid in the fourth quarter of fiscal 2017, and a holdback of $1.9 million that was paid two years from the date of acquisition. Medicor was a long-standing distributor of the Company's Breast and Skeletal Health products in Germany, Austria and Switzerland. Based on the Company's valuation, it has allocated $5.4 million of the purchase price to the intangible assets, which have a weighted average life of 7.7 years, and $8.9 million to goodwill. The remaining $4.7 million of purchase price was allocated to the acquired tangible assets and liabilities.

Emsor, S.A.

On December 11, 2017, the Company completed the acquisition of Emsor S.A. ("Emsor") for a purchase price of $16.3 million, which includes a hold-back of $0.5 million that is paid eighteen months from the date of acquisition, and contingent consideration which the Company estimated at $4.9 million as of the measurement date. The contingent consideration is payable upon Emsor achieving predefined amounts of cumulative revenue over a two-year period from the date of acquisition. Emsor was a distributor of the Company's Breast and Skeletal Health products in Spain and Portugal. Based on the Company's valuation, it allocated $4.6 million of the purchase price to the value of customer relationship intangible assets and $5.7 million to goodwill. The remaining $6.0 million of purchase price has been allocated to acquired tangible assets and liabilities.

Faxitron

On July 31, 2018, the Company completed the acquisition of Faxitron Bioptics, LLC ("Faxitron") for a purchase price of $89.5 million, which included hold-backs of $11.7 million payable up to one year from the date of acquisition, and contingent consideration which the Company estimated at $2.9 million as of the measurement date. Faxitron, headquartered in Tucson, Arizona, develops, manufactures, and markets digital radiography systems. Faxitron's results of operations are reported in the Company's Breast Health reportable segment from the date of acquisition. The contingent consideration is payable upon meeting certain revenue growth metrics. In the fourth quarter of fiscal 2019, the Company increased the contingent consideration liability by $1.7 million based on updated projections. During fiscal 2019, the Company paid $6.5 million of the holdbacks and withheld the remainder of $5.2 million under the indemnification provisions of the purchase agreement, which the former shareholders are disputing.

The total purchase price was allocated to Faxitron's tangible and identifiable intangible assets and liabilities based on the estimated fair values of those assets as of July 31, 2018, as set forth below:

Cash	$	2.4
Accounts receivable		4.0
Inventory		5.8
Other assets		3.1
Accounts payable and accrued expenses		(8.8)
Deferred revenue		(1.9)
Long-term debt		(3.3)
Identifiable intangible assets:		
Developed technology		44.9
In-process research and development		5.5
Customer relationships		0.5
Trade names		2.3
Deferred income taxes, net		(10.6)
Goodwill		45.6
Purchase Price	$	89.5

In performing the purchase price allocation, the Company considered, among other factors, the intended future use of acquired assets, analysis of historical financial performance and estimates of future performance of Faxitron's business. As part of the purchase price allocation, the Company determined the identifiable intangible assets were developed technology, in-process research and development ("IPR&D"), customer relationships, and trade names. The fair value of the intangible assets was estimated using the income approach, and the cash flow projections were discounted using rates ranging from 17% to 19%. The cash flows were based on estimates used to price the transaction, and the discount rates applied were benchmarked with reference to the implied rate of return from the transaction model and the weighted average cost of capital. The weighted average life for both developed technology and customer relationships is 9 years and for trade names it is 7 years. The calculation of the excess of the purchase price over the estimated fair value of the tangible net assets and intangible assets acquired was recorded to goodwill. The factors contributing to the recognition of the preliminary amount of goodwill were based on synergistic benefits that are expected to be realized from this acquisition. Benefits include the expectation of broadening the Company's Breath Health portfolio of products and technology. None of the goodwill is expected to be deductible for income tax purposes.

Focal Therapeutics

On October 1, 2018, the Company completed the acquisition of Focal Therapeutics, Inc. ("Focal") for a purchase price of $120.1 million, which included hold-backs of $14.0 million payable up to one year from the date of acquisition. In the second quarter of fiscal 2019, $1.5 million of the hold-back was paid, and the remaining $12.5 million was paid on October 1, 2019. Focal, headquartered in California, manufactures and markets its BioZorb marker, which is an implantable three-dimensional marker that helps clinicians overcome certain challenges in breast conserving surgery.

The total purchase price was allocated to Focal's tangible and identifiable intangible assets and liabilities based on the estimated fair values of those assets as of October 1, 2018, as set forth below:

Cash	$	2.2
Accounts receivable		2.0
Inventory		7.9
Other assets		0.5
Accounts payable and accrued expenses		(5.6)
Long-term debt		(2.5)
Identifiable intangible assets:		
Developed technology		83.1
In-process research and development		11.4
Trade names		2.7
Deferred income taxes, net		(12.7)
Goodwill		31.1
Purchase Price	$	120.1

In performing the purchase price allocation, the Company considered, among other factors, the intended future use of acquired assets, analysis of historical financial performance and estimates of future performance of Focal's business. As part of the purchase price allocation, the Company determined the identifiable intangible assets were developed technology, in-process research and development ("IPR&D"), and trade names. The fair value of the intangible assets was estimated using the income approach, and the cash flow projections were discounted using rates ranging from 15.5% to 16.5%. The cash flows were based on estimates used to price the transaction, and the discount rates applied were benchmarked with reference to the implied rate of return from the transaction model and the weighted average cost of capital. The weighted average life of developed technology and trade names was 11 years and 13 years, respectively. The calculation of the excess of the purchase price over the estimated fair value of the tangible net assets and intangible assets acquired was recorded to goodwill. The factors contributing to the recognition of the amount of goodwill were based on synergistic benefits that are expected to be realized from this acquisition. Benefits include the expectation of broadening the Company's Breast Health portfolio of products and technology. None of the goodwill is expected to be deductible for income tax purposes.

5. Investment in SuperSonic Imagine

On August 1, 2019, the Company purchased 46% of the outstanding shares of SuperSonic Imagine ("SSI") for $18.2 million. SSI is a public company located in Aix-en-Provence, France that manufactures and markets ultrasound medical imaging equipment. In September 2019, the Company launched a cash tender offer to acquire the remaining outstanding shares for a price of €1.50 per share in cash. The Company determined that SSI is a Variable Interest Entity (“VIE”) but it is not the primary beneficiary as it was not a party to the initial design of the entity nor does it have control over SSI's operations as of September 28, 2019. Accordingly, the Company accounted for this investment under the equity method of accounting and has included its proportionate share of SSI's net loss of $3.3 million for the two months ended September 28, 2019 within Other income, net. The fair value of the Company's investment in these shares at September 28, 2019 was $17.6 million. The Company has also provided loans totaling $28.4 million to SSI to pay-off certain of its preexisting loans and support its operating activities. On November 21, 2019, the Company acquired an additional 7.6 million shares for $12.5 million. As a result, the Company owns approximately 78% of the outstanding shares at November 21, 2019 and will launch a second tender offer with similar terms in an attempt to acquire the remaining shares. The Company expects to consolidate SSI's results effective November 21, 2019. Given that the Company acquired a controlling interest on November 21, 2019, the Company determined it was impracticable to provide all the disclosures required for a business combination pursuant to ASC 805, *Business Combinations*, and will provide applicable disclosures in a future filing. The investment and loans were recorded in Other assets in the Consolidated Balance Sheets.

6. Restructuring Charges

The Company evaluates its operations for opportunities to improve operational effectiveness and efficiency, including facility and operations consolidation, and to better align expenses with revenues. As a result of these assessments, the Company has undertaken various restructuring actions which are described below. The following table displays charges taken related to restructuring actions in fiscal 2019, 2018 and 2017 and a rollforward of the charges to the accrued balances as of September 28, 2019:

	Fiscal 2019 Actions	Fiscal 2018 Actions	Fiscal 2017 Actions	Other	Total
Restructuring Charges					
Fiscal 2017 charges:					
Workforce reductions	$ —	$ —	$ 8.5	$ —	$ 8.5
Facility closure costs	—	—	—	4.8	4.8
Fiscal 2017 restructuring charges	$ —	$ —	$ 8.5	$ 4.8	$ 13.3
Fiscal 2018 charges:					
Workforce reductions	$ —	$ 11.7	$ —	$ —	$ 11.7
Facility closure costs	—	0.9	—	1.6	2.5
Fiscal 2018 restructuring charges	$ —	$ 12.6	$ —	$ 1.6	$ 14.2
Fiscal 2019 charges:					
Workforce reductions	$ 4.0	$ 1.4	$ —	$ —	$ 5.4
Facility closure costs	—	(0.2)	—	1.4	1.2
Fiscal 2019 restructuring charges	$ 4.0	$ 1.2	$ —	$ 1.4	$ 6.6

	Fiscal 2019 Actions	Fiscal 2018 Actions	Fiscal 2017 Actions	Previous Other Charges	Total
Rollforward of Accrued Restructuring					
Balance as of September 24, 2016	$ —	$ —	$ —	$ 6.3	$ 6.3
Fiscal 2017 restructuring charges	$ —	$ —	$ 8.5	$ 4.8	$ 13.3
Severance payments	—	—	(1.0)	(5.6)	(6.6)
Other payments	—	—	—	(1.5)	(1.5)
Balance as of September 30, 2017	$ —	$ —	$ 7.5	$ 4.0	$ 11.5
Fiscal 2018 restructuring charges	$ —	$ 12.6	$ —	$ 1.6	$ 14.2
Stock-based compensation	—	(1.3)	—	—	(1.3)
Severance payments and adjustments	—	(6.8)	(6.7)	(0.2)	(13.7)
Other payments	—	(0.2)	—	(1.4)	(1.6)
Balance as of September 29, 2018	$ —	$ 4.3	$ 0.8	$ 4.0	$ 9.1
Fiscal 2019 restructuring charges	$ 4.0	$ 1.2	$ —	$ 1.4	$ 6.6
Severance payments and adjustments	(3.0)	(3.9)	(0.8)	—	(7.7)
Other payments	—	(0.5)	—	(1.6)	(2.1)
Balance as of September 29, 2018	$ 1.0	$ 1.1	$ —	$ 3.8	$ 5.9

Fiscal 2019 Actions

During fiscal 2019, the Company decided to transfer certain shared services positions to its Costa Rica facility from its Marlborough location and announced the termination of 24 personnel and implemented other employee termination actions. The charges for these actions are being recorded pursuant to ASC 420, *Exit or Disposal Cost Obligations* (ASC 420) for one-time termination benefits. The Company recorded severance benefits charges of $4.0 million in the fiscal 2019 related to these actions. The Company expects to finalize the transition to Costa Rica in the first quarter of fiscal 2020 and record an additional charge of $0.1 million as a result of the service requirement during the transition period.

Fiscal 2018 Actions

During the first, second and third quarters of fiscal 2018, the Company decided to terminate certain employees across the organization, including a corporate executive and primarily sales and marketing personnel in its Diagnostics and Medical Aesthetics reportable segments. The charges were recorded pursuant to ASC 712, *Compensation-Nonretirement Postemployment Benefits* (ASC 712) or ASC 420 depending on the employee. As such, the Company recorded severance benefits charges of $9.0 million in fiscal 2018. Included within the charge is $1.3 million related to the modification of equity awards.

During fiscal 2018, the Company finalized its decision and plan to consolidate its legacy international accounting and customer service organizations into its Manchester, UK location and will be eliminating these positions in Belgium, France, Italy, Spain and Germany. This transition was completed in the first quarter of fiscal 2019 and these employees were terminated. During fiscal 2018, the Company recorded $2.2 million for severance benefits pursuant to both ASC 712 and ASC 420 depending on the legal requirements on a country by country basis. The Company recorded an additional $1.0 million in fiscal 2019 for the remaining pro-rata charges. This plan is completed.

During the third quarter of fiscal 2018, the Company decided to close its Hicksville, New York facility where it manufactured certain Cynosure products. In connection with this plan, certain employees, primarily in manufacturing, were terminated. The employees were notified of termination and related benefits in the third quarter of fiscal 2018, and the Company recorded these charges pursuant to ASC 420. Employees were required to remain employed during this transition period and charges were recorded ratably over the required service period. The Company recorded a total of $0.5 million in severance benefits charges in fiscal 2018. The Company recorded an additional $0.3 million in the first quarter of fiscal 2019 for the remaining pro-rata charges. This plan is completed.

In the third quarter of fiscal 2018, the Company determined it would not use warehouse space located on Lyberty Way in Westford, Massachusetts. The Company met the cease use date criteria in the third quarter of fiscal 2018 and estimated the time period to sublet the space and related sublease rates resulting in a lease obligation charge of $0.9 million. During the first quarter of fiscal 2019, the Company executed a termination agreement with the landlord and agreed to pay a termination payment of $0.6 million resulting in a benefit of $0.2 million recorded in the first quarter of fiscal 2019.

Fiscal 2017 Actions

During the second quarter of fiscal 2017, the Company completed its acquisition of Cynosure. In connection with the acquisition, the Company decided to terminate certain Cynosure executives in the second quarter of fiscal 2017 and recorded $1.5 million in severance benefits charges. During the third and fourth quarters of fiscal 2017, the Company terminated additional executives and employees and recorded $4.3 million and $1.3 million, respectively, in severance benefits charges. The charges were recorded pursuant to ASC 712 and ASC 420 depending on the executive.

During the fourth quarter of fiscal 2017, the decision was made to reduce headcount and related costs in R&D within Breast Health and to eliminate certain manufacturing personnel, primarily in Diagnostics. The majority of employees were notified of termination and related benefits in the fourth quarter of fiscal 2017, and the Company recorded these charges pursuant to ASC 420 as the benefits qualify as one-time termination benefits. As such, the Company recorded severance benefits charges of $1.4 million in the fourth quarter.

Other

In connection with the closure of the Bedford location during the first quarter of fiscal 2017, the Company recorded $3.5 million for lease obligation charges related to the first floor of the facility as the Company determined it had met the cease-use date criteria. The Company made certain assumptions regarding the time period it would take to obtain a subtenant and the sublease rates it could obtain. During the third quarter of fiscal 2017, the Company updated its assumption regarding the time period it would take to obtain a subtenant at the Bedford location and as a result recorded an additional $1.3 million lease obligation charge. During the third quarter of fiscal 2018, the Company further adjusted its assumptions and lowered the estimate of the sublease income rate and extended the time period to obtain a sub-tenant. As a result, the Company recorded an additional charge of $1.6 million. During the third quarter of fiscal 2019, the Company further updated its assumption regarding its ability to sublet the first floor and recorded an additional lease obligation charge of $1.4 million. These estimates may vary from the actual sublease agreements executed, if any, resulting in an adjustment to the charge. The Company has vacated other portions of the building but not the entire facility, and at this time does not meet the cease-use date criteria to record additional restructuring charges.

7. Borrowings and Credit Agreements

The Company's borrowings consisted of the following:

	September 28, 2019	September 29, 2018
Current debt obligations, net of debt discount and deferred issuance costs:		
Term Loan	$ 37.4	$ 74.7
Revolver	—	300.0
Securitization Program	234.0	225.0
Total current debt obligations	271.4	599.7
Long-term debt obligations, net of debt discount and issuance costs:		
Term Loan	1,452.4	1,376.3
2025 Senior Notes	937.3	935.2
2028 Senior Notes	393.9	393.1
Total long-term debt obligations	2,783.6	2,704.6
Total debt obligations	$ 3,055.0	$ 3,304.3

The debt maturity schedule for the Company's obligations as of September 28, 2019 was as follows:

	2020	2021	2022	2023	2024	2025 and Thereafter	Total
Term Loan	$ 37.5	$ 75.0	$ 75.0	$ 112.5	$ 1,200.0	$ —	$ 1,500.0
Securitization Program	234.0	—	—	—	—	—	234.0
2025 Senior Notes	—	—	—	—	—	950.0	950.0
2028 Senior Notes	—	—	—	—	—	400.0	400.0
	$ 271.5	$ 75.0	$ 75.0	$ 112.5	$ 1,200.0	$ 1,350.0	$ 3,084.0

2018 Amended and Restated Credit Agreement

On December 17, 2018, the Company and certain of its subsidiaries refinanced its term loan and revolving credit facility by entering into an Amended and Restated Credit and Guaranty Agreement as of December 17, 2018 (the "2018 Credit Agreement") with Bank of America, N.A. in its capacity as Administrative Agent, Swing Line Lender and L/C Issuer, and certain other lenders. The 2018 Credit Agreement amended and restated the Company's prior credit and guaranty agreement as of October 3, 2017 ("2017 Credit Agreement").

The credit facilities under the 2018 Credit Agreement consist of:

- A $1.5 billion secured term loan ("2018 Amended Term Loan") with a maturity date of December 17, 2023; and
- A secured revolving credit facility ("2018 Amended Revolver"; together with the 2018 Amended Term Loan, the "Amended Credit Facilities") under which the Company may borrow up to $1.5 billion, subject to certain sublimits, with a maturity date of December 17, 2023.

The Company initially borrowed $350 million under the 2018 Amended Revolver. This initial borrowing, together with the net proceeds of the 2018 Amended Term Loan, were used to repay the amounts outstanding under the term loan and revolving credit facility under the 2017 Credit Agreement.

Borrowings under the 2018 Credit Agreement bear interest, at the Company's option and in each case plus an applicable margin as follows:

- *2018 Amended Term Loan*: at the Base Rate, Eurocurrency Rate or LIBOR Daily Floating Rate,
- *2018 Amended Revolver*: if funded in U.S. dollars, the Base Rate, Eurocurrency Rate, or LIBOR Daily Floating Rate, and, if funded in an alternative currency, the Eurocurrency Rate; and if requested under the swing line sublimit, the Base Rate.

As of September 28, 2019, the Company had no amounts outstanding under our 2018 Amendment Revolver and the interest rate under our Term loan was 3.43%.

The applicable margin to the Base Rate, Eurocurrency Rate, or LIBOR Daily Floating Rate is subject to specified changes depending on the total net leverage ratio as defined in the 2018 Credit Agreement. The borrowings of the 2018 Amended Term Loan initially bear interest at an annual rate equal to the Eurocurrency Rate (i.e., the LIBOR rate) plus an Applicable Rate equal to 1.375%. The borrowings of the 2018 Amended Revolver initially bear interest at a rate equal to the LIBOR Daily Floating Rate plus an Applicable Rate equal to 1.375%. The Company is also required to pay a quarterly commitment fee calculated on the undrawn committed amount available under the 2018 Amended Revolver.

The Company is required to make scheduled principal payments under the 2018 Amended Term Loan in increasing amounts ranging from $9.375 million per three-month period commencing with the three-month period ending on December 27, 2019 to $28.125 million per three-month period commencing with the three-month period ending on December 29, 2022 and ending on September 29, 2023. The remaining balance of the 2018 Amended Term Loan after the scheduled principal payments, which is $1.2 billion as of September 28, 2019, and any amounts outstanding under the 2018 Amended Revolver are due at maturity. In addition, subject to the terms and conditions set forth in the 2018 Credit Agreement, the Company may be required to make certain mandatory prepayments from the net proceeds of specified types of asset sales (subject to certain reinvestment rights), debt issuances and insurance recoveries (subject to certain reinvestment rights). These mandatory prepayments are required to be applied by the Company, first, to the 2018 Amended Term Loan, second, to any outstanding amount under any Swing Line Loans, third, to the 2018 Amended Revolver, fourth to prepay any outstanding reimbursement obligations with respect to Letters of Credit and fifth, to cash collateralize any Letters of Credit. Subject to certain limitations, the Company may voluntarily prepay any of the 2018 Credit Facilities without premium or penalty.

The 2018 Credit Agreement contains affirmative and negative covenants customarily applicable to senior secured credit facilities, including covenants restricting the ability of the Company, subject to negotiated exceptions, to incur additional indebtedness and grant additional liens on its assets, engage in mergers or acquisitions or dispose of assets, enter into sale-leaseback transactions, pay dividends or make other distributions, voluntarily prepay other indebtedness, enter into transactions with affiliated persons, make investments, and change the nature of their businesses. In addition, the 2018 Credit Agreement requires the Company to maintain certain financial ratios. The 2018 Credit Agreement also contains customary representations and warranties and events of default, including payment defaults, breach of representations and warranties, covenant defaults, cross defaults and an event of default upon a change of control of the Company.

Borrowings are secured by first-priority liens on, and a first-priority security interest in, substantially all of the assets of the Company and its U.S. subsidiaries, with certain exceptions. For example, borrowings under the 2018 Credit Agreement are not secured by those accounts receivable that are transferred to the special purpose entity under the Company's Accounts Receivable Securitization program. The 2018 Credit Agreement contains total net leverage ratio and interest coverage ratio financial covenants measured as of the last day of each fiscal quarter. The total net leverage ratio covenant was 5.00:1.00 beginning on the Company's fiscal quarter ended December 29, 2018, and remains as such until it decreases to 4.50:1.00 for the quarter ending June 25, 2022. The interest coverage ratio covenant was 3.75:1.00 beginning on the Company's fiscal quarter ended December 29, 2018, and remains as such for each quarter thereafter. The total net leverage ratio is defined as the ratio of the Company's consolidated net debt as of the quarter end to its consolidated adjusted EBITDA (as defined in the 2018 Credit Agreement) for the four-fiscal quarter period ending on the measurement date. The interest coverage ratio is defined as the ratio of the Company's consolidated adjusted EBITDA for the prior four-fiscal quarter period ending on the measurement date to adjusted consolidated cash interest expense (as defined in the 2018 Credit Agreement) for the same measurement period. The Company was in compliance with these covenants as of September 28, 2019.

The Company evaluated the 2018 Credit Agreement for derivatives pursuant to ASC 815, *Derivatives and Hedging*, and identified embedded derivatives that required bifurcation as the features are not clearly and closely related to the host instrument. The embedded derivatives were a default provision, which could require additional interest payments, and a provision requiring contingent payments to compensate the lenders for changes in tax deductions. The Company determined that the fair value of these embedded derivatives was nominal as of September 28, 2019.

Pursuant to ASC 470, *Debt* (ASC 470), the accounting related to entering into the 2018 Credit Agreement and using the proceeds to pay off the 2017 Credit Agreement was evaluated on a creditor-by-creditor basis to determine whether each transaction should be accounted for as a modification or extinguishment. Certain creditors under the 2017 Credit Agreement did not participate in this refinancing transaction and ceased being creditors of the Company. As a result, the Company recorded a debt extinguishment loss of $0.8 million in the first quarter of fiscal 2019. For the remainder of the creditors, this transaction was accounted for as a modification because on a creditor-by-creditor basis the present value of the cash flows between the two debt instruments before and after the transaction was less than 10%. We accounted for the amendments pursuant to ASC 470, subtopic 50-40, and third-party costs of $0.8 million related to this transaction were recorded as interest expense and $1.9 million was recorded as a reduction to debt representing deferred issuance costs and debt discount for fees paid directly to the lenders.

2017 Credit Agreement

On October 3, 2017, the Company and certain of its domestic subsidiaries entered into an Amended and Restated Credit and Guaranty Agreement (the "2017 Credit Agreement") with Bank of America, N.A. in its capacity as Administrative Agent, Swing Line Lender and L/C Issuer, and certain other lenders from time to time party thereto. The 2017 Credit Agreement amended and restated the Company's prior credit and guaranty agreement, originally dated as of May 29, 2015 (the "Prior Credit Agreement"). The proceeds under the 2017 Credit Agreement of $1.8 billion were used, among other things, to pay off the Term Loan of $1.32 billion and the Revolver then outstanding under the Company's Prior Credit Agreement.

The credit facilities under the 2017 Credit Agreement consisted of:

- A $1.5 billion secured term loan to the Company with a maturity date of October 3, 2022; and
- A secured revolving credit facility under which the Company could borrow up to $1.5 billion, subject to certain sublimits, with a maturity date of October 3, 2022.

During the third quarter of fiscal 2018, the Company borrowed $250.0 million under the revolver to cash settle the conversions of its 2.00% Convertible Senior Notes due 2042. September 28, 2019

Interest expense, non-cash interest expense, the weighted average interest rate, and the interest rate at the end of period under the 2018 Credit Agreement, the 2017 Credit Agreement and the Prior Credit Agreement was as follows:

	Years Ended		
	September 28, 2019	September 29, 2018	September 30, 2017
Interest expense (1)	$ 67.0	$ 60.8	$ 42.3
Non-cash interest expense	$ 2.6	$ 2.6	$ 4.2
Weighted average interest rate	3.79%	3.23%	2.39%
Interest rate at end of period	3.43%	3.74%	2.73%

(1) Interest expense includes non-cash interest expense related to the amortization of the deferred issuance costs and accretion of the debt discount.

Pursuant to ASC 470, the accounting for entering into the 2017 Credit Agreement and using the proceeds to pay off the Prior Credit Agreement was evaluated on a creditor-by-creditor basis to determine whether each transaction should be accounted for as a modification or extinguishment. Certain creditors under the Prior Credit Agreement did not participate in this refinancing transaction and ceased being creditors of the Company. As a result, the Company recorded a debt extinguishment loss of $1.0 million in the first quarter of fiscal 2018. For the remainder of the creditors, this transaction was accounted for as a modification because on a creditor-by-creditor basis the present value of the cash flows between the two debt instruments before and after the transaction was less than 10%. Pursuant to ASC 470, subtopic 50-40, third-party costs of $1.7 million related to this transaction were recorded as interest expense and $4.9 million was recorded as a reduction to debt representing deferred issuance costs and debt discount for fees paid directly to the lenders.

Senior Notes

2025 Senior Notes

On October 10, 2017, the Company completed a private placement of $350 million aggregate principal amount of its 4.375% Senior Notes due 2025 (the "2025 Senior Notes") at an offering price of 100% of the aggregate principal amount of the 2025 Senior Notes. On January 19, 2018, the Company completed a private placement and allocated an additional $600 million in aggregate principal amount to its 2025 Senior Notes pursuant to a supplement to the indenture governing the Company's existing 2025 Senior Notes at an offering price of 100% of the aggregate principal amount. As a result, the total aggregate principal balance of 2025 Senior Notes is $950 million. The 2025 Senior Notes are general senior unsecured obligations of the Company and are guaranteed on a senior unsecured basis by certain domestic subsidiaries. The 2025 Senior Notes mature on October 15, 2025 and bear interest at the rate of 4.375% per year, payable semi-annually on April 15 and October 15 of each year, commencing on April 15, 2018.

The Company may redeem the 2025 Senior Notes at any time prior to October 15, 2020 at a price equal to 100% of the aggregate principal amount so redeemed, plus accrued and unpaid interest, if any, to the redemption date and a make-whole premium set forth in the indenture. The Company may also redeem up to 35% of the aggregate principal amount of the 2025 Senior Notes with the net cash proceeds of certain equity offerings at any time and from time to time before October 15, 2020, at a redemption price equal to 104.375% of the aggregate principal amount so redeemed, plus accrued and unpaid interest, if any, to the redemption date. The Company also has the option to redeem the 2025 Senior Notes on or after: October 15, 2020 through October 14, 2021 at 102.188% of par; October 15, 2021 through October 14, 2022 at 101.094% of par; and October 15, 2022 and thereafter at 100% of par. In addition, if the Company undergoes a change of control coupled with a decline in ratings, as provided in the indenture, the Company will be required to make an offer to purchase each holder’s 2025 Senior Notes at a price equal to 101% of their principal amount, plus accrued and unpaid interest, if any, to the repurchase date.

The Company evaluated the 2025 Senior Notes for derivatives pursuant to ASC 815 and did not identify any embedded derivatives that require bifurcation. All features were deemed to be clearly and closely related to the host instrument.

2028 Senior Notes

On January 19, 2018, the Company completed a private placement of $1.0 billion aggregate principal amount of senior notes and allocated $400 million in aggregate principal amount to its 4.625% Senior Notes due 2028 (the "2028 Senior Notes") at an offering price of 100% of the aggregate principal amount of the 2028 Senior Notes. The 2028 Senior Notes are general senior unsecured obligations of the Company and are guaranteed on a senior unsecured basis by certain domestic subsidiaries. The 2028 Senior Notes mature on February 1, 2028 and bear interest at the rate of 4.625% per year, payable semi-annually on February 1 and August 1 of each year, commencing on August 1, 2018.

The Company may redeem the 2028 Senior Notes at any time prior to February 1, 2023 at a price equal to 100% of the aggregate principal amount so redeemed, plus accrued and unpaid interest, if any, to the redemption date and a make-whole premium set forth in the indenture. The Company may also redeem up to 35% of the aggregate principal amount of the 2028 Senior Notes with the net cash proceeds of certain equity offerings at any time and from time to time before February 1, 2021, at a redemption price equal to 104.625% of the aggregate principal amount so redeemed, plus accrued and unpaid interest, if any, to the redemption date. The Company also has the option to redeem the 2028 Senior Notes on or after: February 1, 2023 through February 1, 2024 at 102.312% of par; February 1, 2024 through February 1, 2025 at 101.541% of par; February 1, 2025 through February 1, 2026 at 100.770% of par; and February 1, 2026 and thereafter at 100% of par. In addition, if the Company undergoes a change of control coupled with a decline in ratings, as provided in the indenture, the Company will be required to make an offer to purchase each holder's 2028 Senior Notes at a price equal to 101% of their principal amount, plus accrued and unpaid interest, if any, to the repurchase date.

The Company evaluated the 2028 Senior Notes for derivatives pursuant to ASC 815 and did not identify any embedded derivatives that require bifurcation. All features were deemed to be clearly and closely related to the host instrument.

Interest expense for the 2028 Senior Notes, 2025 Senior Notes and 2022 Senior Notes is as follows:

		Years Ended					
		September 28, 2019		September 29, 2018		September 30, 2017	
	Interest Rate	Interest Expense (1)	Non-Cash Interest Expense	Interest Expense (1)	Non-Cash Interest Expense	Interest Expense (1)	Non-Cash Interest Expense
2028 Senior Notes	4.625%	$ 19.2	$ 0.7	$ 13.3	$ 0.5	$ —	$ —
2025 Senior Notes	4.375%	43.5	2.1	34.7	1.6	—	—
2022 Senior Notes	5.250%	—	—	21.2	1.5	57.3	3.9
Total		$ 62.7	$ 2.8	$ 69.2	$ 3.6	$ 57.3	$ 3.9

(1) Interest expense includes non-cash interest expense related to the amortization of the deferred issuance costs and accretion of the debt discount.

2022 Senior Notes

The Company had 5.250% Senior Notes due 2022 (the "2022 Senior Notes") outstanding and bore interest at the rate of 5.250% per year, payable semi-annually on January 15 and July 15 of each year. The Company used the net proceeds of the 2025 Senior Notes and the 2028 Senior Notes offering in January 2018 to redeem in full the 2022 Senior Notes in the aggregate principal amount of $1.0 billion on February 15, 2018 at an aggregate redemption price of $1.04 billion, including a make-whole provision payment $37.7 million. Since the Company planned to use the proceeds from the 2025 Senior Notes and the 2028 Senior Notes offering to redeem the 2022 Senior Notes, the Company evaluated the accounting for this transaction under ASC 470 to determine modification versus extinguishment accounting on a creditor-by-creditor basis. Certain 2022 Senior Note holders either did not participate in this refinancing transaction or reduced their holdings and these transactions were accounted for as extinguishments. As a result, the Company recorded a debt extinguishment loss in the second quarter of fiscal 2018 of $44.9 million, which comprised pro-rata amounts of the make-whole provision premium payment, debt discount and debt issuance costs. For the remaining 2022 Senior Notes holders who participated in the refinancing, these transactions were accounted for as modifications because on a creditor-by-creditor basis the present value of the cash flows between the debt instruments before and after the transaction was less than 10%. The Company recorded a portion of the transaction expenses of $2.6 million to interest expense pursuant to ASC 470, subtopic 50-40. The remaining debt issuance costs of $1.5 million and debt discount of $1.5 million related to the modified debt were allocated between the 2025 Senior Notes and 2028 Senior Notes on a pro-rata basis, and will be amortized over the life of the debt using the effective interest method.

Convertible Notes

As of September 28, 2019 and September 29, 2018, the Company had no Convertible Notes outstanding. The following describes the Convertible Note transactions during fiscal 2018 and 2017.

On December 10, 2007, the Company issued and sold $1.725 billion, at par, of 2.00% Convertible Senior Notes due December 15, 2037 (“2007 Notes”). On November 18, 2010, the Company entered into separate, privately-negotiated exchange agreements under which it retired $450.0 million in aggregate principal of its 2007 Notes for $450.0 million in aggregate principal of new 2.00% Convertible Exchange Senior Notes due December 15, 2037 (“2010 Notes”). On February 29, 2012, the Company entered into separate, privately-negotiated exchange agreements under which it retired $500.0 million in aggregate principal of the 2007 Notes for $500.0 million in aggregate principal of new 2.00% Convertible Senior Notes due March 1, 2042 (“2012 Notes”). On February 14, 2013, the Company entered into separate, privately-negotiated exchange agreements under which it retired $370.0 million in aggregate principal of the 2007 Notes for $370.0 million in aggregate principal of new 2.00% Convertible Senior Notes due December 15, 2043 (“2013 Notes”). The remaining 2007 Notes were redeemed in fiscal 2014.

On November 9, 2016, the Company announced that pursuant to the terms of the indenture for the 2010 Notes, holders of the 2010 Notes had the option of requiring the Company to repurchase their 2010 Notes on December 16, 2016 at a repurchase price payable in cash equal to 100% of the original principal amount of the 2010 Notes. None of the 2010 Notes were surrendered for repurchase pursuant to the option. In addition, the Company also announced on November 9, 2016 that, pursuant to the terms of the indenture, it had elected to redeem, on December 19, 2016, all of the then outstanding 2010 Notes at a redemption price payable in cash equal to 100% of the accreted principal amount of the 2010 Notes. Holders of the 2010 Notes also had a right to convert their 2010 Notes. During the first quarter of fiscal 2017, all of the outstanding 2010 Notes were either converted or surrendered for conversion in aggregate principal of $12.3 million, which was paid out over the first and second quarters of fiscal 2017. The payouts included an additional $8.7 million of premium payments due to the Company's stock price exceeding the conversion price.

On January 29, 2018, the Company announced that pursuant to the terms of the indenture for the 2012 Notes, holders of the 2012 Notes had the option of requiring the Company to repurchase their 2012 Notes on March 1, 2018 at a repurchase price payable in cash equal to 100% of the accreted principal amount of the 2012 Notes, plus accrued and unpaid interest. The Company also announced on January 29, 2018 that, it had elected to redeem, on March 6, 2018, all of the then outstanding 2012 Notes at a redemption price payable in cash equal to 100% of the accreted principal amount of the 2012 Notes, plus accrued and unpaid interest. Holders also had the right to convert their 2012 Notes. During the second quarter of fiscal 2018, 2012 Notes in aggregate original principal amount of $200.5 million were surrendered for conversion and the Company cash settled these conversions for $243.3 million during April 2018. As a result, on a gross basis, $42.8 million of the consideration paid was allocated to the reacquisition of the equity component of the original instrument, which was recorded net of deferred taxes of $12.0 million within additional paid-in-capital. The remaining $5.5 million in original principal amount of the 2012 Notes was redeemed by the Company on March 6, 2018.

On December 15, 2017, pursuant to the provisions of the indenture governing the Company's 2013 Notes, the Company redeemed or repurchased an aggregate of $201.7 million in original principal amount of the 2013 Notes then outstanding for an aggregate repurchase price of $244.1 million, representing the then accreted principal amount of the 2013 Notes. The remaining $0.3 million in original principal amount of the 2013 Notes were converted, and the Company settled these conversions in cash in the second quarter of fiscal 2018.

On various dates during the first quarter of fiscal 2018, the Company entered into privately negotiated repurchase transactions and extinguished $39.3 million principal amount of its 2012 Notes for total payments of $52.8 million. This amount includes the conversion premium resulting from the Company's stock price on the date of the transactions being in excess of the conversion prices of $31.175. As a result, on a gross basis, $13.4 million of the consideration paid was allocated to the reacquisition of the equity component of the original instrument, which was recorded net of deferred taxes of $3.8 million within additional paid-in-capital.

On various dates during the fourth quarter of fiscal 2017, the Company entered into privately negotiated repurchase transactions and extinguished $17.9 million and $68.0 million principal amount of the 2012 Notes and 2013 Notes, respectively, for total payments of $23.1 million and $82.9 million, respectively. These amounts include the conversion premium resulting from the Company's stock price on the date of the transactions being in excess of the conversion prices of $31.175 and $38.59, respectively, and on the 2013 Notes accreted principal of $13.3 million. Under ASC 470, these transactions were accounted for as an extinguishment and derecognition of the 2012 Notes and 2013 Notes and resulted in an aggregate debt loss extinguishment of $0.6 million.

On various dates during the third quarter of fiscal 2017, the Company entered into privately negotiated repurchase transactions and extinguished $100.0 million principal amount of each of its 2012 Notes and 2013 Notes, for total payments of $269.1 million. This amount includes the conversion premium resulting from the Company's stock price on the date of the transactions being in excess of the conversion prices of $31.175 and $38.59, respectively, and on the 2013 Notes accreted principal of $18.5 million. Under ASC 470, these transactions were accounted for as an extinguishment and derecognition of the 2012 Notes and 2013 Notes and resulted in an aggregate debt loss extinguishment of $2.6 million.

The Company accounted for the 2012 Notes and 2013 Notes extinguishments in fiscal 2017 under the derecognition provisions of subtopic ASC 470-20-40, which requires the allocations of the fair value of the consideration transferred and transaction costs incurred to the extinguishment of the liability component and the reacquisition of the equity component. In connection with these transactions, the Company recorded a debt extinguishment loss on the 2012 Notes of $0.9 million and a debt extinguishment loss on the 2013 Notes of $2.3 million, for a total debt extinguishment loss of $3.2 million in fiscal 2017. The loss on the debt was calculated as the difference between the fair value of the liability component immediately before the respective transactions and their related carrying values, which includes any debt discount and deferred issuance costs. The fair value of the liability component was calculated using a discounted cash flow technique and incorporates an estimated rate for non-convertible debt (with similar features as the 2012 and 2013 Notes excluding the conversion feature) issued by a company with a credit rating similar to the Company. In addition, under this accounting standard, a portion of the fair value of the consideration transferred is allocated to the reacquisition of the equity component, which is the difference between the fair value of the consideration transferred and the fair value of the liability component immediately before the extinguishment. As a result, on a gross basis, $58.6 million related to the 2012 and 2013 Notes was allocated to the reacquisition of the equity component of the original instrument, which was recorded net of deferred taxes of $31.1 million within additional paid-in-capital.

Interest expense under the Convertible Notes is as follows:

	Years Ended	
	September 29, 2018	September 30, 2017
Amortization of debt discount	$ 3.5	$ 17.9
Amortization of deferred financing costs	0.2	0.8
Principal accretion	1.6	15.6
Non-cash interest expense	5.3	34.3
2.00% accrued interest (cash)	1.8	6.7
	$ 7.1	$ 41.0

Accounts Receivable Securitization Program

On April 25, 2016, the Company entered into a one-year $200.0 million accounts receivable securitization program (the "Securitization Program") with several of its wholly owned subsidiaries and certain financial institutions. Under the terms of the Securitization Program, the Company and certain of its wholly-owned subsidiaries sell their respective customer receivables to a bankruptcy remote special purpose entity, which is also a wholly-owned subsidiary of the Company. In addition, the Company also contributed a portion of its customer receivables to the special purpose entity in connection with its establishment. The Company retains servicing responsibility. The special purpose entity, as borrower, and the Company, as servicer, entered into a Credit and Security Agreement with several lenders pursuant to which the special purpose entity may borrow up to $200.0 million from the lenders, with the loans secured by the receivables. The amount that the special purpose entity may borrow at a given point in time is determined based on the amount of qualifying receivables that are present in the special purpose entity at such point in time. The entire amount available was borrowed in the third quarter of fiscal 2016. Borrowings outstanding under the Securitization Program bear interest at LIBOR plus the applicable margin of 0.7% and are included as a component of current liabilities in the Company's consolidated balance sheet, while the accounts receivable securing these obligations remain as a component of net receivables in the Company's consolidated balance sheet. The Company and the special purpose entity are operated and maintained as separate legal entities. The assets of the special purpose entity secure the amounts borrowed and cannot be used to pay other debts or liabilities of the Company.

Subsequently, in fiscal 2017 and 2018, the Company amended the agreement to extend it for one year periods respectively and increase the borrowing capacity. Effective April 18, 2019, the Company entered into an amendment to extend the Securitization Program an additional year to April 17, 2020. Under the amendment, the maximum borrowing amount increased from $225.0 million to $250.0 million. As of September 28, 2019, there was $234.0 million outstanding under this program.

Borrowings under the Securitization Program for fiscal 2019 had a weighted-average interest rate of 3.08%. Interest expense under the Securitization Program was $7.1 million, $5.4 million and $3.3 million for fiscal 2019, 2018 and 2017, respectively. The interest rate on the amounts outstanding at September 28, 2019 was 2.76%.

The Credit and Security Agreement contains customary representations and warranties and events of default, including payment defaults, breach of representations and warranties, covenant defaults, and an event of default upon a change of control of the Company. In addition, it contains financial covenants consistent with that of the Credit Agreement. As of September 28, 2019, the Company was in compliance with the Credit and Security Agreement covenants.

8. Fair Value Measurements

The Company applies the provisions of ASC 820 for its financial assets and liabilities that are re-measured and reported at fair value each reporting period and its nonfinancial assets and liabilities that are re-measured and reported at fair value on a non-recurring basis. Fair value is 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. When determining fair value, the Company considers the principal or most advantageous market in which it would transact and considers assumptions that market participants would use when pricing the asset or liability.

Fair Value Hierarchy

ASC 820 establishes a three-level valuation hierarchy for disclosure of fair value measurements. Financial assets and liabilities are categorized within the valuation hierarchy based upon the lowest level of input that is significant to the measurement of fair value. The three levels of the hierarchy are defined as follows:

- Level 1—Inputs to the valuation methodology are quoted market prices for identical assets or liabilities.
- Level 2—Inputs to the valuation methodology are other observable inputs, including quoted market prices for similar assets or liabilities and market-corroborated inputs.
- Level 3—Inputs to the valuation methodology are unobservable inputs based on management’s best estimate of inputs market participants would use in pricing the asset or liability at the measurement date, including assumptions about risk.

Assets/Liabilities Measured and Recorded at Fair Value on a Recurring Basis

The Company has investments in derivative instruments comprised of interest rate caps, an interest rate swap, forward foreign currency contracts and foreign currency option contracts, which are valued using analyses obtained from independent third party valuation specialists based on market observable inputs, representing Level 2 assets. The fair values of these derivative contracts represent the estimated amounts the Company would receive or pay to terminate the contracts. Refer to Note 2 for further discussion and information on these derivative contracts. In addition, the Company has contingent

consideration liabilities related to two of its acquisitions that are recorded at fair value and were based on Level 3 inputs (see Note 4).

Assets and liabilities measured and recorded at fair value on a recurring basis consisted of the following:

		Fair Value Measurements at September 28, 2019		
	Carrying Value	Quoted Prices in Active Market for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Interest rate caps - derivative	$ 0.1	$ —	$ 0.1	$ —
Interest rate swaps - derivative	4.7	—	4.7	—
Foreign currency option contracts	2.0	—	2.0	—
Forward foreign currency contracts	0.9	—	0.9	—
Total	$ 7.7	$ —	$ 7.7	$ —
Liabilities:				
Contingent consideration	$ 9.1	$ —	$ —	$ 9.1
Forward foreign currency contracts	0.1	—	0.1	—
Total	$ 9.2	$ —	$ 0.1	$ 9.1

		Fair Value Measurements at September 29, 2018		
	Carrying Value	Quoted Prices in Active Market for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Interest rate caps - derivative	$ 7.7	$ —	$ 7.7	$ —
Forward foreign currency contracts	3.2	—	3.2	—
Total	$ 10.9	$ —	$ 10.9	$ —
Liabilities:				
Contingent consideration	$ 7.8	—	—	$ 7.8
Forward foreign currency contracts	0.2	—	0.2	—
Total	$ 8.0	$ —	$ 0.2	$ 7.8

Assets Measured and Recorded at Fair Value on a Nonrecurring Basis

The Company remeasures the fair value of certain assets and liabilities upon the occurrence of certain events. Such assets are comprised of equity investments and long-lived assets, including property, plant and equipment, intangible assets and goodwill. There were no such remeasurements to equity investments in fiscal 2019, 2018 and 2017. Refer to Note 7 for disclosure of the nonrecurring fair value measurement related to the debt extinguishment losses recorded in fiscal 2019, 2018 and 2017.

Disclosure of Fair Value of Financial Instruments

The Company's financial instruments mainly consist of cash and cash equivalents, accounts receivable, equity investments, interest rate caps, an interest rate swap, forward foreign currency contracts, foreign currency option contracts, insurance contracts, accounts payable and debt obligations. The carrying amounts of the Company's cash and cash equivalents, accounts receivable and accounts payable approximate their fair value due to the short-term nature of these instruments. The Company's interest rate caps, interest rate swap, forward foreign currency contracts and foreign currency option contracts are recorded at fair value. The carrying amount of the insurance contracts are recorded at the cash surrender value, as required by U.S. GAAP, which approximates fair value. The Company believes the carrying amounts of its cost-method equity investments approximate fair value, and the carrying value of its equity method investment differs from fair value due to the accounting requirement to adjust the carrying value for the Company's proportionate share of the investee's net loss.

Amounts outstanding under the Company's 2018 Credit Agreement and Securitization Program of $1.50 billion and $234.0 million aggregate principal, respectively, as of September 28, 2019 are subject to variable rates of interest based on current market rates, and as such, the Company believes the carrying amount of these obligations approximates fair value. The Company's 2025 Senior Notes and 2028 Senior Notes had fair values of approximately $975.5 million and $417.0 million, respectively, as of September 28, 2019 based on their trading price, representing a Level 1 measurement.

9. Income Taxes

The Company's (loss) income before income taxes consisted of the following:

	Years ended		
	September 28, 2019	September 29, 2018	September 30, 2017
Domestic	$ (174.3)	$ (581.9)	$ 1,105.8
Foreign	(83.4)	163.3	124.7
	$ (257.7)	$ (418.6)	$ 1,230.5

The (benefit) provision for income taxes contained the following components:

	Years ended		
	September 28, 2019	September 29, 2018	September 30, 2017
Federal:			
Current	$ 142.9	$ 137.1	$ 701.1
Deferred	(189.9)	(461.9)	(276.9)
	(47.0)	(324.8)	424.2
State:			
Current	22.1	11.0	53.1
Deferred	(41.0)	(11.3)	(15.9)
	(18.9)	(0.3)	37.2
Foreign:			
Current	16.5	21.9	13.9
Deferred	(4.7)	(4.1)	(0.3)
	11.8	17.8	13.6
	$ (54.1)	$ (307.3)	$ 475.0

The income tax (benefit) provision differed from the tax (benefit) provision computed at the U.S. federal statutory rate due to the following:

	Years ended		
	September 28, 2019	September 29, 2018	September 30, 2017
Income tax (benefit) provision at federal statutory rate	(21.0)%	(24.5)%	35.0 %
Increase (decrease) in tax resulting from:			
Domestic production activities deduction	—	(3.1)	(1.7)
State income taxes, net of federal benefit	(0.7)	0.7	2.3
U.S. tax on foreign earnings	(2.1)	0.1	—
Internal restructuring	(3.8)	—	—
Non-deductible goodwill	—	39.4	9.2
Tax credits	(3.3)	(1.9)	(0.8)
Tax reform	2.0	(82.7)	—
Unrecognized tax benefits	(0.1)	1.8	(1.4)
Compensation	0.8	0.3	(0.5)
Foreign rate differential	(5.4)	(5.2)	(2.6)
Change in deferred tax rate	—	1.2	0.2
Change in valuation allowance	9.5	(0.5)	(1.5)
Other	3.1	1.0	0.4
	(21.0)%	(73.4)%	38.6 %

The Company's effective tax rate in fiscal 2019, applied to an overall pre-tax loss resulting in a benefit, was equal to the statutory tax rate primarily due to the offsetting impacts of a discrete benefit related to an internal restructuring, earnings in jurisdictions subject to lower tax rates, reserves for uncertain tax positions and releases resulting from statute of limitations expirations and favorable audit settlements, a valuation allowance resulting from the Medical Aesthetics impairment charge, and finalizing the impact of the enactment of the Tax Cuts and Jobs Act (the "Act") in the first quarter of fiscal 2019. As of December 29, 2018, the Company completed its accounting for the tax effects of enactment of the Act, recording a benefit reduction of $5.0 million in the three months ended December 29, 2018. The Company recognized a final net benefit amount of $341.2 million related to the Act, which was included as a component of income tax expense.

The Company's effective tax rate in fiscal 2018, applied to an overall pre-tax loss resulting in a benefit, differed from the statutory rate primarily due to the favorable impact of the Act, which required the Company to remeasure its U.S. net deferred tax liabilities at a lower rate, partially offset by the unfavorable impact of the Medical Aesthetics goodwill impairment charge, substantially all of which was non-deductible. The net result of implementing the Act was a benefit of $346.2 million

representing the Company's best estimate based on its interpretation of the Act as of September 29, 2018. As of September 29, 2018, the Company was still accumulating data to finalize the underlying calculations, and the U.S. Treasury was expected to issue further guidance on the application of certain provisions of the Act.

The Company's effective tax rate in fiscal 2017 differed from the statutory rate primarily due to non-deductible goodwill related to the sale of the Blood Screening business, partially offset by the release of valuation allowances for capital losses utilized against the capital gain generated on the sale of the Blood Screening business, earnings in jurisdictions subject to lower tax rates, the domestic production activities deduction benefit, the release of reserves for uncertain tax positions due to statutes of limitations expirations and audit settlements, stock compensation benefits, and federal and state tax credits.

The Company uses the asset and liability method to account for income taxes in accordance with ASC 740, *Income Taxes*. Under this method, deferred income taxes are recognized for the future tax consequences of differences between the tax and financial accounting bases of assets and liabilities at each reporting period. Deferred income taxes are based on enacted tax laws and statutory tax rates applicable to the period in which these differences are expected to affect taxable income. A valuation allowance is established when necessary to reduce deferred tax assets to the amounts expected to be realized.

The Company's significant deferred tax assets and liabilities were as follows:

	September 28, 2019	September 29, 2018
Deferred tax assets		
Net operating loss carryforwards	$ 34.5	$ 30.9
Capital losses	6.4	6.5
Non-deductible accruals	24.7	30.7
Non-deductible reserves	22.7	22.1
UK intangible assets	25.4	—
Stock-based compensation	20.9	24.0
Research and other credits	14.8	13.3
Nonqualified deferred compensation plan	12.9	12.3
Other temporary differences	17.8	11.5
	180.1	151.3
Less: valuation allowance	(60.7)	(25.5)
	$ 119.4	$ 125.8
Deferred tax liabilities		
Depreciation and amortization	$ (373.0)	$ (606.6)
Debt discounts and deferrals	(4.5)	(4.5)
	$ (377.5)	$ (611.1)
	$ (258.1)	$ (485.3)

Under ASC 740, the Company can only recognize the future benefit of deferred tax assets to the extent that it is "more likely than not" that these assets will be realized. After considering all available positive and negative evidence, the Company established a valuation allowance against specifically identified deferred tax assets because it is more-likely-than-not that these assets will not be realized. In making this determination, the Company considered numerous factors including historical profitability, estimated future taxable income and the character of such income. The valuation allowance increased $35.2 million in fiscal 2019 from fiscal 2018 primarily due to the impact of the Medical Aesthetics impairment charge and tax reform partially offset by attribute expiration and valuation allowance releases.

At September 28, 2019, the Company had $29.3 million, $31.1 million, and $37.6 million in gross federal, state, and foreign net operating losses, respectively, and $5.0 million, $10.4 million, and $1.2 million in federal, state, and foreign credit carryforwards, respectively. These losses and credits expire between 2020 and 2039, except for $36.8 million in losses and $3.3 million in credits that have unlimited carryforward periods. The federal, state, and foreign net operating losses exclude $4.5 million, $74.6 million, and $46.6 million, respectively, in net operating losses, that the Company expects will expire unutilized.

As of September 28, 2019, the Company had $101.6 million in gross unrecognized tax benefits excluding interest, of which $87.3 million, if recognized, would reduce the Company's effective tax rate. As of September 29, 2018, the Company had $89.5 million in gross unrecognized tax benefits excluding interest, of which $79.0 million, if recognized, would have reduced the Company's effective tax rate. The $12.1 million increase in gross unrecognized tax benefits from fiscal 2018

primarily related to the impact of the Medical Aesthetics impairment charge and other current year positions, partially offset by audit settlements and the expiration of statutes of limitations. In the next twelve months it is reasonably possible that the Company will reduce its gross unrecognized tax benefits by up to $13.4 million due to expiring statutes of limitations.

The Company's unrecognized income tax benefits activity for fiscal 2019 and 2018 was as follows:

	2019	2018
Balance at beginning of fiscal year	$ 89.5	$ 90.3
Tax positions related to current year:		
Additions	22.7	9.0
Reductions	—	—
Tax positions related to prior years:		
Additions related to change in estimate	—	6.6
Reductions	(4.8)	(15.4)
Payments	—	—
Lapses in statutes of limitations	(5.8)	(1.4)
Acquired tax positions:		
Additions related to reserves acquired from acquisitions	—	0.4
Balance as of the end of the fiscal year	$ 101.6	$ 89.5

The Company's policy is to include accrued interest and penalties related to unrecognized tax benefits and income tax liabilities, when applicable, in income tax expense. As of September 28, 2019, and September 29, 2018, gross accrued interest was $11.1 million and $9.0 million, respectively. As of September 28, 2019, no significant penalties have been accrued.

The Company and its subsidiaries are subject to various federal, state, and foreign income taxes. The Company's U.S. Federal income tax returns are generally no longer subject to examination prior to tax year 2016; however, one federal income tax examination is ongoing for Cynosure Inc. and subsidiaries (fiscal years 2015-2017). State income tax returns are generally no longer subject to examination prior to fiscal year 2015. The Company is undergoing a tax examination in Massachusetts (fiscal years 2014-2015). The Company is undergoing a tax examination in the United Kingdom (fiscal year 2016). During fiscal 2017, the Internal Revenue Service completed its audit for fiscal years 2013 and 2014. The Company made a cash payment of $1.7 million and recorded an income tax benefit of $10.9 million, including interest, related to the reversal of unrecognized tax benefits.

Transition Tax

The Act significantly revised the U.S. system of corporate taxation by, among other things, lowering the U.S. corporate income tax rate from 35% to 21%, implementing a new international tax system, broadening the tax base and imposing a tax on deemed repatriated earnings of foreign subsidiaries.

On December 22, 2017, the SEC issued Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act ("SAB 118") directing SEC registrants to consider the impact of the U.S. legislation as "provisional" when it does not have the necessary information available, prepared or analyzed (including computations) in reasonable detail to complete its accounting for the change in tax law. In accordance with SAB 118, during fiscal 2018 the Company recorded its best estimates based on its interpretation of the U.S. legislation while it continued to accumulate data to finalize the underlying calculations, and the U.S. Treasury was expected to issue further guidance on the application of certain provisions of the Act.

As of December 29, 2018, the Company completed its accounting for the tax effects of enactment of the Act. As described below, the Company completed its calculation of the effects on its existing deferred tax balances and the one-time transition tax, and recognized a final net benefit amount of $341.2 million, which is included as a component of income tax expense. As of September 29, 2018, the Company had not completed its accounting for the tax effects of enactment of the Act; however, the Company had made a reasonable estimate of the effects on its existing deferred tax balances and the onetime transition tax, and recognized a provisional net benefit of $346.2 million in fiscal 2018. The benefit reduction of $5.0 million recorded in the three months ended December 29, 2018 primarily related to credit utilization limitations and executive compensation deduction disallowances resulting from the completion of computations reflecting the effects of clarifying guidance issued by the U.S. Treasury during the quarter.

Deferred tax assets and liabilities: The Company recorded a final net reduction of its deferred tax liabilities of $341.2 million related to the Act, as compared to the Company's provisional net reduction of $346.4 million as of September 29,

2018. The Act resulted in a tax benefit relating to the re-measurement of certain U.S. deferred tax assets and liabilities based on the rates at which they are expected to reverse in the future, which is generally 21%, partially offset by additional tax expense pertaining to credit utilization limitations and executive compensation deduction disallowances.

Foreign tax effects: The one-time transition tax is based on the Company's total post-1986 earnings and profits (E&P) which were previously deferred from U.S. income taxes. The Company finalized its calculation of the total post-1986 foreign E&P for these foreign subsidiaries resulting in no cumulative net income tax expense related to the one-time transition tax. No material additional income taxes have been provided for any remaining undistributed foreign earnings not subject to the transition tax and additional outside basis differences in these entities as it is not practicable to estimate the additional taxes that may be payable upon repatriation. The Company intends to indefinitely reinvest its foreign earnings.

The Act subjects a U.S. shareholder to tax on global intangible low-taxed income ("GILTI") earned by certain foreign subsidiaries. The FASB Staff Q&A, Topic 740, No. 5, Accounting for Global Intangible Low-Taxed Income, states that an entity can make an accounting policy election to either recognize deferred taxes for temporary basis differences expected to reverse as GILTI in future years or to provide for the tax expense related to GILTI in the year the tax is incurred as a period expense only. The Company will account for GILTI in the year the tax is incurred as a period cost.

Other Tax Accounting Pronouncements

On October 24, 2016, the FASB issued ASU 2016-16, which removes the prohibition in ASC 740 against the immediate recognition of the current and deferred income tax effects of intra-entity transfers of assets other than inventory. Under ASU 2016-16, the selling (transferring) entity is required to recognize a current tax expense or benefit upon transfer of the asset. Similarly, the purchasing (receiving) entity is required to recognize a deferred tax asset or deferred tax liability, as well as the related deferred tax benefit or expense, upon receipt of the asset.

This ASU is effective for annual periods beginning after December 15, 2017, and interim periods within those annual periods. The Company adopted ASU 2016-16 in the first quarter of fiscal 2019 on a modified retrospective basis through a cumulative-effect adjustment to decrease the opening balance of accumulated deficit within stockholders' equity as of September 30, 2018, the first day of fiscal 2019. This change in accounting principle resulted in an increase in deferred tax assets of $2.9 million, a decrease in accumulated deficit of $2.5 million, and a decrease in prepaid taxes of $0.4 million as of the beginning of the Company's fiscal year beginning September 30, 2018.

The Company was required to account for the internal restructuring discussed above under ASU 2016-16 and recorded a $27.8 million increase to income tax expense and income tax liabilities and a decrease of $37.7 million to deferred tax expense and net deferred tax liabilities for the fiscal year ended September 28, 2019. The net result was a reduction to net loss of $9.9 million, or $0.04 to diluted net loss per share.

Non-Income Tax Matters

The Company is subject to tax examinations for value added, sales-based, payroll and other non-income tax items. A number of these examinations are ongoing in various jurisdictions. The Company takes certain non-income tax positions in the jurisdictions in which it operates pursuant to ASC 450. In the normal course of business, the Company's positions and conclusions related to its non-income tax positions could be challenged, resulting in assessments by governmental authorities. While the Company believes estimated losses previously recorded are reasonable, certain audits are still ongoing and additional charges could be recorded in the future.

In fiscal 2017, based on developments in an ongoing state tax audit, the Company determined that it was probable it had incurred a loss related to a non-income tax issue. The Company estimated the most likely amount of loss to be $35.6 million for all open years and recorded this charge to general and administrative expenses in fiscal 2017. While the Company believes its estimate is reasonable and appropriate, this matter is still ongoing and additional charges could be recorded in the future. In January 2018, the Company settled an ongoing state tax audit for approximately $11.0 million, resulting in a reversal of $4.0 million recorded to general and administrative expenses in the first quarter of fiscal 2018.

During fiscal 2017, the Internal Revenue Service approved and paid refund claims submitted in connection with Medical Device Excise Tax filings for the January 1, 2013 through December 31, 2015 periods. As a result, the Company recorded a $12.4 million gain in fiscal 2017 within general and administrative expenses.

10. Stockholders' Equity and Stock-Based Compensation

Stock Repurchase Program

On June 21, 2016, the Company's Board of Directors authorized the repurchase of up to an additional $500.0 million of the Company's outstanding common stock over the next five years. During fiscal 2017, the Company repurchased 5.3 million shares of its common stock for total consideration of $200.1 million, and in fiscal 2018, the Company repurchased an additional 5.0 million shares of its common stock for a total consideration of $187.3 million under this authorization.

On June 13, 2018, the Board of Directors authorized another share repurchase plan to repurchase up to $500.0 million of the Company's outstanding common stock. This share repurchase plan, which replaced the prior plan, was effective August 1, 2018 and expires on June 13, 2023. Under this authorization, during the fourth quarter of 2018, the Company repurchased 2.3 million shares of its common stock for a total consideration of $88.5 million. During fiscal 2019, the Company repurchased 4.8 million shares of its common stock for total consideration of $200.1 million. As of September 28, 2019, $211.5 million was available under this authorization.

On November 19, 2019, the Board of Directors authorized the Company to repurchase up to $205 million of its outstanding shares, to be in addition to the prior authorization. Pursuant to this authorization, the Company entered into a definitive agreement to conduct a $205 million accelerated share repurchase. On November 25, 2019, the Company initially repurchased 3.3 million shares pursuant to this arrangement, subject to adjustment on the settlement date pursuant to customary terms.

Stock-Based Compensation

Equity Compensation Plans

The Company has one share-based compensation plan pursuant to which awards are currently being issued—the 2008 amended and restated Equity Incentive Plan (“2008 Equity Plan”). The purpose of the 2008 Equity Plan is to provide stock options, restricted stock units and other equity interests in the Company to employees, officers, directors, consultants and advisors of the Company and any other person who is determined by the Board of Directors to have made (or is expected to make) contributions to the Company. The 2008 Equity Plan is administered by the Board of Directors of the Company, and a total of 31.5 million shares were reserved for issuance under this plan. As of September 28, 2019, the Company had 7.0 million shares available for future grant under the 2008 Equity Plan.

The following presents stock-based compensation expense in the Company’s Consolidated Statements of Operations in fiscal 2019, 2018 and 2017:

	2019	2018	2017
Cost of revenues	$ 7.1	$ 8.3	$ 10.7
Research and development	9.2	9.5	11.2
Selling and marketing	10.2	10.3	11.9
General and administrative	35.5	35.6	34.4
Restructuring	—	1.3	—
	$ 62.0	$ 65.0	$ 68.2

Grant-Date Fair Value

The Company uses a binomial model to determine the fair value of its stock options. The Company considers a number of factors to determine the fair value of options including the assistance of an outside valuation adviser. Information pertaining to stock options granted during fiscal 2019, 2018 and 2017 and related assumptions are noted in the following table:

	Years ended		
	September 28, 2019	September 29, 2018	September 30, 2017
Options granted (in millions)	1.0	1.7	1.0
Weighted-average exercise price	$ 41.36	$ 40.76	$ 38.07
Weighted-average grant date fair value	$ 13.54	$ 12.98	$ 12.33
Assumptions:			
Risk-free interest rates	3.0%	2.1%	1.8%
Expected life (in years)	4.8	4.7	4.7
Expected volatility	34.3%	35.3%	36.6%
Dividend yield	—	—	—

The risk-free interest rate is based on a treasury instrument whose term is consistent with the expected life of the stock options. In projecting expected stock price volatility, the Company uses a combination of historical stock price volatility and implied volatility from observable market prices of similar equity instruments. The Company estimated the expected life of stock options based on historical experience using employee exercise and option expiration data.

Stock-Based Compensation Expense Attribution

The Company uses the straight-line attribution method to recognize stock-based compensation expense for stock options and RSUs. The vesting term of stock options is generally four or five years with annual vesting of 25% and 20% per year, respectively, on the anniversary of the grant date, and RSUs generally vest over three or four years with annual vesting at 33% and 25% per year, respectively, on the anniversary of the grant date.

The amount of stock-based compensation recognized during a period is based on the value of the portion of the awards that are ultimately expected to vest. Under ASC 718, the Company has made an accounting policy to estimate forfeitures at the time awards are granted and revises, if necessary, in subsequent periods if actual forfeitures differ from those estimates. Based on an analysis of historical forfeitures, the Company has determined a specific forfeiture rate for certain employee groups and has applied forfeiture rates ranging from 0% to 7.0% as of September 28, 2019 depending on the specific employee group. This analysis is re-evaluated annually and the forfeiture rate will be adjusted as necessary. Ultimately, the actual stock-based compensation expense recognized will only be for those stock options and RSUs that vest.

Stock-based compensation expense related to stock options was $14.1 million, $14.3 million, and $12.2 million in fiscal 2019, 2018 and 2017, respectively. Stock compensation expense related to stock units, including RSUs, performance stock units ("PSUs") and market stock units ("MSUs") was $43.7 million, $46.5 million, and $51.6 million in fiscal 2019, 2018 and 2017, respectively. The related tax benefit recorded in the Consolidated Statements of Operations was $8.9 million, $11.7 million and $22.6 million in fiscal 2019, 2018 and 2017, respectively. At September 28, 2019, there was $22.4 million and $57.1 million of unrecognized compensation expense related to stock options and RSUs, respectively, to be recognized over a weighted average period of 2.4 years and 1.7 years, respectively.

Share Based Payment Activity

The following table summarizes all stock option activity under the Company's stock option plans for the year ended September 28, 2019:

	Number of Shares (in millions)	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life (in Years)	Aggregate Intrinsic Value (in millions)
Options outstanding at September 29, 2018	6.0	$ 32.13	5.9	$ 53.3
Granted	1.0	41.36		
Canceled/ forfeited	(0.2)	36.04		
Exercised	(1.3)	25.35		26.1
Options outstanding at September 28, 2019	5.5	$ 35.23	6.1	$ 78.4
Options exercisable at September 28, 2019	2.7	$ 30.58	4.2	$ 52.2
Options vested and expected to vest at September 28, 2019 (1)	5.4	$ 35.20	6.1	$ 78.1

(1) This represents the number of vested stock options as of September 28, 2019 plus the unvested outstanding options at September 28, 2019 expected to vest in the future, adjusted for estimated forfeitures.

During fiscal 2018 and 2017, the total intrinsic value of options exercised (i.e., the difference between the market price on the date of exercise and the price paid by the employee to exercise the options) was $15.2 million and $25.9 million, respectively.

A summary of the Company's RSU, PSU and MSU activity during the year ended September 28, 2019 is presented below:

Non-vested Shares	Number of Shares (in millions)	Weighted-Average Grant-Date Fair Value
Non-vested at September 29, 2018	2.7	$ 40.02
Granted	1.1	42.25
Vested	(1.1)	37.28
Forfeited	(0.2)	41.23
Non-vested at September 28, 2019	2.5	$ 42.17

The number of RSUs vested includes shares withheld on behalf of employees to satisfy minimum statutory tax withholding requirements. The Company pays the minimum statutory tax withholding requirement on behalf of its employees. During fiscal 2019, 2018 and 2017 the total fair value of RSUs and PSUs vested was $34.6 million, $38.9 million and $39.5 million, respectively.

Included in the above chart, the Company granted 0.1 million and 0.6 million and 0.2 million PSUs during fiscal 2019, 2018, and 2017, respectively, to members of the Company's senior management team, which includes additional shares issued upon achieving metrics within the performance criteria. Each recipient of the PSUs is eligible to receive between zero and 200% of the target number of shares of the Company's common stock at the end of three year performance period provided the Company's defined Return on Invested Capital metrics are achieved. These awards cliff-vest three years from the date of grant, and the Company recognizes compensation expense ratably over the required service period based on its estimate of the number of shares will vest upon achieving the measurement criteria. If there is a change in the estimate of the number of shares that are probable of vesting, the Company will cumulatively adjust compensation expense in the period that the change in estimate is made. The Company also granted 0.1 million, 0.3 million and 0.1 million MSUs during fiscal 2019. 2018 and 2017, respectively, to its senior management team. Each recipient of MSUs is eligible to receive between zero and 200% of the target number of shares of the Company's common stock at the end of three year performance period based upon achieving a certain total shareholder return relative to a defined peer group. The MSUs were valued at $55.13, $49.44 and $48.98 per share using the Monte Carlo simulation model in fiscal 2019, 2018 and 2017, respectively. These awards cliff-vest three years from the date of grant, and the Company recognizes compensation expense for the MSUs ratably over the service period.

Employee Stock Purchase Plan

The Hologic, Inc. 2012 Employee Stock Purchase Plan ("2012 ESPP") provides for the granting of up to 2.5 million shares of the Company's common stock to eligible employees. The 2012 ESPP plan period is semi-annual and allows participants to purchase the Company's common stock at 85% of the lower of (i) the market value per share of the common stock on the first day of the offering period or (ii) the market value per share of the common stock on the purchase date. Stock-based compensation expense in fiscal 2019, 2018 and 2017 was $4.2 million, $4.0 million and $4.4 million, respectively.

The Company uses the Black-Scholes model to estimate the fair value of shares to be issued as of the grant date using the following weighted average assumptions:

	September 28, 2019	September 29, 2018	September 30, 2017
Assumptions:			
Risk-free interest rates	2.27%	1.62%	0.72%
Expected life (in years)	0.5	0.5	0.5
Expected volatility	27.1%	25.0%	24.9%
Dividend yield	—	—	—

11. 401(k) Plan

The Company's U.S. employees have access to a qualified 401(k) defined contribution plan. The Company made contributions of $19.2 million, $18.6 million and $20.2 million for fiscal 2019, 2018 and 2017, respectively.

12. Deferred Compensation Plans

Nonqualified Deferred Compensation Plan

Effective March 15, 2006, the Company adopted its Nonqualified Deferred Compensation Plan ("DCP") to provide non-qualified retirement benefits to a select group of executive officers, senior management and highly compensated employees of the Company. Eligible employees may elect to contribute up to 75% of their annual base salary and 100% of their annual bonus to the DCP and such employee contributions are 100% vested. In addition, the Company may elect to make annual discretionary contributions on behalf of participants in the DCP. Each Company contribution is subject to a three-year vesting schedule, such that each contribution vests one third annually. Employee contributions are recorded within accrued expenses.

Upon enrollment into the DCP, employees make investment elections for both their voluntary contributions and discretionary contributions, if any, made by the Company. Earnings and losses on contributions based on these investment elections are recorded as a component of compensation expense in the period earned.

Annually, the Compensation Committee of the Board of Directors has approved a discretionary cash contribution to the DCP for each year. Discretionary contributions by the Company to the DCP are held in a Rabbi Trust. The Company records compensation expense for the DCP discretionary contributions ratably over the three-year vesting period of each annual contribution, unless the participant meets the plan retirement provision of reaching a certain age and years of service criteria in which case the expense is accelerated to match the required service period to receive such benefit. Under the DCP, the Company recorded compensation expense related to Company contributions of $2.7 million, $2.9 million and $3.4 million in fiscal 2019, 2018 and 2017, respectively. The full amount of the discretionary contribution, net of forfeitures, along with employee deferrals is recorded within accrued expenses and totaled $51.9 million and $49.8 million at September 28, 2019 and September 29, 2018, respectively.

The Company has purchased Company-owned group life insurance contracts, in which both voluntary and discretionary Company DCP contributions are invested, to partially fund payment of the Company’s obligation to the DCP participants. The total amount invested at September 28, 2019 and September 29, 2018 was $44.6 million and $44.2 million, respectively. The values of these life insurance contracts are recorded in other long-term assets. Changes in the cash surrender value of life insurance contracts, which were not significant in fiscal 2019, 2018 and 2017, are recorded within other income, net.

Deferred Equity Plan

Effective September 17, 2015, the Company adopted the Hologic, Inc. Deferred Equity Plan (the “DEP”). The DEP is designed to allow executives and non-employee Directors to accumulate Company stock in a tax-efficient manner to meet their long-term equity accumulation goals and shareholder ownership guidelines. Under the DEP, eligible participants may elect to defer the settlement of RSUs and PSUs granted under the 2008 Equity Plan until separation from service or separation from service plus a fixed number of years. Participants may defer settlement by vesting tranche. Although the equity will vest on schedule, if deferral of settlement is elected, no shares are issued until the settlement date. The settlement date is the earlier of death, disability, change in control of the Company or separation from service plus the number of years of deferral elected by the participant. While these shares upon vesting are not distributed to the individuals and are not outstanding, these shares are included in basic weighted average shares outstanding used to calculate earnings per share.

13. Commitments and Contingencies

Finance Lease Obligations

The Company has two non-cancelable lease agreements for buildings that are primarily used for manufacturing. The Company was responsible for a significant portion of the construction costs, and in accordance with ASC 840, *Leases,* Subsection 40-15-5, the Company was deemed to be the owner of the respective buildings during the construction period. At the completion of the construction period, the Company reviewed the lease for potential sale-leaseback treatment in accordance with ASC 840, Subsection 40, *Sale-Leaseback Transactions.* Based on its analysis, the Company determined that the lease did not qualify for sale-leaseback treatment. Therefore, the building, leasehold improvements and associated liabilities remain on the Company’s financial statements throughout the lease term, and the building and leasehold improvements are being depreciated on a straight line basis over their estimated useful lives of 35 years. The Company recorded the fair market value of the buildings and land aggregating $28.3 million within property and equipment on its Consolidated Balance Sheets. Depreciation expense related to the buildings and land is recorded within depreciation in the Company's Consolidated Statements of Cash Flows. During fiscal 2018, the Company executed an amendment to one of the leases extending the term to 2028. During fiscal 2016, the Company executed an amendment to other leases extending the term to 2024, and a renewal option was removed. There were no other significant provisions to the terms of the lease agreements. At September 28, 2019, the Company has recorded $1.6 million in accrued expenses and $33.6 million in other long-term liabilities related to these

obligations. The current term of the leases is for a period of approximately 10 and 6 years, respectively, with the option to extend for one lease for two consecutive 5-year terms and the other for one 5-year term.

Future minimum lease payments, including principal and interest, under these leases were as follows at September 28, 2019:

Fiscal 2020	$	3.0
Fiscal 2021		3.0
Fiscal 2022		3.1
Fiscal 2023		3.2
Fiscal 2024		2.5
Thereafter		8.1
Total minimum payments		22.9
Less-amount representing interest		(12.5)
Total	$	10.4

As a result of the Cynosure acquisition, the Company has capital leases for the buildings at its primary U.S. operating facility and certain equipment and vehicles with payments due through May 2028. Future minimum lease payments, including principal and interest, under these leases were as follows at September 28, 2019:

Fiscal 2020	$	2.8
Fiscal 2021		2.8
Fiscal 2022		3.0
Fiscal 2023		3.0
Fiscal 2024		3.0
Thereafter		11.4
Total minimum lease payments	$	26.0
Less-amount representing interest		(5.0)
Present value of obligations under capital lease	$	21.0
Current portion of capital lease obligations		1.8
Capital lease obligations, net of current portion	$	19.2

Non-cancelable Purchase and Royalty Commitments

The Company has certain non-cancelable purchase obligations primarily related to inventory purchases and diagnostics instruments, primarily Panther systems, and to a lesser extent other operating expense commitments. These obligations are not recorded in the Consolidated Balance Sheets. For reasons of quality assurance, sole source availability or cost effectiveness, certain key components and raw materials and instruments are available only from a sole supplier and the Company has certain long-term supply contracts to assure continuity of supply. At September 28, 2019, non-cancelable purchase commitments are as follows:

Fiscal 2020		111.0
Fiscal 2021		17.2
Fiscal 2022		10.5
Fiscal 2023		4.7
Fiscal 2024		2.0
Thereafter		1.6
Total	$	147.0

Concentration of Suppliers

The Company purchases certain components of its products from a single or small number of suppliers. A change in or loss of these suppliers could cause a delay in filling customer orders and a possible loss of sales, which could adversely affect results of operations; however, management believes that suitable replacement suppliers could be obtained in such an event.

Operating Leases

The Company conducts its operations in leased facilities under operating lease agreements that expire through fiscal 2035. Substantially all of the Company's lease agreements require the Company to maintain the facilities during the term of the lease and to pay all taxes, insurance, utilities and other costs associated with those facilities. The Company makes customary representations and warranties and agrees to certain financial covenants and indemnities. In the event the Company defaults on a lease, typically the landlord may terminate the lease, accelerate payments and collect liquidated damages. As of September 28, 2019, the Company was not in default of any covenants contained in its lease agreements. Certain of the Company's lease agreements provide for renewal options. Such renewal options are at rates similar to the current rates under the agreements.

Future minimum lease payments under all of the Company's operating leases at September 28, 2019 are as follows:

Fiscal 2020	$	20.5
Fiscal 2021		17.3
Fiscal 2022		13.3
Fiscal 2023		6.6
Fiscal 2024		5.9
Thereafter		14.6
Total	$	78.2

Rent expense, net of sublease income from these locations, was $23.1 million, $23.1 million, and $19.3 million for fiscal 2019, 2018 and 2017, respectively.

The Company subleases a portion of a building it owns and some of its rented facilities and has received aggregate rental income of $2.7 million, $2.6 million and $2.3 million in fiscal 2019, 2018 and 2017, respectively, which has been recorded as an offset to rent expense. The future minimum annual rental income payments under these sublease agreements at September 28, 2019 are as follows:

Fiscal 2020	$	1.6
Fiscal 2021		0.6
Fiscal 2022		0.6
Fiscal 2023		0.6
Fiscal 2024		0.5
Thereafter		0.6
Total	$	4.5

14. Litigation and Related Matters

On November 6, 2015, the Company filed a suit against Minerva Surgical, Inc. ("Minerva") in the United States District Court for the District of Delaware, alleging that Minerva's endometrial ablation device infringes U.S. Patent 6,872,183 (the '183 patent), U.S. Patent 8,998,898 and U.S. Patent 9,095,348 (the '348 patent). On January 25, 2016, the Company amended the complaint to include claims against Minerva for unfair competition, deceptive trade practices and tortious interference with business relationships. On February 5, 2016, the Company filed a second amended complaint to additionally allege that Minerva's endometrial ablation device infringes U.S. Patent 9,247,989 (the '989 patent). On March 4, 2016, Minerva filed an answer and counterclaims against the Company, seeking declaratory judgment on the Company's claims and asserting claims against the Company for unfair competition, deceptive trade practices, interference with contractual relationships,

breach of contract and trade libel. On June 2, 2016, the Court denied the Company's motion for a preliminary injunction on its patent claims and denied Minerva's request for preliminary injunction related to the Company's alleged false and deceptive statements regarding the Minerva product. On June 28, 2018, the Court granted the Company's summary judgment motions on infringement and no invalidity with respect to the '183 and '348 patents. The Court also granted the Company's motion for summary judgment on assignor estoppel, which bars Minerva's invalidity defenses or any reliance on collateral findings regarding invalidity from *inter partes* review proceedings. The Court also denied all of Minerva's defenses, including its motions for summary judgment on invalidity, non-infringement, no willfulness, and no unfair competition. On July 27, 2018, after a two-week trial, a jury returned a verdict that: (1) awarded the Company $4.8 million in damages for Minerva's infringement; (2) found that Minerva's infringement was not willful; and (3) found for the Company regarding Minerva's counterclaims. Damages will continue to accrue until Minerva ceases its infringing conduct. On May 2, 2019, the Court issued rulings that denied the parties' post-trial motions, including the Company's motion for a permanent injunction seeking to prohibit Minerva from selling infringing devices. Both parties appealed the Court's rulings regarding the post-trial motions, and oral argument for the appeals is scheduled for December 4, 2019. On March 4, 2016, Minerva filed two petitions at the USPTO for *inter partes* review of the '348 patent. On September 12, 2016, the PTAB declined both petitions to review patentability of the '348 patent. On April 11, 2016, Minerva filed a petition for *inter partes* review of the '183 patent. On October 6, 2016, the PTAB granted the petition and instituted a review of the '183 patent. On December 15, 2017, the PTAB issued a final written decision invalidating all claims of the '183 patent. On February 9, 2018 the Company appealed this decision to the United States Court of Appeals for the Federal Circuit ("Court of Appeals"). On April 19, 2019, the Court of Appeals affirmed the PTAB's final written decision regarding the '183 patent. On July 16, 2019, the Court of Appeals denied the Company's petition for rehearing in the appeal regarding the '183 patent.

On April 11, 2017, Minerva filed suit against the Company and Cytyc Surgical Products, LLC ("Cytyc") in the United States District Court for the Northern District of California alleging that the Company's and Cytyc's NovaSure ADVANCED endometrial ablation device infringes Minerva's U.S. patent 9,186,208. Minerva is seeking a preliminary and permanent injunction against the Company and Cytyc from selling this NovaSure device as well as enhanced damages and interest, including lost profits, price erosion and/or royalty. On January 5, 2018, the Court denied Minerva's motion for a preliminary injunction. On February 2, 2018, at the parties' joint request, this action was transferred to the District of Delaware. On March 26, 2019, the Magistrate Judge issued a claims construction ruling regarding the disputed terms in the patent, which the District Court Judge adopted in all respects on October 21, 2019. Trial is scheduled for July 20, 2020. At this time, based on available information regarding this litigation, the Company is unable to reasonably assess the ultimate outcome of this case or determine an estimate, or a range of estimates, of potential losses.

On January 30, 2012 and March 6, 2012, Enzo Life Sciences, Inc. ("Enzo") filed suit against the Company and its subsidiary, Gen-Probe Incorporated ("Gen-Probe"), in the United States District Court for the District of Delaware, alleging that certain of Gen-Probe's diagnostics products, including products that incorporate Gen-Probe's hybridization protection assay technology (HPA), infringe Enzo's U.S. patent 6,992,180 (the '180 patent). On July 16, 2012, Enzo amended its complaint to include additional products that include HPA or TaqMan reagent chemistry. Both complaints sought preliminary and permanent injunctive relief and unspecified damages. On March 27, 2015, Enzo filed an additional suit against the Company in the United States District Court for the District of Delaware, alleging that certain additional Company molecular diagnostic products also infringe the '180 patent. The complaint further alleged that certain of the Company's molecular diagnostic products using target capture technology infringed Enzo's U.S. Patent 7,064,197 (the '197 patent). On October 3, 2016, Enzo filed an additional suit against the Company in the United States District Court for the District of Delaware, alleging that products employing the Company's proprietary target capture technologies infringed U.S. Patent 6,221,581 (the '581 patent). The Court granted Enzo's motion to file an amended complaint adding Grifols Diagnostic Solutions Inc. and Grifols, S.A. ("Grifols") as parties on November 9, 2017. On April 16, 2019, Enzo, the Company and Grifols entered into a Settlement and License Agreement (the "Settlement Agreement"), to resolve all litigation among the parties. Under the Settlement Agreement, Enzo granted the Company and Grifols a fully-paid up, royalty-free, non-exclusive and non-transferable (except in certain limited circumstances) world-wide license regarding the subject Enzo patents. Enzo also granted the Company and Grifols a covenant not to sue on certain products, as defined in the Settlement Agreement. In exchange, the Company and Grifols agreed to pay Enzo $10.5 million and $3.5 million, respectively, for a total amount of $14.0 million. The Company recorded the $10.5 million charge in the second quarter of fiscal 2019.

On February 3, 2017, bioMérieux, S.A. and bioMérieux, Inc. (collectively "bioMérieux") filed suit against the Company in the United States District Court for the Middle District of North Carolina ("MDNC"), alleging that the Company's HIV products, including blood screening products previously manufactured by the Company for its former blood screening partner Grifols Diagnostic Solutions Inc. ("Grifols USA"), infringe U.S. Patent Nos. 8,697,352 and 9,074,262. On January 3, 2018, the MDNC Court granted the parties' consent motion to transfer the case to Delaware. On June 11, 2019, the Court issued a claim construction ruling regarding the disputed terms in the patents. Motions for summary judgment and Daubert motions were filed by the parties on September 30, 2019. A hearing on these motions is schedule for November 26, 2019, and the trial is

scheduled for February 18, 2020. The Company filed petitions for *inter partes* review of the asserted patents on February 6, 2018. The USPTO denied the Company's petitions for *inter partes* review in August and September 2018. The Company filed requests for rehearing of the denial orders, which requests were denied. At this time, based on available information regarding this litigation, the Company is unable to reasonably assess the ultimate outcome of this case or determine an estimate, or range of estimates, of potential losses.

On July 27, 2016, plaintiff ARcare, Inc., individually and as putative representative of a purported nationwide class, filed a complaint against Cynosure. The plaintiff alleges that Cynosure violated the Telephone Consumer Protection Act by: (i) sending fax advertisements that did not comply with statutory and Federal Communications Commission requirements that senders provide recipients with certain information about how to opt out from receiving faxed advertisements in the future; and (ii) sending unsolicited fax advertisements. The complaint sought damages, declaratory and injunctive relief, and attorneys' fees on behalf of a purported class of all recipients of purported fax advertisements that the plaintiff alleges did not receive an adequate opt-out notice. On September 30, 2016, Cynosure answered the complaint and denied liability. On September 7, 2016, the plaintiff sent a demand letter seeking a class settlement for statutory damages under Massachusetts General Laws, Chapter 93A § 9 ("Chapter 93A"). On October 7, 2016, Cynosure responded denying any liability under Chapter 93A, but offering the plaintiff statutory damages of $25 on an individual basis. In March 2017, Cynosure and ARcare entered into a settlement agreement, subject to court approval, which requires Cynosure to pay settlement compensation of $8.5 million notwithstanding the number of claims filed. If approved, Cynosure would receive a full release from the settlement class concerning the conduct alleged in the complaint. On March 14, 2019, the Court entered an order providing preliminary approval of the settlement. During a hearing on July 11, 2019, the Court requested additional information from the parties in assessing whether to grant final approval of the settlement. As a result of the settlement agreement, Cynosure recorded a charge of $9.2 million, in the period ended December 31, 2016, and $8.5 million continues to be accrued as of September 28, 2019.

On June 26 and 28, 2017, the Company filed suit against FUJIFILM Corp., FUJIFILM Medical Systems USA, Inc., and FUJIFILM Techno Products Co., Ltd. (collectively "Fujifilm") in the United States District Court for the District of Connecticut and the United States International Trade Commission ("ITC"), respectively, alleging that Fujifilm's Aspire Cristalle mammography system infringes U.S. Patent Nos. 7,831,296; 8,452,379; 7,688,940; and 7,986,765. The Company seeks preliminary and permanent injunctions and an exclusion order against Fujifilm from making, using, selling, offering for sale, or importing into the United States allegedly infringing product and also seeks enhanced damages and interest. A hearing was held at the ITC before an Administrative Law Judge ("ALJ") from April 9, 2018 to April 13, 2018. On July 26, 2018, the ALJ issued an initial determination finding that Fujifilm infringed all of the patents brought to trial and rejected Fujifilm's defenses against these patents. The ALJ recommended an exclusion order that prevents the importation of infringing Fujifilm products into the United States, as well as a cease-and-desist order preventing the further sale and marketing of infringing Fujifilm products in the United States. On January 25, 2019, the parties entered into a Patent Cross License and Settlement Agreement to resolve all litigation among the parties. Under the agreement, in consideration of the licenses, releases, non-asserts and other immunities that the parties granted to each other, Fujifilm agreed to pay the Company an upfront fee and an ongoing royalty related to the sale of Fujifilm's mammography system. The execution of the settlement agreement was not material to the Company's results of operations for fiscal 2019.

On March 2, 2018, FUJIFILM Corporation and FUJIFILM Medical Systems U.S.A., Inc. (collectively "Fujifilm2") filed suit against the Company in the United States District Court for the District of Delaware alleging that certain of the Company's mammography systems infringe U.S. Patent Nos. 7,453,979; 7,639,779; RE44,367; and 8,684,948. Fujifilm2 further alleges that the Company violated United States antitrust laws and Delaware competition laws regarding the sale of certain of the Company's mammography systems. Fujifilm2 seeks injunctive relief and unspecified monetary damages including statutory treble damages for certain claims. The parties agreed to resolve all litigation among them, including this case, pursuant to the Patent Cross License and Settlement Agreement described in the preceding paragraph.

The Company is a party to various other legal proceedings and claims arising out of the ordinary course of its business. The Company believes that except for those matters described above there are no other proceedings or claims pending against it the ultimate resolution of which could have a material adverse effect on its financial condition or results of operations. In all cases, at each reporting period, the Company evaluates whether or not a potential loss amount or a potential range of loss is probable and reasonably estimable under ASC 450, Contingencies. Legal costs are expensed as incurred.

15. Disposition

Blood Screening Business

On December 14, 2016, the Company entered into a definitive agreement to sell the assets of its blood screening business to its long-time commercial partner, Grifols for a sales price of $1.85 billion in cash, subject to adjustment based on an estimated closing amount of inventory. The divestiture was completed on January 31, 2017, and the Company received $1.865 billion. The sale resulted in a gain of $899.7 million recorded in the second quarter of fiscal 2017 within operations in the Consolidated Statements of Operations. As a result of this disposition and proceeds received, the Company recorded a tax obligation of $649.5 million, which was paid in fiscal 2017. Upon the closing of the transaction, the Company's existing collaboration agreement with Grifols terminated, and a new collaboration agreement was executed as part of this transaction pursuant to which the Company provides certain research and development services to Grifols. In addition, the Company agreed to provide transition services to Grifols over the following two to three years depending on the nature of the respective service, including the manufacture of inventory. The Company has also agreed to sell Panther instrumentation and certain supplies to Grifols as part of a long term supply agreement. In determining the accounting for the multiple elements of the overall arrangement, the Company allocated $13.1 million of the proceeds to these elements based on their estimated fair values.

The Company determined this disposal did not qualify to be reported as a discontinued operation as the blood screening business was deemed not to be strategic to the Company and has not had and will not have a major effect on the Company's operations and financial results. Under the previous collaboration agreement, the Company performed research and development activities and manufacturing, while Grifols performed the commercial and distribution activities. The blood screening business was embedded within the Company's molecular diagnostics business, and the Company retains ownership and will continue to use the intellectual property for the underlying technology of its molecular diagnostics assays and instrumentation.

Income from operations of the disposed business noted below represents the pretax profit of the business as it was operated prior to the date of disposition. The operating expenses include only those that were incurred directly by and were retained by the disposed business and are now incurred by Grifols. As noted above, the Company is performing a number of transition services and the financial impact from these services are not included in income from operations presented below. The Company has in effect served as a contract manufacturer of assays for Grifols since disposition. Income from operations of the disposed business prior to the divestiture for the year ended September 30, 2017 was as follows:

	Years Ended September 30, 2017
Income from operations	$ 45.8

Under the long term supply agreement, transition services agreement to manufacture assays and perform research and development services, the Company recognized revenue of $58.5 million, $55.4 million and $44.0 million, respectively, in fiscal 2019, 2018 and 2017.

Prior Collaboration Agreement with Grifols

Under its prior collaboration agreement with Grifols, the Company manufactured blood screening products, while Grifols was responsible for marketing, sales and service of those products, which Grifols sold under its trademarks. The Company was entitled to recover 50% of its manufacturing costs incurred in connection with the collaboration and received a percentage of the blood screening assay revenue generated under the collaboration. The Company's share of revenue from assays it sold to Grifols was 50%. The Company recognized product revenue, and collaborative research and license revenue, which is included within services and other revenues, under the prior collaboration agreement. The Company recognized revenue of $96.5 million under this collaboration agreement in fiscal 2017.

Sale of Medical Aesthetics - Assets Held-for-Sale

On November 20, 2019, the Company entered into a definitive agreement to sell its medical aesthetics business to Clayton Dubilier & Rice for a sales price of $205.0 million in cash, subject to certain adjustments, which is expected to result in net cash proceeds of approximately $138 million. The sales price is subject to further adjustment until closing, which is expected to be near around the end of calendar 2019. The definitive agreement contains representations and warranties and covenants customary for a transaction of this nature, and the completion of the sale is subject to customary closing conditions. However, the Company cannot assure that it will be able to complete this transaction on a timely basis, if at all. The Company has agreed to provide various transition services, including manufacturing inventory. As a result of this transaction, the Medical Aesthetics asset group will be designated as assets held-for-sale in the first quarter of fiscal 2020. Assets held-for sale comprise the following as of September 28, 2019:

Assets:	**September 28, 2019**
Cash	$ 11.1
Accounts Receivable	62.1
Inventory	84.6
Prepaid expenses and other current assets	4.9
Property, plant, and equipment	14.1
Intangible assets	60.6
Other assets	4.9
Total assets held-for-sale	$ 242.3
Liabilities:	
Accounts payable	$ 15.0
Accrued expenses	28.3
Deferred revenue	15.9
Deferred income tax liabilities	22.4
Capital lease obligations	20.9
Total liabilities held-for-sale	$ 102.5

16. Business Segments and Geographic Information

The Company reports segment information in accordance with ASC 280, *Segment Reporting.* Operating segments are identified as components of an enterprise about which separate, discrete financial information is available for evaluation by the chief operating decision maker, or decision-making group, in making decisions about how to allocate resources and assess performance. The Company's chief operating decision maker is its chief executive officer, and the Company's reportable segments have been identified based on the types of products manufactured and the end markets to which the products are sold. Each reportable segment generates revenue from either the sale of medical equipment and related services and/or sale of disposable supplies, primarily used for diagnostic testing and surgical procedures. The Company has five reportable segments: Diagnostics, Breast Health, Medical Aesthetics, GYN Surgical and Skeletal Health. The Company measures and evaluates its reportable segments based on segment revenues and operating income adjusted to exclude the effect of non-cash charges, such as intangible asset amortization expense, goodwill and intangible asset impairment charges, transaction and integration

expenses for acquisitions, restructuring, consolidation and divestiture charges, litigation charges, and other one-time or unusual items.

Identifiable assets for the five reportable segments consist of inventories, intangible assets, goodwill, and property, plant and equipment. The Company fully allocates depreciation expense to its five reportable segments. The Company has presented all other identifiable assets as corporate assets. There were no intersegment revenues. Segment information for fiscal 2019, 2018, and 2017 was as follows:

	Years ended		
	September 28, 2019	September 29, 2018	September 30, 2017
Total revenues:			
Diagnostics	$ 1,205.5	$ 1,147.4	$ 1,197.1
Breast Health	1,314.2	1,218.2	1,138.3
Medical Aesthetics	315.6	339.1	207.5
GYN Surgical	437.2	422.0	427.1
Skeletal Health	94.8	91.2	88.8
	$ 3,367.3	$ 3,217.9	$ 3,058.8
Operating (loss) income:			
Diagnostics	$ 163.1	$ 145.5	$ 1,054.2
Breast Health	399.3	399.7	373.4
Medical Aesthetics	(781.2)	(844.7)	(115.9)
GYN Surgical	99.2	58.3	65.0
Skeletal Health	(4.2)	3.3	(6.5)
	$ (123.8)	$ (237.9)	$ 1,370.2
Depreciation and amortization:			
Diagnostics	$ 246.6	$ 257.3	$ 278.9
Breast Health	36.8	22.7	19.7
Medical Aesthetics	91.4	108.1	54.2
GYN Surgical	87.7	91.6	95.7
Skeletal Health	0.6	0.6	0.7
	$ 463.1	$ 480.3	$ 449.2
Capital expenditures:			
Diagnostics	$ 59.2	$ 57.7	$ 50.9
Breast Health	18.3	14.8	12.0
Medical Aesthetics	7.0	9.4	7.3
GYN Surgical	15.7	13.1	15.2
Skeletal Health	1.2	3.3	1.2
Corporate	7.7	7.3	21.0
	$ 109.1	$ 105.6	$ 107.6

	September 28, 2019	September 29, 2018	September 30, 2017
Identifiable assets:			
Diagnostics	$ 2,276.6	$ 2,442.9	$ 2,621.6
Breast Health	1,127.8	972.4	824.0
Medical Aesthetics	159.3	913.3	1,751.2
GYN Surgical	1,328.6	1,414.9	1,494.6
Skeletal Health	27.3	30.3	25.5
Corporate	1,522.5	1,457.1	1,262.7
	$ 6,442.1	$ 7,230.9	$ 7,979.6

The Company operates in the following major geographic areas as noted in the below chart. Revenue data is based upon customer location. Other than the United States, no single country accounted for more than 10% of consolidated revenues. The Company's sales in Europe are predominantly derived from France, the United Kingdom and Germany. The Company's sales in Asia-Pacific are predominantly derived from China, Australia and Japan. The "Rest of world" designation includes Canada, Latin America and the Middle East.

Revenues by geography as a percentage of total revenues were as follows:

	Years ended		
	September 28, 2019	September 29, 2018	September 30, 2017
United States	75.3%	75.1%	77.6%
Europe	11.8%	11.7%	10.0%
Asia-Pacific	8.5%	8.6%	8.1%
Rest of world	4.4%	4.6%	4.3%
	100.0%	100.0%	100.0%

The Company's property, plant and equipment, net are geographically located as follows:

	September 28, 2019	September 29, 2018	September 30, 2017
United States	$ 355.5	$ 366.5	$ 368.1
Costa Rica	33.0	30.9	30.1
Europe	64.4	62.0	57.1
Rest of world	18.0	18.8	17.5
	$ 470.9	$ 478.2	$ 472.8

17. Accrued Expenses and Other Long-Term Liabilities

Accrued expenses and other long-term liabilities consisted of the following:

	September 28, 2019	September 29, 2018
Accrued Expenses		
Compensation and employee benefits	$ 223.4	$ 196.0
Income and other taxes	56.1	57.2
Other	151.4	182.9
	$ 430.9	$ 436.1

	September 28, 2019	September 29, 2018
Other Long-Term Liabilities		
Reserve for income tax uncertainties	$ 106.8	$ 92.6
Accrued lease obligation—long-term	33.7	35.5
Pension liabilities	10.2	9.9
Other	11.7	19.6
	$ 162.4	$ 157.6

18. Pension and Other Employee Benefits

The Company has certain defined benefit pension plans covering the employees of its Hitec Imaging German subsidiary (the "Pension Benefits"). As of September 28, 2019 and September 29, 2018, the Company's pension liability was $10.0 million and $9.7 million, respectively, which is primarily recorded as a component of long-term liabilities in the Consolidated Balance Sheets. Under German law, there are no rules governing investment or statutory supervision of the pension plan. As such, there is no minimum funding requirement imposed on employers. Pension benefits are safeguarded by the Pension Guaranty Fund, a form of compulsory reinsurance that guarantees an employee will receive vested pension benefits in the event

of insolvency. The pension plans were closed on December 31, 1997 and only eligible employees at that date could participate in the plans prior to closing to new participants.

The tables below provide a reconciliation of benefit obligations, plan assets, funded status, and related actuarial assumptions of the Company's German Pension Benefits.

	Years ended		
Change in Benefit Obligation	**September 28, 2019**	**September 29, 2018**	**September 30, 2017**
Benefit obligation at beginning of year	$ (9.7)	$ (9.9)	$ (11.0)
Service cost	—	—	—
Interest cost	(0.2)	(0.2)	(0.1)
Plan participants' contributions		—	—
Actuarial gain (loss)	(1.0)	(0.1)	1.5
Foreign exchange gain	0.6	0.2	(0.6)
Benefits paid	0.3	0.3	0.3
Benefit obligation at end of year	(10.0)	(9.7)	(9.9)
Plan assets		—	—
Benefit obligation at end of year	$ (10.0)	$ (9.7)	$ (9.9)

The tables below outline the components of the net periodic benefit cost and related actuarial assumptions of the Company's German Pension Benefits.

	Years ended		
Components of Net Periodic Benefit Cost	**September 28, 2019**	**September 29, 2018**	**September 30, 2017**
Service cost	$ —	$ —	$ —
Interest cost	0.2	0.2	0.1
Expected return on plan assets	—	—	—
Amortization of prior service cost	—	—	—
Recognized net actuarial gain	0.1	0.1	0.4
Net periodic benefit cost	$ 0.3	$ 0.3	$ 0.5

Weighted-Average Net Periodic Benefit Cost Assumptions	**2019**	**2018**	**2017**
Discount rate	1.10%	1.95%	2.15%
Expected return on plan assets	—%	—%	—%
Rate of compensation increase	—%	—%	—%

The projected benefit obligation for the German Pension Benefits with projected benefit obligations in excess of plan assets was $10.0 million and $9.7 million at September 28, 2019 and September 29, 2018, respectively, and the accumulated benefit obligation for the German Pension Benefits was $10.0 million and $9.7 million at September 28, 2019 and September 29, 2018, respectively.

The Company is also obligated to pay long-term service award benefits under the German Pension Benefits. The projected benefit obligation for long-term service awards was $0.1 million at both September 28, 2019 and September 29, 2018, respectively.

The table below reflects the total Pension Benefits expected to be paid for the German Pension Benefits each fiscal year as of September 28, 2019:

2020	$	0.3
2021	$	0.3
2022	$	0.4
2023	$	0.4
2024	$	0.4
2025 to 2029	$	2.0

The Company also maintains additional contractual pension benefits for its top German executive officers in the form of a defined contribution plan. These contributions were insignificant in fiscal 2019, 2018 and 2017. Additionally, the Company has Swiss pension plans, which were insignificant in fiscal 2019, 2018, and 2017.

19. Quarterly Statement of Operations Information (Unaudited)

The following table presents a summary of quarterly results of operations for fiscal 2019 and 2018:

	2019			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Total revenue	$ 830.7	$ 818.4	$ 852.4	$ 865.8
Gross profit	434.1	42.4	444.8	249.5
Net income (loss) (1)	98.6	(272.6)	93.9	(123.5)
Diluted net income (loss) per common share	$ 0.36	$ (1.01)	$ 0.35	$ (0.46)

	2018			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Total revenue	$ 791.1	$ 789.3	$ 824.0	$ 813.5
Gross profit	$ 424.5	$ 415.1	$ 436.0	$ 421.1
Net income (loss) (2)	$ 406.7	$ (681.4)	$ 112.9	$ 50.5
Diluted net income (loss) per common share	$ 1.45	$ (2.46)	$ 0.41	$ 0.18

(1) Net loss in the second quarter of fiscal 2019 included intangible asset and equipment impairment charges of $443.8 million. Net loss in the fourth quarter of fiscal 2019 included intangible asset and equipment impairment charges of $241.6 million.

(2) Net income in the first quarter of fiscal 2018 included the impact of implementing tax reform, which resulted in a provisional net tax benefit of $329.2 million. Net loss in the second quarter of fiscal 2018 included a goodwill impairment charge of $685.7 million, an in-process research and development intangible asset charge of $46.0 million and a debt extinguishment loss of $44.9 million. Net income in the fourth quarter of fiscal 2018 included a litigation settlement charge of $34.8 million.

CERTIFICATE OF INCORPORATION
OF
HOLOGIC, INC.

The undersigned, a natural person, for the purposes of organizing a corporation for conducting the business and promoting the purposes hereinafter stated, under the provisions and subject to the requirements of the laws of the State of Delaware (particularly Chapter 1, Title 8 of the Delaware Code and the acts amendatory thereof and supplemental thereto, and generally known as the "General Corporation Law of the State of Delaware"), hereby certifies that:

FIRST: The name of the corporation (hereinafter called the "Corporation") is Hologic, Inc.

SECOND: The address, including street, number, city, and county, of the registered office of the Corporation in the State of Delaware is 32 Lookerman Square, Suite L-100, Dover, County of Kent, Delaware 19901; and the name of the registered agent of the Corporation in the State of Delaware at such address is Prentice-Hall Corporate Services.

THIRD: The nature of the business and the purposes to be conducted and promoted by the Corporation, shall be (a) to engage in the manufacture, sale, research and development of medical products and (b) any lawful business, to promote any lawful purpose, and to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of the State of Delaware.

FOURTH:

(a) The total number of shares of all classes of stock which the Corporation shall have authority to issue is (i) 10,000,000 shares of Common Stock, $.01 par value per share ("Common Stock"), and (ii) 1,622,685 shares of Preferred Stock, $.01 par value per share (the "Preferred Stock").

(b) The Preferred Stock may be issued and designated by the Board of Directors, in one or more classes or series and with such rights, powers, preferences and terms and at such times and for such consideration as the Board of Directors shall determine, without further stockholder action. With respect to each class or series of Preferred Stock, prior to issuance, the Board of Directors by resolution shall designate that class or series to distinguish it from other classes and series of stock of the Corporation, shall specify the number of shares to be included in the class or series, and shall fix the rights, powers, preferences and terms of the shares of the class or series, including, but without limitation: (i) the dividend rate, which may be fixed or variable, its preference as to any other class or series of capital stock, and whether dividends will be cumulative or noncumulative; (ii) whether the shares are to be redeemable and, if so, at what times and prices (which price or prices may, but need not, vary according to the time or circumstances of such redemption) and on what other terms and conditions; (iii) the terms and amount of any sinking fund provided for the purchase or redemption of the shares; (iv) whether the shares shall be convertible or exchangeable and, if so, the times, prices, rates, adjustments and other terms of such conversion or exchange; (v) the voting rights, if any, applicable to the shares in addition to those prescribed by law; (vi) the restrictions and conditions, if any, on the issue or reissue of any additional shares of such class or series or of any other class or series of Preferred Stock ranking on a parity with or prior to the shares of such class or series; (vii) whether, and the extent to which, any of the rights, powers, preferences and terms of any such class or series may be made dependent upon facts ascertainable outside of the Certificate of Incorporation or outside the resolution or resolutions providing for the issuance of such class or series by the Board of Directors, provided that the manner in which such facts shall operate is clearly set forth in the resolution or resolutions providing for the issuance of such class or series adopted by the Board of Directors; and (viii) the rights of the holders of such shares upon voluntary or involuntary liquidation, dissolution or winding up of the Corporation.

FIFTH: The name and the mailing address of the incorporator(s) are as follows:

NAME	ADDRESS
Ann C. Brachman	Brown, Rudnick, Freed & Gesmer One Financial Center Boston, MA 02111

SIXTH: The name and the mailing address of the directors of the Corporation, each of whom shall serve until the first annual meeting of shareholders and until his or her successor is elected and qualified, are as follows:

NAME	ADDRESS
S. David Ellenbogen	300 Bear Hill Road Waltham MA 02154
Jay A. Stein	300 Bear Hill Road Waltham MA 02154

Esther Sharp One Post Office Square
Suite 3800
Boston MA 02109

SEVENTH: The Corporation shall have perpetual existence.

EIGHTH: Whenever a compromise or arrangement is proposed between this Corporation and its creditors or any class of them and/or between this Corporation and its stockholders or any class of them, any court of equitable jurisdiction within the State of Delaware may, on the application in a summary way of this Corporation or of any creditor or stockholder thereof or on the application of any receiver or receivers appointed for this Corporation under the provisions of Section 291 of Title 8 of the Delaware Code or on the application of trustees in dissolution or of any receiver or receivers appointed for this Corporation under the provisions of Section 279 of Title 8 of the Delaware Code order a meeting of the creditors or class of creditors, and/or of the stockholders or class of stockholders of this Corporation, as the case may be, to be summoned in such manner as the said court directs. If a majority in number representing three-fourths in value of the creditors or class of creditors, and/or of the creditors or class of creditors, and/or of the stockholders or class of stockholders of this Corporation, as the case may be, agrees to any compromise or arrangement and to any reorganization of this Corporation as a consequence of such compromise or arrangement, the said compromise or arrangement and the said reorganization shall, if sanctioned by the court to which the said application has been made, be binding on all the creditors or class of creditors, and/or on all the stockholders or class of stockholders, of this Corporation, as the case may be, and also on this Corporation.

NINTH: For the management of the business and for the conduct of the affairs of the Corporation, and in further definition, limitation and regulation of the powers of the Corporation and of its directors and of its stockholders or any class thereof, as the case may be, it is further provided that:

(a) The business of the Corporation shall be conducted by the officers of the Corporation under the supervision of the Board of Directors.

(b) The number of directors which shall constitute the whole Board of Directors shall be fixed by, or in the manner provided in, the By-Laws. No election of Directors need be by written ballot.

(c) The Board of Directors of the Corporation may adopt, amend or repeal the By-Laws of the Corporation at any time after the original adoption of the By-Laws according to Section 109 of the General Corporation Law of the State of Delaware; provided, however, that any amendment to provide for the classification of directors of the Corporation for staggered terms pursuant to the provisions of subsection (d) of Section 141 of the General Corporation Law of the State of Delaware shall be set forth in an amendment to this Certificate of Incorporation, in an initial By-Law, or in a By-Law adopted by the stockholders of the Corporation entitled to vote.

TENTH:

(a) The Corporation may, to the fullest extent permitted by Section 145 of the General Corporation Law of the State of Delaware, as the same may be amended and supplemented, indemnify any and all persons whom it shall have power to indemnify under said section from and against any and all of the expenses, liabilities or other matters referred to in or covered by said section, and the indemnification provided for herein shall not be deemed exclusive of any other rights to which a person indemnified may be entitled under any By-Law, agreement, vote of stockholders or disinterested Directors or otherwise, both as to action in his official capacity and as to action in another capacity while holding such office, and shall continue as to a person who has ceased to be a Director, officer, employee or agent and shall inure to the benefit of the heirs, executors and administrators of such a person.

(b) No director shall be personally liable to the Corporation or its stockholders for monetary damages for any breach of fiduciary duty by such director as a director. Notwithstanding the foregoing sentence, a director shall be liable to the extent provided by applicable law (i) for breach of the Director's duty of loyalty to the Corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) pursuant to Section 174 of the General Corporation Law of the State of Delaware or (iv) for any transaction from which the director derived an improper personal benefit. No amendment to or repeal of this paragraph (b) of this Article Tenth shall apply to or have any effect on the liability or alleged liability of any director of the Corporation for or with respect to any acts or omissions of such Director occurring prior to such amendment.

ELEVENTH: From time to time, subject to the provisions of this Certificate of Incorporation (including without limitation the provisions of paragraph (d) of Article Twelfth and of Article Fourteenth), any of the provisions of this Certificate of Incorporation may be amended, altered or repealed, and other provisions authorized by the laws of the State of Delaware at the time in force may be added or inserted in the manner and at the time prescribed by said laws, and all rights at any time conferred upon the stockholders of the Corporation by this Certificate of Incorporation are granted subject to the provisions of this Article Eleventh.

TWELFTH:

(a) Any direct or indirect purchase or other acquisition in one or more transactions by the Corporation or any Subsidiary of any of the outstanding Voting Stock of any class from any one or more individuals or entities known by the Corporation to be a Related Person, who has beneficially owned such security or right for less than two years prior to the date of such purchase, at a price in excess of the Fair Market Value shall, except as hereinafter provided, require the affirmative vote of the holders of at least two-thirds of the shares of Voting Stock, voting as a single class, excluding any votes cast with respect to shares of Voting Stock beneficially owned by such Related Person. Such affirmative vote shall be required notwithstanding the fact that no vote may be required, or that a lesser percentage may be specified by law or any agreement with any national securities exchange, or otherwise, but no such affirmative vote shall be required with respect to any purchase or other acquisition of securities made as part of (i) a tender or exchange offer by the Corporation to purchase securities of the same class made on the same terms to all holders of such securities and complying with the applicable requirements of the Exchange Act and the rules and regulations thereunder, or any successor rule or regulation or (ii) pursuant to an open-market purchase program conducted in accordance with the requirements of Rule 10b-18 promulgated by the Securities and Exchange Commission pursuant to the Exchange Act or any successor rule or regulation.

(b) A majority of the Continuing Directors shall have the power and duty to determine, on the basis of information known to them after reasonable inquiry, all facts necessary to determine compliance with this Article Twelfth including, without limitation, (i) whether a person is a Related Person, (ii) the number of shares of Voting Stock beneficially owned by any person and (iii) whether a price is in excess of Fair Market Value.

(c) Nothing contained in this Article Twelfth shall be construed to relieve any Related Person from any fiduciary obligation imposed by law.

(d) Notwithstanding anything contained in this Certificate of Incorporation to the contrary, the affirmative vote of the holders of at least two-thirds of the outstanding shares of Voting Stock, voting together as a single class, shall be required to alter, change, amend, repeal or adopt any provision inconsistent with this Article Twelfth.

THIRTEENTH: The Board of Directors of the Corporation, when evaluating any offer of another Person to (a) purchase or exchange any securities or property for any outstanding equity securities of the Corporation, (b) merge or consolidate the Corporation with another corporation, or (c) purchase or otherwise acquire all or substantially all of the properties and assets of the Corporation, shall in connection with the exercise of its judgment in determining what is in the best interests of the Corporation and its stockholders, give due consideration not only to the price or other consideration being offered, but also to all other relevant factors, including but without limitation, the interests of the Corporation's employees, suppliers, creditors and customers, the economy of the state, region and nation, community and societal considerations, and the long-term and short-term interests of the Corporation and its stockholders, including the possibility that these interests may be best served by the continued independence of the Corporation.

FOURTEENTH: Except as otherwise provided in this Certificate of Incorporation, the By-laws, any designation of terms pursuant to Section 151 of the General Corporation Law of the State of Delaware, any vote required by stockholders pursuant to said General Corporation Law, other than the election of directors (which shall not be affected by this provision), shall be effective if recommended by a majority of the Continuing Directors and the vote of a majority of each class of stock outstanding and entitled to vote thereon; and if not recommended by a majority of the Continuing Directors, then by the vote of 80% of each class of stock outstanding and entitled to vote thereon.

FIFTEENTH: Definitions

The following definitions shall apply for the purpose of Articles Twelfth, Thirteenth and Fourteenth only:

(a) "Affiliate" shall have the meaning given such term in Rule 12b-2 under the Exchange Act.

(b) "Associate" shall have the meaning given such term in Rule 12b-2 under the Exchange Act.

(c) "Continuing Director" shall mean any member of the Board of Directors who is not an Affiliate of any Related Person and who was a member of the Board of Directors prior to the time that any such Related Person became a Related Person, and any successor of a Continuing Director who is unaffiliated with any Related Person and is recommended to succeed a Continuing Director by a majority of the Continuing Directors then on the Board of Directors. Notwithstanding the above, a majority of the then existing Continuing Directors can deem a new director to be a Continuing Director, even though such person is Affiliated with a Related Person.

(d) "Exchange Act" shall mean the Securities Exchange Act of 1934, as amended, from time to time.

(e) "Fair Market Value" shall mean: (i) in the case of stock, the highest closing sale price during the 30-day period immediately preceding the date in question of a share of such stock on the principal United States securities exchange registered under the Exchange Act on which such stock is listed, or, if such stock is not listed on any such exchange, the highest closing bid quotation with respect to a share of such stock during the 30-day period preceding the date in question on the National Association of Securities Dealers, Inc. Automated Quotations System or any system then in use or, if no such quotations are available, the fair market value on the date in

question of a share of such stock as determined by the Board of Directors in good faith; and (ii) in the case of property other than cash or stock, the fair market value of such property on the date in question as determined by the Board of Directors in good faith.

(f) "Massachusetts Predecessor" shall mean Hologic, Inc., a Massachusetts corporation.

(g) "Merger Date" shall mean the date upon which the Massachusetts predecessor merges with and into the Corporation.

(h) "Person" shall mean any individual, firm, corporation or other entity.

(i) "Related Person" shall mean any Person (other than the Corporation, any Subsidiary or any individual who was a stockholder of the Corporation's Massachusetts Predecessor on December 31, 1985) which, together with its Affiliates and Associates and with any other Person (other than the Corporation, any Subsidiary or any individual who was a stockholder of the Corporation's Massachusetts Predecessor on December 31, 1985) with which it or they have entered into, after the Merger Date, any agreement, arrangement or understanding with respect to acquiring, holding or disposing of Voting Stock, acquires beneficial ownership (as defined in Rule 13d-3 of the Exchange Act, except that such term shall include any Voting Stock which such person has the right to acquire, whether or not such right may be exercised within 60 days), directly or indirectly of more than 5% of the voting power of the outstanding Voting Stock after the Merger Date.

(j) "Subsidiary" shall mean any corporation in which a majority of the capital stock entitled to vote generally in the election of directors is owned, directly or indirectly, by the Corporation.

(k) "Voting Stock" shall mean all of the then outstanding shares of the capital stock of the Corporation entitled to vote generally in the election of directors.

Signed on the 18th day of January, 1990.

/s/ Ann C. Brachman

Ann C. Brachman, Incorporator

CERTIFICATE OF AMENDMENT
OF
CERTIFICATE OF INCORPORATION

Hologic, Inc., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, DOES HEREBY CERTIFY:

FIRST: That at a meeting of the Board of Directors of Hologic, Inc., resolutions were duly adopted setting forth a proposed amendment to the Certificate of Incorporation of said corporation, declaring said amendment to be advisable and calling a meeting of the stockholders of said corporation for consideration thereof. The resolution setting forth the proposed amendment is as follows:

RESOLVED: That it is advisable and in the best interests of the corporation to amend the Certificate of Incorporation of the corporation so that the first paragraph of Article Fourth shall read in its entirety as follows:

(a) The total number of shares of all classes of stock which the Corporation shall have authority to issue is (i) 30,000,000 shares of Common Stock, $.01 par value per share ("Common Stock"), and (ii) 1,622,685 shares of Preferred Stock, $.01 par value per share ("Preferred Stock").

SECOND: That thereafter, pursuant to resolution of its Board of Directors, an annual meeting of the stockholders of said corporation was duly called and held, upon notice in accordance with Section 222 of the General Corporation Law of the State of Delaware at which meeting the necessary number of shares as required by statute were voted in favor of the amendment.

THIRD: That said amendment was duly adopted in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware.

IN WITNESS WHEREOF, said Hologic, Inc. has caused this Certificate to be signed by S. David Ellenbogen, its Chairman, this

27th day of February, 1996.

HOLOGIC, INC.

By: /s/ S. David Ellenbogen

Name: S. David Ellenbogen
Title: Chairman

CERTIFICATE OF AMENDMENT
OF
CERTIFICATE OF INCORPORATION

Hologic, Inc., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, DOES HEREBY CERTIFY:

FIRST: That at a meeting of the Board of Directors of Hologic, Inc., resolutions were duly adopted setting forth a proposed amendment to the Certificate of Incorporation of said corporation, declaring said amendment to be advisable and calling a meeting of the stockholders of said corporation for consideration thereof. The resolution setting forth the proposed amendment is as follows:

RESOLVED: That it is advisable and in the best interests of the corporation to amend the Certificate of Incorporation of the corporation so that the first paragraph of Article Fourth shall read in its entirety as follows:

(a) The total number of shares of all classes of stock which the Corporation shall have authority to issue is (i) 90,000,000 shares of Common Stock, $.01 par value per share ("Common Stock"), and (ii) 1,622,685 shares of Preferred Stock, $.01 par value per share ("Preferred Stock"), of which 30,000 shares have been designated Series A Junior Participating Preferred Stock ("Series A Preferred Stock").

SECOND: That thereafter, pursuant to resolution of its Board of Directors, a special meeting of the stockholders of said corporation was duly called and held, upon notice in accordance with Section 222 of the General Corporation Law of the State of Delaware at which meeting the necessary number of shares as required by statute were voted in favor of the amendment.

THIRD: That said amendment was duly adopted in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware.

IN WITNESS WHEREOF, said Hologic, Inc. has caused this Certificate to be signed by Glenn P. Muir, its Executive Vice President, this 15th day of November 2005.

HOLOGIC, INC.

By: /s/ GLENN P. MUIR

Name: **Glenn P. Muir**

Title: **Vice President**

CERTIFICATE OF AMENDMENT

OF

CERTIFICATE OF INCORPORATION

Hologic, Inc., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, DOES HEREBY CERTIFY:

FIRST: That at a meeting of the Board of Directors of Hologic, Inc. held on May 19, 2007, resolutions were duly adopted setting forth a proposed amendment to the Certificate of Incorporation of said corporation, declaring said amendment to be advisable and calling a

meeting of the stockholders of said corporation for consideration thereof. The resolution setting forth the proposed amendment is as follows:

RESOLVED: That it is advisable and in the best interests of the corporation to amend the Certificate of Incorporation of the corporation so that the first paragraph of Article Fourth shall read in its entirety as follows:

> (a) The total number of shares of all classes of stock which the Corporation shall have authority to issue is (i) 300,000,000 shares of Common Stock, $.01 par value per share ("Common Stock"), and (ii) 1,622,685 shares of Preferred Stock, $.01 par value per share ("Preferred Stock"), of which 30,000 shares have been designated Series A Junior Participating Preferred Stock ("Series A Preferred Stock").

SECOND: That thereafter, pursuant to resolution of its Board of Directors, a special meeting of the stockholders of said corporation was duly called and held, on October 18, 2007, upon notice in accordance with Section 222 of the General Corporation Law of the State of Delaware at which meeting the necessary number of shares as required by statute were voted in favor of the amendment.

THIRD: That said amendment was duly adopted in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware.

IN WITNESS WHEREOF, said Hologic, Inc. has caused this Certificate to be signed by Glenn P. Muir, its Executive Vice President, this 22nd day of October, 2007.

HOLOGIC, INC.

By: /s/ Glenn P. Muir
Name: Glenn P. Muir
Title: Executive Vice President

CERTIFICATE OF AMENDMENT
OF
CERTIFICATE OF INCORPORATION

Hologic, Inc., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, DOES HEREBY CERTIFY:

FIRST: That at a meeting of the Board of Directors of Hologic, Inc. held on January 11, 2008, resolutions were duly adopted setting forth a proposed amendment to the Certificate of Incorporation of said corporation, declaring said amendment to be advisable and calling a meeting of the stockholders of said corporation for consideration thereof. The resolution setting forth the proposed amendment is as follows:

RESOLVED: That it is advisable and in the best interests of the corporation to amend the Certificate of Incorporation of the corporation so that the first paragraph of Article Fourth shall read in its entirety as follows:

> (a) The total number of shares of all classes of stock which the Corporation shall have authority to issue is (i) 750,000,000 shares of Common Stock, $.01 par value per share ("Common Stock"), and (ii) 1,622,685 shares of Preferred Stock, $.01 par value per share ("Preferred Stock"), of which 30,000 shares have been designated Series A Junior Participating Preferred Stock ("Series A Preferred Stock").

SECOND: That thereafter, pursuant to resolution of its Board of Directors, a annual meeting of the stockholders of said corporation was duly called and held, on March 11, 2008, upon notice in accordance with Section 222 of the General Corporation Law of the State of Delaware at which meeting the necessary number of shares as required by statute were voted in favor of the amendment.

THIRD: That said amendment was duly adopted in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware.

IN WITNESS WHEREOF, said Hologic, Inc. has caused this Certificate to be signed by Glenn P. Muir, its Executive Vice President, this 11th day of March, 2008.

HOLOGIC, INC.

By: /s/ Glenn P. Muir
Name: Glenn P. Muir

Title: Executive Vice President

DESCRIPTION OF COMPANY SECURITIES REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

This section summarizes certain information regarding the common stock, $0.01 par value per share (the "Common Stock"), of Hologic, Inc., a Delaware corporation ("we", "us", "our" or the "Company"), which constitutes the only class of the Company's securities that is registered under Section 12 of the Securities Exchange Act of 1934, as amended. The following description is only a summary and does not purport to be complete and is qualified by reference to our certificate of incorporation, as amended (our "Certificate of Incorporation"), and our amended and restated bylaws (our "Bylaws"), each of which is incorporated by reference as exhibits to our annual report on Form 10-K. For additional information, please read our Certificate of Incorporation, our Bylaws, and the applicable provisions of the General Corporation Law of Delaware (the "DGCL").

Common Stock

General

As of September 28, 2019, we had 750,000,000 shares of Common Stock authorized for issuance. All of the issued and outstanding shares of our Common Stock are fully paid and non-assessable.

Each share of Common Stock entitles the holder of record thereof to one vote on all matters to be voted on by stockholders. We do not have a classified board of directors. The full board of directors is subject to reelection at each annual meeting of our stockholders. When a quorum is present at any meeting of stockholders, each director is elected by a majority of the votes cast with respect to the director's election; provided that, in the event of a contested director election, any nominee for director is elected by a plurality of the votes cast. Our common stockholders do not have cumulative voting rights in the election of directors.

The Common Stock is entitled to receive dividends, if any, as declared by our board of directors from legally available funds. The terms of any outstanding shares of preferred stock may provide that dividends may not be paid on Common Stock unless all accrued dividends on preferred stock, if any, have been paid or declared and set aside. In the event of our liquidation, dissolution or winding up, the holders of our Common Stock are entitled to share ratably in all assets available for distribution to the stockholders, subject to prior distribution rights of our preferred stock, if any, then outstanding. Our Common Stock has no preemptive or other subscription rights, and there are no conversion rights or redemption or sinking fund provisions with respect to such shares. Except as may be required by applicable law or the rules of any stock exchange or automated quotation system on which shares of our Common Stock may be listed or traded, our board of directors has the authority to issue, without further stockholder approval, our authorized but unissued shares of Common Stock. The authority of our board of directors to issue authorized but unissued shares of our Common Stock might be considered as having the effect of discouraging an attempt by another person or entity to effect a takeover or otherwise gain control of us, since the issuance of additional shares of our Common Stock would dilute the voting power of our Common Stock then outstanding.

Stockholder Meetings

Our Bylaws provide that special meetings of our stockholders (i) may be called at any time by our Company's president, chief executive officer or the board of directors, and (ii) must be called by the board of directors upon the written request of stockholders holding shares representing in the aggregate at least 25% of the outstanding shares of Common Stock, provided that the requesting stockholder(s) satisfy the requirements specified in our Bylaws.

Proxy Access Provision of Our Bylaws

Our Bylaws permit a stockholder, or a group of up to 20 stockholders, owning 3% or more of the Company's outstanding Common Stock continuously for at least three years to nominate and include in the Company's proxy materials prepared in connection with any annual meeting of stockholders director nominees not to exceed the greater of (i) 20% of the number of directors then in office or (ii) two directors, provided that the stockholder(s) and the nominee(s) satisfy the procedural and eligibility requirements specified in our Bylaws.

Advance Notice Requirements for Stockholder Proposals and Director Nominations

Our Bylaws provide that stockholders seeking to nominate directors or bring business before an annual meeting of stockholders must provide timely notice of their proposal in writing to the secretary of the Company. To be timely, notice must be delivered to the Company's secretary at the Company's principal executive offices not less than 90 nor more than 120 days prior to the first anniversary of the preceding year's annual meeting. Our Bylaws also specify requirements as to the substance and form of a stockholder's notice. These provisions may impede stockholders' ability to bring matters before an annual meeting of stockholders or make nominations for directors.

Blank Check Preferred Stock

Our board of directors, without further stockholder approval (except as may be required by applicable law or the rules of any stock exchange or automated quotation system on which our securities may be listed or traded) has the authority to issue up to 1,622,685 shares of preferred stock in one or more class or series, and to fix the rights, preferences, privileges and restrictions thereof. If our board of directors elects to exercise its authority to issue shares of such preferred stock, the rights and privileges of holders of shares of our Common Stock could be made subject to the rights and privileges of such class or series of preferred stock. The issuance of such preferred stock or even the ability to issue preferred stock could also have the effect of delaying, deterring or preventing a change of control or other corporate action.

Certificate of Incorporation

Various other provisions of our Certificate of Incorporation, which are summarized in the following paragraphs, may be deemed to have an anti-takeover effect and may have the effect of delaying, deferring, discouraging or preventing a tender offer or takeover attempt that a stockholder might consider in its best interest, including those attempts that might result in a premium over the market price for the shares held by stockholders.

Anti-Greenmail Provision

Our Certificate of Incorporation contains a so-called "anti-greenmail" provision. This provision is intended to discourage speculators who accumulate beneficial ownership of a significant block of stock of a company and then, under the threat of making a tender offer or instigating a proxy contest or some other corporate disruption, succeed in extracting from the company a premium price to repurchase the shares acquired by the speculator. This tactic is known as greenmail. The anti-greenmail provision prohibits us from purchasing any shares of our Common Stock from a person, known by the Company to be a related person, who has beneficially owned such Common Stock or right to purchase such Common Stock for less than two years prior to the date of such purchase, at a per share price in excess of the fair market value at the time of the purchase unless the purchase is approved by the holders of two-thirds of the then outstanding voting stock, excluding any votes cast by the related person. The term "voting stock" means the shares of the capital stock of the Company entitled to vote generally in the election of directors. The term "related person" means any person (other than the Company or a subsidiary of the Company or a founder of our Company) who acquires more than five percent of our Common Stock. Stockholder approval is not required for such purchases when the offer is made available on the same terms to all holders of shares of our Common Stock or when the purchases are effected on the open market. The affirmative vote of the holders of at least two-thirds of the outstanding shares of our voting stock, voting together as a single class, shall be required to alter, change, amend, repeal or adopt any provision inconsistent with this anti-greenmail provision.

Supermajority Vote Required for Certain Actions not Approved by Continuing Directors

Our Certificate of Incorporation contains a provision that requires the affirmative vote of the holders of 80% of our outstanding Common Stock to approve amendments to our Certificate of Incorporation or to approve extraordinary transactions that are required to be approved by stockholders under the DGCL, including mergers, sales of substantially all of the Company's assets and dissolution, if the actions are not approved by a majority of our continuing directors. Our Certificate of Incorporation provides that the affirmative vote of the holders of only a majority of our outstanding Common Stock is required to approve such matters if they have been approved by our continuing directors. The term "continuing director" is defined to mean (i) any member of our board of directors who is unaffiliated with a related person and was a member of our board of directors prior to the time any such person became a related person and (ii) any successor to such a continuing director who is not affiliated with any related person and is recommended to succeed a continuing director by a majority of the continuing directors then on the board of directors. A majority of the continuing directors can designate a new director to be a continuing director, even though such person is affiliated with a related person. The effect of this provision of our Certificate of Incorporation would be to make it unlikely that any transaction requiring a stockholder vote would receive the requisite approval unless supported by our management.

Consideration of Social, Economic, and Other Factors

Our Certificate of Incorporation contains a provision that requires our board of directors to consider social, economic and other factors in evaluating whether certain types of corporate transactions proposed by another party are in the best interests of our Company and our stockholders. These transactions include (i) the purchase or exchange of securities or property for any of our outstanding equity securities, (ii) the merger or consolidation of our Company with another corporation and (iii) the purchase or other acquisition of all or substantially all of our properties and assets.

Delaware Business Combination Statute

We are subject to the provisions of Section 203 of the DGCL. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years after the date the stockholder becomes an interested stockholder, unless:

- before the stockholder becomes an interested stockholder, the corporation's board of directors approves either the business combination or the transaction which results in the stockholder becoming an interested stockholder;

- after the transaction which results in the stockholder becoming an interested stockholder, the interested stockholder owns at least 85% of the corporation's outstanding voting stock; or

- on or subsequent to such date, the business combination is approved by the corporation's board of directors and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least 66 2/3% of the corporation's outstanding voting stock that is not owned by the interested stockholder.

An "interested stockholder" is a person or entity who directly or indirectly owns 15% or more of the corporation's outstanding voting stock. A "business combination" includes a merger, asset sale or other transaction which results in a financial benefit to the interested stockholder.

FIRST ADDENDUM TO LEASE AGREEMENT

THIS FIRST ADDENDUM TO LEASE AGREEMENT (this “Agreement”) is made as of March l, 1996, by and between MELVYN J. POWERS and MARY P. POWERS, individuals d/b/a M&M REALTY, with an office address at 7 Finance Drive, Danbury, Connecticut 06810 (together, the “Lessor”) and LORAD, A DIVISION OF TREX-MEDICAL CORPORATION, a corporation organized and existing under the laws of the State of Delaware with an office address at 36 Apple Ridge Road, Danbury, Connecticut 06810 (the “Lessee”).

BACKGROUND:

As of December 26, 1995, Lessor and Lessee entered into a lease (the "Lease") of certain premises at Apple Ridge Road, Danbury, Connecticut 06810, as therein more particularly described, and upon the terms and conditions therein contained. Lessor and Lessee have agreed to amend the Lease in manner hereinafter set out.

NOW, THEREFORE, in consideration of the sum of One ($1.00) Dollar each to the other in hand paid, receipt whereof being hereby acknowledged, Lessor and Lessee agree as follows:

1. In Section 1.1 (vi) of the Lease, the word “November” shall be deemed deleted and replaced with the word "December”.

2. In Section 1.1 (xxxi) of the Lease, the words “November 1, 1996” shall be deemed deleted and replaced with the words "December 1, 1996".

3. In the fourth line of Section 2.2 of the Lease, the words “March 1, 1996” shall be deemed deleted and replaced with the words “April 1, 1996”.

4. Except as hereby expressly modified, the Lease shall remain in full force and effect upon the terms and conditions therein contained.

5. This Agreement is made under and shall be construed in accordance with the laws of the state of Connecticut.

IN WITNESS WHEREOF, Lessor and Lessee have executed and delivered this Agreement as of the day and year first above written.

Signed, sealed and delivered
in the presence of:

/s/ Margaret Caruso /s/ Melvyn J. Powers

/s/ Claire A. Milano

/s/ Margaret Caruso /s/ Mary P. Powers

/s/ Claire A. Milano

LORAD, A

DIVISION OF

TREX MEDICAL CORPORATION

/s/ Theresa P. Baker By: /s/ Raymond A. Calvo

Its:

V.P., Controller

/s/ Maria Lena Tibbits Duly Authorized

SECOND ADDENDUM TO LEASE AGREEMENT

THIS SECOND ADDENDUM TO LEASE AGREEMENT (this "Agreement") is made as of April 1, 1996, by and between MELVYN J. POWERS and MARY P. POWERS, individuals d/b/a M&M REALTY, with an office address at 7 Finance Drive, Danbury, Connecticut 06810 (together the "Lessor") and LORAD, A DIVISION OF TREX MEDICAL CORPORATION, a corporation organized and existing under the laws of the State of Delaware with an office address at 36 Apple Ridge Road, Danbury, Connecticut 06810 (the "Lessee").

BACKGROUND

As of December 26, 1995, Lessor and Lessee entered into a lease of certain premises at Apple Ridge Road, Danbury, Connecticut 06810, as therein more particularly described, and upon the terms and conditions therein contained which lease was amended by a certain First Addendum to Lease Agreement entered into by and between Lessor and Lessee and dated as of March 1, 1996, which lease as so amended is herein referred to as the "Lease". Lessor and Lessee have agreed to further amend the Lease in the manner hereinafter set out.

NOW, THEREFORE, in consideration of the sum of One ($1.00) Dollar each to the other in hand paid, receipt whereof being hereby acknowledged, Lessor and Lessee agree as follows:

1. In the fourth line of Section 2.2 of the Lease, the words "April 1, 1996" shall be deemed deleted and replaced with the words "May 1. 1996".

2. Except as hereby expressly modified, the Lease shall remain in full force and effect upon the terms and conditions therein contained.

3. This Agreement is made under and shall be construed in accordance with the laws of the State of Connecticut.

IN WITNESS WHEREOF, Lessor and Lessee have executed and delivered this Agreement as of the day and year first above written.

Signed, sealed and delivered
in the presence of:

/s/ Margaret Caruso /s/ Melvyn J. Powers

/s/ Claire A. Milano

/s/ Margaret Caruso /s/ Mary P. Powers

/s/ Claire A. Milano

LORAD, A DIVISION OF
TREX MEDICAL CORPORATION

/s/ Maria Lena Tibbits By: /s/ Raymond A. Calvo

Its: V.P., Controller

/s/ S. Lee Duly Authorized

CERTAIN INFORMATION HAS BEEN OMITTED FROM THIS DOCUMENT BECAUSE IT IS (I) NOT MATERIAL, AND (II) WOULD BE COMPETITIVELY HARMFUL IF PUBLICLY DISCLOSED. OMISSIONS ARE MARKED [*******].

THIRD ADDENDUM TO LEASE AGREEMENT

THIS THIRD ADDENDUM TO LEASE AGREEMENT (this "Agreement") is made as of May 1, 1996, by and between MELVYN J. POWERS and MARY P. POWERS, individuals d/b/a M&M REALTY, with an office address at 7 Finance Drive, Danbury, Connecticut 06810 (together, the “Lessor”) and LORAD, A DIVISIONOF TREX-MEDICAL CORPORATION, a corporation organized and existing under the laws of the State of Delaware with an office address at 36 Apple Ridge Road, Danbury, Connecticut 06810 (the "Lessee").

BACKGROUND:

As of December 26, 1995, Lessor and Lessee entered into a lease of certain premises at Apple Ridge Road. Danbury, Connecticut 06810, as therein more particularly described, and upon the terms and conditions therein contained, which lease was amended by a certain First Addendum to Lease Agreement entered into by and between Lessor and Lessee and dated as of March 1, 1996, and by a certain Second Addendum to Lease Agreement entered into by and between Lessor and Lessee and dated as of April 1, 1996, which lease as so amended is herein referred to as the “Lease”. Lessor and Lessee have agreed to further amend the Lease in manner hereinafter set out.

NOW, THEREFORE, in consideration of the sum of One ($1.00) Dollar each to the other in hand paid, receipt whereof being hereby acknowledged, Lessor and Lessee agree as follows:

1. In the fourth line of Section 2.2 of the Lease, the words "May 1, 1996” shall be deemed deleted and replaced with the words "May 10, 1996".

2. Except as hereby expressly modified, the lease shall remain in full force and effect upon the terms and conditions therein contained.

3. This Agreement is made under and shall be construed in accordance with the laws of the State of Connecticut.

IN WITNESS WHEREOF, Lessor and Lessee have executed and delivered this Agreement as of the day and year first above written.

Signed, sealed and delivered
in the presence of:

/s/ Claire A. Milano

/s/ Melvyn J. Powers

/s/ Margaret Caruso

/s/ Claire A. Milano

/s/ Mary P. Powers

/s/ Margaret Caruso

/s/ Claire A. Milano

/s/ Melvyn J. Powers

/s/ Margaret Caruso

LORAD, A DIVISION OF
TREX MEDICAL CORPORATION

/s/ Maria Lena Tibbits

By: /s/ Raymond Calvo

Its: V.P., Controller

/s/ Karyn A. Colasanti

Duly Authorized

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NOTICE OF LEASE

NOTICE IS HEREBY GIVEN in accordance with the provisions of §47-19 of the Connecticut General Statutes, as of September _, 2005, by COMMERCE PARK REALTY, LLC, successor-in-interest to MELVYN J. POWERS AND MARY P. POWERS D/B/A M & M REALTY with a place of business at 7 Finance Drive, Danbury, Connecticut 06810 ("Landlord"), and HOLOGIC, INC., with a place of business at 37 Apple Ridge Road, Danbury, Connecticut 06810 ("Tenant") that:

1. Lease. Landlord entered into a lease with LORAD, A DIVISION OF TREX MEDICAL CORPORATION ("LORAD") dated as of December 26, 1995, which lease was amended by a First Addendum to Lease Agreement dated March 1, 1996, a Second Addendum to Lease Agreement dated as of April 1, 1996 and a Third Addendum to Lease Agreement dated as of May 1, 1996, each between Landlord and LORAD, which lease was assigned by LORAD to HOLOGIC, INC., pursuant to an Assignment of Lease and Assumption of Obligations dated September __, 2000, and was further amended by a Fourth Addendum to Agreement of Lease of even date herewith between Landlord and Tenant (collectively, the "Lease").

2. Premises. In consideration of the rents and upon the terms, conditions, covenants and agreements set forth in the Lease, Landlord has leased that certain property known as 37 Apple Ridge Road, in the Town of Danbury, County of Fairfield, and State of Connecticut and more particularly described on Schedule A attached hereto and made a part hereof together with all buildings and improvements located thereon (the "Leased Premises").

3. Term. The initial term of the Lease commenced on December 18, 1996, and terminates on December 31, 2012. If Tenant exercises either or both of the Renewal Options described in the Lease, the first Renewal Term shall commence on January 1, 2013 and terminate on December 31, 2017, and the second Renewal Term shall commence on January 1, 2018 and terminate on December 31, 2022. The date of execution of the Lease is December 26, 1995. The Lease was amended by a First Addendum to Lease Agreement dated March 1, 1996, a Second Addendum to Lease Agreement dated as of April 1, 1996, a Third Addendum to Lease Agreement dated as of May 1, 1996, and a Fourth Addendum to Agreement of Lease dated as of the date hereof.

4. Landlord' s Name and Address. The name and address of Landlord are:

Commerce Park Realty, LLC
7 Finance Drive
Danbury, Connecticut 06810

5. Tenant's Address. The address of Tenant as stated in the Lease is:

HOLOGIC, INC.
37 Apple Ridge Road Danbury, Connecticut 06810

6. Extension or Renewal of Term. Pursuant to the terms of the Lease, Tenant has two (2) consecutive options to extend the term of the Lease for an additional period of five (5) years each.

7. Option to Purchase. The Lease contains no option or other right to purchase the Leased Premises.

8. Lease on File. Executed copies of the Lease are on file at the Tenant's and Landlord's offices.

IN WITNESS WHEREOF Landlord and Tenant have executed this notice as of the date first mentioned above.

Witnessed by:

LANDLORD:
COMMERCE PARK REALTY, LLC

Commerce Park Management Company
Its Manager

/s/ Margaret Caruso By: /s/ Melvyn J. Powers
Its President

/s/ Ed Coyr

TENANT:
HOLOGIC, INC.

/s/ Raymond Calvo By: /s/ William E. Healy
Its VP

/s/ Cathy F. Fontaine

SCHEDULE A

Legal Description
37 APPLE RIDGE ROAD

All that piece or parcel of property consisting of approximately 13.428 acres, situated on Apple Ridge Road , in the City of Danbury, County of Fairfield and State of Connecticut, more particularly described on a map entitled: "Map Showing Parcel "D" - Orchard Park, Danbury, Connecticut Prepared for M&M Realty" (Scale l " = 40') Prepared by New England Land Surveyi ng, P.C.. dated January 2, 1996, which map is to be filed in the Office of Town Clerk of Danbury, and which land is described as follows:

Beginning at a point which is the northwesterly corner of the Premises herein described and proceeding N 77° 14' 34" E, a distance of 160.63'; thence continuing along said line N 76° 461 25" E, a distance of 242.78'; thence N 71° 51' 26" E, a distance of 378.72'; thence turning and running S 12° 07' 22fl E, a distance of 597.50'; thence proceeding along a curve 355.22'; thence running S 68° 59" 09' W, a distance of 149.5l '; thence along a curve a distance of 499.911 and thence N 20 ° 05 ' 04" W, a distance of 382 .56' and thence N 14Q 13' 54" W, a distance of to the point and place of beginning.

Together with the right (in common with others) to pass and repass over that certain roadway shown and designated as Apple Ridge Road on the Map for the purposes of ingress and egress to the said piece or parcel of land from the public highway known as Kenosia Avenue.

FOURTH ADDENDUM TO AGREEMENT OF LEASE

AGREEMENT made as of the day of September, 2005, by and between COMMERCE PARK REALTY, LLC, a Connecticut limited liability company having an address at 7 Finance Drive, Danbury, Connecticut 06810 ("Lessor") and HOLOGIC, INC., a Delaware corporation, having an address at 37 Apple Ridge Road, Danbury, Connecticut 06810 ("Lessee").

RECITALS

A. Lessee has leased certain premises located at 37 Apple Ridge Road, Danbury, Connecticut (the "Leased Premises"), pursuant to a lease dated December 26, 1995 between Melvyn J. Powers and Mary P. Powers, as original lessor, and LORAD, a Division of Trex-Medical Corporation, as original lessee, as amended by a First Addendum to Lease Agreement dated March 1, 1996, a Second Addendum to Lease Agreement dated as of April I , 1996, and a Third Addendum to Lease Agreement dated as of May 1, 1996 (collectively, the "Lease").

B. The interest of the original lessee was assigned to Lessee pursuant to that certain Assignment of Lease and Assumption of Obligations dated September , 2000.

C. Lessee has requested that Lessor agree to extend the Initial Term of the Lease to December 31, 2012, and re-define the two (2) Renewal Terms to be the five (5) year periods: ending December 31, 2017 and December 31, 2022, respectively.

D. To memorialize said extensions, Lessor requires that the Lessee enter into this. Agreement.

E. In consideration of the foregoing, and for One Dollar ($1.00) and other valuable consideration received by each to their satisfaction, Lessor and Lessee hereby agree as follows:

AGREEMENT

1. Lessor and Lessee hereby agree that the Initial Term of the Lease shall end on December 31, 2012. All references in the Lease and herein to the "Initial Term" shall be deemed to mean the period ending on December 31, 2012.

2. Lessee agrees that the current annual Fixed Rent of [******], which is payable in advance in equal monthly installments of [*******],

shall continue to be payable on the first day of each calendar month through and including December 1, 2006. Commencing on January 1, 2007 and continuing on the first day of each month to and including December 1, 2012, monthly Fixed Rent in the amount of [*******] shall be due and payable in advance.

3. Notwithstanding anything contained in the Lease to the contrary, if Lessee exercises either or both of the Renewal Options described in the Lease, the first Renewal Term shall commence on January 1, 2013 and terminate on December 31, 2017, and the second Renewal Term shall commence on January 1, 2018 and terminate on December 31, 2022. The Fixed Rent payable during the Renewal Terms shall be as follows:

a. First Renewal Term: [*******].

b. Second Renewal Term: [*******].

4. Lessee hereby surrenders that portion of the Leased Premises designated in Section 22.3 of the Lease as the Surrender Premises, and more particularly described in Exhibit D of the Lease. As a result thereof, Lessee agrees and acknowledges that, commencing as of the date hereof, the Lessee has no interest of any kind, as tenant or otherwise, in or to the Surrender Premises, and hereby forever releases, relinquishes and remises to the Lessor all right, title and interest the Lessee has or may have had in and to said Surrender Premises.

5. Except as specifically modified hereby, all of the terms and conditions of the Lease remain in full force and effect.

6. This Agreement shall be binding upon, and inure to the benefit of, Lessor and Lessee and their respective heirs, successors and assigns.

7. This Agreement shall be construed in accordance with the laws of the State of Connecticut.

8. This Agreement may not be changed or modified, in whole or in part, except by written instrument executed by the party against whom enforcement of such change or modification is sought.

9. All capitalized terms used, but not defined herein, shall have the definitions attributed thereto in the Lease.

[The Remainder of this Page Intentionally Left Blank]

IN WITNESS WHEREOF, Lessor and Lessee have executed this Agreement as of the day and date first above written.

LESSOR:
COMMERCE PARK REALTY, LLC

By: Commerce Park Management Company
Its Manager

By: /s/ Melvyn Powers
Its President

LESSEE:
HOLOGIC, INC.

By: /s/ William E. Healy
Its Vice President

CERTAIN INFORMATION HAS BEEN OMITTED FROM THIS DOCUMENT BECAUSE IT IS (I) NOT MATERIAL, AND (II) WOULD BE COMPETITIVELY HARMFUL IF PUBLICLY DISCLOSED. OMISSIONS ARE MARKED [*******].

FIFTH ADDENDUM TO AGREEMENT OF LEASE

AGREEMENT made as of the _ day of March, 2012, by and between COMMERCE PARK REALTY, LLC, a Connecticut limited liability company having an address at 7 Finance Drive, Danbury, Connecticut 06810 ("Lessor") and HOLOGIC, INC., a Delaware corporation , having an address at 37 Apple Ridge Road, Danbury, Connecticut 06810 ("Lessee").

RECITALS

A. Lessee has leased certain premises located at 37 Apple Ridge Road, Danbury, Connecticut (the **"Leased Premises"**), pursuant to, and is the current tenant under, a lease dated December 26, 1995 between Melvyn J. Powers and Mary P. Powers, as original lessor, and LORAD, a Division of Trex-Medical Corporation, as original lessee, as amended by a First Addendum to Lease Agreement dated March 1, 1996, a Second Addendum to Lease Agreement dated as of April 1, 1996, a Third Addendum to Lease Agreement dated as of May 1, 1996, and a Fourth Addendum to Lease Agreement dated as of September _, 2005 (collectively, the **"Lease"**).

B. By letter dated March 8, 2012, Lessee has exercised the first Renewal Term and wishes to extend the Initial Term of the Lease to December 31, 2017, upon the terms and conditions set forth in the Fourth Addendum to Lease Agreement.

C. To memorialize said extension, Lessor requires that the Lessee enter into this Agreement.

D. In consideration of the foregoing, and for One Dollar ($1.00) and other valuable consideration received by each to their satisfaction, Lessor and Lessee hereby agree as follows:

AGREEMENT

1. Lessor and Lessee hereby agree that Lessee has exercised its right to the first Renewal Term described in the Fourth Addendum to Lease Agreement and that as a result thereof, the Initial Term of the Lease shall end on December 31, 2017. All references in the Lease to the "Initial Term" shall be deemed to mean the period ending on December 31, 2017.

2. Notwithstanding anything contained in the Lease to the contra1y, due to Lessee's exercise of the first Renewal Term, commencing as of January 1, 2013, the Fixed Rent shall be payable as follows: [*******].

3. Except as specifically modified hereby, all of the terms and conditions of the Lease remain in full force and effect.

4. This Agreement shall be binding upon, and inure to the benefit of, Lessor and Lessee and their respective heirs, successors and assigns.

5. This Agreement shall be construed in accordance with the laws of the State of Connecticut.

6. This Agreement may not be changed or modified, in whole or in part, except by written instrument executed by the party against whom enforcement of such change or modification is sought.

7. All capitalized terms used, but not defined herein, shall have the definitions attributed thereto in the Lease.

IN WITNESS WHEREOF, Lessor and Lessee have executed this Agreement as of the day and date first above written.

LESSOR:

COMMERCE PARK REALTY, LLC

By: Commerce Park Management Company Its Manager

By: /s/ Melvyn J. Powers
Its President

LESSEE:

HOLOGIC, INC.

By: /s/ Robert H. Lavallee
Its SVP and CAO

CERTAIN INFORMATION HAS BEEN OMITTED FROM THIS DOCUMENT BECAUSE IT IS (I) NOT MATERIAL, AND (II) WOULD BE COMPETITIVELY HARMFUL IF PUBLICLY DISCLOSED. OMISSIONS ARE MARKED [*******].

SIXTHADDENDUM TOAGREEMENT OF LEASE

THIS SIXTH ADDENDUM ("Addendum") made as of the _ day of July, 2016, by and between DELAWARE COMMERCE PARK, LLC, a Delaware limited liability company having an address at 7 Finance Drive, Danbury, Connecticut 06810 ("Lessor") and HOLOGIC, INC., a Delaware corporation, having an address at 37 Apple Ridge Road, Danbury, Connecticut 06810 ("Lessee").

RECITALS

A. Lessee has leased certain premises located at 37 Apple Ridge Road, Danbury, Connecticut (the "Leased Premises"), pursuant to, and is the current tenant under, a lease dated December 26, 1995 between Melvyn J. Powers and Mary P. Powers, as original lessor, and LORAD, a Division of Trex-Medical Corporation, as original lessee, as amended by a First Addendum to Lease Agreement dated March l , 1996, a Second Addendum to Lease Agreement dated as of April 1, 1996, a Third Addendum to Lease Agreement dated as of May 1, 1996, a Fourth Addendum to Lease Agreement dated as of September 26, 2005, and a Fifth Addendum to Lease dated as of March 28, 2012 (collectively, the "Lease"). Lessor is the successor in title to the Leased Premises pursuant to Quit Claim Deed from Commerce Park Realty, LLC dated December 6, 2012.

B. By letter dated June 30, 2016, Lessee wishes to extend the Term of the Lease to December 31, 2021, upon the terms and conditions set forth in this Sixth Addendum to Lease Agreement.

C. To memorialize said extension, Lessor requires that the Lessee enter into this Addendum.

D. In consideration of the foregoing, and for One Dollar ($1.00) and other valuable consideration received by each to their satisfaction, Lessor and Lessee hereby agree as follows:

AGREEMENT

1. Lessor and Lessee hereby agree to extend the Lease Agreement, as described in this Sixth Addendum to Lease Agreement for five (5) years commencing on January 1, 2017 and ending on December 31, 2021. All references in the Lease to the "Initial Term" shall be deemed to mean the period ending on December 31, 2021.

2. Notwithstanding anything contained in the Lease to the contrary, the parties hereby agree that, commencing as of January 1, 2017, the Fixed Rent shall be payable as follows: [*******].

3. The parties hereby agree that the Lessor shall construct the following improvements to the Lease Premises at Lessor's sole expense:

- [*******]

- [*******]
- [*******]
- [*******]

4. The parties hereby agree that the Lessee will be granted one (1) additional option to extend the Lease Term for two (2) years ("Option"). Lessee agrees to provide at least a twelve (12) month prior notice to exercise the addition Term Option. The parties hereby agree that the Fixed Rent for the Option shall be at [*******].

5. Except as specifically modified hereby in this Addendum, all of the terms and conditions of the Lease Agreement remain in full force and effect.

6. This Addendum shall be binding upon, and inure to the benefit of, Lessor and Lessee and their respective heirs, successors and assigns.

7. This Addendum shall be construed in accordance with the laws of the State of Connecticut.

8. This Addendum and the Lease Agreement may not be changed or modified, i n whole or in part, except by written instrument executed by the party against whom enforcement of such change or modification is sought

9. All capitalized terms used, but not defined herein, shall have the definitions attributed thereto in the Lease Agreement.

IN WITNESS WHEREOF, Lessor and Lessee have executed this Addendum as of the day and date first above written.

LESSOR:

DELAWARE COMMERCE PARK, LLC

By: Commerce Park Management
Company, Its Manager

By::
/s/ Melvyn J. Powers
Melvyn J. Powers
President

LESSEE:

HOLOGIC, INC.

By: /s/ Ed Zielinski
Vice President, Real Estate & Facilities

CERTAIN INFORMATION HAS BEEN OMITTED FROM THIS DOCUMENT BECAUSE IT IS (I) NOT MATERIAL, AND (II) WOULD BE COMPETITIVELY HARMFUL IF PUBLICLY DISCLOSED. OMISSIONS ARE MARKED [*******].

ORIGINAL DOCUMENTS

ADDENDUM 1

TO LEASE AGREEMENT BY AND BETWEEN

CYTYC SURGICAL PRODUCTS COSTA RICA, S. A.

& ZONA FRANCA COYOL, S. A.

AND DELIVERY OF PHASE IIIA

AMENDMENT TO LEASE AGREEMENT

Banco Cuscatlân de Costa Rica, S. A., a company organized and existent in accordance with the laws of Costa Rica with main offices 'm San José, La Uruca, 150 meters north from the John Paul the Second bridge, corporate identification number three- one hundred and one- cero sixty four thousand and fifty one, (the "Fiduciary"), hereon, represented by [*******], acting with sufficient authority for the execution of this Amendment to the Lease Agreement, which legal representation is duly recorded in the Persons Section of the Public Registry as shown in the Notarial Statement attached hereto as Exhibit C,

Zona Franca Coyol S.A., corporate identification card number three- one hundred one-four hundred and twenty thousand five hundred twelve, registered in the Mercantile Section of the Public Registry under book five hundred sixty, entry ten thousand three hundred and seventy eight, consecutive one here on represented by [*******], and [*******], acting jointly and with sufficient authority for the execution of this lease agreement which legal representation is duly recorded in the Mercantile Section of the Public Registry under book five hundred and sixty five, entry eleven thousand five hundred and ninety two, consecutive one, company acting as Lessor (the "Lessor"}, and

Cytyc Surgical Products Costa Rica S.A., corporate identification number three - one hundred one - three hundred forty eight thousand seven hundred fifty nine, (the "Lessee"), registered in the Mercantile Section of the Public Registry under book one thousand sis hundred ninety, page one hundred sixty eight, entry two hundred three, represented in this act with enough power by [*******]**.**

Lessor, Lessee and fiduciary shall each and collectively be referred to as a "Party" or the "Parties".

RECITALS:

1. Whereas ZONA FRANCA COYOL, as Lessor entered into a Lease Agreement on April 23rd 2007 ("Lease Agreement"), according to which the Lessor will built and lease to Lessee a manufacturing facility and office building, with an approximate construction area of 15,269 square meters [fifteen thousand two hundred and sixty nine square meters], the "Premises"; located in Lessor's' property located in Alajuela, registered in the National Registry as property number 2- 426607- 000, with a total registered area of one million seventy two thousand eight hundred and ninety nine square meters and two decimeters square meters, cadastral map recorded at the Cadastral Office of the National Registry number A-1093438- 2006, hereinafter identified as the "Overall Land".2. Whereas on August, 2007, the Lessor executed a Trust Agreement, and the Overall Land was

transferred to Banco Cuscatlán de Costa Rica, S. A. in trust, through the so called Zona Franca Coyol / Citibank / Cuscatlán / Two thousand and seven Guaranty Trust ('Trust Agreement");

2. Whereas, according to the Lease Agreement, the Lessor had to, (i) perform all work ("Lessor's Premises Work"} necessary to deliver the Premises to the Lessee in the condition described in the plans and specifications listed on **Exhibit Five and Exhibit One to the Lease Agreement**, and (»} perform all work ("Lessor's Common Area Work") necessary to complete the common areas of the Zona Franca Coyol Park (the "Park") in the conditions described on the plans and specifications listed on **Exhibit Six to the Lease Agreement.** Lessor's Premises Work and Lessor's Common Area Work collectively referred in the Lease Agreement and hereinafter as "Lessor's Work";

3. Whereas according to provision 2.02 B of the Lease Agreement, Lessor shall deliver Lessor's Work to Lessee in three Phases (i.e. Phase I, H and HI). The Timing and Scope Works required for the completion of Lessor's Deliveries for each phase were established in **Exhibit Seven to the Lease Agreement.**

4. Whereas Lessor was not able to achieve the Delivery Dates established in Exhibit Seven to the Lease Agreement and therefore, requested Lessee an extension to the Delivery Dates,

5. Whereas Lessor was not able to deliver to Lessee, as of today, all necessary Lessor Common Area Works and services, established in the Lease Agreement in the conditions established therein, and therefore Lessor proposed Lessee to accept a partial delivery of Lessors Work, hereinafter referred as "Phase HI A"; and a new date for the delivery of all Lessor's Work according to Exhibits One, Five, Six and Seven of the Lease Agreement, hereinafter referred as "Phase HI B";

6. Whereas Lessor, by means of its letter dated January 18, 2008, notified Lessee that Lessor had modified Exhibit 6 to the Lease Agreement, in accordance with Section 2.02 of the Lease.

7. Whereas, Lessee, by means of a letter dated January 28, 2008, expressed its rejection to such Exhibit 6 amendment claiming that such changes adversely and materially affect Lessee's interests and implied a downgrading of the common Works and services that were offered to Lessee and were used as reference to establish the monthly rent of the Lease Agreement.

8. Whereas, in consideration of Lessees' aforementioned rejection notice, Parties agreed that Exhibit 6 wilt remain as originally negotiated, i.e. as it was prepared and attached to the Lease Agreement, exception made of the modifications contained in Exhibit A to this Amendment.

9. Whereas the Trustor and the Main Beneficiary of the Trust Agreement have instructed Banco Cuscatlán de Costa Rica, S. A. as a Trustee to enter into this Amendment, and all parties acknowledge that Banco Cuscatlán de Costa Rica, S. A. will act in accordance with the instructions received by the Main Beneficiary and Zona Franca Coyol S.A., and expressly agree that Banco Cuscatlán de Costa Rica, S. A. enters into the present Agreement acting solely as trustee of the Trust.

Now, therefore, based on mutual negotiations between the Parties, they have agreed to execute this Amendment to the Lease Agreement (the "Amendment"), under the following terms and conditions:

I. Amendment to 2.02 A and B:

The parties hereby agree and accept to amend Provision 2.02 items B and C of the Lease Agreement, as follows:

"B. ***Timing of Lessor's Work.*** *Lessor shall deliver Lessor's Work to Lessee in three Phases I, II* and *III.* Works *required for the completion of each Phase are defined as set forth in* ***Exhibit*** **Seven** *hereto. The Timing and Scope Works required for the completion of* Lessor's *Deliveries for each phase is as established in such* ***Exhibit*** **Seven.**

- *[*******]*
- *[*******]*
- *[*******].*

Lessor *shall give a written-notice to Lessee when Lessor has achieved the completion of each Phase or Sub-phase establishing a date and time (not after the following five working days after notification, unless otherwise agreed between the parties) for the Reception Visit to confirm that such Phase has been completed. Time is of the essence for the performance of Lessor's Work. If Lessee may not show to the Reception Visit, on the date established by Lessor he shall inform so in writing to the Lessor, and indicate a new date and time for such Reception Visit, which will have to be within the five working days after the date of notification given by the Lessor. If the Lessee does not* show *unjustifiably to the Reception Visit and, on or before the date five (5) business days after the Reception Visit, Lessee do not present to the Lessor a written notice ("Opposition") objecting to the Lessor's assertion that it has achieved the Phase of Lessor's Work in question, it shall be deemed an acceptance of the completion of works to be performed within such Phase.*

C. *Definitions.*

(1) *No* Phase *shall be deemed to be completed unless the portion of the Building completed is watertight. With respect to Phase I, [*******].*

(2) *The "Final Date of Delivery" for* Phase *III- A shall defined as the date when Phase HI- A, is complete in accordance with* ***Exhibits*** **One,** ***Five,*** **Six and Seven.** The *"Final Date of Delivery" for Phase lll-B shall be defined as the date when* Phase ///- B, *is complete in accordance with* ***Exhibits*** **One,** ***Five.*** **Six and Seven and** ***the subsequent amendments attached hereto as Exhibits A and*** **B.** No *phase shall be deemed to be completed unless all of Lessor's Premises Work and Lessor's Common Area Work are Substantially Complete,* as *hereinafter defined. The Final Date of Delivery shall be confirmed by a Premises and Common Area Work Reception Notice, for each Sub-phase as set forth in Section 2.02D below.*

(3) *"Substantial Completion" of Lessor's Premises Work shall be defined as the time when: (if not less than ninety-Five (95%) percent of Lessor's Premises Work has been completed, and the only remaining work corresponds to the Punch List items, so that the* Lessee *is capable of using and occupying the Premises, as contemplated hereunder, without any inconvenience or interruption, and (ii) Lessor has obtained, from the governmental authorities having jurisdiction over Lessor's Premises Work, all permits necessary to enable* Lessee to obtain *all permits relating to Lessee's Work, as* set *forth in Exhibit Two and Seven.*

(4) *"Substantial Completion" of Lessor's Common Area Work shall be defined as the time when: (i) not less than ninety-five (95%) percent of ail of Lessor's Common Area Work has been completed, and the only remaining work corresponds to the Punch List items, so that Lessee has proper access to the Premises and all utility services to be used by the Lessee in the Premises are available to Lessee on a continuous basis, [*******], and (ii) Lessor has obtained from the governmental authorities having jurisdiction over Lessor's Common Areas Work, any permits which are necessary to enable Lessee to obtain all permits relating to Lessee's Work, as set forth in Exhibit Two and Seven."*

All provisions of 2.02 the Lease Agreement not specifically amended hereby shall keep their full validity and effect.

II. Amendment to Exhibit 6 and 7.

The parties hereby agree and accept to amend Exhibits 6 & 7, in order to modify the date of delivery and works to be delivered under Phase HI, Sub-phases HI A and B, as described in Exhibits A and B to this Agreement.

III. Amendments to Section 2.05

The parties hereby agree and accept to amend Provision 2.05 of the Lease Agreement, as follows:

"2.05. *Lessee's Remedies in the Event of Delays in Lessor's Work.*

A. *Self-Help Rights. If, for any reason other than Lessee Delays, Lessor fails to achieve any Phase or Sub-phase on or before the respective Target Date for such Phase, and the Works have not been completed in the following sixty (60) calendar days, in case of Phase I, 30 days for Phase H and 15 days for Subphases III- A and III- B, Lessee shall have the right to give Lessor a written notice that it intends to complete the portion of Lessor's Work necessary to achieve such delivery, and if Lessor fails to complete such portion of Lessor's Work within thirty (30) calendar days after Lessor receives such notice. Lessee shall have the right to perform such portion of Lessor's Work, at Lessor's expense. If due to the nature of the works it is impossible for the Lessor to finish them in thirty (30) days, it win have to begin all necessary actions in order to finish them, and if it does, it will have an additional reasonable term to finish to be approved by Lessee. If Lessor has not started all actions required in order to do so within fifteen (15) days after Lessor receives* such notice, and, *in any event, if the Lessor has not completed the work after the additional* reasonable *term approved by Lessee, then the Lessee will be allowed to complete the Lessor's Work, at Lessor's cost and expense. Lessor will reimburse* Lessee for *the costs so incurred by Lessee within thirty (30 days) after Lessee delivers to Lessor all invoices corresponding to such costs, that have to be invoices with legal and tax effects in Costa Rica, unless both parties agree that payment is made by means of deduction of the total amount owed for such costs from the next monthly rent payment thereafter due under this Lease and, if such rent payment is not enough, by deducting from the following months, until the complete amount owed and its interests has been credited to the Lessee. Lessee may only take over Lessor's Work, provided that Lessee does not exercise its right to terminate the Lease. Once the Lessee has taken over Lessor's Work, Lessor will no longer be responsible for further or new delays not attributable to Lessor.*

B. Liquidated Damages.

1. *If, for any reason other than Lessee Delays and Force Majeure Lessor fails to achieve delivery of Phase One on or before the Target Date for delivery of Phase One, then Lessor shall pay to Lessee liquidated damages equal in amount to the product of: (i) the number of days between the date that Lessor achieves delivery of Phase One and the Target Date for delivery of Phase One, multiplied by (ii)[*******]. Provided, however, that such liquidated damages shall only be paid by* Lessor *if the Lessee does not exercise its right to terminate the Lease. In case Force Majeure delays Lessor's Work for more than six months. Lessee can exercise its right to terminate the Lease.*

Lessee *hereby releases Lessor of any liability or payment of liquidated damages for delays in the delivery of Phase I, provided Lessor delivers Phase III* B on *the Target Date of Delivery of Phase IIIB. If Lessor fails to achieve the Final Date of Delivery of Phase lll-B on or before the respective Target Date for such Phase, Lessee will be entitled to liquidated damages as compensation in accordance with Section 2.05 (B)(1).*

2. *If, for any reason other than Lessee Delays and Force Majeure, Lessor fails to achieve the Final Date of Delivery of Phase III- B on or before the respective Target Date for such Phase, Lessor shall pay to Lessee liquidated damages equal in amount to the product of: (i) the number of days between the Target Date for such Phase and the actual date that Lessor achieves* the *Final Date of Delivery of Phase III- B, multiplied by (ii) [*******], provided however, that such liquidated damages shall only be paid by Lessor if the Lessee does not exercise its right to terminate the* Lease, and *in no event shall* Lessee be *entitled to collect more than [*******] for liquidated damages for any day of delay. As an example, if Lessor compensated Lessee four weeks of delay after the Target Date of Phase I or Phase III A, then if there is a delay of the* same four weeks at the *Final Date of Delivery of Phase III* B, then *Lessor will not have to compensate such delay, since it has already been compensated. Liquidated damages for Phase II will have to be paid only and exclusively, if delay in delivery of Phase II affects Final Date of Delivery of Phases HI A and HI* B on *Target Date for such Final Date of Delivery. As allowed under Article 705 of Costa Rican Civil Code, the Lessee irrevocably waives its rights to and guarantees and acknowledges that it will not file any lawsuits or claims to recover additional amounts from the Lessor originated in damages caused by a failure to deliver the Premises in a timely manner for causes attributable to the Lessor, its contractors, agents or employees, unless otherwise stated in this Agreement. Additionally if, for any reason other than Lessee's Delays and Force Majeure occurred after execution of this amendment. Lessor fails to achieve the Final Date of Delivery of Phase lll-B* on or *before the respective Target Date for such Phase, Lessee will be entitled to liquidated damages as compensation for the delays existing as of the date of signature of this Lease Agreement, attributable to Lessor in the delivery of Phase I and H in the Target Dates originally established in Exhibit 7, subject to alt other rights and remedies under the Agreement, and it shall have the right to use the Performance Bond to charge them.*

In case Force Majeure delays Lessor's Work for more than six months. Lessee can exercise its right to terminate the Lease.

3. *At Lessee's election. Lessee shall have the right to deduct any liquidated damages due from Lessor to Lessee pursuant to this Section 2.05 from the amount of Rent and other charges due from Lessee to Lessor hereunder.*

C. If Lessor fails to achieve any Phase or Sub-phase on the date ("Outside Termination Date") six (6) months after the Target Date for such Phase, Lessee shall have the right to terminate this Lease by giving written notice to Lessor. The Outside Termination Date shall be extended by any period of time that Lessor is delayed in the performance of Lessor's Work by reasons of Force Majeure occurred after

the execution of this Agreement, provided that in no event shall the Outside Termination Date occur later than the date six (6) months after the Target Date for such Phase. If Lessee exercises its termination right pursuant to this Section 2.05C, he will be entitled to the sole compensation indicated as penal sum pursuant to Section 3.03 (Lessor's Performance Bond}. Lessor hereby waives all claims against Lessee due to Lessee's Delay which occurred prior to execution of *this Amendment.*

D. Lessor's Performance Bond. The parties confirm and agree that Lessor's obligations under this Section 2.05 shall be secured by a Performance Bond delivered by Lessor to Lessee pursuant to Section 3.03 and subject to all other rights and remedies under the Agreement".

III. Amendment to Section Three. Rent, Fees and Lease Term.

The parties hereby agree and accept to amend Section Three of the Lease Agreement, as follows:

"3.00. Rent and Fees

Rent will be paid in monthly installments. Commencing as of the Final Date of Delivery of Phase lll-A, the monthly rent to be paid for the Premises (the "Rent") by the Lessee *shall be [*******], and commencing as of the Final Date of Delivery of Phase III-B the monthly Rent shall be [*******], equivalent, the latest amount, to:*

a) *[*******] per month for every square meter of the Manufacturing facility, that has an area of twelve thousand square meters,*

b) *[*******] per* month *for every square meter of the* External *Offices, that have an area of eight hundred and eighty four square meters,*

c) *[*******] per month for every square meter of a Cafeteria, that has an area of eight hundred and eighty five square meters;*

d) *[*******]per month for every square meter of an interior Mezzanine structure; and*

Lessee shall have *the right, within thirty (30) days after the completion of each Phase of Lessor's Work to measure the Premises jointly with the Lessor, and the measurement method shall be at central axis of walls and columns. If, after such measurement, it is determined that the actual area of the Premises (or any portion) is less than the amounts set forth above, the Rent shall be reduced accordingly. However. Lessee accepts that the total area measured may have a difference of up to two percent (2%) of the area set forth above, and in such case a reduction or increase in Rent will not apply. Any dispute as to such*

measurement shall be submitted *to an Engineers and Architects Board Arbitration process, in accordance with the procedural rules of such institution.*

The Lessee shall begin making such payments as of the Final Date of Delivery of Phase lll-A, in the amount established in the first paragraph of this Section 3.00 [*******]and in compliance with the terms and conditions agreed under this Lease. As of the Final Date of Delivery of Phase III- B, Lessee will begin making payments for the full amount established in the first paragraph of this Section *3.00 [*******]. The Rent shall be paid for each month in advance within the first five calendar days of each month, and net of all taxes including but not limited to value added taxes and other than income taxes. If the Final Delivery Date is not on the first day of the month, Rent for the first month will be prorated, so that Lessee only pays Rent for the days remaining for such month to end, counting since the Final Date of Delivery. During the first 45 days of the Lease Agreement, the Lessee has a right to request additional internal offices, of an area of up to one thousand square meters, that shall be charged at a rental fee of [*******] per month per every square meter.*

Every year, on the anniversary of the Final Date of Delivery of Phase lll-B, the monthly Rent shall undergo a [*******], using as basis for such increase the Rent paid in the last month of the previous twelve month period ("Annual Increase Rate"). The first increase will be effective as of the first anniversary of the Final Date of Delivery of Phase lll-B, and thereafter all yearly increments shall be paid accordingly unfit the expiration of the Lease.

Rent and any other Payments shall be made in full and in cash, check, or electronic transfer to the Lessor's account. The validity of any form of payment different than cash, will be subject to its approval and final credit in favor of the Lessor by the bank. In case of wire transfers, the Lessee shall notify in writing to the *Lessor, the date in which the transfer was executed, and such payment shall be deemed made on the date* on *which the transfer is credited by the Lessor's bank to the Lessor's account. The Lessee must pay all applicable transfer fees or bank charges. For purposes of this Lease, the Lessor's address shall be the address where payments should be made. In the event that the beginning or end of the term of this Lease is not the first of a month, rent shall be prorated such that the Lessee shall only pay the portion of the rent allocated to the* portion of the *month the Premises is occupied by the Lessee. Claims pertaining to breach of rent payment are not subject to arbitration.*

Except as expressly set forth in this Lease: (i) the Lessee shall make all payments in accordance with this Lease without any deductions, and (ii) in the event the Lessee finds himself obligated to make deductions or withholdings, originated in a value added or sales tax or any other circumstance that may reduce the amount to be received by the Lessor, the Lessee must increase Rent to an amount that will allow Lessor to receive a net amount equal to the original agreed Rent.

The Lessee shall be solely responsible for the payment of any and all utilities and any other installations or services not included in the Service Agreement. The Lessee *shall pay utilities in accordance with applicable fees and usage shall be determined by the meters specifically installed for such purpose by the carriers of these services or the Lessor, as may be the case.*

In addition, during the term of this Lease, the Lessee shall be solely liable for the payment of monthly service fees in compliance with the Service Agreement that the Lessee has concurrently entered into with *the Lessor or current Manager of the Park. The Service Agreement is attached as* ***Exhibit Nine*** *hereto. Service fees under the Service Agreement are currently [*******] per square meter, for a total amount of [*******].*

All monetary obligations contained herein are part of Lessee's basic obligation to pay rent, as established under articles twenty five and sixty four of the "Ley General de Arrendamientos Urbanos y Suburbanos " number 7527 and its amendments (General Urban and Suburban Lease Law) in effect in Costa Rica. Lessee will not be responsible for payment of any other obligation not specifically contemplated in this Agreement.

3.01 Term of the Lease.

A. Initial Term. The term of occupancy of the Premises shall commence as of the Final Date of Delivery of Phase III A (as defined in Section 2.02-C hereof), ending [*******]: provided however, that if the Final Date of Delivery occurs on other than the first day of a calendar month, then the Termination Date shall be the last day of the calendar month in which the [*******].

B. The *term of this Lease Agreement may be extended for [*******], provided that Lessee notifies in writing of its intention to extend the Term, at least six months prior to the Termination Date, or the termination of any extension thereof. If Lessee timely exercises its right to extend the term of this Lease Agreement, [*******], then the term of this Lease shall be extended for upon all of the same terms and conditions of the Lease in effect immediately preceding the commencement of such additional term, without the need for further act or deed by either party. The Rent payable by Lessee during each additional term shall be the same as during the initial term of this Lease, subject to the [*******]that have already taken place in accordance with Section 3.00.*

3.02 Performance Bond, Security Deposit and Guarantee of Compliance.

A. Lessee shall, *at the time of* execution and delivery of this Lease, deliver to Lessor a deposit in *the* form of an irrevocable Letter of Credit from a bank reasonably acceptable to Lessor,,

("Lessee's Letter of *Credit"), for a sum* equal to *[*******]* from a surety reasonably acceptable to Lessor, as penal sum in case of *unjustified* termination of this Agreement by Lessee. Besides the aforementioned. Lessee's Letter of Credit shall secure Lessee's payment obligations for the amount of such payment obligations, from the time of execution of the Lease until the Final Date of Delivery of Phase III - A, when the Lessor shall receive payment from the Lessee of the security deposit and corporate guaranty, as indicated in Sections 3.02 B) *and 3.02 C)* below, or until Lessor or Lessee exercise their rights of termination according to the provisions of this Agreement, in case termination takes place prior to such Final Date of Delivery. If all or part of the Letter of Credit were used by the Lessor for any of the applicable events, the Lessee shall reinstate the Letter of *Credit* for the original amount of *[*******]*, when applicable, within the next ten (10) calendar days following notice of its use by the Lessor. Reinstatement obligation will not be eligible if termination of the agreement has occurred.

B. Upon the Final Date of Delivery of Phase III - A, Lessee shall deliver to Lessor a security deposit (which may be in the form of a letter of credit, as hereinafter set forth) in the amount of *[*******]*. Such *deposit* shall serve as security for compliance of the Lessee's obligations under this Lease, and shall be kept by the Lessor as a security deposit for all the term of the Lease (the "Deposit"). The Lessee shall provide the Deposit in the form of an irrevocable Letter of Credit or Bond from a Costa Rican bank reasonably acceptable to Lessor, Lessor hereby agreeing that Banco Interfin is acceptable to Lessor.

Additionally, the Deposit shall serve as a guarantee to cover the payment of any other amounts due by the Lessee to the Lessor pursuant to the provisions of this Lease. *The* Lessor shall have the right, but not the *obligation, after any Event of* Default by Lessee, to use the Deposit to settle outstanding rent payments, and shall communicate the Lessee when it intends to do so, for information purposes only. If so directed by Lessee in writing, the Lessee authorizes the Lessor to use the Deposit to cover the expenses of *[*******]*. If all or part of the Deposit were used by the Lessor for any of the aforementioned items, the Lessee shall have an obligation to reinstate the used amount within fen (10) calendar days following notice of its use by the Lessor, unless such use is made upon termination of the Lease, in which case the balance, if any, shall be returned to the Lessee within sixty (60) calendar days following the date on which this Lease is terminated, and prior verification that all utility bills payable by the Lessee have been fully paid. *[*******]*.

C. In addition to the Deposit, no later than five business days following the Final Date of Delivery of Phase III- A the Lessee shall deliver to the Lessor *[*******]*, a copy of which is attached hereto as ***Exhibit Ten*** (the *[*******]*). The *[*******] shall* serve as a *[*******] obligations under this Lease Agreement and shall remain valid from the date hereof until the Termination Date of this Agreement.*

3.03 Lessor shall, at the time of execution and delivery of this Lease, deliver to Lessee a [*******] ("Lessor's *[*******]*"), *in form reasonably acceptable to Lessee, for a sum equal to [*******] from a surety reasonably acceptable to Lessee, as penal sum, as established in this Contract. Lessor's [*******] shall secure Lessor's obligations and payment of any amounts due from* Lessor to Lessee under this Lease from the *time of* execution of the Lease *until the Final Date of Delivery of Phase HI* - 8. *If the Lessor*

does not reimburse Lessee for the costs so incurred in case of Self-Help, pursuant to Section 2.05 A) above, within the term established in such Section, Lessee *may seek compensation from the Lessor's [*******] as established in this Section 3.03. However, in the latter case, if* Lessor's *[******]* is not sufficient to cover such *necessary amounts, Lessee may seek compensation from Lessor for any uncovered balance regarding such Self-Help, through the procedures established in provision 11.01 of this Lease Agreement. If all or part of the [*******] is used by the Lessee for any of the applicable occurrences, the Lessor shall have an obligation to reinstate the [*******] for the original amount of [*******], when applicable, within the next ten (10) calendar days following notice of its* use *by the* Lessee. Reinstatement *obligation will not be exigible if termination of the agreement* has *occurred."*

VI. Prevailing clauses.

The execution of this Amendment does not affect the legal effect of any clauses of the Lease Agreement or its Exhibits, not specifically amended in this Amendment. Therefore, all provisions of the Lease Agreement and its Exhibits not specifically amended shall keep their full validity and effect.

VII. Acceptance by the Trustee.

Banco Cuscatlán de Costa Rica, S.A., acting solely as the trustee of the Trust Agreement, hereby acknowledges the covenants taken herein, prior authorization of the Main Beneficiary and express request of the Trustor.

Notwithstanding the foregoing, all parties agree and acknowledge that all income generated as product of the Lease, unless if Lessor is in default, will be received only by the Lessor, since the Lessor is the direct beneficiary of such revenues, and therefore, he shall comply with any tax obligation whether material or formal. The parties also agree that the exclusive purpose of the Trust Agreement (and its amendments) is to secure the loans set forth therein; therefore it does not have any kind of lucrative activity, being that the duties of the Trustee are limited to: (i) hold the trust ownership of the entrusted assets, and (ii) transfer the entrusted assets, in accordance with the terms and conditions established in the Trust Agreement. Also, the parties agree that as long the Lessor keeps acting as the contractor of the overall land (within which, the leased premises are located), he will assume and undertake all obligations provided in the Lease Agreement and this amendment.

IN WITNESS WHEREOF, the Parties hereto have executed this Amendment as of the date first above written.

Zona Franca Coyol, S. A.

Per: [Signature]
Per: [Signature]
Date: July, 11th 2008

Cytyc Surgical Products Costa Rica, S. A.

Per: [Signature]
Per: [Signature]
Date: July 22 2008

BANCO CUSCATLÁN

Per: [Signature]
Date: July, 14th 2008

CERTAIN INFORMATION HAS BEEN OMITTED FROM THIS DOCUMENT BECAUSE IT IS (I) NOT MATERIAL AND (II) WOULD BE COMPETITIVELY HARMFUL IF PUBLICLY DISCLOSED. OMISSIONS ARE MARKED [*******].

ORIGINAL DOCUMENTS

ADDENDUM 2

TO LEASE AGREEMENT BY AND BETWEEN

CYTYC SURGICAL PRODUCTS COSTA RICA, S. A.

& ZONA FRANCA COYOL, S. A.

AND DELIVERY OF PHASE IIIB

SECOND AMENDMENT TO LEASE AGREEMENT

Entered into at the city of San José and effective as of the 22nd day of the month of September, of the year 2008, between:

Banco Cuscatlán de Costa Rica, S. A., a company organized and existent in accordance with the laws of Costa Rica with main offices in San José, La Uruca, 150 meters north from the John Paul the Second bridge, corporate identification number three- one hundred and one- cero sixty four thousand and fifty one, (the "Fiduciary"), hereon, represented by Manuel Marenco Fernandez, [*******], acting with sufficient authority for the execution of this Amendment to the Lease Agreement, which legal representation is duly recorded in the Persons Section of the Public Registry,

Zona Franca Coyol S.A., corporate identification card number three- one hundred one-four hundred and twenty thousand five hundred twelve, registered in the Mercantile Section of the Public Registry under book five hundred sixty, entry ten thousand three hundred and seventy eight, consecutive one here on represented by André Gamier Kruse, [*******], and Alvaro Carballo Pinto, [*******], acting jointly and with sufficient authority for the execution of this lease agreement which legal representation is duly recorded in the Mercantile Section of the Public Registry under book five hundred and sixty five, entry eleven thousand five hundred and ninety two, consecutive one, company acting as Lessor (the "Lessor"), and

Cytyc Surgical Products Costa Rica S.A., corporate identification number three - one hundred one - three hundred forty eight thousand seven hundred fifty nine, (the "Lessee"),
registered in the Mercantile Section of the Public Registry under book one thousand six hundred ninety, page one hundred sixty eight, entry two hundred three, represented in this act with enough power by Javier Gomez Morales, [*******], acting with sufficient authority for the execution of this Amendment to the Lease Agreement, which legal representation is duly recorded in the Persons Section of the Public Registry,

Lessor, Lessee and Fiduciary shall each and collectively be referred to as a "Party" or the "Parties". Words

RECITALS:

1. Whereas, ZONA FRANCA COYOL, as Lessor entered into a Lease Agreement on April 23rd 2007 ("Lease Agreement"), according to which the Lessor would build and lease to Lessee a manufacturing facility and office building, the "Premises".

2. Whereas, on August, 2007, the Lessor executed a Trust Agreement, and the Premises were transferred to Banco Cuscatlan de Costa Rica, S. A. in trust, through the so called Zona Franca Coyol / Citibank / Cuscatlan / Two thousand and seven Guaranty Trust ("Trust Agreement");

3. Whereas, on July 22nd, 2008, Parties entered into the First Amendment to the Lease, in order to, among other things, amend Sections 2.02 A and B, 2.05, and Section 3 of the Lease.

4. Whereas, as a consequence of Lessee Changes duly evidenced by Change Orders # 1 to 7, 9 to 15, 17 to 19, 21, and 22, there was an [*******] in the cost of Lessor's Work in the Premises of a [*******].

5. Whereas, in accordance with Section 2.04 of the Lease, Parties wish to mutually agree on the form and method of payment by Lessee to Lessor of such [*******] of Lessor's Work as part of the Rent.

Now, therefore, based on mutual negotiations between the Parties, they have agreed to execute this Second Amendment to the Lease Agreement (the "Amendment"), under the following terms and conditions:

I. Capitalized Terms

All capitalized terms not otherwise defined herein shall have the meanings ascribed thereto in the Lease.

II. Amendment to Section 3.01 "Rent, Fees"

The parties hereby agree and accept to amend Section 3.01 of the Lease Agreement, as follows:

"3.00. Rent and Fees

Rent will be paid in monthly installments. Commencing as of the Final Date of Delivery of Phase III-A, the monthly rent to be paid for the Premises (the "Rent") by the Lessee shall be [*******]*, and commencing as of the Final Date of Delivery of Phase III-B the monthly Rent shall be* [*******]*, equivalent, the latest amount, to:*

[*******]

Lessee shall have the right, within thirty (30) days after the completion of each Phase of Lessor's Work to measure the Premises jointly with the Lessor, and the measurement method shall be at central axis of walls and columns. If after such measurement, it is determined that the actual area of the Premises (or any portion) is less than the amounts set forth above, the Rent shall be reduced accordingly. However, Lessee accepts that the total area measured may have a difference of up to two percent (2%) of the area set forth above, and in such case a reduction or increase in Rent will not apply. Any dispute as to such measurement shall be submitted to an Engineers and Architects Board Arbitration process, in accordance with the procedural rules of such institution.

The Lessee shall begin making such payments as of the Final Date of Delivery of Phase III-A, in the amount established in the first paragraph of this Section 3.00 ([*******]*) and in compliance with the terms and conditions agreed under this Lease. As of the Final Date of Delivery of Phase III- B, Lessee will begin making payments for the full amount established in the first paragraph of this Section 3.00 (*[*******]*. The Rent shall be paid for each month in advance within the first five calendar days of each month, and net of all taxes including but not limited to value added taxes and other than income taxes. If the Final Delivery Date is not on the first day of the month, Rent for the first month will be prorated, so that Lessee only pays Rent for the days remaining for such month to end, counting since the Final Date of Delivery. During the first 45 days of the Lease Agreement, the Lessee has a right to request additional internal offices, of an area of up to* [*******] *per month per every square meter.*

Every year, on the anniversary of the Final Date of Delivery of Phase III-B, the monthly Rent shall undergo a [*******]*, using as basis for such* [*******] *paid in the last month of the previous twelve month period ("*[*******]*"). The first increase will be effective as of the first anniversary of the Final Date of Delivery of Phase III-B, and thereafter all yearly increments shall be paid Lessee shall have the right, within thirty (30) days after the completion of each Phase of Lessor's Work to measure the Premises jointly with the Lessor, and the measurement method shall be at central axis of walls and columns. If, after such measurement, it is determined that the actual area of the Premises (or any portion) is less than the amounts set forth above, the Rent shall be reduced accordingly. However, Lessee accepts that the total area measured may have a difference of up to two percent (2%) of the area set forth above, and in such case a reduction or increase in Rent will not apply. Any dispute as to such measurement shall be submitted to an Engineers and Architects Board Arbitration process, in accordance with the procedural rules of such institution.*

The Lessee shall begin making such payments as of the Final Date of Delivery of Phase III-A, in the amount established in the first paragraph of this Section 3.00 ([*******]) and in compliance with the terms and conditions agreed under this Lease. As of the Final Date of Delivery of Phase III- B, Lessee will begin making payments for the full amount established in the first paragraph of this Section 3.00 ([*******]. *The Rent shall be paid for each month in advance within the first five calendar days of each month, and net of all taxes including but not limited to value added taxes and other than income taxes. If the Final Delivery Date is not on the first day of the month, Rent for the first month will be prorated, so that Lessee only pays Rent for the days remaining for such month to end, counting since the Final Date of Delivery. During the first 45 days of the Lease Agreement, the Lessee has a right to request additional internal offices, of an area of up to* [*******]*, that shall be charged at a rental* [*******] *per month per every square meter.*

Every year, on the anniversary of the Final Date of Delivery of Phase III-B, the monthly Rent shall undergo a [*******]*, using as basis for such* [*******] *the Rent paid in the last month of the previous twelve month period ("*[*******]*"). The first* [*******] *will be effective as of the first anniversary of the Final Date of Delivery of Phase III-B, and thereafter all yearly increments shall be paid accordingly until the expiration of the Lease.*

Rent and any other Payments shall be made in full and in cash, check, or electronic transfer to the Lessor's account. The validity of any form of payment different than cash, will be subject to its approval and final credit in favor of the Lessor by the bank. In case of wire transfers, the Lessee shall notify in *writing to the Lessor, the date in which the transfer was executed, and such payment shall be deemed made on the date on which the transfer is credited by the Lessor's bank to the Lessor's account. The Lessee must pay all applicable transfer fees or bank charges. For purposes of this Lease, the Lessor's address shall be the address where payments should be made. In the event that the beginning or end of the term of this Lease is not the first of a month, rent shall be prorated such that the Lessee shall only pay the portion of the rent allocated to the portion of the month the Premises is occupied by the Lessee. Claims pertaining to breach of rent payment are not subject to arbitration.*

Except as expressly set forth in this Lease: (i) the Lessee shall make all payments in accordance with this Lease without any deductions, and (ii) in the event the Lessee finds himself obligated to make deductions or withholdings, originated in a value added or sales tax, or any other circumstance that may reduce the amount to be received by the Lessor, the Lessee must increase Rent to an amount that will allow Lessor to receive a net amount equal to the original agreed Rent.

The Lessee shall be solely responsible for the payment of any and all utilities and any other installations or services not included in the Service Agreement. The Lessee shall pay utilities in accordance with applicable fees and usage shall be determined by the meters specifically installed for such purpose by the carriers of these services or the Lessor, as may be the case.

In addition, during the term of this Lease, the Lessee shall be solely liable for the payment of monthly service fees in compliance with the Service Agreement that the Lessee has concurrently entered into with the Lessor or current Manager of the Park. The Service Agreement is attached as ***Exhibit Nine*** *hereto. Service fees under the Service Agreement are currently* [*******]*, for a total amount of* [*******].

All monetary obligations contained herein are part of Lessee's basic obligation to pay rent, as established under articles twenty five and sixty four of the "Ley General de Arrendamientos Urbanos y Suburbanos " number 7527 and its amendments (General Urban and Suburban Lease Law) in effect in Costa Rica. Lessee will not be responsible for payment of any other obligation not specifically contemplated in this Agreement."

III.Prevailing clauses:

The execution of this Amendment does not affect the legal effect of any clauses of the Lease Agreement or its Exhibits or previous Amendments, not specifically modified in this Amendment. Therefore, all provisions of the Lease Agreement and its Exhibits not specifically amended shall keep their full validity and effect.

IV.Acceptance by the Trustee.

Banco Cuscatlan de Costa Rica, S. **A.,** acting solely as the trustee of the Trust Agreement, hereby acknowledges the covenants taken herein, prior authorization of the Main Beneficiary and express request of the Trustor.

Notwithstanding the foregoing, all parties agree and acknowledge that all income generated as product of the Lease, unless if Lessor is in default, will be received only by the Lessor, since the Lessor is the direct beneficiary of such revenues, and therefore, he shall comply with any tax obligation whether material or formal. The parties also agree that the exclusive purpose of the Trust Agreement (and its amendments) is to secure the loans set forth therein; therefore it does not have any kind of lucrative activity, being that the duties of the Trustee are limited to: (i) hold the trust ownership of the entrusted assets, and (ii) transfer the entrusted assets, in accordance with the terms and conditions established in the Trust Agreement. Also, the parties agree that as long the Lessor keeps acting as the contractor of the overall land (within which, the leased premises are located), he will assume and undertake all

obligations provided in the Lease Agreement and this amendment.

IN WITNESS WHEREOF, the Parties hereto have executed this Second Amendment as of the date first above written.

[Signature]

By/ Cytyc Surgical Products de Costa Rica S.A.

Lessee

[Signature]

By/ Banco Cuscalán de Costa Rica S.A.

Trustee

[Signature]

Zona Franca Coyol S.A.

Lessor

CERTAIN INFORMATION HAS BEEN OMITTED FROM THIS DOCUMENT BECAUSE IT IS (I) NOT MATERIAL, AND (II) WOULD BE COMPETITIVELY HARMFUL IF PUBLICLY DISCLOSED. OMISSIONS ARE MARKED [*******].

FIRST AMENDMENT TO LEASE

This FIRST AMENDMENT TO LEASE (the "First Amendment") is entered into as of July 14th, 2016, by and between 445 SIMARANO DRIVE MARLBOROUGH LLC, a Massachusetts limited liability company ("Landlord") and HOLOGIC, INC., a Delaware corporation ("Tenant").

WHEREAS, Landlord and CYTYC CORPORATION ("Predecessor Tenant") entered into a certain lease dated July 11, 2006 (the "Lease") for approximately 145,527 rentable square feet of space (the "Premises") in the building (the "Building") located at 445 Simarano Drive, Marlborough, Massachusetts (the "Property"); and

WHEREAS, pursuant to a certain Assignment and Assumption of Lease Agreement of substantially even date herewith, Predecessor Tenant assigned all of its interest in and obligations under the Lease to Tenant, and Tenant accepted said assignment and assumed said obligations; and

WHEREAS, the Term of the Lease is scheduled to expire on February 28, 2019; and WHEREAS, Landlord and Tenant desire to extend the

Term of the Lease and further modify the

terms of the Lease as set forth herein.

NOW THEREFORE, in consideration of ONE DOLLAR and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Landlord and Tenant hereby agree as follows:

1. Effective Date. Except where expressly stated to the contrary herein, the terms and conditions of this First Amendment shall be deemed effective as of the date set forth above (the "Effective Date").

2. Status of Lease. Tenant and Landlord hereby represents and warrants that it is currently in possession of the Premises and acknowledges, agrees and confirms that the Lease is valid and presently in full force and effect.

3. Completion of all Landlord Work. Etc. Tenant hereby acknowledges, agrees and confirms that all leasehold improvements and previous work to be performed and documentation to be provided and allowances to be paid by Landlord under the Lease, including without limitation, pursuant to Sections 1 and 15 and Exhibits B and K of the original Lease, have been substantially and satisfactorily completed, provided, paid or waived (as applicable) including all punch list items (if any) and Landlord has delivered the Premises to Tenant and Tenant has accepted possession of the same.

4. Rentable Square Feet of Building. The references in Section l(A) and Section 4(F) of the Lease to the amount of rentable square feet of the Building are hereby changed from “175,763 sf “ to "176,020 sf."

5. Tenant 's Proportionate Share. Tenant's Proportionate Share as set forth in Section 4(F) of the Lease is hereby changed from “82.8%f “ to “82.68%.”

6. Term. The term of the Lease is hereby extended until February 29, 2024 (the "Expiration Date").

7. Base Rent. Tenant shall continue to pay Base Rent through December 31, 2016 as set forth in Section 3 of the Lease, unaffected by this First Amendment. Notwithstanding the foregoing, so long as Tenant is not then in Default under the Lease, as defined in Section 33 of the Lease, beyond any applicable cure period, each of the monthly payments of Base Rent for each of October, November and December, 2016 shall be offset by a credit in the amount of [*******] for a total credit of [*******], but Tenant's obligation to pay Additional Rent and all other sums payable hereunder shall continue unabated. Effective as of January 1, 2017, Base Rent shall be paid as follows:

Period	Rent per square foot	Annual Rent	Monthly Rent
[*******]	[*******]	[*******]	[*******]
[*******]	[*******]	[*******]	[*******]
[*******]	[*******]	[*******]	[*******]
[*******]	[*******]	[*******]	[*******]
[*******]	[*******]	[*******]	[*******]
[*******]	[*******]	[*******]	[*******]
[*******]	[*******]	[*******]	[*******]
[*******]	[*******]	[*******]	[*******]

* Notwithstanding the foregoing, so long as Tenant is not then in Default, as defined in Section 33 of the Lease, hereunder beyond any applicable cure

period monthly payments of Base Rent shall be abated for the Rent Months of January 2018 and January 2019, but Tenant's obligation to pay Additional Rent and all other sums payable hereunder shall continue unabated.

8. Option to Extend. The first sentence of Section 7 of the Lease is hereby revised to indicate that Tenant shall have the right and option to extend the term of the Lease for only one (1) additional period of five (5) years, commencing on the expiration of the original term as extended by this First Amendment.

9. Right of First Offer. Tenant's Right of First Offer as set forth in Section 8 of the Lease is hereby terminated and said Section 8 is hereby deleted in its entirety. Accordingly all references to "Right of First Offer" and "ROFO Space" contained in the Lease, including without limitation, the following specific Lease provisions are also hereby deleted:

a. Section 4(A)(2) in its entirety;
b. Section l 4(A)(ii) in its entirety;
c. The last sentence of Section l 9(D);
d. The third sentence of Section 20(A); and
e. The second and third sentences of Section 21.

10. Tenant Work and Tenant 1mprovement Allowance.

a. Landlord agrees to provide Tenant with an allowance (the "Tenant Improvement Allowance") of up to the aggregate amount of [*******] for its actual costs incurred which are directly related to the work set forth on the Tenant Improvements Work Letter (the "Tenant Improvements Work Letter") attached hereto as Exhibit A and incorporated herein (the "Tenant Work").

b. Prior to commencement of the Tenant Work, Tenant shall: (i) obtain and submit to Landlord for its review and approval, complete plans and specifications for the Tenant Work which comply with all applicable governmental and municipal laws, codes and regulations, are sufficiently detailed, and substantially comport with the Tenant Work Letter ("Tenant's Plans"), and which shall not be materially modified after such approval without Landlord's prior written consent; (ii) procure and deliver to Landlord upon request, copies of a building permit and all other permits, licenses or approvals from all governmental authorities as are necessary to commence, conduct and complete the Tenant Work; (iii) provide Landlord upon request, with a list of all contractors, subcontractors and materialmen to be utilized by Tenant for the Tenant Work and copies of any construction or architect's contracts relating to the Tenant Work; (iv) cause each contractor and subcontractor to carry workmen's compensation insurance in statutory amounts covering all the contractor's and subcontractor's employees, and commercial general liability insurance and property damage insurance with such limits as Landlord may reasonably require but in no event less than the amounts set forth in Section 25 of the Lease, all such insurance to be written by properly licensed companies as provided in Section 25 of the Lease and insuring Landlord, Manager and Tenant as well as the contractors and subcontractors (as applicable), and to deliver to Landlord certificates evidencing all such insurance.

c. Once commenced, Tenant shall diligently proceed in good faith and use commercially reasonable efforts to complete the Tenant Work as soon as practicable. Tenant shall cause the Tenant Work to be: (i) be made in accordance with Tenant's Plans approved by Landlord; (ii) constructed in a good and workmanlike manner using only first-class quality materials; and (iii) conducted in accordance with all applicable permits, licenses and approvals and all applicable governmental and municipal laws, codes, ordinances and regulations and otherwise in accordance with the terms and provisions of this Lease, including without limitation, Section 14, to the extent not inconsistent with the terms of this First Amendment.

d. [*******].

e. Tenant shall provide Landlord with at least forty-eight (48) hours advance notice of any planned shut-down of utilities associated with the Tenant Work (if any) and will coordinate the same so as to minimize any disruption of other tenants at the Property.

f. Landlord and its representatives shall have the right at any time, without prior notice to Tenant, during the construction process to enter the Premises and observe the performance of the Tenant Work and Tenant shall take all such actions with respect thereto as Landlord may, in its good faith determination, deem advisable from time to time to assure that the Tenant Work and the manner of performance thereof shall not be injurious to the Building or the Base Building Systems (as herein defined) and shall otherwise be in accordance with Tenant's Plans and in compliance with the provisions of the Lease. "Base Building Systems" shall mean: (i) any mechanical, electrical or plumbing system or component of the Building (including the Premises); (ii) the exterior of the Building; (iii) the Building HVAC distribution system; (iv) any fire safety prevention/suppression system; and (v) any structural element or component of the Building.

g. Tenant shall not permit any mechanics' liens, or similar liens, to remain upon the Premises, the Building or the Property for labor or material furnished to Tenant or claimed to have been furnished to Tenant in connection with the Tenant Work and shall cause any such lien to be released of record forthwith without cost to Landlord. Tenant shall also periodically collect interim lien waivers from contractors, subcontractors, materialmen, architects, engineers or other parties which furnished labor, materials or other services related to the Tenant Work, and if requested by Landlord, shall promptly provide Landlord with copies of the same. Notice is hereby given that Landlord shall not be liable for any labor or materials furnished or to be furnished to Tenant upon credit, and that no mechanic's or other lien for any such labor or materials shall attach to or affect the reversion or other estate or interest of Landlord in and to the Premises, the Building or the Property.

h. To the maximum extent this agreement may be made effective, and in addition to Tenant's indemnity obligations set forth elsewhere in the Lease Tenant, hereby agrees to indemnify, defend and save Landlord harmless from and against any and all loss, cost, penalties, liabilities, damages and claims (including, without limitation, reasonable attorney's fees) arising from any act, omission or negligence of Tenant or Tenant's contractor or its subcontractors or their licensees, agents, servants or employees arising from the performance of the Tenant Work caused to any person or to the property of any person, the Building or the Property. This indemnity shall, to the maximum extent this agreement may be effective, also extend to all loss, cost, penalties, liability, damage, and claims of whatever nature asserted against the Landlord arising out of the use or occupancy or passage or travel in, over or upon, the Building or the Property by Tenant or by any person claiming by, through or under Tenant including, without limitation, Tenant's contractor, subcontractors and their respective agents, employees, contractors and customers or arising out of any delivery to or service supplied to the Premises or on account of or based on anything whatsoever done at the Building or the Property by any of them including, without limitation, any loss, cost, damages or claims sustained or incurred by Landlord as the direct result of any tenant of the Property claiming breach of the covenant of quiet enjoyment or an interference with ongoing business operations as the result of the Tenant Work. The indemnity contained in this subsection shall include indemnity against all cost, expenses, and liabilities incurred in or in connection with any such claim or proceeding brought thereon and the defense thereof with counsel reasonably approved by the

Landlord. The indemnity contained in this subsection shall survive any expiration or earlier termination of the Lease.

i. In addition to and without limitation of any other right or remedy provided to Landlord pursuant to the Lease, at law or in equity, and in the event that (i) Tenant's contractor shall fail or refuse to continue to perform the Tenant Work for any reason or (ii) Tenant's contractor shall abandon the project and cease performing the Tenant Work for more than ten (10) consecutive Business Days or (iii) all or any portion of the Tenant's Work is not performed strictly in accordance with Tenant's Plans, then, in any such case, Landlord shall have the right, but not the obligation, and upon ten (10) days' notice to Tenant, to complete the Tenant Work (at Landlord 's option with or without Tenant's contractor) in accordance with Tenant's Plans at the sole cost and expense of Tenant. In the event that Landlord shall exercise such right, Tenant agrees to pay Landlord forthwith upon demand all such sums incurred by Landlord in so completing the Tenant Work together with interest thereon at a rate equal to three percent (3.0%) over the WSJ prime rate then in effect (but in no event, more than the maximum rate permitted under Massachusetts law) as an additional charge hereunder.

J. Any alterations or improvements made by Tenant as part of the Tenant Work shall become part of the Premises and the property of Landlord at the expiration or earlier termination of this Lease, unless otherwise agreed to by the parties in writing. Notwithstanding the foregoing, Landlord reserves the right to require that Tenant demolish and remove, at Tenant's sole expense, any alterations or improvements made by Tenant. If so required, such demolition and removal will be completed prior to Tenant vacating the Premises upon the expiration or earlier termination of this Lease.

k. Upon completion of the Tenant Work, Tenant shall provide to Landlord: (i) copies of all invoices mark as paid; (ii) copies of final lien waivers from Tenant's contractor and all subcontractors and materialmen; (iii) a copy of a certificate of occupancy from the City of Marlborough (if applicable) or other evidence satisfactory to Landlord that the City of Marlborough has signed-off and approved the completion of the Tenant Work; and (iv) any other information or documentation reasonably requested by Landlord to evidence lien-free completion of the Tenant Work and payment of all of the costs and expenses thereof (collectively, the "Completion Documentation"). Within Thirty (30) days of Landlord's receipt of the Completion Documentation, Landlord shall issue payment to Tenant in an amount equal to the actual and verifiable cost of the Tenant Work not to exceed the Tenant Improvement Allowance.

11. Mechanic's Lien. The following is added to the end of Section 23 of the Lease:

"In addition to and without limitation of any other right or remedy provided to Landlord pursuant to the Lease, at law or in equity, in the event that Tenant does not strictly comply with the terms of this Section, Landlord shall have the right, but not the obligation, to take whatever action is necessary to cause any such lien to be released of record at the sole cost and expense of Tenant. In the event that Landlord shall exercise such right, Tenant agrees to pay Landlord forthwith upon demand all such sums incurred by Landlord in connection with such actions together with interest thereon at a rate equal to three percent (3.0%) over the WSJ prime rate then in effect (but in no event, more than the maximum rate permitted under Massachusetts law) as an additional charge hereunder."

12. Notices. The Notice addresses for Landlord contained in Section 37 of the Lease are hereby deleted and replaced with the following:

If to Landlord for payment of Base Rent and other charges:

445 Simarano Drive Marlborough LLC

c/o Metropolis Partners, Inc.
PO Box 252148
Los Angeles, CA 90025 Attn: Cathy Johnson
Facsimile: (888) 683-0445

If to Landlord for all other communications: With copies to:

445 Simarano Drive Marlborough LLC c/o Metropolis Partners, Inc.
Ferry Building, Suite 225 San Francisco, CA 94111 Attn: David Agger Facsimile: (888) 683-0445

Bernstein, Shur 100 Middle Street
P.O. Box 9729
Portland, ME 04104-5029 Attn: William M. Welch, Esq. Facsimile:
(207) 774-1127

445 Simarano Drive Marlborough LLC c/o Metropolis Partners, Inc.
PO Box 252148
Los Angeles, CA 90025 Attn: Cathy Johnson Facsimile: (888) 683-
0445

13. Brokerage. Landlord and Tenant each warrant and represent to the other that it has had no dealings with any real estate broker or agent in connection with this First Amendment, and that that it knows of no real estate broker or agent who is entitled to a commission in connection herewith. Tenant agrees to indemnify, defend and hold Landlord harmless from and against any and all claims, demand, losses, liabilities, lawsuits, judgments, costs and expenses (including without limitation, reasonable attorneys' fees) with respect to any leasing commission or equivalent compensation alleged to be owing on account of any dealings with any real estate broker or agent occurring by, through or under Tenant.

14. Reaffirmation of Lease. Landlord and Tenant each reaffirms the Lease as hereby amended, and all terms and conditions of the Lease, including all defined terms, except as specifically amended by this First Amendment, shall have the same meaning and remain in full force and effect. No covenant or condition of the Lease shall be deemed waived by any action or non-action in the past. In the event of a conflict between the terms and conditions of this First Amendment and the Lease, the terms and conditions of this First Amendment shall control.

15. Execution; Copies. This First Amendment and any documents executed or initialed in connection herewith may be executed in multiple counterparts, which together shall be construed to be a single document. Any one or more counterpart signature pages may be removed from one counterpart hereof and annexed to another counterpart of hereof to form a completely executed original instrument without impairing the legal effect of the signatures thereon. This First Amendment may be transmitted between the parties by facsimile machine or electronic mail and

facsimile or scanned PDF copies of an original signature by either party hereto shall be binding as if such copies were original signatures.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, 445 Simarano Drive Marlborough LLC and Hologic, Inc. have caused this First Amendment to be duly executed under seal by their respective duly authorized representatives, as of the day and year first above mentioned.

WITNESS : LANDLORD:

445 SIMARANO DRIVE MARLBOROUGH LLC,
By: RAM 445 Simarano Management, LLC

/s/ Philip BlixBy: /s/ David A. Agger

Its Manager

TENANT:

HOLOGIC, INC.

/s/ Lori M. NickersonBy: /s/ Ed Zielinski

Its: VP, Facilities and Real Estate

EXHIBIT A

TENANT IMPROVEMENTS WORK LETTER

[See attached - one (1) page]

EXHIBIT A

TENANT IMPROVEMENTS WORK LETTER

[*******]

Exhibit 21.1

Subsidiaries of Hologic	Jurisdiction of Incorporation or Organization
Beijing Century Jinbai Technology Co., Ltd.	China
Beijing Hologic Technology Co., Ltd.	China
Benassar Diagnostica-Equipamientos Medicos Unipessoal, Lda.	Portugal
BioLucent, LLC	Delaware
Bioptics, Inc.	Arizona
Cynosure B.V.	Netherlands
Cynosure Finance Limited	Bermuda
Cynosure France SARL	France
Cynosure GmbH	Germany
Cynosure K.K.	Japan
Cynosure Korea Limited	Korea
Cynosure, LLC	Delaware
Cynosure Maroc SARL	Morocco
Cynosure Mexico, S. de R.L. de C.V.	Mexico
Cynosure Portugal, Unipessoal, Limitada	Portugal
Cynosure Pty Ltd	Australia
Cynosure Spain S.L.	Spain
Cynosure UK LTD	United Kingdom
Cytyc Cayman Limited	Cayman Islands
Cytyc Corporation	Delaware
Cytyc Prenatal Products Corp.	Delaware
Cytyc Surgical Products, LLC	Massachusetts
Direct Radiography Corp.	Delaware
Emsor, Sociedad de responsabilidad limitada	Spain
Faxitron Bioptics, LLC	Delaware
Focal Therapeutics, Inc.	Delaware
Gen-Probe Incorporated	Delaware
Gen-Probe Prodesse, Inc.	Wisconsin
Gen-Probe Sales & Service, Inc.	Delaware
Hologic (Australia & New Zealand) Pty Ltd.	Australia
Hologic (Australia & New Zealand) Pty Ltd.	New Zealand
Hologic (MA), LLC	Massachusetts
Hologic ASE, LLC	Delaware
Hologic Asia, Limited	Hong Kong
Hologic Asia Pacific Limited	Hong Kong
Hologic Austria GmbH	Austria
Hologic BVBA	Belgium
Hologic Canada ULC	Canada
Hologic Caribbean (Barbados) SRL	Barbados
Hologic Denmark ApS	Denmark
Hologic Deutschland GmbH	Germany
Hologic Espana S.A.	Spain
Hologic Europe Middle East and Africa, S.A.	Switzerland
Hologic Finance Ltd.	Bermuda

Subsidiaries of Hologic	Jurisdiction of Incorporation or Organization
Hologic France SARL	France
Hologic GGO 1, LLC	Delaware
Hologic GGO 2, LLC	Delaware
Hologic GGO 3 LLP	United Kingdom
Hologic GGO 4 LTD	United Kingdom
Hologic GGO 5, LLC	Delaware
Hologic Global Holding LTD	United Kingdom
Hologic Hitec-Imaging GmbH	Germany
Hologic Holdings Limited	United Kingdom
Hologic HUB LTD	United Kingdom
Hologic Iberia, S.L.	Spain
Hologic India LLP	India
Hologic International Holdings B.V.	Netherlands
Hologic IP LTD	United Kingdom
Hologic Ireland Limited	Ireland
Hologic Italia S.r.l.	Italy
Hologic Japan KK	Japan
Hologic Latin America (Servicos Em Marketing E Negocios) Ltda.	Brazil
Hologic Ltd.	United Kingdom
Hologic Malaysia SDN. BHD.	Malaysia
Hologic Medical Technologies (Beijing) Co., Ltd.	China
Hologic Medicor GmbH	Germany
Hologic Medicor Suisse GmbH	Switzerland
Hologic Middle East, Dubai	United Arab Emirates
Hologic Netherlands B.V.	Netherlands
Hologic SA	France
Hologic (Shanghai) Medical Supplies Co., Ltd.	China
Hologic Singapore Pte. Ltd	Singapore
Hologic Suisse SA	Switzerland
Hologic Surgical Products Costa Rica, S.R.L.	Costa Rica
Hologic Sweden AB	Sweden
Hologic Switzerland Holdings Limited	United Kingdom
Hologic UK Finance Ltd.	United Kingdom
Hologic US Finance Co LLC	Delaware
Navigation Three Limited	Hong Kong
Palomar Medical Technologies, LLC	Delaware
Sentinelle Medical ULC	Canada
Suros Surgical Systems, Inc.	Delaware
Suzhou Cynosure Medical Devices Company Ltd.	China
TCT International Co., Ltd.	British Virgin Islands

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

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

(1) Registration Statement (Form S-8 No. 333-79167) pertaining to the Hologic, Inc. 1997 Employee Equity Incentive Plan and the Hologic, Inc. Amended and Restated 1999 Equity Incentive Plan,

(2) Registration Statement (Form S-8 No. 333-60046) pertaining to the Hologic, Inc. Amended and Restated 1999 Equity Incentive Plan, and the Hologic, Inc. 2000 Acquisition Equity Incentive Plan,

(3) Registration Statement (Form S-8 No. 333-112222) pertaining to the Hologic, Inc. Amended and Restated 1999 Equity Incentive Plan,

(4) Registration Statement (Form S-8 No. 333-121111) pertaining to the Hologic, Inc. Amended and Restated 1999 Equity Incentive Plan,

(5) Registration Statement (Form S-8 No. 333-130170) pertaining to the Hologic, Inc. Amended and Restated 1999 Equity Incentive Plan,

(6) Registration Statement (Form S-8 No. 333-139341) pertaining to the Hologic, Inc. Second Amended and Restated 1999 Equity Incentive Plan,

(7) Registration Statement (Form S-3ASR No. 333-214663) pertaining to Hologic, Inc.'s shelf registration statement for common stock, preferred stock, debt securities, rights, warrants, purchase contracts, units or any combination of the foregoing,

(8) Registration Statement (Form S-8 No. 333-150796) pertaining to the Hologic, Inc. 2008 Equity Incentive Plan, Hologic, Inc.'s two-for-one stock split in the form of a dividend of one share of common stock for each share of common stock outstanding as of March 21, 2008 and the adjustment of shares registered under Hologic, Inc.'s Stock Plans,

(9) Registration Statement (Form S-8 No. 333-181126) pertaining to the Hologic, Inc. 2012 Employee Stock Purchase Plan, as amended,

(10) Registration Statement (Form S-8 No. 333-183019) pertaining to the 2003 Incentive Award Plan of Gen-Probe Incorporated,

(11) Registration Statement (Form S-8 No. 333-188468) pertaining to the Hologic, Inc. Amended and Restated 2008 Equity Incentive Plan,

(12) Registration Statement (Form S-8 No. 333-224613) pertaining to the Hologic, Inc. Amended and Restated 2008 Equity Incentive Plan,

(13) Registration Statement (Form S-8 No. 333-210968) pertaining to the Hologic, Inc. 2012 Employee Stock Purchase Plan.

of our reports dated November 27, 2019, with respect to the consolidated financial statements of Hologic, Inc. and the effectiveness of internal control over financial reporting of Hologic, Inc., included in this Annual Report (Form 10-K) of Hologic, Inc. for the year ended September 28, 2019.

/s/ Ernst & Young LLP

Boston, Massachusetts
November 27, 2019

Exhibit 31.1

CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Stephen P. MacMillan, certify that:

1. I have reviewed this annual report on Form 10-K of Hologic, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 27, 2019

/s/ Stephen P. MacMillan

Stephen P. MacMillan

Chairman, President and Chief Executive Officer

Exhibit 31.2

CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Karleen M. Oberton, certify that:

1. I have reviewed this annual report on Form 10-K of Hologic, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 27, 2019

/s/ Karleen M. Oberton

Karleen M. Oberton

Chief Financial Officer

Exhibit 32.1

Certification
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)

I, Stephen P. MacMillan, Chief Executive Officer of Hologic, Inc., a Delaware corporation (the "Company"), do hereby certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), that:

(1) The Annual Report on Form 10-K for the year ended September 28, 2019 (the "Form 10-K") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: November 27, 2019

/s/ Stephen P. MacMillan

Stephen P. MacMillan

Chairman, President and Chief Executive Officer

A SIGNED ORIGINAL OF THIS WRITTEN STATEMENT REQUIRED BY SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002 HAS BEEN PROVIDED TO HOLOGIC, INC. AND WILL BE RETAINED BY HOLOGIC, INC. AND FURNISHED TO THE SECURITIES AND EXCHANGE COMMISSION OR ITS STAFF UPON REQUEST.

Exhibit 32.2

Certification
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)

I, Karleen M. Oberton, Chief Financial Officer of Hologic, Inc., a Delaware corporation (the "Company"), do hereby certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), that:

(1) The Annual Report on Form 10-K for the year ended September 28, 2019 (the "Form 10-K") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: November 27, 2019

/s/ Karleen M. Oberton

Karleen M. Oberton

Chief Financial Officer

A SIGNED ORIGINAL OF THIS WRITTEN STATEMENT REQUIRED BY SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002 HAS BEEN PROVIDED TO HOLOGIC, INC. AND WILL BE RETAINED BY HOLOGIC, INC. AND FURNISHED TO THE SECURITIES AND EXCHANGE COMMISSION OR ITS STAFF UPON REQUEST.