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 June 29, 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 001-36861

Lumentum Holdings Inc.

(Exact name of Registrant as specified in its charter)

Delaware	**47-3108385**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)

400 North McCarthy Boulevard, Milpitas, California 95035
(Address of principal executive offices including Zip code)

(408) 546-5483
(Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol(s)	Name of exchange on which registered
Common Stock, par value of $0.001 per share	LITE	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 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, a smaller reporting company, or an emerging growth company. See definition of “large accelerated filer,” “accelerated filer,” “smaller reporting company,” and “emerging growth company” in Rule 12b-2 of the Exchange Act.

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

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

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

As of December 29, 2018, the aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant was approximately $2,264 million based on the closing sales price of the registrant’s common stock as reported on the NASDAQ Stock Market on December 28, 2018 of $41.57 per share. Shares of common stock held by officers, directors and holders of more than five percent of the outstanding common stock have been excluded from this calculation because such persons may be deemed to be affiliates.

As of August 20, 2019, the Registrant had 76.9 million shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the information called for by Part III of this Annual Report on Form 10-K is hereby incorporated by reference from the definitive proxy statement for the Registrant’s annual meeting of stockholders, which will be filed with the Securities and Exchange Commission not later than 120 days after the Registrant’s fiscal year ended June 29, 2019.

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FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K (this "Annual Report") contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, (the "Exchange Act"). These statements are based on our current expectations and involve risks, uncertainties and assumptions that, if they never materialize or prove incorrect, could cause our results to differ materially from those expressed or implied by such forward-looking statements. These statements relate to, among other things, our markets and industry, products and strategy, sales, gross margins, operating expenses, capital expenditures and requirements, liquidity, product development and R&D efforts, manufacturing plans, litigation, effective tax rates and tax reserves, our corporate and financial reporting structure, our plans for growth and innovation, our plans to discontinue certain operations and product lines, our expectations regarding US-China relations and market conditions, the successful integration of Oclaro's business (including personnel), and expected synergies and non-GAAP earnings accretion from the acquisition of Oclaro, and are often identified by the use of words such as, but not limited to, "anticipate," "believe," "can," "continue," "could," "estimate," "expect," "intend," "may," "might," "plan," "project," "seek," "should," "target," "will," "would" and similar expressions or variations intended to identify forward-looking statements. These statements are based on the beliefs and assumptions of our management, which are in turn based on information currently available to management. Such forward-looking statements are subject to risks, uncertainties and other important factors that could cause actual results and the timing of certain events to differ materially from future results expressed or implied by such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in the section entitled "*Risk Factors*" included under Part I, Item 1A below. Furthermore, such forward-looking statements speak only as of the date of this report. Except as required by law, we undertake no obligation to update any forward-looking statements to reflect events or circumstances after the date of such statements.

PART I

ITEM 1. BUSINESS

General

Overview

Lumentum Holdings Inc. ("we", "our", "Lumentum" or the "Company") is an industry-leading provider of optical and photonic products defined by revenue and market share addressing a range of end market applications including Optical Communications and Commercial Lasers for manufacturing, inspection and life-science applications. We seek to use our core optical and photonic technology and our volume manufacturing capability to expand into attractive emerging markets that benefit from advantages that optical or photonics-based solutions provide, including 3D sensing for consumer electronics and diode light sources for a variety of consumer and industrial applications. The majority of our customers tend to be original equipment manufacturers ("OEMs") that incorporate our products into their products which then address end-market applications. For example, we sell fiber optic components that our network equipment manufacturer ("NEM") customers assemble into communications networking systems, which they sell to network service providers or enterprises with their own networks. Similarly, many of our customers for our Lasers products incorporate our products into tools they produce, which are used for manufacturing processes by their customers. For 3D sensing, we sell diode lasers to manufacturers of consumer electronics products for mobile, personal computing, and gaming who then integrate our devices within their products, for eventual resale to consumers and also into other industrial applications.

We operate in two reportable segments: Optical Communications ("OpComms") and Commercial Lasers ("Lasers").

We have a global marketing and sales footprint that enables us to address global market opportunities for our products. We have manufacturing capabilities and facilities in North America, Asia-Pacific, and Europe, with employees engaged in R&D, administration, manufacturing, support and sales and marketing activities. Our headquarters are located in Milpitas, California, and we employed approximately 5,161 full-time employees around the world as of June 29, 2019.

Lumentum was incorporated in Delaware as a wholly owned subsidiary of JDS Uniphase Corporation ("JDSU") on February 10, 2015, and is comprised of the former communications and commercial optical products ("CCOP") segment and WaveReady product lines of JDSU. In August 2015, we became an independent publicly-traded company through the distribution by JDSU to its stockholders of 80.1% of our outstanding common stock (the "Separation"). Each JDSU stockholder of record as of the close of business on July 27, 2015, received one share of Lumentum common stock for every five shares of JDSU common stock held on such date. JDSU was renamed Viavi Solutions Inc. ("Viavi") and at the time of distribution, retained ownership of 19.9% of Lumentum's outstanding shares. Since the Separation, Viavi has sold its shares and is no longer a shareholder of Lumentum.

Our business traces its origins to Uniphase Corporation, which was formed in 1979, and became publicly traded in 1992. Uniphase was originally a supplier of commercial lasers, and later, a leading supplier of optical transmission products. In 1999, JDS Fitel Inc., a pioneer in products for fiber optic networking which was formed in 1981, merged with Uniphase to become JDSU, a global leader in optical networking. Subsequent acquisitions by JDSU broadened the depth and breadth of the OpComms and Lasers businesses, as well as the intellectual property, technology and product offerings, of what is now Lumentum. Notable amongst these acquisitions in the OpComms business were Agility Communications, Inc. in 2005 and Picolight, Inc. in 2007 which respectively brought widely tunable, long wavelength laser technology for metro and long haul networking applications and short wavelength vertical-cavity surface-emitting lasers ("VCSELs") for enterprise, datacenter networking, and 3D sensing applications. The fundamental laser component technologies which we acquired through these acquisitions, form the basis of virtually all optical networks today, and we believe will continue to do so for the foreseeable future. These technologies will enable us to develop highly integrated products to satisfy our communications customers' ever increasing needs for smaller, lower power and lower cost optical products. Notable acquisitions in the Lasers business were Lightwave Electronics Corporation in 2005 and Time-Bandwidth Products Inc. ("Time-Bandwidth") in 2014. Both of these Lasers acquisitions brought high power pulsed solid-state laser products and technology to our business, which address the micro laser machining market and expanded our addressable market. On December 10, 2018, we completed a merger with Oclaro, Inc. ("Oclaro"), a provider of optical components and modules for the long-haul, metro and data center markets. Oclaro's products provide differentiated solutions for optical networks and high-speed interconnects driving the next wave of streaming video, cloud computing, application virtualization and other bandwidth-intensive and high-speed applications. This acquisition has strengthened our product portfolio, including by gaining Oclaro's indium phosphide laser and photonic integrated circuit and coherent component and module capabilities; broadens our revenue mix; and positions us strongly to meet the future needs of our customers.

Industry Trends and Business Risks

Our business is driven by end-market applications which benefit from the performance advantages that optical solutions enable.

The OpComms markets we serve are experiencing continually increasing needs for higher data transmission speeds, fiber optic network capacity and network agility. This is driven by rapid growth in both the number of higher bandwidth broadband connections, notably those associated with mobile devices, such as high-definition video, online gaming, cloud computing and the number and scale of datacenters that require fiber optic links to enable the higher speeds and increased scale necessary to deliver high bandwidth video and other services. Our technology, which was originally developed for communications applications is also finding use in other emerging market opportunities including 3D sensing applications that employ our laser technology in mobile devices, computers, augmented and virtual reality and other consumer electronics devices. Additionally, our products are used in emerging automotive, industrial, security, safety and surveillance applications.

In the Lasers markets, customer demand is driven by the need to enable faster, higher precision volume manufacturing techniques with lower power consumption, reduced manufacturing footprint and increased productivity. These capabilities are critical as industries develop products that are smaller and lighter, increasing productivity and yield and lowering their energy consumption.

Our optical and laser solutions, developed in close collaboration with OEM partners, are well-positioned to meet demand resulting from these trends. We do, however, expect to continue to encounter a number of industry and market risks and uncertainties. These risks and uncertainties may limit our visibility, and consequently, our ability to predict future revenue, profitability and general financial performance, and could create quarter over quarter variability in our financial measures. For example, the demand environment in China has fluctuated significantly in recent years, and has created volatility and uncertainty in our future demand. We cannot predict when or to what extent these uncertainties will be resolved. Our revenues, profitability and general financial performance may also be affected by: (i) pricing pressures, particularly within our OpComms markets, due to, among other things, a highly concentrated customer base, increasing competition, particularly from Asia-Pacific-based competitors, and a general commoditization trend for certain products; (ii) high product mix variability which affects revenue and gross margin; (iii) fluctuations in customer buying patterns, which cause volatility in demand, revenue and profitability; and (iv) the current trend of communication industry consolidation, which is expected to continue, that directly affects our customer bases and adds additional risk and uncertainty to our financial and business projections.

Reportable Segments

We have two operating segments, OpComms and Lasers. The two operating segments were primarily determined based on how our Chief Operating Decision Maker ("CODM") views and evaluates our operations. Operating results are regularly reviewed by our CODM to make decisions about resources to be allocated to the segments and to assess their performance. Other factors, including market separation and customer specific applications, go-to-market channels, products and manufacturing, are considered

in determining the formation of these operating segments. We do not track our property, plant, and equipment by operating segments. For the geographic identification of these assets, refer to “Note 20. Operating Segments and Geographic Information”.

The table below discloses our total net revenue attributable to each of our two reportable segments. In addition, it discloses the percentage of our total net revenue attributable to our product offerings which serve the Telecom, Datacom, and Consumer and Industrial markets which accounted for 10% or more of our total net revenue during the periods presented *(in millions, except percentage data):*

	Years Ended					
	June 29, 2019		June 30, 2018		July 1, 2017	
OpComms:						
Telecom	$ 786.5	50.2%	$ 476.3	38.1%	$ 610.7	61.0%
Datacom	166.4	10.6%	150.4	12.1%	201.3	20.0%
Consumer and Industrial	417.3	26.7%	432.5	34.7%	45.8	4.6%
Total OpComms	$ 1,370.2	87.5%	$ 1,059.2	84.9%	$ 857.8	85.6%
Lasers	195.1	12.5%	188.5	15.1%	143.8	14.4%
Total Revenue	$ 1,565.3		$ 1,247.7		$ 1,001.6	

For further information regarding our operating segments, please refer to “Note 20. Operating Segments and Geographic Information” in the Notes to Consolidated Financial Statements.

OpComms

Markets

Our OpComms products address the following markets: telecommunications (“Telecom”), data communications (“Datacom”) and consumer and industrial (“Consumer and Industrial”).

Our OpComms products include a wide range of components, modules and subsystems to support customers including carrier networks of access (local), metro (intracity), long-haul (city-to-city and worldwide) and submarine (undersea) applications. Additionally, our products address enterprise, cloud, and data center applications, including storage-access networks (“SANs”), local-area networks (“LANs”) and wide-area networks (“WANs”). These products enable the transmission and transport of video, audio and text data over high-capacity fiber-optic cables. We maintain leading positions in these fast growing OpComms markets through our extensive product portfolio, including reconfigurable optical add/drop multiplexers (“ROADMs”), coherent DWDM pluggable transceivers, and tunable small form-factor pluggable transceivers. We also sell laser chips for use in the manufacture of high-speed Datacom transceivers.

In the Consumer and Industrial market, our OpComms products include laser light sources, which are integrated into 3D sensing platforms being used in applications for mobile devices, gaming, computers, and other consumer electronics devices. New emerging applications include virtual and augmented reality, as well as automotive and industrial segments. Our products include vertical cavity surface emitting lasers (“VCSELs”) and edge emitting lasers which are used in 3D sensing depth imaging systems. These systems simplify the way people interact with technology by enabling the use of natural user interfaces. Systems are used for biometric identification, surveillance, and process efficiency, among numerous other application spaces. Emerging applications for this technology include various mobile device applications, autonomous vehicles, self-navigating robotics and drones in industrial applications and 3D capture of objects coupled with 3D printing. In addition, our industrial diode lasers are used primarily as pump sources for pulsed and kilowatt class fiber lasers.

Following the acquisition of Oclaro, during our fiscal 2019, we made several strategic changes to our OpComms business as follows:

First, for overlapping products as a result of the acquisition, we are transitioning to a common lower cost design and manufacturing platform, which we expect will result in gross margin improvement over time. In addition, we are discontinuing certain Telecom product lines that we believe have muted growth and profitability trends that are inconsistent with our long term model. We expect that these transitions will be completed in our fiscal 2021. For the Telecom product lines we are exiting, we do not expect significant revenue declines until fiscal 2021 as in fiscal 2020 we are continuing to satisfy customers’ product needs with respect to these product lines.

Second, we announced our plan to discontinue development and manufacturing of Lithium Niobate modulators, and we plan to wind down these operations in San Donato, Italy during fiscal year 2020. Development and manufacturing will also be discontinued in our San Jose, California manufacturing locations within the next few quarters in order to facilitate our customer

s' transition to new products. We expect our Indium Phosphide photonic integrated circuits will replace Lithium Niobate modulators over time.

Third, we announced the sale of many of our Datacom transceiver module products to Cambridge Industries Group ("CIG"). This transaction closed on April 18, 2019. For further information regarding this transaction, refer to "Note 5. Business Combination". We expect Datacom transceiver sales to ramp down to zero during fiscal year 2020. We are investing in new Datacom chip development and expect sales of these chips to customers serving the Datacom and 5G wireless markets will grow over time. With the exit from the business of selling Datacom transceivers, we recorded an impairment charge of $30.7 million to our Long-lived assets that were not deemed to be useful, as they were retired from active use and classified as held-for-sale. These assets were valued at fair value less cost to sell. We also recorded inventory write down charges of $20.8 million related to the decision to exit the Datacom module and Lithium Niobate product lines in our cost of goods sold of consolidated statements of operations. These actions do not qualify as discontinued operations for disclosure purposes as they do not represent a strategic shift having a major effect on an entity's operations and financial results. For additional information, refer to "Note 15. Impairment Charges".

Customers

Our OpComms customers include Alphabet, Apple, Ciena, Cisco Systems (which recently announced the acquisition of Acacia Communications, another customer of ours), Huawei Technologies (including HiSilicon), Infinera, Innolight, Nokia Networks (including Alcatel-Lucent International), O-Net, and ZTE. During fiscal 2019, 2018, and 2017, net revenue generated from a single customer which represented 10% or more of our total net revenue of the applicable fiscal year is summarized in the table below:

	Years Ended		
	June 29, 2019	**June 30, 2018**	**July 1, 2017**
Apple	21.0%	30.0%	*
Huawei	15.2%	11.0%	16.7%
Ciena	13.7%	11.0%	18.5%
Cisco	*	*	12.4%
*Represents less than 10% of total net revenue			

Trends

We believe the optical communications market has started to expand beyond a small number of very large service providers, and is transitioning to a variety of open and captive networks created for in house use by large video services, search engines and companies offering a variety of cloud computing services. We believe that the trend towards an increase in demand for optical solutions, which increase network capacity, is in response to growing bandwidth demand driven by increased transmission of video, voice and data over optical communications networks. Additionally, service providers also seek to decrease the total cost of ownership of their networks. To remain competitive, network operators worldwide must offer broader suites of digital services at competitive prices. To do this, they are migrating to Internet-protocol ("IP") networks and expanding long-haul, metro regional and metro access networks, which effectively deliver broadband services while lowering capital and operating costs of dense-wavelength-division multiplexing networks.

The growing demand for capacity encourages the adoption of OpComms products across the Datacom and Telecom markets. Demand for capacity in the Datacom market is driven by the growing needs of LANs and WANs. Growth in Datacom is also driven by web and cloud services companies that are expanding data center infrastructure, increasing the need for network capacity within and between these data centers.

Demand in the Telecom market is driven by new bandwidth-intensive applications that can result in sudden and severe changes in demand almost anywhere on the network. Increasing agility in optical networks by employing ROADMs, wavelength selective switches, wavelength tunable transmission products and other agile optical products provides an effective way to respond to unpredictable bandwidth demands and to manage expenses. With more agile optical networks, a network operator can add capacity by using remote management applications rather than dispatching technicians to perform manual operations in the field.

In addition, the high-end routers, switches and cross-connect equipment that must handle legacy and internet-protocol traffic are becoming increasingly complex in order to meet higher bandwidth, scalability, speed and reliability needs. Products must provide higher levels of functionality and performance in compact designs that must also meet requirements for quality, reliability, and cost.

Deployment of fiber closer to the end user increases the availability of high-bandwidth services and we expect it will result in increased demand on the metro regional and long-haul networks into which these services feed. The dynamically reconfigurable nature of today's agile networks enables lower operating costs and other competitive advantages, allowing service providers to use and scale network capacity more flexibly, streamline service provisioning, accelerate rerouting around points of failure and modify network topology through simple point-and-click network management systems.

Our optical products are well positioned to meet these demands. Our innovation has resulted in products that have more functionality, are less than half the size, require less power and are more cost-effective than our historical products, particularly in the area of photonic integrated circuits. Higher levels of integration have also led to development of our Super Transport Blade, which delivers all transport functions (wavelength switching, pre-amplification, post-amplification, optical supervisory channel and monitoring) in a single, integrated platform, essentially replacing three blades with one.

Offerings

In addition to a full selection of active and passive components, we offer increasing levels of functionality and integration in modules, circuit packs and subsystems for transmission, amplification, wavelength management and more.

In the Telecom market, we provide transmission and transport solutions for optical networks that make up the backbone of the wireline Telecom infrastructure, thereby enabling the internet. Transmission products, such as our tunable transponder, transceiver and transmitter modules, transmit and receive high-speed data signals at the ingress/egress points of the network. These products use dense wavelength division multiplexing technology to enable high capacity (from 20 to over 40Tb/s in the C-Band) links driven by increasing internet demand. We also offer components including tunable lasers, receivers and modulators to address the higher end of these same network applications.

Our transport products, such as ROADMs, amplifiers and optical channel monitors provide switching, routing and conditioning of signals. We also make components for transport, including 980nm, multi-mode and Raman pumps for optical amplifiers, and passive components. Passive components include switches, attenuators, photodetectors, gain flattening filters, isolators, wavelength-division multiplexing ("WDM") filters, arrayed waveguide gratings ("AWGs"), multiplex/de-multiplexers and integrated passive modules.

Our innovation led to the Super Transport Blade, which integrates all major optical transport functions into a single-slot blade. This all-in-one solution reduces the size, cost and power requirements of optical components, incorporates nano wavelength selective switch technology and enables greater chassis density and a smaller footprint.

In the Datacom market, optical transceivers are used to connect servers, switches, routers and other information technology infrastructure critical for today's internet applications, web services, video streaming, enterprise networks and service provider solutions. The emerging data center and Web 2.0 markets are two of the fastest growing segments in optical communications, both in terms of capital network equipment investment and growth of high data rate optical transceivers. Additionally, the increased bandwidth needs for 5G wireless applications will drive growth in high speed optical modules. Historically, we have supplied optical transceivers, but have shifted our strategy to supplying underlying optical components, high-speed source lasers and receiver photo diodes used in optical transceivers to address these market segments.

For the 100G and higher data rates, we offer several source laser technologies to balance technical and commercial requirements. For high volume, short distance applications we developed our VCSELs. VCSELs are ideal for short reach applications because they enable low power, low cost optical solutions that are highly scalable. For high-performance, longer distance applications we have our directly modulated laser ("DML") and electro-absorption modulated laser ("EML") dies supporting module applications with speeds from 10Gb/s through 800Gb/s. Our individual lasers and compact laser arrays offer an innovative solution for the LANs, SANs, broadband Internet, 5G Wireless and metro-area network as well as hyperscale datacenter applications.

Our 3D sensing technology enables real time depth information to any photo or video image. This represents a fundamental transition for image capture akin to the transition from monochrome to color and gives devices the ability to see the world around them in three dimensions. The immediate applications include full body imaging for gaming, 3D scanning for space mapping and facial recognition for security. Emerging applications for this technology include various mobile device applications, autonomous vehicles, self-navigating robotics and drones in industrial applications and 3D capture of objects coupled with 3D printing. 3D sensing can be applied to any device with a camera. The technologies to achieve accurate and stable 3D sensing are converging to laser based solutions. We are a leading supplier of the critical laser illumination sources for 3D sensing systems being used in applications for gaming, computing, mobile devices, and home entertainment.

Strategy

In our OpComms segment, we are focused on technology leadership through innovation with our customers, cost leadership and functional integration. We endeavor to align the latest technologies with industry leading, scalable manufacturing and operations to drive the next phase of optical communications technologies and products for Telecom and Datacom applications that are faster, more agile and more reliable, making us a valuable business and technology partner for NEMs, consumer electronic companies, cloud service providers and data center operators.

Competition

We compete against various companies in the markets we serve, including II-VI, Acacia Communications, Accelink, ams AG, Broadcom Inc., Finisar, Furukawa Electric, Mitsubishi Electric, Neophotonics, and Sumitomo Electric Industries as well as private companies and subsidiaries of public companies providing optical communications components such as Fujitsu Optical Components - a subsidiary of Fujitsu, Nistica - a subsidiary of Molex, and O-Net. Additionally, II-VI has announced its plan to acquire Finisar and Cisco has announced its plan to acquire Acacia Communications.

Lasers

Markets

Our Lasers products serve our customers in markets and applications such as sheet metal processing, general manufacturing, biotechnology, graphics and imaging, remote sensing, and precision machining such as drilling in printed circuit boards, wafer singulation, glass cutting and solar cell scribing.

Our Lasers products are used in a variety of OEM applications including diode-pumped solid-state, fiber, diode, direct-diode and gas lasers such as argon-ion and helium-neon lasers. Fiber lasers provide kW-class output powers combined with excellent beam quality and are used in sheet metal processing and metal welding applications. Diode-pumped solid-state lasers provide excellent beam quality, low noise and exceptional reliability and are used in biotechnology, graphics and imaging, remote sensing, materials processing and precision machining applications. Diode and direct-diode lasers address a wide variety of applications, including laser pumping, thermal exposure, illumination, ophthalmology, image recording, printing, plastic welding and selective soldering. Gas lasers such as argon-ion and helium-neon lasers provide a stable, low-cost and reliable solution over a wide range of operating conditions, making them well suited for complex, high-resolution OEM applications such as flow cytometry, DNA sequencing, graphics and imaging and semiconductor inspection.

We also provide high-powered and ultrafast lasers for the industrial and scientific markets. Manufacturers use high-power, ultrafast lasers to create micro parts for consumer electronics and to process semiconductor, LED, and other types of chips. Use of ultrafast lasers for micromachining applications is being driven primarily by the increasing use of consumer electronics and connected devices globally.

Our portfolio of Lasers products includes components and subsystems used in a variety of OEM applications that range in output power from milliwatts to kilowatts and include ultraviolet, visible and infrared wavelengths. We support customer applications in the biotechnology, graphics and imaging, remote sensing, materials processing and other precision machining areas.

Customers

Our Lasers customers include Amada, ASML Holding, Beckman Coulter, DISCO, Electro Scientific Industries (recently acquired by MKS Instruments, a competitor of ours), Han’s Laser Technology, KLA-Tencor, Lasertec, Life Technologies, and NR Electric. During fiscal 2019, 2018, and 2017, we did not have any single customer attributable to our Lasers segment that generated net revenue of 10% or more of our total net revenue for the applicable fiscal year.

Trends

As technology advances, industries such as consumer electronics manufacturing increasingly turn to lasers when they need more precision, higher productivity and energy efficient, or “green,” alternatives for problems that cannot be solved by mechanical, electronic or other means. For example, these industries are using lasers to develop products that are smaller and lighter to increase productivity and yield and to lower their energy consumption. Lasers have been used for years to help achieve the scale and precision needed in semiconductor processing. In biotech applications, lasers have been instrumental for advances (and new standard procedures) in cytology, hematology, genome sequencing and crime scene investigations, among others. We believe the long-term trends in these industries will likely lead to increased demand for lasers.

Sheet metal processing and metal welding applications are increasingly using kW-class fiber lasers instead of kW-class CO2 lasers. Fiber lasers generate higher productivity at lower cost in such applications because they exhibit lower power consumption, better quality and generally lower user maintenance costs.

In addition, demand continues for electronic products, as well as products and components in other industries, with greater functionality while becoming smaller, lighter and less expensive. Innovative / Next generation product designs require precise micromachining and materials processing, such as micro bending, soldering and welding. At the scale and processing speed needed, lasers are replacing mature mechanical tools such as drills for minute holes, or “vias,” in printed circuit boards and saws and scribes for singulating silicon wafers, resulting in greater precision and productivity. As these trends continue, we believe that manufacturers and other industries will increase their reliance on lasers in order to maintain or increase their competitiveness.

We believe we are well-positioned with key OEM providers of laser solutions to these industries. We continue to develop our laser portfolio to offer smaller and more cost-effective products designed specifically for the performance, integration, reliability and support needs of our OEM customers.

Offerings

Our broad range of Lasers products includes diode-pumped solid-state, fiber, diode, direct-diode and gas lasers such as argon-ion and helium-neon lasers. Diode-pumped solid-state and fiber lasers that provide excellent beam quality, low noise and exceptional reliability are used in biotechnology, graphics and imaging, remote sensing, materials processing and precision machining applications. Diode and direct-diode lasers address a wide variety of applications, including laser pumping, thermal exposure, illumination, ophthalmology, image recording, printing, plastic welding and selective soldering. Gas lasers such as argon-ion and helium-neon lasers provide a stable, low-cost and reliable solution over a wide range of operating conditions, making them well suited for complex, high-resolution OEM applications such as flow cytometry, DNA sequencing, graphics and imaging and semiconductor inspection.

Strategy

In our Lasers segment, we leverage our long-term relationships with OEM customers to drive commercial laser innovation. Using established manufacturing, engineering, lasers and photonics expertise, we deliver products that meet cost-of-ownership and reliability needs while delivering on volume production demands.

Competition

We compete against various public and private companies in the commercial laser markets we serve including Coherent and IPG Photonics.

Acquisitions

We evaluate strategic opportunities regularly and, where appropriate, may acquire additional businesses, products, or technologies that are complementary to, or broaden the markets for our products. We believe we have strengthened our business model by expanding our addressable markets, customer base and expertise, diversifying our product portfolio and fortifying our core businesses from acquisitions as well as through organic initiatives.

On December 10, 2018, we completed our merger with Oclaro, a provider of optical components and modules for the long-haul, metro and data center markets. Oclaro’s products provide differentiated solutions for optical networks and high-speed interconnects driving the next wave of streaming video, cloud computing, application virtualization and other bandwidth-intensive and high-speed applications. This acquisition strengthened our product portfolio, including gaining Oclaro’s indium phosphide laser and photonic integrated circuit and coherent component and module capabilities; broadens our revenue mix; and positions us strongly to meet the future needs of our customers. Refer to “Note 5. Business Combination” for further discussion of the merger.

In February 2017, we completed the acquisition of a privately held company to enhance our manufacturing and vertical integration capabilities. We acquired all of the outstanding shares of the company for a total purchase consideration of $8.7 million. In connection with the acquisition, we paid upfront cash consideration of $5.1 million, incurred liabilities of $2.7 million contingent upon the achievement of certain production targets being achieved within 36 months following the acquisition date, and retained $0.9 million of the purchase price as security for the seller’s indemnification obligations, which resulted in the cash payment of $1.0 million to the seller during fiscal 2019 (based on the exchange rate at the date of payment).

Restructuring Programs

We continue to engage in targeted restructuring plans primarily intended to reduce costs, consolidate our operations, rationalize the manufacturing of our products and align our business in response to market needs and as a result of our acquisition of Oclaro. We have focused on improving efficiencies and reducing costs by consolidating operations where appropriate, while taking into consideration our current investment strategy, product offerings, core competencies, opportunities to enhance cost efficiency and the availability of alternative manufacturers, as appropriate.

Please refer to "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Note 14. Restructuring and Related Charges" in the Notes to Consolidated Financial Statements for information on restructuring charges.

Research and Development

During fiscal 2019, 2018 and 2017, we incurred R&D expenses of $184.6 million, $156.8 million, and $148.3 million, respectively. The number of employees engaged in R&D was approximately 790 as of June 29, 2019, 587 as of June 30, 2018 and 598 as of July 1, 2017.

We devote substantial resources to R&D for the development of new and enhanced products to serve our markets. Once the design of a product is complete, our engineering efforts shift to enhancing both product performance and our ability to manufacture it in greater volume and at lower cost.

In our OpComms segment, we are maintaining our capability to provide products throughout the network, while focusing on several important sub-segments. We continue to maintain strong investments in Telecom components and modules such as ROADMs and tunable devices needed for long-haul and metro markets, as well as high performance DML, EML, and VCSEL chips for Datacom transceivers. We are also responding to our customers' requests for higher levels of integration, including the integration of optics, electronics and software in our modules, subsystems and circuit packs. We are providing optical technology for 3D sensing systems that simplify the way that people interact with technology. These solutions are initially being used in computing, mobile, and industrial applications, including automotive applications.

In our Lasers segment, we continue to develop new product offerings in both solid-state and fiber lasers that take advantage of technologies and components we develop. These products are targeted at serving customers engaging in biotechnology, graphics and imaging, remote sensing, and materials processing and precision micromachining markets.

Manufacturing

Our significant manufacturing facilities are located in the United States, Thailand, China, the United Kingdom, Slovenia, Italy, Japan, and Switzerland.

In our fiscal fourth quarter of 2019, we moved into our Slovenia factory, which we expect to be fully operational by the fiscal third quarter of 2020.

In fiscal 2019, we announced our plan to discontinue development and manufacturing of Lithium Niobate modulators, and we plan to wind down these operations in San Donato, Italy during fiscal year 2020. Development and manufacturing will also be discontinued in our San Jose, California manufacturing locations within the next few quarters in order to facilitate our customers' transition to new products. We expect our Indium Phosphide photonic integrated circuits will replace Lithium Niobate modulators over time.

In fiscal 2019, we also announced our plan to discontinue the development and manufacturing of future Datacom transceiver products which impacted our Milpitas and Shenzhen Datacom module teams. While we expect strong growth in Datacom volumes in the future, the market at the transceiver level is gross margin challenged due to extreme competition. Following the Oclaro acquisition, we have a differentiated leadership position across a range of photonic chips on which the Datacom, wireless, and access markets critically rely.

Our significant contract manufacturing partners are located primarily in Thailand, Taiwan and Malaysia. We rely on the capabilities of our contract manufactures to procure components and manage the inventory in these locations.

During fiscal 2018, we entered into a Transition Services Agreement ("TSA") with one of our contract manufacturers to wind down the production of our products at their facility in China and to facilitate an orderly transition of manufacturing to our manufacturing facility in Thailand, including the purchase of the manufacturing equipment. Under the terms of the TSA, we were required to pay $5.3 million in cash upon completion of certain milestones related to the purchase of equipment. During the year ended June 29, 2019, we paid $1.3 million and accrued $4.0 million for the manufacturing equipment acquired under this TSA. The equipment acquired is included in machinery and equipment within property, plant and equipment in our consolidated balance

sheet as of June 29, 2019. We were also required to share cost of retention and severance, and to reimburse for certain other direct and indirect costs incurred by our contract manufacturer for transition services provided. These costs were expensed as incurred. We have now fully exited from operations with this contract manufacturer. Please refer to “Note 8. Asset Acquisition” in the Notes to Consolidated Financial Statements.

Sources and Availability of Raw Materials

We use various suppliers and contract manufacturers to supply parts and components for the manufacture and support of multiple product lines. Although our intention is to establish at least two sources of supply for materials whenever possible, for certain components we have sole or limited source supply arrangements. We may not be able to procure these components from alternative sources at acceptable prices and quality within a reasonable time, or at all; therefore, the risk of loss or interruption of such arrangements could impact our ability to deliver certain products on a timely basis.

Intellectual Property

Intellectual property rights that apply to our various products include patents, trade secrets and trademarks. We do not intend to broadly license our intellectual property rights unless we can obtain adequate consideration or enter into acceptable patent cross-license agreements. As of June 29, 2019, we owned 1,063 U.S. patents and 798 foreign patents with expiration dates ranging from July 2019 through June 2038, and had 490 patent applications pending throughout the world.

Seasonality

Our revenue may be influenced on a quarter to quarter basis by customer demand patterns and new product introductions. Some of our products may be incorporated into consumer electronic products, which are subject to seasonality and fluctuations in demand.

Backlog

Backlog consists of purchase orders for products for which we have assigned shipment dates.

As of June 29, 2019 and June 30, 2018, our backlog was $453.1 million and $370.6 million, respectively. Due to possible changes in product delivery schedules and cancellation of product orders, and because our sales often reflect orders shipped in the same quarter in which they are received, our backlog at any particular date is not necessarily indicative of actual revenue or the level of orders for any succeeding period. A portion of our revenue arises from vendor-managed inventory arrangements where the timing and volume of customer utilization is difficult to predict.

Employees

As of June 29, 2019, we employed approximately 5,161 full-time employees, including approximately 3,748 employees in manufacturing, 790 employees in R&D and 623 employees in SG&A.

Outside of the United States, our business is subject to labor laws that differ from those in the United States. We follow the statutory requirements of those countries where we operate. We consider our employee relations to be good.

Environmental

Our R&D, manufacturing and distribution operations involve the use of hazardous substances and are regulated under international, federal, state and local laws governing health and safety and the environment. We apply strict standards for protection of the environment and occupational health and safety to sites inside and outside the United States, even if not subject to regulation imposed by foreign governments. We believe that our properties and operations at our facilities comply in all material respects with applicable environmental laws and occupational health and safety laws. However, the risk of environmental liabilities cannot be completely eliminated and there can be no assurance that the application of environmental and health and safety laws will not require us to incur significant expenditures. We are also regulated under a number of international, federal, state and local laws regarding recycling, product packaging and product content requirements. The environmental, product content/disposal and recycling laws are gradually becoming more stringent and may cause us to incur significant expenditures in the future.

In connection with the Separation, we agreed to indemnify Viavi for any liability associated with contamination from past operations at all properties transferred to us from Viavi, to the extent the resulting issues primarily related to our business. We have not been presented with any claims to date.

International Operations

During fiscal 2019, 2018 and 2017, net revenue from customers outside the United States based on the geographic region and country where our product is initially shipped, represented 93.6%, 90.8% and 85.2% of net revenue, respectively. In certain circumstances customers may request shipment of our products to a contract manufacturer in one country, which may differ from the location of their end customers. During fiscal 2019, our net revenue from Hong Kong, Mexico, South Korea, and Japan represented 24.8%, 13.7%, 10.4%, and 11.2% of our consolidated net revenue, respectively. During fiscal 2018, our net revenue from Hong Kong, Mexico, South Korea, and Japan represented 14.7%, 11.7%, 11.7%, and 15.6% of our consolidated net revenue, respectively. During fiscal 2017, our net revenue from Hong Kong, Mexico, and Japan represented 22.6%, 18.5% and 9.9% of our consolidated net revenue, respectively. Our net revenue is primarily denominated in U.S. dollars, including our net revenue from customers outside the United States based on customer shipment locations as presented above.

As of June 29, 2019 and June 30, 2018, long-lived assets, namely our net property, plant and equipment, located outside of the United States comprised 64.0% and 68.2% of our total property, plant and equipment, net, respectively. As of June 29, 2019, 7.7% and 36.3% of our net property, plant and equipment were located in China and Thailand, respectively. As of June 30, 2018, 22.8% and 35.0% of our net property, plant and equipment were located in China and Thailand, respectively.

Please refer to "Note 20. Operating Segments and Geographic Information" in the Notes to Consolidated Financial Statements. For information regarding risks associated with our international operations, see "Item 1A. Risk Factors."

Available Information

Our website is located at www.lumentum.com, and our investor relations website is located at www.investor.lumentum.com. Copies of our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to these reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, as amended, are available free of charge on our investor relations website as soon as reasonably practicable after we file such material electronically with or furnish it to the Securities and Exchange Commission (the "SEC"). The SEC also maintains a website that contains our SEC filings at www.sec.gov.

Investors and others should note that we routinely use the Investors section of our website to announce material information to investors and the marketplace. While not all of the information that the Company posts on its corporate website is of a material nature, some information could be deemed to be material. Accordingly, the Company encourages investors, the media and others interested in the Company to review the information that it shares on www.lumentum.com. Information in, or that can be accessed through, our website is not incorporated into this Form 10-K.

ITEM 1A. RISK FACTORS

Investors in our securities should carefully consider all of the relevant factors disclosed by us, including the following factors that could affect our results of operations, financial condition or stock price.

Risks Related to Our Business

Changing technology and intense competition require us to continuously innovate while controlling product costs, and our failure to do so may result in decreased revenues and profitability.

The markets in which we operate are dynamic and complex, and our success depends upon our ability to deliver both our current product offerings and new products and technologies on time and at acceptable prices to our customers. The markets for our products are characterized by rapid technological change, frequent new product introductions, substantial capital investment, changes in customer requirements, continued price pressures and a constantly evolving industry. Historically, these pricing pressures have led to a continued decline of average selling prices across our business. The development of new, technologically advanced products is a complex and uncertain process requiring high levels of innovation and the accurate prediction of technology and market trends. The introduction of new products also often requires significant investment to ramp up production capacity, the benefit of which may not be realized if we are not successful in the production of such products or if customer demand does not develop as expected. Ramping of production capacity also entails risks of delays which can limit our ability to realize the full benefit of new product introductions. We cannot assure you that we will be able to identify, develop, manufacture, market or support new or enhanced products successfully, if at all, or on a timely basis. We also cannot assure you that potential markets for our new products will materialize on the timelines we anticipate, or at all, or that our technology will meet our customers' specifications. Our future performance will depend on the successful development, introduction, deployment and market acceptance of new and enhanced features and products that meet our customers' current and future needs.

The market for optical communications products in particular has matured over time and these products have increasingly become subject to commoditization. Both legacy competitors as well as new entrants, predominantly Asia-based competitors, have intensified market competition in recent years leading to pricing pressure. To preserve our revenues and product margin structures, we remain reliant on an integrated customer and market approach that anticipates end customer needs as Telecom and Datacom requirements evolve. We also must continue to develop more advanced, differentiated products that command a premium with customers, while conversely continuing to focus on streamlining product costs for established legacy products. If we fail to continue to develop enhanced or new products, or over time are unable to adjust our cost structure to continue to competitively price more mature products, our financial condition and results of operations could be materially and adversely affected.

We rely on a limited number of customers for a significant portion of our sales; and the majority of our customers do not have contractual purchase commitments.

We have consistently relied on a small number of customers for a significant portion of our sales and in certain of our markets, such as 3D sensing and commercial lasers, this customer concentration is particularly acute. We expect that this customer concentration will continue in the future and we expect that our growth prospects will continue to be concentrated in a small number of customers. Many of our customers purchase products under purchase orders or under contracts that do not contain volume purchase commitments. Some customers provide us with their expected forecasts for our products several months in advance, but these customers may decrease, cancel or delay purchase orders already in place, including on short notice, and the impact of any such actions may be intensified given our dependence on a limited number of large customers. In addition, changes in the business requirements, vendor selection, project prioritization, financial prospects, capital resources, and expenditures, or purchasing behavior (including product mix purchased or timing of purchases) of our key customers, or any real or perceived quality issues related to the products that we sell to such customers, could significantly decrease our sales to such customers or could lead to delays or cancellations of planned purchases of our products or services, which increases the risk of quarterly fluctuations in our revenues and operating results. There are also continuing trade tensions with the U.S. and countries in Asia, which could materially impact our sales to key customers in these regions. Further, we may be required to purchase raw materials, increase production capacity or make other changes to our business to accommodate certain large customers. If forecasted orders do not materialize, we may need to reduce investment in R&D activities, we may fail to optimize our manufacturing capacity, we may incur liabilities with our suppliers for reimbursement of capital expenditures, or we may have excess inventory. In addition, if we incur expenses in response to forecasted demand and do not have a corresponding increase in revenue, our profitability may suffer. Any of these factors could adversely affect our business, financial condition and results of operations.

Our ability to sell our products to a significant customer has been restricted.

On May 16, 2019, Huawei Technologies Co. Ltd. and 68 designated non-U.S. affiliates (collectively, "Huawei") were added to the Entity List of the Bureau of Industry and Security of the U.S. Department of Commerce, which imposes limitations on the

supply of certain U.S. items and product support to Huawei. Sales to Huawei accounted for 15.2% of our total revenue for the fiscal year ended June 29, 2019. We suspended shipments of all products to Huawei until we were able to review our product portfolio and determine whether our products are subject to the Export Administration Regulations ("EAR"), and therefore within the scope of the Entity List restrictions. We resumed shipments of certain of our products to Huawei during the quarter ended June 29, 2019 after determining that such products are not subject to the EAR.

Notwithstanding our determination that we are able to ship certain products in compliance with applicable law, we believe that under the current regulatory regime, our business with Huawei may be more limited than it was in the past. For example, we may be unable to supply certain other products or be limited or unable to work with Huawei on future product development while Huawei remains on the Entity List, which may negatively impact our financial condition and results of operations. Huawei may seek to obtain similar or substitute products from our competitors that are not subject to these restrictions, or to develop similar or substitute products themselves.

We also cannot be certain what additional actions the U.S. government may take with respect to Huawei, including changes to the Entity List restrictions, export regulations, tariffs or other trade restrictions. We are unable to predict the duration of the restrictions enacted in May 2019 or of additional actions, which could have a long-term adverse effect on our business.

We also manufacture customized products for Huawei, and therefore may be unable to sell certain finished goods inventory to alternative customers, or may be unable to utilize such manufacturing capabilities for products for alternative customers, which may result in excess and obsolete changes in future periods.

Continued competition in our markets may lead to an accelerated reduction in our prices, revenues and market share.

The end markets for optical products have experienced significant industry consolidation during the past few years. As a result, the markets for optical subsystems, components and laser diodes are highly competitive. Our current competitors include a number of domestic and international public and private companies, many of which may have substantially greater financial, technical, marketing and distribution resources and brand name recognition than we have. Our competitors include II-VI (which has announced an agreement to acquire Finisar), Acacia Communications (which has entered an agreement to be acquired by Cisco), AMS, Broadcom, Coherent, Finisar, Fujitsu Optical Components, Furukawa Electric, IPG Photonics, MACOM, Mitsubishi Electric, Molex, Neophotonics, nLight, O-net Communications, OSRAM, Sumitomo Electric Industries and Trumpf. We may not be able to compete successfully against either current or future competitors. Our competitors may continue to enter markets or gain or retain market share through introduction of new or improved products or with aggressive low pricing strategies that may impact the efficacy of our approach. Additionally, if significant competitors were to merge or consolidate, for example, the pending acquisitions of Finisar by II-VI and Acacia Communications by Cisco, they may be able to offer a lower cost structure through economies of scale that we may be unable to match and which may intensify competition in the various markets. Increased competition could result in significant price erosion, reduced revenue, lower margins or loss of market share, any of which would significantly harm our business.

The manufacturing of our products may be adversely affected if we are unable to manufacture certain products in our manufacturing facilities or if our contract manufacturers and suppliers fail to meet our production requirements.

We manufacture some of our finished good products as well as some of the components that we provide to our contract manufacturers, in our China, Italy, Japan, Thailand, U.K., and San Jose, California manufacturing facilities. For some of the components and finished good products we are the sole manufacturer. Our manufacturing processes are highly complex, and issues are often difficult to detect and correct. From time to time we have experienced problems achieving acceptable yields in our manufacturing facilities, resulting in delays in the availability of our products. In addition, if we experience problems with our manufacturing facilities, it would be costly and require a long period of time to move the manufacture of these components and finished good products to a different facility or contract manufacturer which could then result in interruptions in supply, and would likely materially impact our financial condition and results of operations.

We also rely on several independent contract manufacturers to supply us with certain products. For many products, a particular contract manufacturer may be the sole source of the finished good products. We depend on these manufacturers to meet our production and capacity requirements and to provide quality products to our customers. Despite rigorous testing for quality, both by us and the contract manufacturers to whom we sell products, we may receive and ship defective products. We may incur significant costs to correct defective products which could result in the loss of future sales, indemnification costs or costs to replace or repair the defective products, litigation and damage to our reputation and customer relations. Defective products may also cause diversion of management attention from our business and product development efforts.

Additionally, our ability to fulfill our customers' demand, or the ability of our contract manufacturers to fulfill their obligations, may be affected by natural disasters, changes in legal requirements, labor strikes and other labor unrest and economic, political or other forces that are beyond our control. For example, in the past we experienced a labor strike at one of our contract manufacturers

which threatened the contract manufacturer's ability to fulfill its product commitments to us and, in turn, our ability to fulfill our obligations to our customers. Further, certain of our contract manufacturers are located in China, which exposes us to risks associated with Chinese laws and regulations and U.S. laws, regulations and policies with respect to China, such as those related to import and export policies, tariffs, taxation and intellectual property. Chinese laws and regulations are subject to frequent change, and if our contract manufacturers are unable to obtain or retain the requisite legal permits or otherwise to comply with Chinese legal requirements, we may be forced to obtain products from other manufacturers or to make other operational changes, including transferring our manufacturing to another manufacturer or to our own manufacturing facilities. Any such developments could have a material impact on our ability to meet our customers' expectations and may materially impact our operating results. The United States has recently imposed tariffs on the import of certain products manufactured in China, and may propose further tariffs in the future, which could increase costs associated with the manufacturing of our products in China, and potentially other countries, and negatively impact our sales levels and profit margins.

In addition, for a variety of reasons, including changes in circumstances at our contract manufacturers or regarding our own business strategies, we may choose or be required to transfer the manufacturing of certain products to other manufacturing sites, including to our own manufacturing facilities. For example, we are in the process of transitioning the manufacturing of our products with one of our contract manufacturers in China to our Shenzhen and Thailand manufacturing facilities and to other contract manufacturers. As a result of such transfers, our contract manufacturers may prioritize other customers or otherwise be unable to meet our demand. There also may be delays with the transfer of manufacturing equipment and successfully setting up that equipment at the transfer sites and training new operators. If such transfers are unsuccessful or take a longer period of time than expected, it could result in interruptions in supply and would likely impact our financial condition and results of operations.

Some of our purchase commitments with contract manufacturers are not cancellable which may impact our results of operations if customer forecasts driving these purchase commitments do not materialize and we are unable to sell the products to other customers. Alternatively, our contract manufacturers may not be able to meet our demand which would inhibit our ability to meet our customers' demands and maintain or grow our revenues. Furthermore, it could be costly and require a long period of time to move products from one contract manufacturer to another which could result in interruptions in supply and adversely impact our financial condition and results of operations.

In addition, many of our products are sourced from suppliers based outside of the United States, primarily in Asia. Uncertainty with respect to tax and trade policies, tariffs and government regulations affecting trade between the United States and other countries has recently increased. Major developments in tax policy or trade relations, such as the imposition of tariffs on imported products, could increase our product and product-related costs or require us to seek alternative suppliers, either of which could result in decreased sales or increased product and product-related costs.

If our customers do not qualify our manufacturing lines or the manufacturing lines of our subcontractors for volume shipments, our operating results could suffer.

Certain of our customers do not purchase products, other than limited numbers of evaluation units, prior to qualification of the manufacturing line for volume production. Our existing manufacturing lines, as well as each new manufacturing line, must pass through varying levels of qualification with certain of our customers. Some of our customers require that our manufacturing lines pass their specific qualification standards and that we, and any subcontractors that we may use, be registered under international quality standards. We may encounter quality control issues as a result of setting up new manufacturing lines in our facilities, relocating our manufacturing lines or introducing new products to fill production. We may be unable to obtain, or we may experience delays in obtaining, customer qualification of our manufacturing lines. If we introduce new contract manufacturing partners and move any production lines from existing internal or external facilities, the new production lines will likely need to be re-qualified with our customers. Any delays or failure to obtain qualifications would harm our operating results and customer relationships.

We depend on a limited number of suppliers for raw materials, packages and components, and any failure or delay by these suppliers in meeting our requirements could have an adverse effect on our business and results of operations.

We purchase raw materials, packages and components from a limited number of suppliers, who are often small and specialized. Additionally, some of our suppliers are our sole sources for certain materials, equipment and components. We depend on the timely and continued supply and quality of the materials, packages and components that our suppliers supply to us. We have not entered into long-term agreements with many of these suppliers. As a result, these suppliers may stop supplying us materials and equipment at any time. Our business and results of operations have been, and could continue to be, adversely affected by this dependency. Specific concerns we periodically encounter with our sole suppliers or limited number of suppliers include receipt of defective parts or contaminated materials, stoppages or delays of supply, insufficient resources to supply our requirements, substitution of more expensive or less reliable materials, increases in the price of supplies, and an inability to obtain reduced pricing from our suppliers in response to competitive pressures. Additionally, supply of and costs of raw materials may be negatively impacted by trade protection policies such as tariffs, or escalating trade tensions, particularly with countries in Asia. Any disruption in the

supply of the raw materials, packaging or components used in the manufacture and delivery of our products could have a material adverse impact on our business, financial condition and results of operations.

We contract with a number of large OEM and end-user service providers and product companies that have considerable bargaining power, which may require us to agree to terms and conditions that could have an adverse effect on our business or ability to recognize revenues.

Large OEM and end-user service providers and product companies comprise a significant portion of our customer base. These customers generally have greater purchasing power than smaller entities and, accordingly, often request and receive more favorable terms from suppliers, including us. As we seek to expand our sales to existing customers and acquire new customers, we may be required to agree to terms and conditions that are favorable to our customers and that may affect the timing of our ability to recognize revenue, increase our costs and have an adverse effect on our business, financial condition, and results of operations. Furthermore, large customers have increased buying power and ability to require onerous terms in our contracts with them, including pricing, warranties, and indemnification terms. If we are unable to satisfy the terms of these contracts, it could result in liabilities of a material nature, including litigation, damages, additional costs, loss of market share and loss of reputation. Additionally, the terms these large customers require, such as most-favored nation or exclusivity provisions, may impact our ability to do business with other customers and generate revenues from such customers.

Our products may contain defects that could cause us to incur significant costs, divert our attention from product development efforts and result in a loss of customers.

Our products are complex and defects may be found from time to time. Networking products in particular frequently contain undetected software or hardware defects when first introduced or as new versions are released. In addition, our products are often embedded in or deployed in conjunction with our customers' products which incorporate a variety of components produced by third parties. As a result, when problems occur, it may be difficult to identify the source of the problem. These problems may cause us to incur significant damages or warranty and repair costs, divert the attention of our engineering personnel from our product development efforts and cause significant customer relation problems or loss of customers, all of which would harm our business.

We are subject to risks arising from our international operations, which may adversely affect our business, financial condition, and results of operations.

We derive a majority of our revenue from our international operations, and we plan to continue expanding our business in international markets in the future. In addition, we have extensive international manufacturing capabilities through third-party contract manufacturers, as well as through our own international facilities, with employees engaged in R&D, administration, manufacturing, support and sales and marketing activities.

As a result of our international operations, in addition to similar risks we face in our U.S. operations, we are affected by economic, business, regulatory, social, and political conditions in foreign countries, including the following:

- changes in general IT spending;
- the imposition of government controls, inclusive of critical infrastructure protection;
- changes in or limitations imposed by trade protection laws or other regulatory orders or requirements in the United States or in other countries, including tariffs, sanctions, or other costs or requirements which may affect our ability to import or export our products from various countries or increase the cost to do so, including government action to restrict our ability to sell to foreign customers where sales of products may require export licenses (such as the U.S. Department of Commerce's addition of Huawei to the Entity List in May 2019 and the prohibition of export and sale of certain products to ZTE Corporation in early 2018) and increased tariffs on various products that have been proposed by the U.S. government and other non-U.S. governments;
- varying and potentially conflicting laws and regulations;
- fluctuations in local economies;
- wage inflation or a tightening of the labor market;
- political developments of foreign nations; and
- the impact of the following on service provider and government spending patterns as well as our contract and internal manufacturing: political considerations, unfavorable changes in tax treaties or laws, unfavorable events that affect foreign currencies, natural disasters, epidemic disease, labor unrest, earnings expatriation restrictions,

misappropriation of intellectual property, military actions, acts of terrorism, political and social unrest and difficulties in staffing and managing international operations.

Moreover, local laws and customs in many countries differ significantly from or conflict with those in the United States or other countries in which we operate. In many foreign countries, particularly in those with developing economies, it is common for others to engage in business practices that are prohibited by our internal policies and procedures or U.S. regulations applicable to us. There can be no assurance that our employees, contractors, channel partners and agents will not take actions in violation of our policies and procedures, which are designed to ensure compliance with U.S. and foreign laws and policies. Violations of laws or key control policies by our employees, contractors, channel partners, or agents could result in termination of our relationships with customers and suppliers, financial reporting problems, fines and/or penalties for us, or prohibition on the importation or exportation of our products, and could have a material adverse effect on our business, financial condition and results of operations.

Any or all of these factors could have a material adverse impact on our business, financial condition, and results of operations.

The threat of increasing tariffs, particularly to goods traded between the United States and China, could materially and adversely affect our business and results of operations.

Since the beginning of 2018, there has been increasing rhetoric, in some cases coupled with legislative or executive action, from several U.S. and foreign leaders regarding instituting tariffs against foreign imports of certain materials. More specifically, since 2018, the United States and China applied or proposed to apply tariffs to certain of each other's exports, and we expect these actions to continue for the foreseeable future. The institution of trade tariffs both globally and between the United States and China specifically carries the risk of negatively impacting overall economic conditions, which could have negative repercussions on our industry and our business. Furthermore, imposition of tariffs or new or revised export, import or doing-business regulations, including trade sanctions, could cause a decrease in the sales of our products to customers located in China or other customers selling to Chinese end users, which would directly impact our business and results of operations.

We face a number of risks related to our strategic transactions.

We have in the past acquired several companies, including our acquisition of Oclaro in December 2018. We may continue to expand and diversify our operations with additional acquisitions. We may be unable to identify or complete prospective acquisitions for many reasons, including increasing competition from other potential acquirers, the effects of consolidation in our industries and potentially high valuations of acquisition candidates. In addition, applicable antitrust laws and other regulations may limit our ability to acquire targets or force us to divest an acquired business. If we are unable to identify suitable targets or complete acquisitions, our growth prospects may suffer, and we may not be able to realize sufficient scale and technological advantages to compete effectively in all markets.

In connection with acquisitions, risks to us and our business include:

- diversion of management's attention from normal daily operations of the business;
- unforeseen expenses, delays or conditions imposed upon the acquisition or transaction, including due to required regulatory approvals or consents;
- unanticipated changes in the combined business due to potential divestitures or other requirements imposed by antitrust regulators;
- unanticipated changes in the acquired business, including due to regulatory action or changes in the operating results or financial condition of the business;
- the inability to retain and obtain required regulatory approvals, licenses and permits;
- difficulties and costs in integrating the operations, technologies, products, IT and other systems, facilities and personnel of the purchased businesses;
- loss of customers, suppliers or partners;
- potential difficulties in completing projects associated with in-process R&D;
- an acquisition or strategic transaction may not further our business strategy as we expected or we may overpay for, or otherwise not realize the expected return on, our investments;

We have in the past, and may in the future, also divest or reduce its investment in certain businesses or product lines from time to time. For example, during the third quarter of fiscal year 2019, we announced the divestiture of our Datacom module business in Japan which was completed in the fourth quarter of fiscal year 2019. Such divestitures involve risks, such as difficulty

separating portions of or entire businesses, distracting employees, incurring potential loss of revenue, negatively impacting margins, and potentially disrupting customer relationships. We may also incur significant costs associated with exit or disposal activities, related impairment charges, or both.

If we are unable to successfully manage any of these risks in relation to any future acquisitions or divestitures, our business, financial condition and results of operations could be adversely impacted.

We may be unable to successfully implement our acquisitions strategy or integrate acquired companies and personnel with existing operations.

To the extent we are successful in making acquisitions, we may be unsuccessful in implementing our acquisitions strategy, or integrating acquired companies or product lines and personnel with existing operations, or the integration may be more difficult or more costly than anticipated. Some of the risks that may affect our ability to integrate or realize any anticipated benefits from acquired companies, businesses or assets include those associated with:

- loss of customers, suppliers or partners;
- potential difficulties in completing projects associated with in-process R&D;
- an acquisition or strategic transaction may not further our business strategy as we expected or we may overpay for, or otherwise not realize the expected return on, our investments;
- we may face unanticipated liabilities or our exposure for known contingencies and liabilities may exceed our estimates;
- insufficient net revenue to offset increased expenses associated with acquisitions;
- unexpected losses of key employees of the acquired company, or inability to maintain our company culture;
- conforming the acquired company's standards, processes, procedures and controls with our operations, including integrating Enterprise Resource Planning ("ERP") systems and other key business applications;
- coordinating new product and process development;
- increasing complexity from combining operations;
- increasing the scope, geographic diversity and complexity of our operations;
- difficulties in consolidating facilities and transferring processes and know-how; and
- diversion of management's attention from other business concerns.
- dilution of our current stockholders as a result of any issuance of equity securities as acquisition consideration;
- expenditure of cash that would otherwise be available to operate our business;
- incurrence of indebtedness on terms that are unfavorable to us, limit our operational flexibility or that we are unable to repay;

In addition, following an acquisition, we may have difficulty forecasting the financial results of the combined company the market price of our common stock could be adversely affected if the effect of any acquisitions on our consolidated financial results is dilutive or is below the market's or financial analysts' expectations, or if there are unanticipated changes in the business or financial performance of the target company or the combined company. Any failure to successfully integrate acquired businesses may disrupt our business and adversely impact our business, financial condition and results of operations.

Changes in demand and customer requirements for our products may reduce manufacturing yields, which could negatively impact our profitability.

Manufacturing yields depend on a number of factors, including the volume of production due to customer demand and the nature and extent of changes in specifications required by customers for which we perform design-in work. Changes in manufacturing processes required as a result of changes in product specifications, changing customer needs, introduction of new product lines and changes in contract manufacturers may reduce manufacturing yields, resulting in low or negative margins on those products. Moreover, an increase in the rejection rate of products during the quality control process, before, during or after

manufacture, results in lower gross margins from lower yields and additional rework costs. Any reduction in our manufacturing yields will adversely affect our gross margins and could have a material impact on our operating results.

We may not be able to realize tax savings from our international tax structure, which could materially and adversely affect our operating results.

We initiated a new international corporate structure more closely aligned with our international operations during the third quarter of fiscal 2018. The new corporate structure is intended to reduce our overall effective tax rate through changes among our wholly-owned subsidiaries in how we use our intellectual property, and how we structure our international procurement and sales operations. The new structure includes legal entities located in jurisdictions with income tax rates lower than the U.S. statutory tax rate. The intercompany arrangements are intended to result in income earned by such entities in accordance with arm's-length principles and commensurate with functions performed, risks assumed and ownership of valuable corporate assets. We have not yet operationalized the new structure to the full extent possible due to various factors including the acquisition of Oclaro in the second quarter of fiscal 2019. We are currently in the process of assessing the Oclaro transaction's impact to our tax structure and, depending on the outcome, we may make modifications to the new structure in order to achieve better tax and operational efficiency. If we are unable to fully adopt a new international structure, if substantial modifications to the new international structure or the way we operate our business are made in light of the Oclaro acquisition or for other reasons, if changes in domestic and international tax laws negatively impact the structure, if we do not operate our business consistent with the new structure and applicable tax provisions, if we fail to achieve our revenue and profit goals, or if it is successfully challenged by the U.S. or foreign tax authorities, we may be unable to realize the anticipated tax savings which could materially and adversely affect our operating and financial results.

We have agreed to reimburse Viavi for certain tax liabilities and related costs that may be incurred by Viavi, under certain circumstances, as a result of implementing the new corporate structure or a modified structure in the future. In addition, the implementation of such a structure has required us to incur expenses, and may require that we incur additional expenses, for which we may not realize the anticipated benefit or it may take us several years to fully realize the anticipated benefit.

Changes in tax laws could have a material adverse effect on our business, cash flow, results of operations or financial conditions.

As a multinational corporation, we are subject to income taxes as well as non-income based taxes, in both the U.S. and various foreign jurisdictions. Significant uncertainties exist with respect to the amount of our tax liabilities, including those arising from potential changes in laws in the countries in which we do business and the possibility of adverse determinations with respect to the application of existing laws. Many judgments are required in determining our worldwide provision for income taxes and other tax liabilities, and we are under audit by various tax authorities, which often do not agree with positions taken by us on our tax returns. Any unfavorable resolution of these uncertainties may have a significant adverse impact on our tax rate.

Increasingly, countries around the world are actively considering or have enacted changes in relevant tax, accounting and other laws, regulations and interpretations. In particular, the Tax Cuts and Jobs Act (the "Tax Act") contains many significant changes to the U.S. tax laws that affected our fiscal year ended June 29, 2019, and which will continue to affect our fiscal years thereafter. Information regarding the Tax Act and the impact of the Tax Act on our tax profile is included in our Annual Report on Form 10-K for our fiscal year ended June 30, 2018.

The reduction in the U.S. federal statutory rate is expected to positively impact our federal cash tax liability. However, the ultimate impact is subject to the effect of other complex provisions in the Tax Act (including the BEAT and GILTI), and it is possible that any impact of BEAT, GILTI, or other provisions of the Tax Act could significantly reduce, or outweigh, the benefit of the reduction in the U.S. federal statutory rate. Due to the uncertain practical and technical application of many of these provisions, we made reasonable estimates of the effects and recorded provisional amounts where possible for the fiscal year ended June 30, 2018. The U.S. Treasury Department and the Internal Revenue Service (IRS), and other standards-setting bodies may issue guidance on how the provisions of the Tax Act will be applied that is different from our interpretation. The Tax Act requires complex computations not previously required or produced, and significant judgments and assumptions in the interpretation of the law were made in producing our provisional estimates. During the period ended December 29, 2018, we completed our accounting for the Tax Act with no material adjustment to our provisional estimates. We also anticipate that uncertainty in the application of the Tax Act to our ongoing operations as well as possible adverse future law changes attributable to changes in the U.S. political environment could have an adverse impact on our future tax rate. Other countries also continue to enact and consider enacting new laws, which could adversely affect us. The foregoing items could increase our future tax expense, could change our future intentions regarding reinvestment of foreign earnings, and could have a material adverse effect on our business, financial condition and results of operations.

The income and non-income tax regimes we are subject to or operate under are unsettled and may be subject to significant change. Changes in tax laws or tax rulings, or changes in interpretations of existing laws, could materially affect our financial position and results of operations. Many countries in Europe, as well as a number of other countries and organizations, have recently proposed or recommended changes to existing tax laws or have enacted new laws that could increase our tax obligations where we do business or require us to change the manner in which we operate our business. The Organization for Economic Cooperation and Development has been working on a set of internationally accepted tax rules as a part of a Base Erosion and Profit Sharing (BEPS) Project aimed at tax avoidance, and that the roll-out of BEPS action steps by various jurisdictions may change aspects of the existing framework under which our tax obligations are determined in many of the countries in which we do business.

On June 7, 2019, the Ninth Circuit Court of Appeals, reversing a previous decision of the U.S. Tax Court, held that the U.S. Treasury Department's regulations requiring the inclusion of stock-based compensation expense in a taxpayer's cost-sharing calculations were valid. We have a research and development cost sharing arrangement with one of our foreign affiliates. Our financial statements have been prepared consistent with the ruling and we will continue to monitor any ongoing developments, including the possibility of rehearing or appeal to the U.S. Supreme Court, to determine if future changes are required.

Our subsidiary in Thailand currently operates under a tax holiday which will expire in fiscal 2025 unless extension is granted by the Thailand government and we continue to meet the requirements thereunder. If we do not meet the tax holiday requirements, if we are not granted an extension by the Thailand government, or if we decide not to apply for an extension of the tax holiday, income earned in Thailand will be subject to a higher statutory income tax rate, which may cause our effective tax rate to increase and reduce our liquidity and cash flow.

Our operating results may be subject to volatility due to fluctuations in foreign currency.

We are exposed to foreign exchange risks with regard to our international operations which may affect our operating results. Since we conduct business in currencies other than U.S. dollars but report our financial results in U.S. dollars, we face exposure to fluctuations in currency exchange rates. Although we price our products primarily in U.S. dollars, a portion of our operating expenses are incurred in foreign currencies. For example, a portion of our expenses are denominated in U.K. pound sterling, Chinese yuan and Thai baht. Fluctuations in the exchange rate between these currencies and other currencies in which we collect revenues and/or pay expenses could have a material effect on our future operating results. If the value of the U.S. dollar depreciates relative to certain other foreign currencies, it would increase our costs as expressed in U.S. dollars. Conversely, if the U.S. dollar strengthens relative to other currencies, such strengthening could raise the relative cost of our products to non-U.S. customers, especially as compared to foreign competitors, and could reduce demand.

Our ability to develop, market, and sell products could be harmed if we are unable to retain or hire key personnel.

Our future success depends upon our ability to recruit and retain the services of executive, engineering, sales and marketing, and support personnel. The supply of highly qualified individuals, in particular engineers in very specialized technical areas, or sales people specializing in the service provider, enterprise and commercial laser markets, is limited and competition for such individuals is intense. None of our officers or key employees is bound by an employment agreement for any specific term. The loss of the services of any of our key employees, the inability to attract or retain personnel in the future or delays in hiring required personnel and the complexity and time involved in replacing or training new employees, could delay the development and introduction of new products, and negatively impact our ability to market, sell, or support our products.

We may require additional capital to support business growth, and this capital might not be available on acceptable terms, if at all.

We intend to continue to make investments to support our business growth and may require additional funds to respond to business challenges, including supporting the development and introduction of new products, addressing new markets, engaging in strategic transactions and partnerships, improving or expanding our operating infrastructure or acquiring complementary businesses and technologies. On December 10, 2018, we entered into a credit agreement (the "Credit Agreement") with Deutsche Bank AG New York Branch for a senior secured term loan facility in an aggregate principal amount of $500 million (the "Term Loan Facility"). In March 2017, we issued and sold a total of $450 million in aggregate principal amount of Convertible Notes due in 2024 (the "2024 Notes") and we may in the future engage in additional equity or debt financings to secure additional funds. If we raise additional funds through future issuances of equity, equity-linked or convertible debt securities, our existing stockholders could suffer significant dilution, and any new equity securities we issue could have rights, preferences and privileges superior to those of holders of our common stock. Any debt financing we may secure in the future could involve restrictive covenants relating to our capital raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital and to pursue business opportunities, including potential acquisitions. We may not be able to obtain additional financing on terms favorable to us, if at all. If we are unable to obtain adequate financing or financing on terms satisfactory to us

when we require it, our ability to continue to support our business growth and to respond to business challenges could be significantly impaired, and our business may be harmed.

Our ability to hire and retain employees may be negatively impacted by changes in immigration laws, regulations and procedures.

Foreign nationals who are not U.S. citizens or permanent residents constitute an important part of our U.S. workforce, particularly in the areas of engineering and product development. Our ability to hire and retain these workers and their ability to remain and work in the United States are impacted by laws and regulations, as well as by procedures and enforcement practices of various government agencies. Changes in immigration laws, regulations or procedures, including those that may be enacted by the current U.S. presidential administration and in the United Kingdom, may adversely affect our ability to hire or retain such workers, increase our operating expenses and negatively impact our ability to deliver our products and services.

Any failure, disruption or security breach of our information technology infrastructure or information management systems could have an adverse impact on our business and operations.

Our business depends significantly on effective and efficient information management systems, and the reliability and security of our information technology infrastructure are essential to the health and expansion of our business. For example, the information gathered and processed by our information management systems assists us in managing our supply chain, monitoring customer accounts, and protecting our proprietary and confidential business information, plans, trade secrets, and intellectual property, among other things. In addition, these systems may also contain personal data or other protected information about our employees, our customers' employees, or others. We must continue to expand and update this infrastructure in response to our changing requirements as well as evolving security standards and risks.

In some cases, we may rely upon third-party providers of hosting, support and other services to meet our information technology requirements. Any failure to manage, expand and update our information technology infrastructure, including our ERP system and other applications, any failure in the extension implementation or operation of this infrastructure, or any failure by our hosting and support partners or other third-party service providers in the performance of their services could materially harm our business. In addition, we have partnered with third parties to support our information technology systems and to help design, build, test, implement and maintain our information management systems. Our merger, acquisition and divestiture activity, including our acquisition of Oclaro in December 2018, will also require transitions to or from, and the integration of, various information management systems within our overall enterprise architecture, including our ERP system and other applications. Those systems that we acquire may also pose security risks of which we are unaware or unable to mitigate, particularly during the transition of these systems.

Like other companies, we are subject to ongoing attempts by malicious actors, including through hacking, malware, ransomware, denial-of-service attacks, social engineering, exploitation of internet-connected devices, and other attacks, to obtain unauthorized access or acquisition of confidential information or otherwise affect service reliability and threaten the confidentiality, integrity and availability of information on our systems. We have been in the past, and may be in the future, subject to social engineering and other cybersecurity attacks. Further, our third party service providers may have been and may be in the future subject to such attacks. In addition, actions by our employees, service providers, partners, contractors or others, whether malicious or in error, could affect the security of our systems. Further, a breach of our information technology infrastructure could result in the misappropriation of intellectual property, business plans or trade secrets. Any failure of our systems or those of our third-party service providers could result in unauthorized access or acquisition of such proprietary information, and any actual or perceived security breach could cause significant damage to our reputation and adversely impact our relationships with our customers. Additionally, while our security systems are designed to maintain the physical security of our facilities and information systems, accidental or willful security breaches or other unauthorized access by third parties to our facilities or our information systems could lead to misappropriation of proprietary and confidential information.

Despite our implementation of security measures, our systems and those of our third-party service providers are vulnerable to damage from these types of attacks or errors. In addition, our systems may be impacted by natural disasters, terrorism or other similar disruptions. Any system failure, accident or security breach affecting us or our third-party providers could result in disruptions to our operations and loss of, or unauthorized access or damage to, our data or in inappropriate disclosure of confidential information. Any actual or alleged disruption to, or security breach affecting, our systems or those of our third-party partners could cause significant damage to our reputation, lead to theft of our protected intellectual property and trade secrets, result in legal obligations or liability, affect our relationships with our customers, and ultimately harm our business. In addition, we may be required to incur significant costs to protect against or mitigate damage caused by these disruptions or security breaches in the future.

Our revenues, operating results, and cash flows may fluctuate from period to period due to a number of factors including unfavorable economic and market conditions, which makes predicting financial results difficult.

Spending on optical communication and laser products is subject to cyclical and uneven fluctuations, which could cause our financial results to fluctuate unevenly and unpredictably. It can be difficult to predict the degree to which end-customer demand and the seasonality and uneven sales patterns of our OEM partners or other customers will affect our business in the future, particularly as we or they release new or enhanced products. While our fourth fiscal quarters are typically strongest, future buying patterns may differ from historical seasonality. Further, if the mix of revenue changes, it may also cause results to differ from historical seasonality. Accordingly, our quarterly and annual revenues, operating results, cash flows, and other financial and operating metrics may vary significantly in the future, and the results of any prior periods should not be relied upon as an indication of future performance.

Adverse changes to and uncertainty in the global economy may lead to decreased demand for our products and revenue fluctuations, increased price competition for our products, and may increase the risk of excess and obsolete inventories and higher overhead costs as a percentage of revenue. Declines or uncertainty in particular geographic regions, such as China or Europe, may impact IT-related spending generally and consequently, may lead to lower growth or a decline in our markets. The loss or delay of orders from any of our significant customers could cause our revenue and profitability to suffer. The impact of economic challenges on the global financial markets could further negatively impact our operations by affecting the solvency of our customers, the solvency of our key suppliers or the ability of our customers to obtain credit to finance purchases of our products. If economic conditions deteriorate or remain uncertain, our financial condition and results of operations would likely be materially and adversely impacted.

If we have insufficient proprietary rights or if we fail to protect our rights, our business would be materially harmed.

We seek to protect our products and product roadmaps in part by developing and/or securing proprietary rights relating to those products, including patents, trade secrets, know-how and continuing technological innovation. The steps we take to protect our intellectual property may not adequately prevent misappropriation or ensure that others will not develop competitive technologies or products. Other companies may be investigating or developing technologies that are similar to our own. It is possible that patents may not be issued from any of our pending applications or those we may file in the future and, if patents are issued, the claims allowed may not be sufficiently broad to deter or prohibit others from making, using or selling products that are similar to ours, or such patents could be invalidated or ruled unenforceable. We do not own patents in every country in which we sell or distribute our products, and thus others may be able to offer identical products in countries where we do not have intellectual property protections. In addition, the laws of some territories in which our products are or may be developed, manufactured or sold, including Europe, Asia-Pacific or Latin America, may not protect our products and intellectual property rights to the same extent as the laws of the United States. Any patents issued to us may be challenged, invalidated or circumvented. Additionally, we are currently a licensee for a number of third-party technologies including software and intellectual property rights from academic institutions, our competitors and others, and we are required to pay royalties to these licensors for the use thereof. In the future, if such licenses are unavailable or if we are unable to obtain such licenses on commercially reasonable terms, we may not be able to rely on such third-party technologies which could inhibit our development of new products, impede the sale of some of our current products, substantially increase the cost to provide these products to our customers, and could have a significant adverse impact on our operating results.

We also seek to protect our important trademarks by endeavoring to register them in certain countries. We have not registered our trademarks in every country in which we sell or distribute our products, and thus others may be able to use the same or confusingly similar marks in countries where we do not have trademark registrations. We have adopted Lumentum as a house trademark and trade name for our company, and are in the process of establishing rights in this name and brand. We have also adopted the Lumentum logo as a house trademark for our company, and are in the process of establishing rights in this brand. Trademarks associated with the Lumentum brand have been registered in the United States or other jurisdictions, however, the efforts we take to maintain registration and protect trademarks, including the Lumentum brand, may not be sufficient or effective. Although we have registered marks associated with the Lumentum brand, third parties may seek to oppose or otherwise challenge these registrations. There is the possibility that, despite efforts, the scope of the protection obtained for our trademarks, including the Lumentum brand, will be insufficient or that a registration may be deemed invalid or unenforceable in one or more jurisdictions throughout the world.

Further, a breach of our information technology infrastructure could result in the misappropriation of intellectual property, business plans or trade secrets. Any failure of our systems or those of our third-party service providers could result in unauthorized access or acquisition of such proprietary information, and any actual or perceived security breach could cause significant damage to our reputation and adversely impact our relationships with our customers.

Our products may be subject to claims that they infringe the intellectual property rights of others, the resolution of which may be time-consuming and expensive, as well as require a significant amount of resources to prosecute, defend, or make our products non-infringing.

Lawsuits and allegations of patent infringement and violation of other intellectual property rights occur regularly in our industry. We have in the past received, and anticipate that we will receive in the future, notices from third parties claiming that our products infringe upon their proprietary rights, with two distinct sources of such claims becoming increasingly prevalent. First, large technology companies, including some of our customers and competitors, are seeking to monetize their patent portfolios and have developed large internal organizations that may approach us with demands to enter into license agreements. Second, patent-holding companies that do not make or sell products (often referred to as "patent trolls") may claim that our products infringe upon their proprietary rights. We respond to these claims in the course of our business operations. The litigation or settlement of these matters, regardless of the merit of the claims, could result in significant expense and divert the efforts of our technical and management personnel, regardless of whether or not we are successful. If we are unsuccessful, we could be required to expend significant resources to develop non-infringing technology or to obtain licenses to the technology that is the subject of the litigation. We may not be successful in such development, or such licenses may not be available on commercially reasonable terms, or at all. Without such a license, or if we are the subject of an exclusionary order, our ability to make our products could be limited and we could be enjoined from future sales of the infringing product or products, which could adversely affect our revenues and operating results. Additionally, we often indemnify our customers against claims of infringement related to our products and may incur significant expenses to defend against such claims. If we are unsuccessful defending against such claims, we may be required to indemnify our customers against any damages awarded.

We also face risks that third parties may assert trademark infringement claims against us in one or more jurisdictions throughout the world related to our Lumentum and Oclaro brands and/or other trademarks. The litigation or settlement of these matters, regardless of the merit of the claims, could result in significant expense and divert the efforts of our technical and management personnel, regardless of whether or not we are successful. If we are unsuccessful, trademark infringement claims against us could result in significant monetary liability or prevent us from selling some or all of our products or services under the challenged trademark. In addition, resolution of claims may require us to alter our products, labels or packaging, license rights from third parties, or cease using the challenged trademark altogether, which could adversely affect our revenues and operating results.

We face certain litigation risks that could harm our business.

We are now, and in the future we may become, subject to various legal proceedings and claims that arise in or outside the ordinary course of business. The results of legal proceedings are difficult to predict. Moreover, many of the complaints filed against us may not specify the amount of damages that plaintiffs seek, and we therefore may be unable to estimate the possible range of damages that might be incurred should these lawsuits be resolved against us. While we may be unable to estimate the potential damages arising from such lawsuits, certain of them assert types of claims that, if resolved against us, could give rise to substantial damages. Thus, an unfavorable outcome or settlement of one or more of these lawsuits could have a material adverse effect on our financial condition, liquidity and results of operations. Even if these lawsuits are not resolved against us, the uncertainty and expense associated with unresolved lawsuits could seriously harm our business, financial condition and reputation. Litigation is generally costly, time-consuming and disruptive to normal business operations. The costs of defending these lawsuits have been significant in the past, will continue to be costly and may not be covered by our insurance policies. The defense of these lawsuits could also result in continued diversion of our management's time and attention away from business operations, which could harm our business. For additional discussion regarding litigation, see "Part II, Item 1. Legal Proceedings."

Our products incorporate and rely upon licensed third-party technology, and if licenses of third-party technology do not continue to be available to us or are not available on terms acceptable to us, our revenues and ability to develop and introduce new products could be adversely affected.

We integrate licensed third-party technology into certain of our products. From time to time, we may be required to license additional technology from third-parties to develop new products or product enhancements. Third-party licenses may not be available or continue to be available to us on commercially reasonable terms. The failure to comply with the terms of any license, including free open source software, may result in our inability to continue to use such license. Our inability to maintain or re-license any third-party licenses required in our products or our inability to obtain third-party licenses necessary to develop new products and product enhancements, could potentially require us to develop substitute technology or obtain substitute technology of lower quality or performance standards or at a greater cost, any of which could delay or prevent product shipment and harm our business, financial condition, and results of operations.

We are subject to laws and other regulations worldwide including with respect to environmental matters, securities laws, privacy and data protection, compliance with which could increase our expenses and harm our operating results.

Our operations and our products are subject to various federal, state and foreign laws and regulations, including those governing pollution and protection of human health and the environment in the jurisdictions in which we operate or sell our products. These laws and regulations govern, among other things, wastewater discharges and the handling and disposal of hazardous materials in our products. Our failure to comply with current and future environmental or health or safety requirements could cause us to incur substantial costs, including significant capital expenditures, to comply with such environmental laws and regulations and to clean up contaminated properties that we own or operate. Such clean-up or compliance obligations could result in disruptions to our operations. Additionally, if we are found to be in violation of these laws, we could be subject to governmental fines or civil liability for damages resulting from such violations. These costs could have a material adverse impact on our financial condition or operating results.

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, the Registration, Evaluation, Authorization and Restriction of Chemicals (“REACH”), the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Directive (“RoHS”) and the Waste Electrical and Electronic Equipment Directive (“WEEE”) enacted in the European Union which regulate the use of certain hazardous substances in, and require the collection, reuse and recycling of waste from, certain products we manufacture. These regulations and similar legislation 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, which could have an adverse impact on the performance of our products, add greater testing lead-times for product introductions or other similar effects. We believe we comply with all such legislation where our products are sold and we continuously monitor these laws and the regulations being adopted under them to determine our responsibilities.

In addition, pursuant to Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act, the SEC has promulgated rules requiring disclosure regarding the use of certain “conflict minerals” that are mined from the Democratic Republic of Congo and adjoining countries and procedures regarding a manufacturer’s efforts to prevent the sourcing of such minerals. Complying with these disclosure requirements involves substantial diligence efforts to determine the source of any conflict minerals used in our products and may require third-party auditing of our diligence process. These efforts may demand internal resources that would otherwise be directed towards operations activities.

Since our supply chain is complex, we may face reputational challenges if we are unable to sufficiently verify the origins of the conflict minerals used in our products. Additionally, if we are unable to satisfy those customers who require that all of the components of our products are determined to be conflict free, they may choose a competitor’s products which could materially impact our financial condition and operating results.

We are also subject to laws and regulations with respect to personal data we collect from our employees, customers, and others. These laws and regulations are subject to frequent modifications and updates and require ongoing supervision. For example, the European Union adopted a General Data Protection Regulation (“GDPR”) that became effective in May 2018, and has established new, and in some cases more stringent, requirements for data protection in Europe, and which provides for substantial penalties for noncompliance. We have made certain modifications to our practices in order to comply with these or other requirements, and may be required to make additional modifications in order to comply with these or other requirements relating to privacy and data protection in the future, each of which may require us to incur significant costs and expenses. Additionally, California enacted legislation in June 2018, the California Consumer Privacy Act (“CCPA”), which will, among other things, require covered companies to provide new disclosures to California consumers when it goes into effect on January 1, 2020. Legislators have stated that they intend to propose amendments to the CCPA before it goes into effect, and it remains unclear what, if any, modifications will be made to this legislation or how it will be interpreted. The effects of the CCPA are potentially significant, however, and may require us to modify our data processing practices and policies and to incur substantial costs and expenses in an effort to comply. Laws and regulations relating to privacy and data protection continue to evolve in various jurisdictions, with existing laws and regulations subject to new and differing interpretations and new laws and regulations being proposed and adopted. It is possible that our practices may be deemed not to comply with those privacy and data protection legal requirements that apply to us now or in the future.

Further, in June 2016, a referendum was passed in the United Kingdom to leave the European Union, commonly referred to as “Brexit.” This created an uncertain political and economic environment in the United Kingdom and other European Union countries, even though the formal process for leaving the European Union may take years to complete and may not ultimately be effectuated. For example, while the United Kingdom has enacted a Data Protection Bill that substantially implements GDPR, which became law in May 2018, there remains uncertainty with regard to whether the European Union will view this regulation as adequate under GDPR and how data transfers between the United Kingdom and the European Union will be regulated.

Our failure or perceived failure to comply with any of the foregoing legal and regulatory requirements could result in increased costs for our products, monetary penalties, damages to our reputation, government inquiries and investigations, and legal action. Furthermore, the legal and regulatory requirements that are applicable to our business are subject to change from time to time, which increases our monitoring and compliance costs and the risk that we may fall out of compliance. Additionally, we may be required to ensure that our suppliers comply with applicable laws and regulations. If we or our suppliers fail to comply with such laws or regulations, we could face sanctions for such noncompliance, and our customers may refuse to purchase our products, which would have a material adverse effect on our business, financial condition and results of operations.

Our sales may decline if we are unable to obtain government authorization to export certain of our products, and we may be subject to legal and regulatory consequences if we do not comply with applicable export control laws and regulations.

Exports of certain of our products are subject to export controls imposed by the U.S. government and administered by the U.S. Departments of State and Commerce. In certain instances, these regulations may require pre-shipment authorization from the administering department. For products subject to the Export Administration Regulations ("EAR") administered by the Department of Commerce's Bureau of Industry and Security, the requirement for a license is dependent on the type and end use of the product, the final destination, the identity of the end user and whether a license exception might apply. Virtually all exports of products subject to the International Traffic in Arms Regulations ("ITAR") administered by the Department of State's Directorate of Defense Trade Controls, require a license. Certain of our fiber optics products are subject to EAR and certain of our RF-over-fiber products, as well as certain products and technical data, are developed with government funding, and are currently subject to ITAR. Products and the associated technical data developed and manufactured in our foreign locations are subject to export controls of the applicable foreign nation.

Given the current global political climate, obtaining export licenses can be difficult and time-consuming. Failure to obtain export licenses for these shipments could significantly reduce our revenue and materially adversely affect our business, financial condition and results of operations. Compliance with U.S. government regulations also subjects us to additional fees and costs. The absence of comparable restrictions on competitors in other countries may adversely affect our competitive position.

Further, there is increased attention from the government and the media regarding potential threats to U.S. national security and foreign policy relating to certain foreign entities, particularly Chinese entities, and the imposition of enhanced restrictions or sanctions regarding the export of our products or on specific foreign entities that would restrict their ability to do business with U.S. companies may materially adversely affect our business. For example, on May 16, 2019, Huawei was added to the Entity List of the Bureau of Industry and Security of the U.S. Department of Commerce, which imposes limitations on the supply of certain U.S. items and product support to Huawei. We cannot predict what additional actions the U.S. government may take with respect to Huawei or other of our customers, including modifications to or interpretations of Entity List restrictions, export restrictions, tariffs, or other trade limitations or barriers.

Our association with customers that are or become subject to U.S. regulatory scrutiny or export restrictions could negatively impact our business. Governmental actions such as these could subject us to actual or perceived reputational harm among current or prospective investors, suppliers or customers, customers of our customers, other parties doing business with us, or the general public. Any such reputational harm could result in the loss of investors, suppliers or customers, which could harm our business, financial condition, operating results or prospects.

In addition, certain of our significant customers and suppliers have products that are subject to U.S. export controls, and therefore these customers and suppliers may also be subject to legal and regulatory consequences if they do not comply with applicable export control laws and regulations. Such regulatory consequences could disrupt our ability to obtain components from our suppliers, or to sell our products to major customers, which could significantly increase our costs, reduce our revenue and materially adversely affect our business, financial condition and results of operations.

If we fail to maintain an effective system of disclosure controls and internal control over financial reporting, our ability to produce timely and accurate financial statements or comply with applicable regulations could be impaired.

As a public company, we are subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes-Oxley Act, and Nasdaq listing requirements. The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. In order to maintain and improve the effectiveness of our disclosure controls and procedures and internal control over financial reporting, we have expended, and anticipate that we will continue to expend, significant resources, including accounting-related costs and significant management oversight.

Any failure to develop or maintain effective controls, or any difficulties encountered in their implementation or improvement, could cause us to delay reporting of our financial results, be subject to one or more investigations or enforcement actions by state or federal regulatory agencies, stockholder lawsuits or other adverse actions requiring us to incur defense costs, pay fines, settlements

or judgments. Any such failures could also cause investors to lose confidence in our reported financial and other information, which would likely have a negative effect on the trading price of our common stock. In addition, if we are unable to continue to meet these requirements, we may not be able to remain listed on the NASDAQ stock market.

We face a number of risks related to our Separation from Viavi, including those associated with ongoing indemnification obligations and tax and accounting-related risks, which could adversely affect our business, financial condition, results of operations and cash flows.

In August 2015, we became an independent publicly-traded company through the distribution by JDS Uniphase Corporation ("JDSU") to its stockholders of 80.1% of our outstanding common stock (the "Separation"). The Separation and Distribution Agreement dated as of July 31, 2015 by and among JDSU, Lumentum Holdings Inc. and Lumentum Operations LLC (the "Separation Agreement") requires that we indemnify Viavi, and that Viavi indemnify us, for certain specified liabilities related to the Separation. Among other things, we are obligated to indemnify Viavi against certain tax-related liabilities that may result from the breach of any of our representations or covenants made in connection with the Separation. Our indemnification obligations are not subject to maximum loss clauses and, if we are required to indemnify Viavi under the circumstances set forth in the Separation Agreement, we may be subject to substantial liabilities. Furthermore, third parties could seek to hold us responsible for any of the liabilities that Viavi has agreed to indemnify us for, and there can be no assurance that the indemnity from Viavi will be sufficient to protect us against the full amount of such liabilities, or that Viavi will be able to fully satisfy its indemnification obligations.

Risks Related to Our Common Stock

Our stock price may be volatile and may decline regardless of our operating performance.

Our common stock is listed on NASDAQ under the symbol "LITE". Since shares of our common stock commenced trading on the NASDAQ stock market in August 2015, the reported high and low closing prices of our common stock per the NASDAQ Global Select Market has ranged from $14.12 to $73.20, through June 29, 2019. The market price of our common stock may fluctuate significantly due to a number of factors, some of which may be beyond our control, including:

- actual or anticipated fluctuations in our quarterly or annual operating results;
- changes in earnings estimates by securities analysts or our ability to meet those estimates;
- the operating and stock price performance of other comparable companies;
- a shift in our investor base;
- the financial performance of other companies in our industry, and of our customers;
- success or failure of our business strategy;
- credit market fluctuations which could negatively impact our ability to obtain financing as needed;
- changes to the regulatory and legal environment in which we operate;
- announcements by us, competitors, customers, or our contract manufacturers of significant acquisitions or dispositions;
- investor perception of us and our industry;
- changes in accounting standards, policies, guidance, interpretations or principles;
- litigation or disputes in which we may become involved;
- overall market fluctuations; sales of our shares by our officers, directors, or significant stockholders;
- the timing and amount of dividends and share repurchases, if any; and
- general economic and market conditions and other external factors.

In addition, the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many technology companies. Stock prices of many technology companies have fluctuated in a manner unrelated or disproportionate to the operating performance of those companies. In the past, stockholders have instituted securities class action litigation following periods of market volatility. If we were to become involved in securities

litigation, it could subject us to substantial costs, divert resources and the attention of management from our business and adversely affect our business, results of operations, financial condition and cash flows.

Servicing our 2024 Notes and the Term Loan Facility may require a significant amount of cash, and we may not have sufficient cash flow or the ability to raise the funds necessary to satisfy our obligations under the 2024 Notes or the Term Loan Facility, and our current and future indebtedness may limit our operating flexibility or otherwise affect our business.

Our ability to make scheduled payments of the principal of, to pay interest on or to refinance our indebtedness, including the 2024 Notes and the Term Loan Facility, or to make cash payments in connection with any conversion of the 2024 Notes or upon any fundamental change if note holders require us to repurchase their notes for cash, depends on our future performance, which is subject to economic, financial, competitive and other factors beyond our control. Our business may not generate cash flow from operations in the future sufficient to service our indebtedness and make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring indebtedness or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations. In addition, our existing and future indebtedness could have important consequences to our stockholders and significant effects on our business. For example, it could:

- make it more difficult for us to satisfy our debt obligations, including the 2024 Notes and the Term Loan Facility;

- increase our vulnerability to general adverse economic and industry conditions;

- require us to dedicate a substantial portion of our cash flow from operations to payments on our indebtedness, thereby reducing the availability of our cash flow to fund working capital and other general corporate purposes;

- limit our flexibility in planning for, or reacting to, changes in our business and the industry in which we operate;

- restrict us from exploiting business opportunities;

- place us at a competitive disadvantage compared to our competitors that have less indebtedness; and

limit our availability to borrow additional funds for working capital, capital expenditures, acquisitions, debt service requirements, execution of our business strategy or other general purposes.

Transactions relating to our 2024 Notes may dilute the ownership interest of existing stockholders, or may otherwise depress the price of our common stock.

If the 2024 Notes are converted by holders, we have the ability under the indenture for the 2024 Notes to deliver cash, equity, common stock, or any combination of cash or common stock, at our election upon conversion of the 2024 Notes. If we elect to deliver common stock upon conversion of the 2024 Notes, it would dilute the ownership interests of existing stockholders. Any sales in the public market of the common stock issuable upon such conversion could adversely affect prevailing market prices of our common stock. In addition, certain holders of the 2024 Notes may engage in short selling to hedge their position in the 2024 Notes. Anticipated future conversions of such 2024 Notes into shares of our common stock could depress the price of our common stock.

OurTerm Loan Facility restricts our operations, particularly our ability to respond to changes or to take certain actions regarding our business.

The definitive documents governing the Term Loan Facility provided for in the Commitment Letter contain a number of restrictive covenants that impose operating and financial restrictions on us and limit our ability to engage in acts that may be in our long-term best interest, including restrictions on the ability to: incur indebtedness, grant liens, undergo certain fundamental changes, dispose of assets, make investments, enter into transactions with affiliates, and make certain restricted payments, in each case subject to limitations and exceptions to be set forth in the definitive documentation for the Term Loan Facility.

The definitive documentation governing the Term Loan Facility also contains customary events of default that include, among other things, certain payment defaults, covenant defaults, cross-defaults to other indebtedness, change of control defaults, judgment defaults, and bankruptcy and insolvency defaults. Such events of default may allow the creditors to accelerate the related debt and may result in the acceleration of any other debt to which a cross-acceleration or cross-default provision applies which could have a material adverse effect on our business, operations and financial results. Furthermore, if we are unable to repay the amounts due and payable under the definitive documentation governing our Term Loan Facility, those lenders could proceed against the collateral granted to them to secure that indebtedness which could force us into bankruptcy or liquidation. In the event our lenders

accelerated the repayment of the borrowings, we may not have sufficient assets to repay that indebtedness. Any acceleration of amounts due under the credit agreements would likely have a material adverse effect on us. As a result of these restrictions, we may be: limited in how we conduct business; unable to raise additional debt or equity financing to operate during general economic or business downturns; or unable to compete effectively or to take advantage of new business opportunities.

We do not expect to pay dividends on our common stock.

We do not currently expect to pay dividends on our common stock. The payment of any dividends to our stockholders in the future, and the timing and amount thereof, if any, is within the discretion of our board of directors. Our board of directors' decisions regarding the payment of dividends will depend on many factors, such as our financial condition, earnings, capital requirements, potential debt service obligations or restrictive covenants, industry practice, legal requirements, regulatory constraints and other factors that our board of directors deems relevant.

In addition, because we are a holding company with no material direct operations, we are dependent on loans, dividends and other payments from our operating subsidiaries to generate the funds necessary to pay dividends on our common stock. However, our operating subsidiaries' ability to make such distributions will be subject to their operating results, cash requirements and financial condition and the applicable provisions of Delaware law that may limit the amount of funds available for distribution. Our ability to pay cash dividends may also be subject to covenants and financial ratios related to existing or future indebtedness, and other agreements with third parties.

Certain provisions in our charter and Delaware corporate law could hinder a takeover attempt.

We are subject to the provisions of Section 203 of the DGCL which prohibits us, under some circumstances, from engaging in business combinations with some stockholders for a specified period of time without the approval of the holders of substantially all of our outstanding voting stock. Such provisions could delay or impede the removal of incumbent directors and could make more difficult a merger, tender offer or proxy contest involving us, even if such events could be beneficial, in the short-term, to the interests of our stockholders. In addition, such provisions could limit the price that some investors might be willing to pay in the future for shares of our common stock. Our certificate of incorporation and bylaws contain provisions providing for the limitations of liability and indemnification of our directors and officers, allowing vacancies on our board of directors to be filled by the vote of a majority of the remaining directors, granting our board of directors the authority to establish additional series of preferred stock and to designate the rights, preferences and privileges of such shares (commonly known as "blank check preferred") and providing that our stockholders can take action only at a duly called annual or special meeting of stockholders, which may only be called by the chairman of the board of directors, the chief executive officer or the board of directors. These provisions may also have the effect of deterring hostile takeovers or delaying changes in control or changes in our management.

Our bylaws designate Delaware courts as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could discourage lawsuits against us or our directors and officers.

Our bylaws provide that, unless we consent in writing to an alternative forum, the state or federal courts of Delaware are the sole and exclusive forum for any derivative action or proceeding brought on our behalf; any action asserting breach of fiduciary duty, or other wrongdoing, by our directors, officers or other employees to us or our stockholders; any action asserting a claim against Lumentum pursuant to the Delaware General Corporation Law or our certificate of incorporation or bylaws; any action asserting a claim against Lumentum governed by the internal affairs doctrine; or any action to interpret, apply, enforce or determine the validity of our certificate of incorporation or bylaws. This exclusive forum provision may limit the ability of our stockholders to bring a claim in a judicial forum that such stockholders find favorable for disputes with us or our directors or officers, which may discourage such lawsuits against us or our directors and officers.

Alternatively, if a court outside of Delaware were to find this exclusive forum provision inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings described above, we may incur additional costs associated with resolving such matters in other jurisdictions, which could adversely affect our business, financial condition or results of operations.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We own and lease various properties in the United States and nine other countries around the world. We use the properties for executive and administrative offices, data centers, product development offices, customer service offices and manufacturing facilities. Our current corporate headquarters is approximately 126,000 square feet and located in Milpitas, California. In May 2019, we purchased a three-building campus property consisting of approximately 238,000 square feet in San Jose, California. We plan to relocate our corporate headquarters to this new San Jose campus and consolidate another leased San Jose site to this campus by end of calendar year 2019. As of June 29, 2019, our leased and owned properties in total are approximately 2,100,000 square feet, of which we own approximately 900,000 square feet, including the 560,000 square feet manufacturing site in Thailand and the new 238,000 square feet San Jose campus. Larger leased sites include properties located in Canada, China, Japan and the United States. We believe our existing properties, including both owned and leased sites, are in good condition and suitable for the conduct of our business.

From time to time we consider various alternatives related to our long-term facilities' needs. While we believe our existing facilities are adequate to meet our immediate needs, it may become necessary to lease, acquire, or sell additional or alternative space to accommodate future business needs.

ITEM 3. LEGAL PROCEEDINGS

We are subject to a variety of claims and suits that arise from time to time in the ordinary course of our business. While management currently believes that resolving claims against us, individually or in the aggregate, will not have a material adverse impact on our financial position, results of operations or cash flows, these matters are subject to inherent uncertainties and management's view of these matters may change in the future. Should we experience an unfavorable final outcome, there exists the possibility of a material adverse impact on our financial position, results of operations or cash flows for the period in which the effect becomes reasonably estimable.

Merger Litigation

In connection with our acquisition of Oclaro, seven lawsuits were filed by purported stockholders of Oclaro challenging the proposed merger (the "Merger"). Two of the seven suits were putative class actions filed against Oclaro, its directors, Lumentum, Prota Merger Sub, Inc. and Prota Merger, LLC: Nicholas Neinast v. Oclaro, Inc., et al., No. 3:18-cv-03112-VC, in the United States District Court for the Northern District of California (filed May 24, 2018) (the "Neinast Lawsuit"); and Adam Franchi v. Oclaro, Inc., et al., No. 1:18-cv-00817-GMS, in the United States District Court for the District of Delaware (filed June 9, 2018) (the "Franchi Lawsuit). Both the Neinast Lawsuit and the Franchi Lawsuit were voluntarily dismissed with prejudice.

The other five suits, styled as Gerald F. Wordehoff v. Oclaro, Inc., et al., No. 5:18-cv-03148-NC (the "Wordehoff Lawsuit"), Walter Ryan v. Oclaro, Inc., et al., No. 3:18-cv-03174-VC (the "Ryan Lawsuit"), Jayme Walker v. Oclaro, Inc., et al., No. 5:18-cv-03203-EJD (the "Walker Lawsuit"), Kevin Garcia v. Oclaro, Inc., et al., No. 5:18-cv-03262-VKD (the "Garcia Lawsuit"), and SaiSravan B. Karri v. Oclaro, Inc., et al., No. 3:18-cv-03435-JD (the "Karri Lawsuit" and, together with the other six lawsuits, the "Lawsuits"), were filed in the United States District Court for the Northern District of California on May 25, 2018, May 29, 2018, May 30, 2018, May 31, 2018, and June 9, 2018, respectively. These five Lawsuits named Oclaro and its directors as defendants only and did not name Lumentum. The Wordehoff, Ryan, Walker, and Garcia Lawsuits have been voluntarily dismissed, and the Wordehoff, Ryan, and Walker dismissals were with prejudice. The Karri Lawsuit has not yet been dismissed. The Ryan Lawsuit was, and the Karri Lawsuit is, a putative class action.

The Lawsuits generally alleged, among other things, that Oclaro and its directors violated Section 14(a) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Rule 14a-9 promulgated thereunder by disseminating an incomplete and misleading Form S-4, including proxy statement/prospectus. The Lawsuits further alleged that Oclaro's directors violated Section 20(a) of the Exchange Act by failing to exercise proper control over the person(s) who violated Section 14(a) of the Exchange Act.

The remaining Lawsuit (the Karri Lawsuit) currently purports to seek, among other things, damages to be awarded to the plaintiff and any class if the Merger is consummated, and litigation costs, including attorneys' fees. The defendants intend to defend the Karri Lawsuit vigorously.

ITEM 4. MINE SAFETY DISCLOSURES

None.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information for Common Stock and Stockholders

From August 4, 2015, our common stock has traded on the NASDAQ Stock Market under the symbol "LITE". The following table sets forth the range of high and low closing prices of our common stock per the NASDAQ Global Select Market for the periods indicated:

	High		Low	
Fiscal 2019 Quarter Ended:				
June 29, 2019	$	63.74	$	40.47
March 30, 2019	$	56.54	$	39.01
December 29, 2018	$	62.36	$	37.50
September 29, 2018	$	68.80	$	52.10
Fiscal 2018 Quarter Ended:				
June 30, 2018	$	64.50	$	50.20
March 31, 2018	$	73.20	$	42.60
December 30, 2017	$	64.75	$	46.40
September 30, 2017	$	67.95	$	50.80

According to records of our transfer agent, we had 2,957 stockholders of record as of August 20, 2019 and we believe there is a substantially greater number of beneficial holders.

Dividends

Our subsidiary, Lumentum Inc., issued $35.8 million in Series A Preferred Stock to Viavi, which was sold to Amada following the Separation. On November 2, 2018, all 35,805 shares of Series A Preferred Stock, were converted into 1.5 million shares of our common stock. Up through the date of conversion, holders of Series A Preferred Stock, in preference to holders of common stock or any other class or series of our outstanding capital stock ranking in any such event junior to the Series A Preferred Stock, were entitled to receive, when and as declared by the board of directors, quarterly cumulative cash dividends at the annual rate of 2.5% of the Issuance Value per share on each outstanding share of Series A Preferred Stock. The accrued dividends were payable on March 31, June 30, September 30 and December 31 of each year commencing on September 30, 2015. The accrued dividends as of November 2, 2018, the effective date of the conversion of all outstanding Series A Preferred Stock, and June 30, 2018, were $0.3 million and $0.4 million, respectively. During the years ended June 29, 2019, June 30, 2018, and July 1, 2017, we paid $0.7 million, $0.7 million, and $0.9 million, respectively, in dividends to the holders of Series A Preferred Stock. We do not expect to pay cash dividends on our common stock in the foreseeable future.

Stock Performance Graph

This performance graph shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the Exchange Act), or incorporated by reference into any filing of Lumentum Holdings Inc. under the Securities Act of 1933, as amended, or the Exchange Act, except as shall be expressly set forth by specific reference in such filing.

The following graph compares the cumulative total return of our common stock with the total return for the NASDAQ Composite Index (the "IXIC") and the NASDAQ 100 Technology Sector Index (the "NDXT") from August 4, 2015 through June 29, 2019. The stock price performance on the following graph is not necessarily indicative of future stock price performance.

Recent Sale of Unregistered Equity Securities

None.

Issuer Purchases of Equity Securities

None.

ITEM 6. SELECTED FINANCIAL DATA

This table sets forth selected financial data of Lumentum (*in millions*, except share and per share amounts) for the periods indicated. This data should be read in conjunction with the discussion in "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in Item 7 of this Annual Report and our audited consolidated financial statements included in Item 8 of this Annual Report. The selected data in this section are not intended to replace the Consolidated Financial Statements included in this Annual Report.

Our historical consolidated financial statements for the fiscal years ended July 2, 2016 and June 27, 2015, include allocations of expenses arising from shared services and infrastructure provided by Viavi to us, including costs of information technology, human resources, accounting, legal, real estate and facilities, corporate marketing, insurance, treasury and other corporate and infrastructure services. The financial information included here may not necessarily reflect our financial position and results of operations or what our financial position and results of operations would have been had we been an independent, publicly-traded company during the entirety of the periods presented or be indicative of our future performance as an independent company. There were no allocations of expenses from Viavi for the fiscal years ended June 29, 2019, June 30, 2018, or July 1, 2017.

	Years Ended				
	June 29, 2019 [1]	June 30, 2018 [2]	July 1, 2017 [3]	July 2, 2016	June 27, 2015 [4]
Consolidated Statements of Operations Data:					
Net revenue	$ 1,565.3	$ 1,247.7	$ 1,001.6	$ 903.0	$ 837.1
Gross profit	425.9	432.1	318.1	277.3	257.9
Income (loss) from operations	(21.6)	139.9	47.6	11.5	(23.4)
Net (loss) income	(36.4)	248.1	(102.5)	9.3	(3.4)
Cumulative dividends on Series A Preferred Stock	(0.3)	(0.9)	(0.9)	(0.8)	—
Accretion of Series A Preferred Stock	—	—	—	(11.7)	—
Earnings allocated to Series A Preferred Stock	(1.2)	(5.7)	—	—	—
Net income (loss) attributable to common stockholders	$ (37.9)	$ 241.5	$ (103.4)	$ (3.2)	$ (3.4)
Net income (loss) per share attributable to common stockholders [5]:					
Basic	$ (0.54)	$ 3.88	$ (1.71)	$ (0.05)	$ (0.06)
Diluted	$ (0.54)	$ 3.82	$ (1.71)	$ (0.05)	$ (0.06)
Shares used to compute net income (loss) per share attributable to common stockholders [5]:					
Basic	70.7	62.3	60.6	59.1	58.8
Diluted	70.7	63.3	60.6	59.1	58.8

	Balance as of				
	June 29, 2019 (1)	June 30, 2018 (2)	July 1, 2017 (3)	July 2, 2016	June 27, 2015 (4)
Consolidated Balance Sheet Data:					
Cash and cash equivalents	$ 432.6	$ 397.3	$ 272.9	$ 157.1	$ 14.5
Total assets	2,716.6	1,581.5	1,232.9	726.3	512.6
Convertible notes	351.9	334.2	317.5	—	—
Term loan, non-current	484.0	—	—	—	—
Derivative liability	—	52.4	51.6	10.3	—
Other non-current liabilities	33.7	19.0	25.0	9.1	9.8
Total redeemable convertible preferred stock	—	35.8	35.8	35.8	—
Total stockholders’ equity	1,497.1	926.1	618.8	497.4	380.6

(1) On December 10, 2018, we completed the acquisition of Oclaro, a provider of optical components and modules for the long-haul, metro and data center markets, for $1.4 billion, which was funded through the issuance of Lumentum common stock, new debt, and cash balances of the combined company. Refer to “Note 5. Business Combination” in the notes to consolidated financial statements for further discussion of the merger. Results of operations and financial position of the business acquired have been included in our consolidated financial statements subsequent to the date of acquisition.

(2) During the second quarter of fiscal 2018, we had a credit of $207.0 million primarily related to a release of a U.S. valuation allowance, which was offset by a write-down of deferred tax assets in the amount of $83.0 million due to the lower corporate tax rate enacted under the 2017 “Tax Cuts and Jobs Act” reform.

(3) During the third quarter of fiscal 2017, we completed the acquisition of a privately held company. Results of operations and financial position of the business acquired have been included in our consolidated financial statements subsequent to the date of acquisition.

(4) In fiscal 2015, we settled an audit in a non-U.S. jurisdiction which resulted in the recognition of a $21.8 million tax benefit. In addition, we recognized $14.1 million of additional deferred tax assets which were fully offset by a corresponding increase in the deferred tax valuation allowance.

(5) On August 1, 2015, JDSU distributed 47.1 million shares, or 80.1% of the outstanding shares of Lumentum common stock to existing holders of JDSU common stock. JDSU was renamed Viavi and at the time of distribution, retained 11.7 million shares, or 19.9% of Lumentum’s outstanding shares. Basic and diluted net income (loss) per share for all periods through June 27, 2015 is calculated using the shares of Lumentum common stock outstanding on August 1, 2015.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion in conjunction with the audited consolidated financial statements and the corresponding notes included elsewhere in this Annual Report. This Management's Discussion and Analysis of Financial Condition and Results of Operations contains forward-looking statements. The matters discussed in these forward-looking statements are subject to risk, uncertainties and other factors that could cause actual results to differ materially from those made, projected or implied in the forward-looking statements. Please see "Risk Factors" and "Forward-Looking Statements" for a discussion of the uncertainties, risks and assumptions associated with these statements.

Overview

We are an industry-leading provider of optical and photonic products defined by revenue and market share addressing a range of end-market applications including Optical Communications, which we refer to as OpComms, and Lasers for manufacturing, inspection and life-science applications. We seek to use our core optical and photonic technology and our volume manufacturing capability to expand into attractive emerging markets that benefit from advantages that optical or photonics-based solutions provide, including 3D sensing for consumer electronics and diode light sources for a variety of consumer and industrial applications. We have two operating segments, OpComms and Lasers. The two operating segments were primarily determined based on how our CODM views and evaluates our operations. Operating results are regularly reviewed by our CODM to make decisions about resources to be allocated to the segments and to assess their performance. Other factors, including market separation and customer specific applications, go-to-market channels, products and manufacturing, are considered in determining the formation of these operating segments.

We see the world as becoming more reliant on ever-increasing amounts of data flowing through optical networks and data centers, which demand new networks and data centers to be built to satisfy this insatiable demand for data. As higher levels of precision, new materials, factory and energy efficiency are being demanded by manufacturers, suppliers of manufacturing tools globally are turning more and more to laser based approaches, including the types of lasers Lumentum supplies. Laser based 3D sensing is a rapidly developing market. The technology enables computer vision applications that enhance security, safety, and new functionality in the electronic devices that people rely on every day. We believe the global markets in which Lumentum participates have fundamentally robust, long-term trends that increase the need for our photonics products and technologies.

On December 10, 2018, we completed the acquisition of Oclaro, a provider of optical components and modules for the long-haul, metro and data center markets. In accordance with the terms of the Merger Agreement, each issued and outstanding share of Oclaro common stock was automatically converted into the right to receive (i) $5.60 in cash and (ii) 0.0636 of a share of Lumentum common stock. The total transaction consideration was $1.4 billion, which was funded through the issuance of Lumentum common stock, new debt (refer to "Note 7. Term Loan Facility"), and cash balances of the combined company. Refer to "Note 5. Business Combination" in the notes to consolidated financial statements for further discussion of the merger.

During our fiscal 2019, we recorded $20.9 million in restructuring and related charges in our consolidated statements of operations, attributable to severance and employee related benefits associated with Oclaro's executive severance and retention agreements. These retention agreements provide, under certain circumstances, for payments and benefits upon an involuntary termination of employment, including following a change in control of Oclaro. The payments and benefits payable under these arrangements in the event of a change in control of Oclaro are subject to a "double trigger," meaning that both a change in control of Oclaro and a subsequent involuntary termination of employment are required. In other words, the change in control of Oclaro does not by itself trigger any payments or benefits. Instead, payments and benefits are paid only if the employment of the employee is subsequently terminated without "cause" (or the employee resigns for "good reason") during a specified period following the change in control. We incurred total expense of $20.9 million, of which $5.7 million relates to cash severance as part of our restructuring expense, refer to "Note 14. Restructuring and Related Charges" and $15.2 million relates to acceleration of equity awards, refer to "Note 17. Stock-Based Compensation and Stock Plans."

OpComms

Our OpComms products address the following markets: Telecom, Datacom and Consumer and Industrial.

Our OpComms products include a wide range of components, modules and subsystems to support customers including carrier networks of access (local), metro (intracity), long-haul (city-to-city and worldwide) and submarine (undersea) applications. Additionally, our products address enterprise, cloud, and data center applications, including storage-access networks ("SANs"), local-area networks ("LANs") and wide-area networks ("WANs"). These products enable the transmission and transport of video, audio and text data over high-capacity fiber-optic cables. We maintain leading positions in these fast growing OpComms markets through our extensive product portfolio, including reconfigurable optical add/drop multiplexers ("ROADMs"), coherent DWDM

pluggable transceivers, and tunable small form-factor pluggable transceivers. We also sell laser chips for use in the manufacture of high-speed Datacom transceivers.

In the Consumer and Industrial market, our OpComms products include laser light sources, which are integrated into 3D sensing platforms being used in applications for mobile devices, gaming, computers, and other consumer electronics devices. New emerging applications include virtual and augmented reality, as well as automotive and industrial segments. Our products include vertical cavity surface emitting lasers ("VCSELs") and edge emitting lasers which are used in 3D sensing depth imaging systems. These systems simplify the way people interact with technology by enabling the use of natural user interfaces. Systems are used for biometric identification, surveillance, and process efficiency, among numerous other application spaces. Emerging applications for this technology include various mobile device applications, autonomous vehicles, self-navigating robotics and drones in industrial applications and 3D capture of objects coupled with 3D printing. In addition, our industrial diode lasers are used primarily as pump sources for pulsed and kilowatt class fiber lasers.

Our OpComms customers include Alphabet, Apple, Ciena, Cisco Systems (which recently announced the acquisition of Acacia Communications, another customer of ours), Huawei Technologies (including HiSilicon), Infinera, Innolight, Nokia Networks (including Alcatel-Lucent International), O-Net, and ZTE.

Following the acquisition of Oclaro, during our fiscal 2019, we made several strategic changes to our OpComms business as follows:

First, for overlapping products as a result of the acquisition, we are transitioning to a common lower cost design and manufacturing platform, which we expect will result in gross margin improvement over time. In addition, we are discontinuing certain Telecom product lines that we believe have muted growth and profitability trends that are inconsistent with our long term model. We expect that these transitions will be completed in our fiscal 2021. For the Telecom product lines we are exiting, we do not expect significant revenue declines until fiscal 2021 as in fiscal 2020 we are continuing to satisfy customers' product needs with respect to these product lines.

Second, we announced our plan to discontinue development and manufacturing of Lithium Niobate modulators, and we plan to wind down these operations in San Donato, Italy during fiscal year 2020. Development and manufacturing will also be discontinued in our San Jose, California manufacturing locations within the next few quarters in order to facilitate our customers' transition to new products. We expect our Indium Phosphide photonic integrated circuits will replace Lithium Niobate modulators over time.

Third, we announced the sale of many of our Datacom transceiver module products to Cambridge Industries Group ("CIG"). This transaction closed on April 18, 2019. For further information regarding this transaction, refer to "Note 5. Business Combination". We expect Datacom transceiver sales to ramp down to zero during fiscal year 2020. We are investing in new Datacom chip development and expect sales of these chips to customers serving the Datacom and 5G wireless markets will grow over time. With the exit from the business of selling Datacom transceivers, we recorded an impairment charge of $30.7 million to our Long-lived assets that were not deemed to be useful, as they were retired from active use and classified as held-for-sale. These assets were valued at fair value less cost to sell. We also recorded inventory write down charges of $20.8 million related to the decision to exit the Datacom module and Lithium Niobate product lines in our cost of goods sold of consolidated statements of operations. These actions do not qualify as discontinued operations for disclosure purposes as they do not represent a strategic shift having a major effect on an entity's operations and financial results. For additional information, refer to "Note 15. Impairment Charges".

Lasers

Our Lasers products serve our customers in markets and applications such as sheet metal processing, general manufacturing, biotechnology, graphics and imaging, remote sensing, and precision machining such as drilling in printed circuit boards, wafer singulation, glass cutting and solar cell scribing.

Our Lasers products are used in a variety of OEM applications including diode-pumped solid-state, fiber, diode, direct-diode and gas lasers such as argon-ion and helium-neon lasers. Fiber lasers provide kW-class output powers combined with excellent beam quality and are used in sheet metal processing and metal welding applications. Diode-pumped solid-state lasers provide excellent beam quality, low noise and exceptional reliability and are used in biotechnology, graphics and imaging, remote sensing, materials processing and precision machining applications. Diode and direct-diode lasers address a wide variety of applications, including laser pumping, thermal exposure, illumination, ophthalmology, image recording, printing, plastic welding and selective soldering. Gas lasers such as argon-ion and helium-neon lasers provide a stable, low-cost and reliable solution over a wide range of operating conditions, making them well suited for complex, high-resolution OEM applications such as flow cytometry, DNA sequencing, graphics and imaging and semiconductor inspection.

We also provide high-powered and ultrafast lasers for the industrial and scientific markets. Manufacturers use high-power, ultrafast lasers to create micro parts for consumer electronics and to process semiconductor, LED, and other types of chips. Use of ultrafast lasers for micromachining applications is being driven primarily by the increasing use of consumer electronics and connected devices globally.

Our Lasers customers include Amada, ASML Holding, Beckman Coulter, DISCO, Electro Scientific Industries (recently acquired by MKS Instruments, a competitor of ours), Han's Laser Technology, KLA-Tencor, Lasertec, Life Technologies, and NR Electric.

Critical Accounting Policies and Estimates

Our consolidated financial statements are prepared in accordance with U.S. generally accepted accounting principles ("GAAP") as set forth in the Financial Accounting Standards Board's Accounting Standards Codification ("ASC"), and we consider the various staff accounting bulletins and other applicable guidance issued by the United States Securities and Exchange Commission ("SEC"). GAAP, as set forth within the ASC, requires us to make certain estimates, judgments and assumptions. We believe that the estimates, judgments and assumptions upon which we rely are reasonable based upon information available to us at the time that these estimates, judgments and assumptions are made. These estimates, judgments and assumptions can affect the reported amounts of assets and liabilities as of the date of the financial statements as well as the reported amounts of revenues and expenses during the periods presented. To the extent there are differences between these estimates, judgments or assumptions and actual results, our financial statements will be affected. The accounting policies that reflect our more significant estimates, judgments and assumptions and which we believe are the most critical to aid in fully understanding and evaluating our reported financial results include the following:

- Inventory Valuation
- Revenue Recognition
- Income Taxes
- Long-lived Asset Valuation
- Business Combinations
- Goodwill

During fiscal year 2019, we removed valuation of derivative liability from the list of critical accounting policies and estimates due to the conversion of the Series A Preferred Stock to common stock on November 2, 2018. Refer to "Note 12. Non-Controlling Interest Redeemable Convertible Preferred Stock and Derivative Liability" for additional information.

Inventory Valuation

Inventory is valued at standard cost, which approximates actual cost computed on a first-in, first-out basis, not in excess of net realizable value. We assess the value of our inventory on a quarterly basis and write down those inventories which are obsolete or in excess of our forecasted usage to the lower of their cost or estimated net realizable value. Our estimates of realizable value are based upon our analysis and assumptions including, but not limited to, forecasted sales levels and historical usage by product, expected product lifecycle, product development plans and future demand requirements. Our product line management personnel play a key role in our excess review process by providing updated sales forecasts, managing product transitions and working with manufacturing to minimize excess inventory. If actual market conditions are less favorable than our forecasts or actual demand from our customers is lower than our estimates, we may be required to record additional inventory write-downs. If actual market conditions are more favorable than anticipated, inventory previously written down may be sold, resulting in lower cost of sales and higher income from operations than expected in that period.

Revenue Recognition

<u>Adoption of Topic 606</u>

Pursuant to Topic 606, our revenues are recognized upon the application of the following steps:

- identification of the contract, or contracts, with a customer;
- identification of the performance obligations in the contract;
- determination of the transaction price;
- allocation of the transaction price to the performance obligations in the contract; and
- recognition of revenues when, or as, the contractual performance obligations are satisfied.

The majority of our revenue comes from product sales, consisting of sales of Lasers and OpComms hardware products to our customers. Our revenue contracts generally include only one performance obligation. Revenues are recognized at a point in time when control of the promised goods or services are transferred to our customers upon shipment or delivery, in an amount that reflects the consideration we expect to be entitled to in exchange for those goods or services. We have entered into vendor managed inventory ("VMI") programs with our customers. Under these arrangements, we receive purchase orders from our customers, and the inventory is shipped to the VMI location upon receipt of the purchase order. The customer then pulls the inventory from the VMI hub based on its production needs. Revenue under VMI programs is recognized when control transfers to the customer, which is generally once the customer pulls the inventory from the hub.

Revenue from all sales types is recognized at the transaction price. The transaction price is determined based on the consideration to which we will be entitled in exchange for transferring goods or services to the customer, adjusted for estimated variable consideration, if any. We typically estimate the impact on the transaction price for discounts offered to the customer for early payments on receivables or net of accruals for estimated sales returns. These estimates are based on historical returns, analysis of credit memo data and other known factors. Actual returns could differ from these estimates. We allocate the transaction price to each distinct product based on its relative standalone selling price. The product price as specified on the purchase order is considered the standalone selling price as it is an observable input that depicts the price as if sold to a similar customer in similar circumstances.

Taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction, that are collected by us from a customer and deposited with the relevant government authority, are excluded from revenue. Our revenue arrangements do not contain significant financing components as our standard payment terms are less than one year.

If a customer pays consideration, or if we have a right to an amount of consideration that is unconditional before we transfer a good or service to the customer, those amounts are classified as deferred revenue or deposits received from customers which are included in other current liabilities or other long-term liabilities when the payment is made or when it is due, whichever is earlier.

Transaction Price Allocated to the Remaining Performance Obligations

Remaining performance obligations represent the transaction price allocated to performance obligations that are unsatisfied or partially unsatisfied as of the end of the reporting period. Unsatisfied and partially unsatisfied performance obligations consist of contract liabilities and non-cancellable backlog. Non-cancellable backlog includes goods and services for which customer purchase orders have been accepted that are scheduled or in the process of being scheduled for shipment. A portion of our revenue arises from vendor-managed inventory arrangements where the timing and volume of customer utilization is difficult to predict.

The following table includes estimated revenue expected to be recognized in the future for backlog related performance obligations that are unsatisfied as of June 29, 2019 (*in millions*):

	Less than 1 year	**1-2 years**	**Greater than 2 years**	**Total**
Performance Obligations	$446.1	$7.0	$—	$453.1

Warranty

Hardware products regularly include warranties to the end customers such that the product continues to function according to published specifications. We typically offer a twelve-month warranty for most of our products. However, in some instances depending upon the product, specific market, product line and geography in which we operate, and what is common in the industry, our warranties can vary and range from six months to five years. These standard warranties are assurance type warranties and do not offer any services in addition to the assurance that the product will continue working as specified. Therefore, warranties are not considered separate performance obligations in the arrangement. Instead, the expected cost of the warranty is accrued as expense in accordance with authoritative guidance.

We provide reserves for the estimated costs of product warranties at the time revenue is recognized. We estimate the costs of our warranty obligations based on our historical experience of known product failure rates, use of materials to repair or replace defective products and service delivery costs incurred in correcting product failures. In addition, from time to time, specific warranty accruals may be made if unforeseen technical problems arise.

Shipping and Handling Costs

We record shipping and handling costs related to revenue transactions within cost of sales as a period cost.

Contract Costs

We recognize the incremental direct costs of obtaining a contract, which consist of sales commissions, when control over the products they relate to transfers to the customer. Applying the practical expedient, we recognize commissions as expense when incurred, as the amortization period of the commission asset we would have otherwise recognized is less than one year.

Contract Balances

We record accounts receivable when we have an unconditional right to consideration. Contract liabilities are recorded when cash payments are received or due in advance of performance. Contract liabilities consist of advance payments and deferred revenue, where we have unsatisfied performance obligations. Contract liabilities are classified as deferred revenue and customer deposits, and are included in other current liabilities within our consolidated balance sheet. Payment terms vary by customer. The time between invoicing and when payment is due is not significant.

The following table reflects the changes in contract balances as of June 29, 2019 (*in millions, except percentages*):

Contract balances	**Balance sheet location**	**June 29, 2019**	**June 30, 2018**	**Change**	**Percentage Change**
Accounts receivable, net	Accounts receivable, net	$238.0	$197.1	$40.9	20.8%
Deferred revenue and customer deposits	Other current liabilities	$2.9	$2.8	$0.1	3.6%

Disaggregation of Revenue

We disaggregate revenue by geography and by product. Refer to "Note 20. Operating Segments and Geographic Information" for a presentation of disaggregated revenue. We do not present other levels of disaggregation, such as by type of products, customer, markets, contracts, duration of contracts, timing of transfer of control and sales channels, as this information is not used by our CODM to manage the business.

Income Taxes

In accordance with the authoritative guidance on accounting for income taxes, we recognize income taxes using an asset and liability approach. This approach requires the recognition of taxes payable or refundable for the current year and deferred tax liabilities and assets for the future tax consequences of events that have been recognized in our consolidated financial statements or tax returns. The measurement of current and deferred taxes is based on provisions of the enacted tax law, and the effects of future changes in tax laws or rates are not anticipated.

The authoritative guidance provides for recognition of deferred tax assets if the realization of such deferred tax assets is more likely than not to occur based on an evaluation of both positive and negative evidence and the relative weight of the evidence. We consider future growth, forecasted earnings, future taxable income, the mix of earnings in the jurisdictions in which we operate, historical earnings, taxable income in prior years, if carryback is permitted under the law, and prudent and feasible tax planning strategies in determining the need for a valuation allowance. In the event we were to 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 valuation allowance would be charged to earnings in the period in which we make such a determination, or goodwill would be adjusted at our final determination of the valuation allowance related to an acquisition within the measurement period. If we later determine that it is more likely than not that the net deferred tax assets would be realized, we would reverse the applicable portion of the previously provided valuation allowance as an adjustment to earnings at such time.

We are subject to income tax audits by the respective tax authorities of the jurisdictions in which we operate. The determination of our income tax liabilities in each of these jurisdictions requires the interpretation and application of complex, and sometimes uncertain, tax laws and regulations. The authoritative guidance on accounting for income taxes prescribes both recognition and measurement criteria that must be met for the benefit of a tax position to be recognized in the financial statements. If a tax position taken, or expected to be taken, in a tax return does not meet such recognition or measurement criteria, an unrecognized tax benefit liability is recorded. If we ultimately determine that an unrecognized tax benefit liability is no longer necessary, we reverse the liability and recognize a tax benefit in the period in which it is determined that the unrecognized tax benefit liability is no longer necessary.

The recognition and measurement of current taxes payable or refundable and deferred tax assets and liabilities requires that we make certain estimates and judgments. Changes to these estimates or a change in judgment may have a material impact on our tax provision in a future period.

Long-lived Asset Valuation

We test long-lived assets for recoverability, at the asset group level, when events or changes in circumstances indicate that their carrying amount may not be recoverable. Circumstances which could trigger a review include, but are not limited to: significant decreases in the market price of the asset, significant adverse changes in the business climate or legal factors, accumulation of costs significantly in excess of the amount originally expected for the acquisition or construction of the asset, current period cash flow or operating losses combined with a history of losses or a forecast of continuing losses associated with the use of the asset, or current expectation that the asset will more likely than not be sold or disposed significantly before the end of its estimated useful life.

Recoverability is assessed based on the difference between the carrying amount of the asset and the sum of the undiscounted cash flows expected to result from the use and the eventual disposal of the asset. An impairment loss is recognized when the carrying amount is not recoverable and exceeds fair value.

Business Combinations

In accordance with the guidance for business combinations, we determine whether a transaction or other event is a business combination, which requires that the assets acquired and liabilities assumed constitute a business. Each business combination is then accounted for by applying the acquisition method. If the assets acquired are not a business, we account for the transaction or other event as an asset acquisition. Under both methods, we recognize the identifiable assets acquired, the liabilities assumed, and any noncontrolling interest in the acquired entity. We capitalize acquisition-related costs and fees associated with asset acquisitions and immediately expense acquisition-related costs and fees associated with business combinations.

We allocate the fair value of purchase consideration to the tangible assets acquired, liabilities assumed and intangible assets acquired based on their estimated fair values. The excess of the fair value of purchase consideration over the fair values of these identifiable assets and liabilities is recorded as goodwill. When determining the fair values of assets acquired and liabilities assumed, we make significant estimates and assumptions, especially with respect to intangible assets. Critical estimates in valuing certain intangible assets include, but are not limited to, future expected cash flows from customer relationships and acquired developed technology and discount rates. Our estimates of fair value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable and, as a result, actual results may differ materially from estimates. Other estimates associated with the accounting for acquisitions may change as additional information becomes available regarding the assets acquired and liabilities assumed. Any change in facts and circumstances that existed as of the acquisition date and impacts our preliminary estimates is recorded to goodwill if identified within the measurement period. Subsequent to the measurement period or our final determination of fair value of assets and liabilities whichever is earlier the adjustments will affect our earnings.

In addition, we estimate the economic lives of certain acquired assets and these lives are used to calculate depreciation and amortization expense. If our estimates of the economic lives change, depreciation or amortization expenses could be accelerated or slowed.

Goodwill

Goodwill represents the excess of the purchase price of an acquired business over the fair value of the identifiable assets acquired and liabilities assumed. We test for impairment of goodwill on an annual basis in the fourth quarter and at any other time when events occur or circumstances indicate that the carrying amount of goodwill may not be recoverable.

An entity has the option to first assess qualitative factors to determine whether it is necessary to perform the two-step quantitative goodwill impairment test. If an entity determines that as a result of the qualitative assessment that it is more likely than not (i.e., greater than 50% likelihood) that the fair value of a reporting unit is less than its carrying amount, then the quantitative test is required. Otherwise, no further testing is required. The two-step quantitative goodwill impairment test requires us to estimate the fair value of our reporting units. If the carrying value of a reporting unit exceeds its fair value, the goodwill of that reporting unit is potentially impaired and we proceed to step two of the impairment analysis. In step two of the analysis, we measure and record an impairment loss equal to the excess of the carrying value of the reporting unit's goodwill over its implied fair value, if any.

Application of the goodwill impairment test requires judgments, including: identification of the reporting units, assigning assets and liabilities to reporting units, assigning goodwill to reporting units, a qualitative assessment to determine whether there are any impairment indicators, and determining the fair value of each reporting unit. We estimate the fair value of a reporting unit using market approach, income approach or a combination of market and income approach. Significant estimates in the market approach include: identifying similar companies with comparable business factors such as size, growth, profitability, risk and return on investment, and assessing comparable revenue and operating income multiples in estimating the fair value of the reporting unit. Significant estimates in the income approach include: future cash flows, discount rates.

We base our estimates on historical experience and on various assumptions about the future that we believe are reasonable based on available information. Unanticipated events and circumstances may occur that affect the accuracy of our assumptions, estimates and judgments. For example, if the price of our common stock were to significantly decrease combined with other adverse changes in market conditions, thus indicating that the underlying fair value of our reporting units may have decreased, we might be required to reassess the value of our goodwill in the period such circumstances were identified.

Based on the impairment analysis performed in the fourth quarter of each year presented, the fair value of our reporting unit substantially exceeded the carrying value; as such, our annual qualitative assessment did not indicate that a more detailed quantitative analysis was necessary.

In many cases, the accounting treatment of a particular transaction is specifically dictated by GAAP and does not require management's judgment in its application. There are also areas in which management's judgment in selecting among available alternatives would not produce a materially different result. Our senior management has reviewed our critical accounting policies and related disclosures with the Audit Committee of our board of directors.

Recently Issued Accounting Pronouncements

Refer to "Note 2. Recently Issued Accounting Pronouncements" in the notes to consolidated financial statements.

Results of Operations

The results of operations for the periods presented are not necessarily indicative of results to be expected for future periods. The following table summarizes selected consolidated statements of operations items as a percentage of net revenue:

	Years Ended		
	June 29, 2019	**June 30, 2018**	**July 1, 2017**
Segment net revenue:			
OpComms	87.5 %	84.9 %	85.6 %
Lasers	12.5	15.1	14.4
Net revenue	100.0	100.0	100.0
Cost of sales	69.8	65.1	67.6
Amortization of acquired intangibles	3.0	0.3	0.6
Gross profit	27.2	34.6	31.8
Operating expenses:			
Research and development	11.8	12.6	14.8
Selling, general and administrative	12.8	10.3	11.0
Restructuring and related charges	2.0	0.6	1.2
Impairment charge	2.0	—	—
Total operating expenses	28.6	23.4	27.0
Income/(loss) from operations	(1.4)	11.2	4.8
Unrealized gain (loss) on derivative liability	0.6	(0.1)	(10.4)
Interest and other income (expense), net	(1.3)	(0.8)	(0.3)
Income/(loss) before income taxes	(2.1)	10.4	(6.0)
Provision for (benefit from) income taxes	0.2	(9.5)	4.3
Net income/(loss)	(2.3)%	19.9 %	(10.2)%

Financial Data for Fiscal 2019, 2018 and 2017

The following table summarizes selected consolidated statements of operations items (*in millions, except for percentages*):

	2019	2018	Change	Percentage Change	2018	2017	Change	Percentage Change
Segment net revenue:								
OpComms	$ 1,370.2	$ 1,059.2	$ 311.0	29.4 %	$ 1,059.2	$ 857.8	$ 201.4	23.5 %
Lasers	195.1	188.5	6.6	3.5	188.5	143.8	44.7	31.1
Net revenue	$ 1,565.3	$ 1,247.7	$ 317.6	25.5 %	$ 1,247.7	$ 1,001.6	$ 246.1	24.6 %
Gross profit	$ 425.9	$ 432.1	$ (6.2)	(1.4)%	$ 432.1	$ 318.1	$ 114.0	35.8 %
Gross margin	27.2%	34.6%			34.6%	31.8%		
Research and development	$ 184.6	$ 156.8	$ 27.8	17.7 %	$ 156.8	$ 148.3	$ 8.5	5.7 %
Percentage of net revenue	11.8%	12.6%			12.6%	14.8%		
Selling, general and administrative	$ 200.3	$ 128.2	$ 72.1	56.2 %	$ 128.2	$ 110.2	$ 18.0	16.3 %
Percentage of net revenue	12.8%	10.3%			10.3%	11.0%		
Restructuring and related charges	$ 31.9	$ 7.2	$ 24.7	343.1 %	$ 7.2	$ 12.0	$ (4.8)	(40.0)%
Percentage of net revenue	2.0%	0.6%			0.6%	1.2%		
Impairment charge	$ 30.7	$ —	$ 30.7	100.0 %	—	—	$ —	— %
Percentage of net revenue	2.0%	—%			—%	—%		

Net Revenue

Net revenue increased by $317.6 million, or 25.5%, during fiscal 2019 compared to fiscal 2018. This increase was primarily due to the acquisition of Oclaro, which closed in December 2018, and organic growth in our Telecom business.

OpComms net revenue increased by $311.0 million, or 29.4%, during fiscal 2019 compared to fiscal 2018, primarily driven by increased sales of Telecom Products of $310.2 million, specifically ROADM products of $165.3 million. OpComms net revenue in fiscal 2019 includes $250.1 million from the acquisition of Oclaro from the date of closing.

Lasers net revenue increased by $6.6 million, or 3.5%, during fiscal 2019 compared to fiscal 2018, primarily due to increased sales of our kilowatt class fiber lasers, offset by lower sales of our solid state lasers products.

Net revenue increased by $246.1 million, or 24.6%, during fiscal 2018 compared to fiscal 2017. This increase was primarily due to record revenues in 3D sensing, TrueFlex® ROADMs, commercial lasers, and industrial diode lasers.

OpComms net revenue increased $201.4 million, or 23.5%, during fiscal 2018 compared to fiscal 2017, driven by increased sales of Consumer and Industrial products of $386.7 million, primarily in 3D sensing for mobile devices and engage numerous customers globally, partially offset by decreased sales of Telecom and Datacom products.

Lasers net revenue increased $44.7 million, or 31.1%, in fiscal 2018 compared to fiscal 2017, primarily due to increased sales of our kilowatt class fiber lasers. Growth was driven by strong demand from customers in both the micro and macro material processing markets.

During our fiscal 2019, 2018, and 2017, net revenue generated from a single customer which represented 10% or greater of total net revenue is summarized as follows:

	Years Ended		
	June 29, 2019	**June 30, 2018**	**July 1, 2017**
Apple	21.0%	30.0%	*
Huawei	15.2%	11.0%	16.7%
Ciena	13.7%	11.0%	18.5%
Cisco	*	*	12.4%
*Represents less than 10% of total net revenue			

Revenue by Region

We operate in three geographic regions: Americas, Asia-Pacific and EMEA. Net revenue is assigned to the geographic region and country where our product is initially shipped. For example, certain customers may request shipment of our product to a contract manufacturer in one country, however, the location of the end customers may differ. The following table presents net revenue by the three geographic regions we operate in and net revenue from countries within those regions that represented 10% or more of our total net revenue (*in millions, except for percentages*):

	Years Ended					
	June 29, 2019		**June 30, 2018**		**July 1, 2017**	
Net revenue:						
Americas:						
United States	$ 100.9	6.4%	$ 115.1	9.2%	$ 147.9	14.8%
Mexico	214.9	13.7	145.8	11.7	185.1	18.5
Other Americas	4.3	0.3	7.0	0.6	9.2	0.9
Total Americas	$ 320.1	20.4%	$ 267.9	21.5%	$ 342.2	34.2%
Asia-Pacific:						
Hong Kong	$ 387.9	24.8%	$ 183.0	14.7%	$ 226.7	22.6%
Japan	176.0	11.2	194.7	15.6	99.2	9.9
South Korea	162.4	10.4	146.1	11.7	4.9	0.5
Other Asia-Pacific	356.1	22.7	354.2	28.3	220.5	22.0
Total Asia-Pacific	$ 1,082.4	69.1%	$ 878.0	70.3%	$ 551.3	55.0%
EMEA	$ 162.8	10.5%	$ 101.8	8.2%	$ 108.1	10.8%
Total net revenue	$ 1,565.3		$ 1,247.7		$ 1,001.6	

During fiscal 2019, 2018 and 2017, net revenue from customers outside the United States, based on customer shipping location, represented 93.6%, 90.8% and 85.2% of net revenue, respectively. Our net revenue from Mexico increased in fiscal 2019 compared to 2018 due to increased demand for our ROADM products from one of our large customers who manufactures in Mexico, while net revenue from Hong Kong grew due to a change in shipment destination of a large portion of our 3D sensing products for mobile devices.

Our net revenue is primarily denominated in U.S. dollars, including our net revenue from customers outside the United States as presented above. We expect revenue from customers outside of the United States to continue to be an important part of our overall net revenue and an increasing focus for net revenue growth opportunities. However, regulatory and enforcement actions by U.S. and other governmental agencies, as well as changes in tax and trade policies and tariffs, may impact net revenue from customers outside the United States in future periods.

Gross Margin and Segment Gross Margin

The following table summarizes segment gross margin for fiscal 2019, 2018 and 2017 (*in millions, except for percentages*):

	Gross Profit			Gross Margin		
	Years Ended			Years Ended		
	2019	2018	2017	2019	2018	2017
OpComms	$ 534.1	$ 402.3	$ 287.3	39.0%	38.0%	33.5%
Lasers	84.4	82.8	59.9	43.3%	43.9%	41.7%
Segment total	$ 618.5	$ 485.1	$ 347.2	39.5%	38.9%	34.7%
Unallocated corporate items:						
Stock-based compensation	(15.1)	(12.6)	(7.5)			
Amortization of intangibles	(46.6)	(3.2)	(6.5)			
Amortization of inventory step up	(54.6)	—	—			
Inventory write down due to product lines exit	(20.8)	—	—			
Integration related costs	(6.6)	—	—			
Other charges (1)	(48.9)	(37.2)	(15.1)			
Total	$ 425.9	$ 432.1	$ 318.1	27.2%	34.6%	31.8%

The unallocated corporate items for the periods presented include the effects of amortization of acquired developed technologies and other intangibles, share-based compensation and certain other charges. We do not allocate these items to the gross margin for each segment because management does not include such information in measuring the performance of the operating segments.

(1) The increase in “other charges” of unallocated corporate items for fiscal 2019 compared to fiscal 2018 primarily relates to set-up costs of our facility in Thailand, including costs of transferring the manufacturing of product lines to Thailand of $45.8 million in fiscal 2019 compared to $27.0 million in fiscal 2018.

The increase in “other charges” of unallocated corporate items for fiscal 2018 compared to fiscal 2017 primarily relates to set-up costs of our facility in Thailand, including costs of transferring the manufacturing of product lines to Thailand of $27.0 million in fiscal 2018 compared to $1.8 million in fiscal 2017.

Gross Margin

Gross margin in fiscal 2019 decreased to 27.2% from 34.6% in fiscal 2018. The decrease was primarily due to amortization of intangibles and amortization of inventory step up related to the acquisition of Oclaro, as well as inventory write down charges of $20.8 million due to our exit of Datacom module and Lithium Niobate product lines.

Gross margin in fiscal 2018 increased to 34.6% from 31.8% in fiscal 2017. The increase was primarily due to increased sales in our 3D sensing and lasers products, which have higher gross margins than the average for the Company. The increase was partially offset by underutilized capacity costs due to the decline in Telecom and Datacom demand, higher write-downs of excess and obsolete inventory of $1.2 million, as well as set-up costs of our facility in Thailand, including costs of transferring product lines to Thailand of $27.0 million in our fiscal 2018 compared to $1.8 million in fiscal 2017.

We sell products in certain markets that are consolidating, undergoing product, architectural and business model transitions, have high customer concentrations, are highly competitive, are price sensitive and/or are affected by customer seasonal and mix variant buying patterns. We expect these factors to continue to result in variability of our gross margin.

Segment Gross Margin

OpComms

OpComms gross margin in fiscal 2019 increased to 39.0% from 38.0% in fiscal 2018. This increase was primarily due to increased sales of our ROADM products, which have higher gross margins than the average for the segment as well as increased sales of our transmission products due to the acquisition of Oclaro which have higher gross margins than legacy transmission products. This was partially offset by decreased sales of our 3D sensing products which have higher gross margins than the average for this segment.

OpComms gross margin in fiscal 2018 increased to 38.0% from 33.5% in fiscal 2017. This increase was primarily due to increased sales of our 3D sensing products, which have higher gross margins than the average for the segment. The increase was partially offset by underutilized capacity costs due to the decline in Telecom and Datacom demand.

Lasers

Lasers gross margin in fiscal 2019 decreased to 43.3% from 43.9% in fiscal 2018. This decrease was primarily due to decreased sales of our solid state products which have higher gross margins than the average for the segment. This was partially offset by increased revenue and manufacturing utilization for our kilowatt class fiber products.

Lasers gross margin in fiscal 2018 increased to 43.9% from 41.7% in fiscal 2017. This increase was primarily due to increased sales of solid state lasers products, which have higher gross margins than the average for the segment.

Research and Development (“R&D”)

R&D expense increased by $27.8 million, or 17.7%, in fiscal 2019 compared to fiscal 2018. The increase in R&D expense was primarily due to the increase in investments in key product lines and R&D materials. In addition, we had an increase in payroll related expense of $10.1 million as a result of our acquisition of Oclaro.

R&D expense increased by $8.5 million, or 5.7%, in fiscal 2018 compared to fiscal 2017. The increase in R&D expense was primarily due to the increase in stock-based compensation of $2.6 million and payroll related expense of $4.1 million, which includes an increase in variable incentive compensation of $2.9 million.

We believe that continuing our investments in R&D is critical to attaining our strategic objectives. We plan to continue to invest in R&D and new products that we believe will further differentiate us in the marketplace and expect our investment in R&D to increase in absolute dollars in future quarters.

Selling, General and Administrative (“SG&A”)

SG&A expense increased by $72.1 million, or 56.2%, in fiscal 2019 compared to fiscal 2018. The increase was primarily attributable to additional costs from our acquisition of Oclaro, including $14.6 million of payroll related expense, $2.4 million of facility related expense, $13.3 million in charges related to the acceleration of equity awards under certain Oclaro executive severance and retention agreements, $9.0 million related to the success fee on the closing of the Oclaro transaction, $8.0 million related to the amortization of acquired intangibles, and $3.1 million related to the incremental stock-based compensation expense of Oclaro awards. The remainder of the increase was primarily driven by higher payroll related expense and stock-based compensation.

SG&A expense increased by $18.0 million, or 16.3%, in fiscal 2018 compared to fiscal 2017. The increase was primarily attributable to increases in stock-based compensation of $6.4 million and payroll related expense of $10.5 million, which includes an increase in variable incentive compensation of $3.8 million. We also incurred $4.8 million of costs related to the planned acquisition of Oclaro during our fiscal 2018.

We expect to experience in the future certain non-core expenses, such as mergers and acquisition-related expenses and litigation expenses, which will likely increase our SG&A expenses and potentially impact our profitability expectations in any particular quarter.

Restructuring and Related Charges

We have initiated various strategic restructuring events primarily intended to reduce costs, consolidate our operations, rationalize the manufacturing of our products and align our business in response to market conditions and as a result of our acquisition of Oclaro.

During fiscal 2019, we recorded $31.9 million in restructuring and related charges in our consolidated statements of operations.

- During the first quarter of 2019, we recorded $1.3 million of severance costs primarily due to an internal re-organization in order to extend our market leadership position by strengthening product quality, to develop new enabling technologies required to support a winning long-term portfolio roadmap, and to develop commercial proposals and new product introduction ("NPI") priorities to maintain and grow our position while driving new customer and eco-system partner engagements.

- During the second quarter of 2019, we recorded $5.7 million primarily attributable to severance and employee related benefits associated with Oclaro's executive severance and retention agreements. These retention agreements provide, under certain circumstances, for payments and benefits upon an involuntary termination of employment.

- During the third quarter of 2019, we recorded $21.1 million primarily attributable to severance and employee related benefits associated with the wind down of operations for Lithium Niobate modulators and Datacom modules. We also recorded an additional $1.6 million of lease restructuring charges for the former Oclaro corporate headquarters.

Refer to "Note 14. Restructuring and Related Charges" in the notes to consolidated financial statements.

During fiscal 2018, we recorded $7.2 million in restructuring and related charges in the consolidated statements of operations.

- During the fourth quarter of fiscal 2018, we initiated a new restructuring plan in order to realign the organization and enable further investment in key priority areas. As a result, a restructuring charge of $3.4 million was recorded for severance costs and employee benefits. In total, 52 employees in manufacturing, R&D and SG&A functions were terminated in connection with this new restructuring plan.

- We also incurred restructuring and related charges of $3.8 million from restructuring plans approved prior to fiscal 2016 primarily related to the shut down of our manufacturing facility in Bloomfield, Connecticut as a result of the transfer of certain production processes into existing sites in the United States or to contract manufacturers.

During fiscal 2017, we recorded $12.0 million in restructuring and related charges. Of the $12.0 million charge recorded during fiscal 2017, $2.1 million related to severance, retention and employee benefits.

Impairment Charges

In fiscal 2019, we announced our plan to discontinue the development and manufacturing of future Datacom transceiver products which impacted the Milpitas and Shenzhen Datacom module teams. While we expect strong growth in Datacom volumes in the future, the market at the transceiver level is gross margin challenged due to extreme competition. Following the Oclaro acquisition, we have a differentiated leadership position across a range of photonic chips on which the Datacom, wireless, and access markets critically rely.

In fiscal 2019, we recorded $30.7 million in long lived asset impairment charges in connection with the above plan. Refer to "Note 9. Balance Sheet Details" and "Note 15. Impairment Charges" in the notes to consolidated financial statements for additional information.

Interest and Other Income (Expense), Net

The components of interest and other income (expense), net are as follows for the years presented (*in millions*):

	Years Ended		
	June 29, 2019	June 30, 2018	July 1, 2017
Interest expense	$ (36.3)	$ (18.2)	$ (5.5)
Foreign exchange gains (losses), net	(0.6)	(0.3)	0.6
Interest income	13.9	8.5	1.1
Other income (expense), net	2.5	0.3	0.6
Total other income (expense), net	$ 15.8	$ 8.5	$ 2.3

During fiscal 2019, interest and other income (expense), net increased by $10.8 million in expense as compared to fiscal 2018, mainly driven by interest expense on our term loan and ticking fees, partially offset by higher interest income due to high interest rates owned on our investment portfolio.

During fiscal 2018, interest and other income (expense), net increased by $6.5 million in expense as compared to fiscal 2017, mainly driven by amortization of the debt discount on the 2024 Notes of $16.7 million in our fiscal 2018 compared to $5.1 million in fiscal 2017, partially offset by interest income on the short-term investments and cash equivalents of $8.5 million in our fiscal 2018 compared to $1.1 million in fiscal 2017.

Unrealized Gain (Loss) on Derivative Liability

Unrealized gain (loss) on Series A Preferred Stock derivative liability amounted to $8.8 million and $(0.8) million in fiscal 2019 and 2018, respectively. The change was primarily related to the change in the price of our underlying common stock and reflected in the consolidated statements of operations as "unrealized gain (loss) on derivative liability". On November 2, 2018, all 35,805 shares of our Series A Preferred Stock were converted to common stock with the outstanding balance of the embedded derivative liability reclassed to additional paid in capital. There will be no further adjustments to "unrealized gain (loss) on derivative liability" due to this conversion.

For further discussion of our derivative liability, see "Note 12. Non-Controlling Interest Redeemable Convertible Preferred Stock and Derivative Liability" in the notes to consolidated financial statements.

Provision for (Benefit from) Income Taxes *(in millions):*

	Years Ended		
	June 29, 2019	June 30, 2018	July 1, 2017
Provision for (benefit from) income taxes	$ 3.1	$ (118.7)	$ 42.7

The comparability of our operating results for fiscal 2019 compared to the corresponding prior years was impacted by the U.S. Tax Cuts and Jobs Act of 2017 (the "Tax Act"), which was enacted on December 22, 2017. The Tax Act introduced significant changes to U.S. income tax law including reducing the U.S. federal statutory tax rate from 35% to 21% and imposing new taxes on certain foreign-sourced earnings and certain intercompany payments. Due to the timing of the enactment and the complexity involved in applying the provisions of the Tax Act, we made reasonable estimates of the effects and recorded provisional amounts in our financial statements as of fiscal 2018 in accordance with SEC Staff Accounting Bulletin No. 118 ("SAB 118"). During the period ended December 29, 2018, we completed our accounting for the Tax Act with no material adjustment to our provisional estimates recorded.

Our provision for income taxes for fiscal 2019 differs from the 21% U.S. statutory rate primarily due to the income tax expense from non-deductible stock-based compensation and the tax effect of increased valuation allowance in the U.K. and Thailand, Global Intangible Low-Taxed Income ("GILTI"), Base Erosion and Anti-Abuse Tax ("BEAT") and subpart F inclusion, partially offset by the income tax benefit of the earnings of our foreign subsidiaries being taxed at rates that differ from the U.S. statutory rate as well as the U.S. federal R&D tax credit.

Our provision for income taxes for fiscal 2018 differed from the tax provision based on the U.S. statutory federal income tax rate of approximately 28% as a result of $207.2 million of income tax benefit related to the release of valuation allowance against

our U.S. federal and certain state deferred tax assets, partially offset by $80.5 million of income tax expense related to the remeasurement of our net deferred tax assets as a result of reduction in the U.S. federal corporate tax rate. Our provision for income taxes was also impacted by the benefit our foreign income being taxed at lower rates than the U.S. statutory rate, as well as the benefit of research and development tax credits.

Our provision for income taxes for fiscal 2017 differed from the tax provision based on the then-U.S. statutory federal income tax rate of 35% primarily as a result of $36.5 million of income tax expense related to the non-deductible unrealized losses associated with the embedded derivatives for the Series A Preferred Stock and the 2024 Notes, as well as $8.4 million of unrecognized tax benefits, $4.9 million of non-deductible stock-based compensation, and $21.5 million of changes in the valuation allowance against our deferred tax assets. Our provision for income taxes was also impacted by the benefit of our foreign income being taxed at lower rates than the U.S. statutory rate, as well as the income tax benefit of research and development tax credits.

Contractual Obligations

The following table summarizes our contractual obligations as of June 29, 2019, and the effect such obligations are expected to have on our liquidity and cash flow over the next five years (*in millions*):

	Payments due by period				
Contractual Obligations	**Total**	**Less than 1 year**	**1 - 3 years**	**3 - 5 years**	**More than 5 years**
Acquisition contingencies [1]	$ 2.7	$ 2.7	$ —	$ —	$ —
Asset retirement obligations	5.5	1.0	0.8	0.6	3.1
Capital lease obligations [2]	0.8	0.8	—	—	—
Operating lease obligations [2]	90.0	13.9	23.3	21.1	31.7
Pension plan contributions [3]	0.5	0.5	—	—	—
Purchase obligations [4]	216.4	209.7	6.6	0.1	—
Term loan - principal [5]	497.5	5.0	10.0	10.0	472.5
Term loan - interest [5]	151.8	24.2	47.7	46.8	33.1
Convertible notes - principal [6]	450.0	—	—	450.0	—
Convertible notes - interest [7]	5.6	1.1	2.2	2.3	—
Total	$ 1,420.8	$ 258.9	$ 90.6	$ 530.9	$ 540.4

(1) Refer to “Note 11. Fair Value Measurements” in the notes to consolidated financial statements.

(2) Refer to “Note 19. Commitments and Contingencies” in the notes to consolidated financial statements. The amounts of operating lease obligations in the table above are net of our sublease income amounts.

In fiscal 2019, 2018 and 2017, rental expense relating to building and equipment was $15.8 million, $12.1 million and $10.1 million, respectively. Non-cancellable sublease proceeds from our subleases were approximately $1.0 million, $0.7 million, and $0.7 million, respectively, during fiscal years 2019, 2018, and 2017. The amounts of our rental expense for the years presented are net of these sublease income amounts.

(3) In connection with our acquisitions of Oclaro in fiscal 2019 and Time-Bandwidth in fiscal 2014, we assumed defined benefit plans for Japan and Switzerland employees, respectively. The Switzerland Plan is partially funded. The Japan Plan is unfunded. The amount in the preceding table represents planned contributions to our defined benefit plans. Although additional future contributions will be required, the amount and timing of these contributions will be affected by actuarial assumptions, the actual rate of returns on plan assets, the level of market interest rates, legislative changes, and the amount of voluntary contributions to the plan. Any contributions for the following fiscal year and later will depend on the value of the plan assets in the future and thus are uncertain. As such, we have not included any amounts beyond 1 year in the table above. Refer to “Note 18. Employee Benefit Plans” in the notes to consolidated financial statements.

(4) Purchase obligations represent legally-binding commitments to purchase inventory and other commitments made in the normal course of business to meet operational requirements. Refer to “Note 19. Commitments and Contingencies” in the notes to consolidated financial statements.

(5) We incurred indebtedness in an aggregate principal amount of $500.0 million pursuant to a senior secured Term Loan Facility that we entered into in connection with the closing of the Oclaro acquisition on December 10, 2018. The amounts of interest included in the table above is based on current interest rates. Refer to “Note 7. Term Loan Facility” in the notes to consolidated financial statements.

(6) Refer to “Note 13. Convertible Notes” in the notes to consolidated financial statements.

(7) Includes interest on our 0.25% Convertible Notes due in 2024 through March 2024 as we have the right to redeem the 2024 Notes in whole or in part at any time on or after March 15, 2024. Refer to “Note 13. Convertible Notes” in the notes to consolidated financial statements.

As of June 29, 2019, our other non-current liabilities also include $18.7 million of unrecognized tax benefit for uncertain tax positions. We are unable to reliably estimate the timing of future payments related to uncertain tax positions and therefore have excluded them from the preceding table.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements, as such term is defined in rules promulgated by the SEC, that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that are material to investors.

Defined Benefit Plans

As a result of acquiring Time-Bandwidth in January 2014, we have a pension plan for our employees in Switzerland. This plan is open to new participants and additional service costs are being accrued. The Switzerland Plan is partially funded. As of June 29, 2019, our pension plan was under funded by $5.0 million since the projected benefit obligation (“PBO”) exceeded the fair value of the plan assets.

In connection with the acquisition of Oclaro in December 2018, we assumed a defined benefit plan which provides benefits to our employees in Japan. This plan is open to new participants. Benefits are generally based upon an employee’s individual grade level and years of service. Employees are entitled to a lump sum benefit upon retirement or upon certain instances of termination. As of June 29, 2019, there were no Japan Plan assets. The net obligation of $2.8 million as of June 29, 2019 is recorded in our consolidated balance sheets as non-current liabilities and is reflective of the total PBO.

A key actuarial assumption in calculating the net periodic cost and the PBO is the discount rate. Changes in the discount rate impact the interest cost component of the net periodic benefit cost calculation and PBO due to the fact that the PBO is calculated on a net present value basis. Decreases in the discount rate will generally increase pre-tax cost, recognized expense and the PBO. Increases in the discount rate tend to have the opposite effect. We estimate a 50 basis point decrease or increase in the discount rate would cause a corresponding increase or decrease, respectively, in the PBO of $1.4 million or $(1.3) million, based upon data as of June 29, 2019.

We expect to contribute $0.5 million to our Japan and Switzerland pension plans in fiscal 2020.

Financial Condition

Liquidity and Capital Resources

As of June 29, 2019 and June 30, 2018, our cash and cash equivalents of $432.6 million and $397.3 million, respectively, were largely held in the United States. The total amount of cash outside the United States as of June 29, 2019 was $100.5 million, which was primarily held by entities incorporated in Japan, the United Kingdom, Thailand, the British Virgin Islands, China, and the Netherlands. Although the cash currently held in the United States as well as the cash generated in the United States from future operations is expected to cover our normal operating requirements, a substantial amount of additional cash could be required for other purposes, such as capital expenditures to support our business and growth, including costs associated with increasing internal manufacturing capabilities, such as our new Thailand facility, strategic transactions and partnerships, and future acquisitions. Except for the cash and cash equivalents held in the Cayman Islands, Japan and Hong Kong, our intent is to indefinitely reinvest the cash and cash equivalents held outside the United States since our current plans do not demonstrate a need to repatriate them to fund our domestic operations. However, if in the future, we encounter a significant need for liquidity domestically or at a particular location that we cannot fulfill through borrowings, equity offerings, or other internal or external sources, or the cost to bring back the money is insignificant from a tax perspective, we may determine that cash repatriations are necessary or desirable. Repatriation could result in material additional taxes. These factors may cause us to have an overall tax rate higher than other

companies or higher than our tax rates have been in the past. If conditions warrant, we may seek to obtain additional financing through debt or equity sources. To the extent we issue additional shares, our existing stockholders may be diluted. However, any such financing may not be available on terms favorable to us, or may not be available at all.

Fiscal 2019

As of June 29, 2019, our consolidated balance of cash and cash equivalents increased by $35.3 million, to $432.6 million from $397.3 million as of June 30, 2018. The increase in cash and cash equivalents was mainly due to cash provided by financing activities of $485.1 million, primarily related to $490.8 million in proceeds from a term loan, net of debt issuance costs, used to fund the Oclaro acquisition, and cash provided by operating activities of $330.1 million during the year ended June 29, 2019; which was offset by cash used in investing activities of $779.7 million, principally related to net cash of $619.8 million paid to acquire Oclaro.

Cash provided by operating activities of $330.1 million during the year ended June 29, 2019, primarily resulted from $314.4 million of non-cash items (such as depreciation, stock-based compensation, amortization of intangibles, amortization of discount on the 2024 Notes, amortization of the debt issuance costs on the term loan, amortization of fair value adjustment in connection with the acquisition of Oclaro, impairment charges, net of unrealized gain on derivative liability and other non-cash items) and $52.1 million of changes in our operating assets and liabilities, offset by our net loss of $36.4 million.

Cash used in investing activities of $779.7 million during the year ended June 29, 2019, was primarily attributable to $619.8 million paid to acquire all outstanding shares of common stock of Oclaro, net of cash received through the acquisition of Oclaro. In addition, we had capital expenditures of $166.0 million (mainly attributable to the purchase of the property for $54.6 million), payment for asset acquisition of $1.3 million, purchases of short-term investments, net of sales of $18.1 million, offset by proceeds from sales of product lines of $25.5 million.

Cash provided by financing activities of $485.1 million during the year ended June 29, 2019, primarily resulted from $490.8 million of proceeds from a term loan, net of debt issuance costs, used to partially finance the Oclaro acquisition, offset by the repayment of a term loan of $2.5 million. In addition, we received $9.3 million from the issuance of common stock under our employee stock plan, offset by the repayment of capital lease obligations of $8.8 million, tax payments related to restricted stock of $2.4 million, a payment of an acquisition related holdback of $1.0 million, and dividend payments on our Series A Preferred Stock of $0.7 million.

Fiscal 2018

As of June 30, 2018, our consolidated balance of cash and cash equivalents increased by $124.4 million, to $397.3 million from $272.9 million as of July 1, 2017. The increase in cash and cash equivalents was mainly due to cash provided by operating activities of $247.5 million during fiscal 2018 offset by purchases of short-term investments, net of sales of $33.8 million and capital expenditures of $93.2 million.

Cash provided by operating activities was $247.5 million for the year ended June 30, 2018, primarily resulting from $248.1 million of net income and $18.5 million of non-cash items (such as depreciation, stock-based compensation, amortization of intangibles, amortization of discount on the 2024 Notes, net of the release of the valuation allowance), offset by $19.1 million of changes in our operating assets and liabilities. Changes in our operating assets and liabilities related primarily to an increase in accounts receivable of $30.8 million, offset by an increase in accrued expenses and other current and non-current liabilities of $11.9 million.

Cash used in investing activities of $127.0 million for the year ended June 30, 2018, was primarily attributable to capital expenditures of $93.2 million and purchases of short-term investments, net of sales of $33.8 million.

Cash provided by financing activities was $3.8 million for the year ended June 30, 2018, resulting primarily from the issuance of common stock under the 2015 Employee Stock Purchase Plan of $9.2 million offset by repayment of capital lease obligation of $6.4 million.

Fiscal 2017

As of July 1, 2017, our consolidated balance of cash and cash equivalents increased by $115.8 million, to $272.9 million from $157.1 million as of July 2, 2016. The increase in cash and cash equivalents was mainly due to proceeds from the issuance of the 2024 Notes during fiscal 2017, offset by the purchases of short-term investments and property, plant and equipment.

Cash provided by operating activities was $85.0 million for the year ended July 1, 2017, primarily resulting from $102.5 million of net loss and $199.4 million of non-cash items such as depreciation, stock-based compensation, amortization of intangibles and unrealized loss on derivative liabilities, the impact of which was offset by changes in excess tax benefit associated with stock-

based compensation. In addition, changes in our operating assets and liabilities of $11.9 million related primarily to an increase in inventories of $41.7 million and a decrease in accounts payable of $16.9 million related to non-cash items such as $10.0 million unpaid property, plant and equipment, offset by a decrease in income taxes, net of $42.7 million.

Cash used in investing activities was mainly for capital expenditures and purchases of short-term investments, net of sales of $138.1 million and $282.5 million, respectively, for the year ended July 1, 2017. Changes in investing cash flow in fiscal 2017 also related to the acquisition of a business for $5.1 million.

Cash provided by financing activities was $456.7 million for the year ended July 1, 2017, resulting primarily from proceeds of $442.3 million from the issuance of the 2024 Notes.

Liquidity and Capital Resources Requirements

We believe that our cash and cash equivalents as of June 29, 2019, and cash flows from our operating activities will be sufficient to meet our liquidity and capital spending requirements for at least the next 12 months. However, if market conditions are favorable, we may evaluate alternatives to opportunistically pursue additional financing.

There are a number of factors that could positively or negatively impact our liquidity position, including:

- global economic conditions which affect demand for our products and services and impact the financial stability of our suppliers and customers;
- changes in accounts receivable, inventory or other operating assets and liabilities, which affect our working capital;
- increase in capital expenditures to support our business and growth;
- the tendency of customers to delay payments or to negotiate favorable payment terms to manage their own liquidity positions;
- timing of payments to our suppliers;
- factoring or sale of accounts receivable;
- volatility in fixed income and credit, which impact the liquidity and valuation of our investment portfolios;
- volatility in foreign exchange markets, which impacts our financial results;
- possible investments or acquisitions of complementary businesses, products or technologies, or other strategic transactions or partnerships;
- issuance of debt or equity securities, or other financing transactions, including bank debt;
- potential funding of pension liabilities either voluntarily or as required by law or regulation; and
- the settlement of any conversion or redemption of the 2024 Notes in cash.

In March 2018, we entered into the Merger Agreement with Oclaro. On December 10, 2018, we completed the merger. In accordance with the terms of the Merger Agreement, each issued and outstanding share of Oclaro common stock was automatically converted into the right to receive (i) $5.60 in cash and (ii) 0.0636 of a share of Lumentum common stock. The total transaction consideration was $1.4 billion, funded through a combination of the issuance of Lumentum common stock, new debt obtained through the Term Loan facility, and cash balances of the combined company.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign Exchange Risk

We conduct our business and sell our products to customers primarily in Asia, Europe, and North America. Due to the impact of changes in foreign currency exchange rates between the U.S. Dollar and foreign currencies, for the fiscal years ended June 29, 2019, June 30, 2018, and July 1, 2017, we recorded unrealized gain (loss) of $(0.6) million, $(0.3) million, and $0.6 million, respectively, in interest and other income (expense), net in the consolidated statements of operations.

Although we sell primarily in the U.S. Dollar, we have foreign currency exchange risks related to our operating expenses denominated in currencies other than the U.S. Dollar, principally the Chinese Yuan, Canadian Dollar, Thai Baht, Japanese Yen, UK Pound, Swiss Franc and Euro. The volatility of exchange rates depends on many factors that we cannot forecast with reliable accuracy. In the event our foreign currency denominated assets, liabilities, sales or expenses increase, our operating results may be more greatly affected by fluctuations in the exchange rates of the currencies in which we do business.

Equity Price Risk

We are exposed to equity price risk related to the conversion options embedded in our 2024 Notes.

In March 2017, we issued the 2024 Notes in a private placement with an aggregate principal amount of $450 million. We carry the 2024 Notes at face value less amortized discount on the consolidated balance sheet. The 2024 Notes bear interest at a rate of 0.25% per year. Since the 2024 Notes bear interest at fixed rates, we have no financial statement risk associated with changes in interest rates. However, the potential value of the shares to be distributed to the holders of 2024 Notes changes when the market price of our stock fluctuates. The 2024 Notes will mature on March 15, 2024, unless earlier repurchased by us or converted pursuant to their terms, at a conversion price of approximately $60.62 per share.

Interest Rate Fluctuation Risk

As of June 29, 2019, we had cash, cash equivalents, and short-term investments of $768.5 million. Cash equivalents and short-term investments are primarily comprised of highly liquid investment grade fixed income securities. Our investment policy and strategy is focused on the preservation of capital and supporting our liquidity requirements. We do not enter into investments for trading or speculative purposes. As of June 29, 2019, the weighted-average life of our investment portfolio was approximately seven months.

Our fixed-income portfolio is subject to fluctuations in interest rates, which could affect our results of operations. Based on our investment portfolio balance as of June 29, 2019, a hypothetical increase or decrease in interest rates of 1% (100 basis points) would have resulted in a decrease or an increase in the fair value of our portfolio of approximately $2.2 million, and a hypothetical increase or decrease of 0.5% (50 basis points) would have resulted in a decrease or an increase in the fair value of our portfolio of approximately $1.1 million.

A hypothetical increase or decrease of 0.5% (50 basis points) in interest rates would have resulted in an approximate $2.5 million increase or decrease in our interest expense for the year on the Term Loan Facility.

Bank Liquidity Risk

As of June 29, 2019, we had approximately $213.8 million of unrestricted cash (excluding money market funds) in operating accounts that are held with domestic and international financial institutions. These cash balances could be lost or become inaccessible if the underlying financial institutions fail or if they are unable to meet the liquidity requirements of their depositors and if they are not supported by the national government of the country in which such financial institution is located. Notwithstanding, to date, we have not incurred any losses and have had full access to our operating accounts. We believe any failures of domestic and international financial institutions could impact our ability to fund our operations in the short term.

ITEM 8. FINANCIAL STATEMENTS AND SUMMARY DATA

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of Lumentum Holdings Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Lumentum Holdings Inc. and subsidiaries (the "Company") as of June 29, 2019 and June 30, 2018, the related consolidated statements of operations, comprehensive income (loss), cash flows, and redeemable convertible preferred stock and stockholders' equity for each of the three years in the period ended June 29, 2019, and the related notes and the schedule listed in the Index at Item 15 (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of June 29, 2019 and June 30, 2018, and the results of its operations and its cash flows for each of the three years in the period ended June 29, 2019, in conformity with accounting principles generally accepted in the United States of America.

We have also 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 June 29, 2019, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated August 27, 2019, expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion

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

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

/s/ DELOITTE & TOUCHE LLP

San Jose, California
August 27, 2019

We have served as the Company's auditor since 2017.

LUMENTUM HOLDINGS INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(in millions, except per share data)

	Years Ended		
	June 29, 2019	June 30, 2018	July 1, 2017
Net revenue	$ 1,565.3	$ 1,247.7	$ 1,001.6
Cost of sales	1,092.9	812.4	677.0
Amortization of acquired intangibles	46.5	3.2	6.5
Gross profit	425.9	432.1	318.1
Operating expenses:			
Research and development	184.6	156.8	148.3
Selling, general and administrative	200.3	128.2	110.2
Restructuring and related charges	31.9	7.2	12.0
Impairment charges	30.7	—	—
Total operating expenses	447.5	292.2	270.5
Income/(loss) from operations	(21.6)	139.9	47.6
Unrealized gain (loss) on derivative liability	8.8	(0.8)	(104.2)
Interest expense	(36.3)	(18.2)	(5.5)
Other income (expense), net	15.8	8.5	2.3
Income/(loss) before income taxes	(33.3)	129.4	(59.8)
Provision for (benefit from) income taxes	3.1	(118.7)	42.7
Net income/(loss)	$ (36.4)	$ 248.1	$ (102.5)
Items reconciling net income/(loss) to net income/(loss) attributable to common stockholders:			
Less: Cumulative dividends on Series A Preferred Stock	(0.3)	(0.9)	(0.9)
Less: Earnings allocated to Series A Preferred Stock	(1.2)	(5.7)	—
Net income/(loss) attributable to common stockholders - Basic	$ (37.9)	$ 241.5	$ (103.4)
Net income/(loss) attributable to common stockholders - Diluted	$ (37.9)	$ 241.5	$ (103.4)
Net income/(loss) per share attributable to common stockholders:			
Basic	$ (0.54)	$ 3.88	$ (1.71)
Diluted	$ (0.54)	$ 3.82	$ (1.71)
Shares used to compute net income/(loss) per share attributable to common stockholders:			
Basic	70.7	62.3	60.6
Diluted	70.7	63.3	60.6

See accompanying Notes to Consolidated Financial Statements.

LUMENTUM HOLDINGS INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(in millions)

	Years Ended		
	June 29, 2019	June 30, 2018	July 1, 2017
Net income/(loss)	$ (36.4)	$ 248.1	$ (102.5)
Other comprehensive income (loss), net of tax:			
Net change in cumulative translation adjustment	(0.6)	(0.2)	(1.2)
Net change in unrealized gain (loss) on available-for-sale securities	2.5	(1.6)	—
Net change in defined benefit obligations	(1.2)	0.8	(0.8)
Other comprehensive income (loss), net of tax	0.7	(1.0)	(2.0)
Comprehensive income (loss), net of tax	$ (35.7)	$ 247.1	$ (104.5)

See accompanying Notes to Consolidated Financial Statements.

LUMENTUM HOLDINGS INC.
CONSOLIDATED BALANCE SHEETS
(in millions, except share and per share data)

	June 29, 2019	June 30, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	$ 432.6	$ 397.3
Short-term investments	335.9	314.2
Accounts receivable, net	238.0	197.1
Inventories	228.8	174.1
Prepayments and other current assets	97.5	44.5
Total current assets	1,332.8	1,127.2
Property, plant and equipment, net	433.3	306.9
Goodwill	368.9	11.3
Other intangible assets, net	395.4	7.0
Deferred income taxes	169.6	125.6
Other non-current assets	16.6	3.5
Total assets	$ 2,716.6	$ 1,581.5
LIABILITIES, REDEEMABLE CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 160.8	$ 126.5
Accrued payroll and related expenses	42.3	31.5
Accrued expenses	46.7	33.9
Term loan, current	5.0	—
Other current liabilities	39.2	22.1
Total current liabilities	294.0	214.0
Convertible notes	351.9	334.2
Term loan, non-current	484.0	—
Derivative liability	—	52.4
Deferred tax liability	55.9	0.3
Other non-current liabilities	33.7	18.7
Total liabilities	1,219.5	619.6
Commitments and contingencies (Note 19)		
Redeemable convertible preferred stock:		
Non-controlling interest redeemable convertible Series A Preferred Stock, $0.001 par value, 10,000,000 authorized shares; zero and 35,805 shares issued and outstanding as of June 29, 2019 and June 30, 2018, respectively	—	35.8
Total redeemable convertible preferred stock	—	35.8
Stockholders' equity:		
Common stock, $0.001 par value, 990,000,000 authorized shares, 76,653,478 and 62,790,087 shares issued and outstanding as of June 29, 2019 and June 30, 2018, respectively	0.1	0.1
Additional paid-in capital	1,360.8	753.2
Retained earnings	129.1	166.4
Accumulated other comprehensive income	7.1	6.4
Total stockholders' equity	1,497.1	926.1
Total liabilities, redeemable convertible preferred stock, and stockholders' equity	$ 2,716.6	$ 1,581.5

See accompanying Notes to Consolidated Financial Statements.

LUMENTUM HOLDINGS INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in millions)

	Years Ended		
	June 29, 2019	June 30, 2018	July 1, 2017
OPERATING ACTIVITIES:			
Net income/(loss)	$ (36.4)	$ 248.1	$ (102.5)
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation expense	102.9	74.0	54.2
Stock-based compensation	60.7	46.8	32.7
Unrealized (gain) loss on derivative liability	(8.8)	0.8	104.2
Amortization of acquired intangibles	54.6	3.2	6.8
Loss on disposal of property, plant and equipment	2.2	0.6	0.2
Excess tax benefit associated with stock-based compensation	—	—	(3.8)
Impairment charges	30.7	—	—
Amortization of discount on 0.25% Convertible Notes due 2024	17.7	16.7	5.1
Amortization of debt issuance costs on term loan	0.8	—	—
Amortization of inventory fair value adjustment in connection with Oclaro acquisition	54.6	—	—
Amortization of favorable/unfavorable leases	0.5	—	—
Release of valuation allowance, net	—	(124.0)	—
Other non-cash (income) expenses	(1.5)	0.4	—
Changes in operating assets and liabilities:			
Accounts receivable	27.7	(30.8)	4.2
Inventories	40.6	(7.7)	(41.7)
Prepayments and other current and non-currents assets	(10.8)	6.1	(7.4)
Income taxes, net	(5.6)	(7.3)	42.7
Accounts payable	(10.6)	4.8	(16.9)
Accrued payroll and related expenses	(0.1)	3.9	1.0
Accrued expenses and other current and non-current liabilities	10.9	11.9	6.2
Net cash provided by operating activities	330.1	247.5	85.0
INVESTING ACTIVITIES:			
Payments for acquisition of property, plant and equipment	(166.0)	(93.2)	(138.1)
Proceeds from sale of product lines	25.5	—	—
Acquisition of business, net of cash acquired	(619.8)	—	(5.1)
Payment for asset acquisition	(1.3)	—	—
Purchases of short-term investments	(269.7)	(634.3)	(290.7)
Proceeds from maturities and sales of short-term investments	251.6	600.5	8.2
Net cash used in investing activities	(779.7)	(127.0)	(425.7)
FINANCING ACTIVITIES:			
Proceeds from the issuance of 0.25% Convertible Senior Notes due 2024, net of issuance costs	—	—	442.3
Excess tax benefit associated with stock-based compensation	—	—	3.8
Tax payments related to restricted stock	(2.4)	—	—
Payment of dividends - Series A Preferred Stock	(0.7)	(0.7)	(0.9)
Payment of acquisition related holdback	(1.0)	—	—
Proceeds from employee stock plans	9.3	9.2	8.1
Proceeds from term loan, net of debt issuance costs	490.8	—	—
Repayment of term loan	(2.5)	—	—
Repayment of capital lease obligations	(8.8)	(6.4)	—
Proceeds from the exercise of stock options	0.4	1.7	3.4

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LUMENTUM HOLDINGS INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in millions)

Net cash provided by financing activities	485.1	3.8	456.7
Effect of exchange rates on cash and cash equivalents	(0.2)	0.1	(0.2)
Increase in cash and cash equivalents	35.3	124.4	115.8
Cash and cash equivalents at beginning of period	397.3	272.9	157.1
Cash and cash equivalents at end of period	$ 432.6	$ 397.3	$ 272.9
Supplemental disclosure of cash flow information:			
Cash paid for taxes	$ 8.7	$ 12.7	9.5
Cash paid for interest	15.1	1.3	—
Supplemental disclosure of non-cash transactions:			
Unpaid property, plant and equipment in accounts payable and accrued expenses	$ 14.3	$ 17.2	18.4
Equipment acquired under capital lease	—	15.6	—
Issuance of common stock upon conversion of Series A Preferred Stock	79.4	—	—
Net transfer of assets from property plant and equipment to assets held-for-sale	4.9	—	—
Issuance of common stock and replacement awards in connection with Oclaro acquisition	460.1	—	—

See accompanying Notes to Consolidated Financial Statements.

LUMENTUM HOLDINGS INC.
CONSOLIDATED STATEMENTS OF REDEEMABLE CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY
(in millions)

	Non-Controlling Interest Redeemable Convertible Series A Preferred Stock		Common Stock		Additional Paid-In Capital	Retained Earnings (Accumulated Deficit)	Accumulated Other Comprehensive Income/(Loss)	Total Stockholders' Equity
	Shares	Amount	Shares	Amount				
Balance as of July 2, 2016	—	$ 35.8	59.6	$ 0.1	$ 467.7	$ 20.2	$ 9.4	$ 497.4
Net income (loss)	—	—	—	—	—	(102.5)	—	(102.5)
Other comprehensive income (loss)	—	—	—	—	—	—	(2.0)	(2.0)
Declared dividend for preferred stock	—	—	—	—	—	(0.9)	—	(0.9)
Reclassification of 2024 Notes derivative liability in connection with cash settlement condition	—	—	—	—	192.8	—	—	192.8
Issuance of shares pursuant to equity plans, net of tax withholdings	—	—	1.6	—	(12.2)	—	—	(12.2)
ESPP shares issued	—	—	0.3	—	8.1	—	—	8.1
Stock-based compensation	—	—	—	—	34.3	—	—	34.3
Excess tax benefit associated with stock-based compensation	—	—	—	—	3.8	—	—	3.8
Balance as of July 1, 2017	—	$ 35.8	61.5	$ 0.1	$ 694.5	$ (83.2)	$ 7.4	$ 618.8
Net income (loss)	—	—	—	—	—	248.1	—	248.1
Other comprehensive income (loss)	—	—	—	—	—	—	(1.0)	(1.0)
Declared dividend for preferred stock	—	—	—	—	—	(0.9)	—	(0.9)
Issuance of shares pursuant to equity plans, net of tax withholdings	—	—	1.1	—	1.7	—	—	1.7
ESPP shares issued	—	—	0.2	—	9.2	—	—	9.2
Stock-based compensation	—	—	—	—	47.6	—	—	47.6
Cumulative effect of stock compensation accounting change	—	—	—	—	0.2	2.4	—	2.6
Balance as of June 30, 2018	—	$ 35.8	62.8	$ 0.1	$ 753.2	$ 166.4	$ 6.4	$ 926.1
Net income (loss)	—	—	—	—	—	(36.4)	—	(36.4)
Other comprehensive income (loss)	—	—	—	—	—		0.7	0.7
Declared dividend for preferred stock	—	—	—	—	—	(0.3)	—	(0.3)
Issuance of shares pursuant to equity plans, net of tax withholdings	—	—	1.1	—	(0.4)	—	—	(0.4)
Issuance of shares pursuant to merger agreement, net of tax withholdings	—	—	11.0	—	460.1	—	—	460.1
ESPP shares issued	—	—	0.3	—	9.3	—	—	9.3

LUMENTUM HOLDINGS INC.
CONSOLIDATED STATEMENTS OF REDEEMABLE CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY
(in millions)

Stock-based compensation	—	—	—	—	59.2	—	—	59.2
Cumulative-effect adjustment for adoption of Topic 606	—	—	—	—	—	(0.6)	—	(0.6)
Conversion of preferred stock to common stock	—	(35.8)	1.5	—	79.4	—	—	79.4
Balance as of June 29, 2019	—	$ —	76.7	$ 0.1	$ 1,360.8	$ 129.1	$ 7.1	$ 1,497.1

See accompanying Notes to Consolidated Financial Statements.

LUMENTUM HOLDINGS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1. Description of Business and Summary of Significant Accounting Policies

Description of Business

Lumentum ("we," "us," "our" or the "Company") is an industry-leading provider of optical and photonic products defined by revenue and market share addressing a range of end market applications including Optical Communications ("OpComms") and Lasers for manufacturing, inspection and life-science applications. We seek to use our core optical and photonic technology and our volume manufacturing capability to expand into attractive emerging markets that benefit from advantages that optical or photonics based solutions provide, including 3D sensing for consumer electronics and diode light sources for a variety of consumer and industrial applications. The majority of our customers tend to be Original Equipment Manufacturers ("OEMs") that incorporate our products into their products which then address end-market applications. For example, we sell fiber optic components that Network Equipment Manufacturers' ("NEMs") customers assemble into communications networking systems, which they sell to network service providers or enterprises with their own networks. Similarly, many of our customers for our Lasers products incorporate our products into tools they produce, which are used for manufacturing processes by their customers. For 3D sensing, we sell diode lasers to manufacturers of consumer electronics products for mobile, personal computing, and gaming who then integrate our devices within their products, for eventual resale to consumers and also into other industrial applications.

Basis of Presentation

The preparation of the consolidated financial statements in accordance with U.S. generally accepted accounting principles ("GAAP") requires management to make estimates and assumptions that affect the amounts reported in our consolidated financial statements and accompanying notes. Management bases its estimates on historical experience and various other assumptions believed to be reasonable. Although these estimates are based on management's best knowledge of current events and actions that may impact the Company in the future, actual results may be different from the estimates. Our critical accounting policies are those that affect our financial statements materially and involve difficult, subjective or complex judgments by management. Those policies are inventory valuation, revenue recognition, income taxes, long-lived asset valuation, business combinations, and goodwill.

On December 10, 2018, we completed our merger with Oclaro, Inc. ("Oclaro"), a provider of optical components and modules for the long-haul, metro and data center markets. Our consolidated financial statements include the operating results of Oclaro for the period from the date of acquisition through June 29, 2019. Refer to "Note 5. Business Combination" for further discussion of the merger.

Fiscal Years

We utilize a 52-53 week fiscal year ending on the Saturday closest to June 30th. Our fiscal 2019 and 2018 ended on June 29, 2019 and June 30, 2018, respectively, and were 52-week years. Our fiscal 2017 ended on July 1, 2017 and was a 53-week year.

Principles of Consolidation

The preparation of the consolidated financial statements in accordance with GAAP in the United States requires management to make estimates and assumptions that affect the amounts reported in our consolidated financial statements and accompanying notes. Management bases its estimates on historical experience and various other assumptions believed to be reasonable. Although these estimates are based on management's best knowledge of current events and actions that may impact the Company in the future, actual results may be different from the estimates.

Certain prior period amounts have been reclassified to conform to the current year presentation. For fiscal 2018, we have reclassified $20.5 million of capitalized manufacturing overhead from prepayments and other current assets to inventory work in process to conform to current period presentation. Refer to "Note 9. Balance Sheet Details".

Related Party Transactions

Since October 2017, all transactions with Viavi were no longer related party transactions, as Viavi held less than 5% of our total shares outstanding. During fiscal year 2017, we recognized revenue of $3.6 million from products sold to Viavi, recorded $0.5 million in research and development cost reimbursement, and $0.7 million in sublease rental income. During fiscal year 2017, we also recorded $0.6 million in other income, which resulted from a tax indemnification agreement between Lumentum and Viavi.

Summary of Significant Accounting Policies

Our significant accounting policies are those that affect our financial statements materially and involve difficult, subjective or complex judgments by management. We believe that of our significant accounting policies described below, certain accounting

policies involve a greater degree of judgment and complexity and are the most critical to aid in fully understanding and evaluating our consolidated financial statements. These policies are inventory valuation, revenue recognition, income taxes, long-lived asset valuation, business combinations, and goodwill. During fiscal year 2019, we removed valuation of derivative liability from the list of critical accounting policies and estimates due to the conversion of the Series A Preferred Stock to common stock on November 2, 2018. Refer to "Note 12. Non-Controlling Interest Redeemable Convertible Preferred Stock and Derivative Liability" for more details. For a description of our critical accounting policies, also refer to "Management's Discussion and Analysis of Financial Condition and Results of Operations", *Critical Accounting Policies and Estimates.*

Cash and Cash Equivalents

We consider highly-liquid fixed income securities with original maturities of three months or less at the time of purchase to be cash equivalents. As of fiscal year ended June 29, 2019, cash and cash equivalents mainly consist of commercial papers, money market funds, and U.S. Treasury securities. As of fiscal year ended June 30, 2018, our cash and cash equivalents did not include any investments with original maturities of three months or less.

Short-term Investments

We classify our investments in debt as available-for-sale and record these investments at fair value. Investments with an original maturity of three months or less at the date of purchase are considered cash equivalents, while all other investments are classified as short-term based on management's intent and ability to use the funds in current operations. Unrealized gains and losses are reported as a component of other comprehensive loss. Realized gains and losses are determined based on the specific identification method, and are reflected as interest and other income (expense), net in our Consolidated Statements of Operations. We regularly review our investment portfolio to identify and evaluate investments that have indicators of possible impairment. Factors considered in determining whether a loss is other-than-temporary include, but are not limited to: the length of time and extent a security's fair value has been below its cost, the financial condition and near-term prospects of the investee, the credit quality of the security's issuer, likelihood of recovery and our intent and ability to hold the security for a period of time sufficient to allow for any anticipated recovery in value. For our debt instruments, we also evaluate whether we have the intent to sell the security or it is more likely than not that we will be required to sell the security before recovery of its cost basis.

Impairment of Marketable and Non-Marketable Securities

We periodically review our marketable and non-marketable securities for impairment. If we conclude that any of these investments are impaired, we determine whether such impairment is other-than-temporary. We consider factors such as the duration, severity and the reason for the decline in value, the potential recovery period and whether we intend to sell. For marketable debt securities, we also consider whether (i) it is more likely than not that we will be required to sell the debt securities before recovery of their amortized cost basis, and (ii) the amortized cost basis cannot be recovered as a result of credit losses. If any impairment is considered other-than-temporary, we will write-down the security to its fair value.

Fair Value of Financial Instruments

We define fair value as the price that would be received from selling an asset, or paid to transfer a liability, in an orderly transaction between market participants at the measurement date. When determining the fair value measurements for assets and liabilities which are required to be recorded at fair value, we consider the principal or most advantageous market in which to transact and the market-based risk. We apply fair value accounting for all financial assets and liabilities that are recognized or disclosed at fair value in the financial statements on a recurring basis. The carrying amounts reported in the consolidated financial statements approximate the fair value for cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities due to their short-term nature.

Basic and Diluted Net Income (Loss) per Common Share

Basic income (loss) per share is computed by dividing net income (loss) available to common stockholders by the weighted average number of common shares outstanding during the reporting period. The weighted average number of shares is calculated by taking the number of shares outstanding and weighting them by the amount of time that they were outstanding. Diluted earnings per share reflects the potential dilution that could occur if stock options, preferred stock, and other commitments to issue common stock were exercised or equity awards vest resulting in the issuance of common stock that could share in the earnings of the Company.

Diluted loss per share is the same as basic loss per share during periods where net losses are incurred since the inclusion of the potential common stock equivalents would be anti-dilutive as a result of the net loss.

Our Series A Preferred Stock was considered a participating security where the holders of Series A Preferred Stock had the right to participate in undistributed earnings with holders of common stock. On November 2, 2018, the remaining 35,805 shares of our Series A Preferred Stock were converted into 1.5 million shares of our common stock. Refer to "Note 12. Non-Controlling Interest Redeemable Convertible Preferred Stock and Derivative Liability" for further discussion. Prior to conversion, the holders of our Series A Preferred Stock were entitled to share in dividends, on an as-converted basis, if the holders of our common stock were to receive dividends. Up through the date of conversion, we used the two-class method to compute earnings per share. The two-class method is an earnings allocation formula that determines earnings per share for each class of common stock and participating security according to dividends declared (or accumulated) and participation rights in undistributed earnings. In determining the amount of net earnings to allocate to common stockholders, earnings are allocated to both common and participating securities based on their respective weighted-average shares outstanding during the period. Diluted earnings per common share is calculated similar to basic earnings per common share except that it gives effect to all potentially dilutive common stock equivalents outstanding for the period, using the treasury stock method.

In March 2017, we issued $450 million in aggregate principal amount of 0.25% Convertible Senior Notes due in 2024 (the "2024 Notes"). We have the ability and intent to settle the $450 million face value of the 2024 Notes in cash. Therefore, we use the treasury stock method for calculating the dilutive impact of the 2024 Notes. The 2024 Notes will have no impact to diluted earnings per share until the average price of our common stock exceeds the conversion price of $60.62. Refer to "Note 13. Convertible Notes" for details.

The dilutive effect of securities from the 2015 Equity Incentive Plan is reflected in diluted earnings per share by application of the treasury stock method, which includes consideration of unamortized share-based compensation expense and the dilutive effect of in-the-money options and non-vested restricted stock units. Under the treasury stock method, the amount the employee must pay for exercising stock options and the amount of unamortized share-based compensation expense are collectively assumed to be used to repurchase hypothetical shares. An increase in the fair value of our common stock can result in a greater dilutive effect from potentially dilutive awards.

Anti-dilutive potential shares from 2015 Equity Incentive Plan are excluded from the calculation of diluted earnings per share if their exercise price exceeded the average market price during the period or the share-based awards were determined to be anti-dilutive based on applying the treasury stock method.

Inventory Valuation

Inventory is valued at standard cost, which approximates actual cost computed on a first-in, first-out basis, not in excess of net realizable value. We assess the value of our inventory on a quarterly basis and write down those inventories which are obsolete or in excess of our forecasted usage to the lower of their cost or estimated net realizable value. Our estimates of realizable value are based upon our analysis and assumptions including, but not limited to, forecasted sales levels and historical usage by product, expected product lifecycle, product development plans and future demand requirements. Our product line management personnel play a key role in our excess review process by providing updated sales forecasts, managing product transitions and working with manufacturing to minimize excess inventory. If actual market conditions are less favorable than our forecasts or actual demand from our customers is lower than our estimates, we may be required to record additional inventory write-downs. If actual market conditions are more favorable than anticipated, inventory previously written down may be sold, resulting in lower cost of sales and higher income from operations than expected in that period.

Revenue Recognition

Adoption of Topic 606

Pursuant to Topic 606, our revenues are recognized upon the application of the following steps:

- identification of the contract, or contracts, with a customer;
- identification of the performance obligations in the contract;
- determination of the transaction price;
- allocation of the transaction price to the performance obligations in the contract; and
- recognition of revenues when, or as, the contractual performance obligations are satisfied.

The majority of our revenue comes from product sales, consisting of sales of Lasers and OpComms hardware products to our customers. Our revenue contracts generally include only one performance obligation. Revenues are recognized at a point in

time when control of the promised goods or services are transferred to our customers upon shipment or delivery, in an amount that reflects the consideration we expect to be entitled to in exchange for those goods or services. We have entered into vendor managed inventory ("VMI") programs with our customers. Under these arrangements, we receive purchase orders from our customers, and the inventory is shipped to the VMI location upon receipt of the purchase order. The customer then pulls the inventory from the VMI hub based on its production needs. Revenue under VMI programs is recognized when control transfers to the customer, which is generally once the customer pulls the inventory from the hub.

Revenue from all sales types is recognized at the transaction price. The transaction price is determined based on the consideration to which we will be entitled in exchange for transferring goods or services to the customer adjusted for estimated variable consideration, if any. We typically estimate the impact on the transaction price for discounts offered to the customers for early payments on receivables or net of accruals for estimated sales returns. These estimates are based on historical returns, analysis of credit memo data and other known factors. Actual returns could differ from these estimates. We allocate the transaction price to each distinct product based on its relative standalone selling price. The product price as specified on the purchase order is considered the standalone selling price as it is an observable input that depicts the price as if sold to a similar customer in similar circumstances.

Taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction, that are collected by us from a customer and deposited with the relevant government authority, are excluded from revenue. Our revenue arrangements do not contain significant financing components as our standard payment terms are less than one year.

If a customer pays consideration, or the Company has a right to an amount of consideration that is unconditional before we transfer a good or service to the customer, those amounts are classified as deferred revenue or deposits received from customers which are included in other current liabilities or other long-term liabilities when the payment is made or it is due, whichever is earlier.

Transaction Price Allocated to the Remaining Performance Obligations

Remaining performance obligations represent the transaction price allocated to performances obligations that are unsatisfied or partially unsatisfied as of the end of the reporting period. Unsatisfied and partially unsatisfied performance obligations consist of contract liabilities and non-cancellable backlog. Non-cancellable backlog includes goods and services for which customer purchase orders have been accepted that are scheduled or in the process of being scheduled for shipment. A portion of our revenue arises from vendor managed inventory arrangements where the timing and volume of customer utilization is difficult to predict.

The following table includes estimated revenue expected to be recognized in the future for backlog related performance obligations that are unsatisfied as of June 29, 2019 (*in millions*):

	Less than 1 year	1-2 years	Greater than 2 years	Total
Performance Obligations	$446.1	$7.0	$—	$453.1

Warranty

Hardware products regularly include warranties to the end customers such that the product continues to function according to published specifications. We typically offer a twelve month warranty for most of our products. However, in some instances depending upon the product, specific market, product line and geography in which we operate, and what is common in the industry, our warranties can vary and range from six months to five years. These standard warranties are assurance type warranties and do not offer any services in addition to the assurance that the product will continue working as specified. Therefore, warranties are not considered separate performance obligations in the arrangement. Instead, the expected cost of warranty is accrued as expense in accordance with authoritative guidance.

We provide reserves for the estimated costs of product warranties at the time revenue is recognized. We estimate the costs of our warranty obligations based on our historical experience of known product failure rates, use of materials to repair or replace defective products and service delivery costs incurred in correcting product failures. In addition, from time to time, specific warranty accruals may be made if unforeseen technical problems arise.

Shipping and Handling Costs

We record shipping and handling costs related to revenue transactions within cost of sales as a period cost.

Contract Costs

The Company recognizes the incremental direct costs of obtaining a contract, which consist of sales commissions, when control over the products they relate to transfers to the customer. Applying the practical expedient, the Company recognizes commissions as expense when incurred, as the amortization period of the commission asset the Company would have otherwise recognized is less than one year.

Contract Balances

The Company records accounts receivable when it has an unconditional right to consideration. Contract liabilities are recorded when cash payments are received or due in advance of performance. Contract liabilities consist of advance payments and deferred revenue, where the Company has unsatisfied performance obligations. Contract liabilities are classified as deferred revenue and customer deposits, and are included in other current liabilities within our consolidated balance sheet. Payment terms vary by customer. The time between invoicing and when payment is due is not significant.

The following table reflects the changes in contract balances as of June 29, 2019 (*in millions, except percentages*):

Contract balances	Balance sheet location	June 29, 2019	June 30, 2018	Change	Percentage Change
Accounts receivable, net	Accounts receivable, net	$238.0	$197.1	$40.9	20.8%
Deferred revenue and customer deposits	Other current liabilities	$2.9	$2.8	$0.1	3.6%

Disaggregation of Revenue

We disaggregate revenue by geography and by product. Refer to “Note 20. Operating Segments and Geographic Information” for a presentation of disaggregated revenue. We do not present other levels of disaggregation, such as by type of products, customer, markets, contracts, duration of contracts, timing of transfer of control and sales channels, as this information is not used by our Chief Operating Decision Maker to manage the business.

Income Taxes

In accordance with the authoritative guidance on accounting for income taxes, we recognize income taxes using an asset and liability approach. This approach requires the recognition of taxes payable or refundable for the current year and deferred tax liabilities and assets for the future tax consequences of events that have been recognized in our consolidated financial statements or tax returns. The measurement of current and deferred taxes is based on provisions of the enacted tax law, and the effects of future changes in tax laws or rates are not anticipated.

The authoritative guidance provides for recognition of deferred tax assets if the realization of such deferred tax assets is more likely than not to occur based on an evaluation of both positive and negative evidence and the relative weight of the evidence. We consider future growth, forecasted earnings, future taxable income, the mix of earnings in the jurisdictions in which we operate, historical earnings, taxable income in prior years, if carryback is permitted under the law, and prudent and feasible tax planning strategies in determining the need for a valuation allowance. In the event we were to 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 valuation allowance would be charged to earnings in the period in which we make such a determination, or goodwill would be adjusted at our final determination of the valuation allowance related to an acquisition within the measurement period. If we later determine that it is more likely than not that the net deferred tax assets would be realized, we would reverse the applicable portion of the previously provided valuation allowance as an adjustment to earnings at such time.

We are subject to income tax audits by the respective tax authorities of the jurisdictions in which we operate. The determination of our income tax liabilities in each of these jurisdictions requires the interpretation and application of complex, and sometimes uncertain, tax laws and regulations. The authoritative guidance on accounting for income taxes prescribes both recognition and measurement criteria that must be met for the benefit of a tax position to be recognized in the financial statements. If a tax position taken, or expected to be taken, in a tax return does not meet such recognition or measurement criteria, an unrecognized tax benefit liability is recorded. If we ultimately determine that an unrecognized tax benefit liability is no longer necessary, we reverse the liability and recognize a tax benefit in the period in which it is determined that the unrecognized tax benefit liability is no longer necessary.

The recognition and measurement of current taxes payable or refundable and deferred tax assets and liabilities requires that we make certain estimates and judgments. Changes to these estimates or a change in judgment may have a material impact on our tax provision in a future period.

Property, Plant and Equipment

Property, plant and equipment are stated at cost. Depreciation is computed by the straight-line method generally over the following estimated useful lives of the assets: 10 to 40 years for building and improvements, 3 to 5 years for machinery and equipment, and 2 to 5 years for furniture, fixtures, software and office equipment. Leasehold improvements are amortized using the straight-line method over the shorter of the estimated useful lives of the assets or the term of the lease.

Goodwill

Goodwill represents the excess of the purchase price of an acquired business over the fair value of the identifiable assets acquired and liabilities assumed. We test for impairment of goodwill on an annual basis in the fourth quarter and at any other time when events occur or circumstances indicate that the carrying amount of goodwill may not be recoverable.

An entity has the option to first assess qualitative factors to determine whether it is necessary to perform the two-step quantitative goodwill impairment test. If an entity determines that as a result of the qualitative assessment that it is more likely than not (i.e., greater than 50% likelihood) that the fair value of a reporting unit is less than its carrying amount, then the quantitative test is required. Otherwise, no further testing is required. The two-step quantitative goodwill impairment test requires us to estimate the fair value of our reporting units. If the carrying value of a reporting unit exceeds its fair value, the goodwill of that reporting unit is potentially impaired and we proceed to step two of the impairment analysis. In step two of the analysis, we measure and record an impairment loss equal to the excess of the carrying value of the reporting unit's goodwill over its implied fair value, if any.

Application of the goodwill impairment test requires judgments, including: identification of the reporting units, assigning assets and liabilities to reporting units, assigning goodwill to reporting units, a qualitative assessment to determine whether there are any impairment indicators, and determining the fair value of each reporting unit. We estimate the fair value of a reporting unit using market approach, income approach or a combination of market and income approach. Significant estimates in the market approach include: identifying similar companies with comparable business factors such as size, growth, profitability, risk and return on investment, and assessing comparable revenue and operating income multiples in estimating the fair value of the reporting unit. Significant estimates in the income approach include: future cash flows, discount rates.

We base our estimates on historical experience and on various assumptions about the future that we believe are reasonable based on available information. Unanticipated events and circumstances may occur that affect the accuracy of our assumptions, estimates and judgments. For example, if the price of our common stock were to significantly decrease combined with other adverse changes in market conditions, thus indicating that the underlying fair value of our reporting units may have decreased, we might be required to reassess the value of our goodwill in the period such circumstances were identified.

Based on the impairment analysis performed in the fourth quarter of each year presented, the fair value of our reporting unit substantially exceeded the carrying value; as such, our annual qualitative assessment did not indicate that a more detailed quantitative analysis was necessary.

Intangible Assets

Intangible assets consist primarily of intangible assets purchased through acquisitions. Purchased intangible assets include acquired developed technologies (developed and core technology), customer relationships, in-process research and development, and order backlog. Intangible assets, with the exception of customer relationships and order backlog, are amortized using the straight-line method over the estimated economic useful lives of the assets, which is the period during which expected cash flows support the fair value of such intangible assets. Customer relationships and order backlog are amortized using an accelerated method of amortization over the expected customer lives, which more accurately reflects the pattern of realization of economic benefits expected to be obtained.

Long-lived Asset Valuation

We test long-lived assets for recoverability, at the asset group level, when events or changes in circumstances indicate that their carrying amount may not be recoverable. Circumstances which could trigger a review include, but are not limited to: significant decreases in the market price of the asset, significant adverse changes in the business climate or legal factors, accumulation of costs significantly in excess of the amount originally expected for the acquisition or construction of the asset, current period cash flow or operating losses combined with a history of losses or a forecast of continuing losses associated with the use of the asset, or current expectation that the asset will more likely than not be sold or disposed significantly before the end of its estimated useful life.

Recoverability is assessed based on the difference between the carrying amount of the asset and the sum of the undiscounted cash flows expected to result from the use and the eventual disposal of the asset. An impairment loss is recognized when the carrying amount is not recoverable and exceeds fair value.

Pension Benefits

The funded status of our retirement-related benefit plan is measured as the difference between the fair value of plan assets and the benefit obligation at fiscal year end, the measurement date. The funded status of an underfunded benefit plan, of which the fair value of plan assets is less than the benefit obligation, is recognized as a non-current net pension liability in the consolidated balance sheets unless the fair value of plan assets is not sufficient to cover the expected payments to be made over the next year (or operating cycle, if longer) from the measurement date. For defined benefit pension plans, the benefit obligation is the projected benefit obligation ("PBO") which represents the actuarial present value of benefits expected to be paid upon retirement.

Net periodic pension cost (income) ("NPPC") is recorded in the consolidated statements of operations and includes service cost, interest cost, expected return on plan assets, amortization of prior service cost and (gains) losses previously recognized as a component of accumulated other comprehensive income. Service cost represents the actuarial present value of participant benefits attributed to services rendered by employees in the current year. Interest cost represents the time value of money cost associated with the passage of time. (Gains) losses arise as a result of differences between actual experience and assumptions or as a result of changes in actuarial assumptions. Prior service cost (credit) represents the cost of benefit improvements attributable to prior service granted in plan amendments. (Gains) losses and prior service cost (credit) that arise during the current year are first recognized as a component of accumulated other comprehensive income in the consolidated balances sheets, net of tax. Prior service cost is amortized as a component of NPPC over the average remaining service period of active plan participants starting at the date the plan amendment is adopted. Deferred actuarial (gains) losses are subsequently recognized as a component of NPPC if they exceed the greater of 10% of PBO or the fair value of plan assets, with the excess amortized over the average remaining service period of active plan participants.

The measurement of the benefit obligation and NPPC is based on our estimates and actuarial valuations, provided by third-party actuaries, which are approved by management. These valuations reflect the terms of the plans and use participant-specific information such as compensation, age and years of service, as well as certain assumptions, including estimates of discount rates, expected return on plan assets, rate of compensation increases, and mortality rates. We evaluate these assumptions annually at a minimum. In estimating the expected return on plan assets, we consider historical returns on plan assets, adjusted for forward-looking considerations, inflation assumptions and the impact of the active management of the plan's invested assets.

Concentration of Credit and Other Risks

Financial instruments that potentially subject our business to concentration of credit risk consist primarily of cash and cash equivalents and trade receivables. We perform credit evaluations of our customers' financial condition and generally do not require collateral from our customers. These evaluations require significant judgment and are based on a variety of factors including, but not limited to, current economic trends, payment history, bad debt write-off experience, and financial review of the customer.

Although the Company deposits its cash with financial institutions that management believes are of high credit quality, its deposits, at times, may exceed federally insured limits. The Company's investment portfolio consists of investment grade securities diversified amongst security types, industries, and issuers. The Company's investment policy limits the amount of credit exposure in the investment portfolio to a maximum of 5% to any one issuer, except for Treasury and Government Agencies securities, and the Company believes no significant concentration risk exists with respect to these investments.

We maintain an allowance for doubtful accounts for estimated losses resulting from the inability of our customers to make required payments. When we become aware that a specific customer is unable to meet their financial obligations, we record a specific allowance to reflect the level of credit risk in the customer's outstanding receivable balance. In addition, we record

additional allowances based on certain percentages of aged receivable balances. These percentages take into account a variety of factors including, but not limited to, current economic trends, payment history and bad debt write-off experience. We classify bad debt expenses as selling, general and administrative ("SG&A") expense.

We have significant trade receivables concentrated in the telecommunications industry. While our allowance for doubtful accounts balance is based on historical loss experience along with anticipated economic trends, unanticipated financial instability in the telecommunications industry could lead to higher than anticipated losses.

During fiscal 2019, 2018 and 2017, several customers generated more than 10% of total net revenue. Refer to "Note 20. Operating Segments and Geographic Information" in the Notes to Consolidated Financial Statements.

Our accounts receivable was concentrated with three customers as of June 29, 2019, who represented 17%, 17% and 10% of gross accounts receivable, respectively, compared with two customers as of June 30, 2018, who represented 11% and 10% of gross accounts receivable, respectively.

We rely on a limited number of suppliers for a number of key components contained in our products. We also rely on a limited number of significant independent contract manufacturers for the production of certain key components and subassemblies contained in our products.

We generally use a rolling twelve months forecast based on anticipated product orders, customer forecasts, product order history and backlog to determine our materials requirements. Lead times for the parts and components that we order vary significantly and depend on factors such as the specific supplier, contract terms and demand for a component at a given time. If the forecast does not meet or if it exceeds actual demand, we may have excess or shortfalls of some materials and components, as well as excess inventory purchase commitments. We could experience reduced or delayed product shipments or incur additional inventory write-downs and cancellation charges or penalties, which would increase costs and could have a material adverse impact on our results of operations.

Foreign Currency Translation

Concurrent with the acquisition of Oclaro on December 10, 2018, we established the functional currency for our worldwide operations as the U.S. dollar. The change in our functional currency is a result of significant changes in economic facts and circumstances, primarily the acquisition of Oclaro, a U.S. dollar-denominated functional currency company. The combined business, which requires the integration of our supply chain, manufacturing operations and sales organization, will predominantly use the U.S. dollar, including when negotiating customer and major supplier contracts.

Translation adjustments reported prior to December 10, 2018, remain as a component of accumulated other comprehensive income in our consolidated balance sheet. The translated values for any non-monetary assets and liabilities as of December 10, 2018 become the new accounting basis for those assets. Accordingly, monetary assets and liabilities denominated in foreign currencies have been remeasured into U.S. dollars using the exchange rates in effect at the balance sheet date. Foreign currency re-measurement gains (losses) are included in interest and other income (expense), net.

Stock-based Compensation

Compensation expense related to stock-based transactions is measured and recognized in the financial statements based on fair value at the grant date.

Restricted stock units ("RSUs") are grants of shares of our common stock, the vesting of which is based on the requisite service requirement. Generally, our RSUs are subject to forfeiture and expected to vest over one to four years. For new-hire grants, RSUs generally vest ratably on an annual basis over four years. For annual refresh grants, RSUs generally vest ratably on an annual, or combination of annual and quarterly, basis over three years.

Restricted stock awards ("RSAs") are grants of shares of our common stock that are subject to various restrictions, including restrictions on transferability and forfeiture provisions. RSAs are expected to vest over one to four years, and the shares acquired may not be transferred by the holder until the vesting conditions (if any) are satisfied.

Performance stock units ("PSUs") are grants of shares of our common stock that vest upon the achievement of certain performance and service conditions. We account for the fair value of PSUs using the closing market price of our common stock on the date of grant. We begin recognizing compensation expense when we conclude that it is probable that the performance conditions will be achieved. We reassess the probability of vesting at each reporting period and adjust our compensation cost based on this probability assessment. Our PSUs are subject to risk of forfeiture until performance and service conditions are satisfied and generally vest over three years.

We estimate the fair value of the rights to acquire stock under our 2015 Employee Stock Purchase Plan (the "2015 Purchase Plan") using the Black-Scholes option pricing formula. Our 2015 Purchase Plan provides for consecutive six-month offering periods. We recognize such compensation expense on a straight-line basis over the requisite service period. We calculate the volatility factor based on our historical stock prices.

Restructuring Accrual

Costs associated with restructuring activities are recognized when they are obligated. However, in the case of leases, the expense is estimated and accrued when the property is vacated. Given the significance of, and the timing of the execution of such activities, this process is complex and involves periodic reassessments of estimates made from the time the property was vacated, including evaluating real estate market conditions for expected vacancy periods and sub-lease income. We recognize a liability for post-employment benefits for workforce reductions related to restructuring activities when payment is probable and the amount is reasonably estimable. We continually evaluate the adequacy of the remaining liabilities under our restructuring initiatives. Although we believe that these estimates accurately reflect the costs of our restructuring plans, actual results may differ, thereby requiring us to record additional provisions or reverse a portion of such provisions. Refer to "Note 14. Restructuring and Related Charges" in the Notes to Consolidated Financial Statements.

Business Combinations

In accordance with the guidance for business combinations, we determine whether a transaction or other event is a business combination, which requires that the assets acquired and liabilities assumed constitute a business. Each business combination is then accounted for by applying the acquisition method. If the assets acquired are not a business, we account for the transaction or other event as an asset acquisition. Under both methods, we recognize the identifiable assets acquired, the liabilities assumed, and any noncontrolling interest in the acquired entity. We capitalize acquisition-related costs and fees associated with asset acquisitions and immediately expense acquisition-related costs and fees associated with business combinations.

We allocate the fair value of purchase consideration to the tangible assets acquired, liabilities assumed and intangible assets acquired based on their estimated fair values. The excess of the fair value of purchase consideration over the fair values of these identifiable assets and liabilities is recorded as goodwill. When determining the fair values of assets acquired and liabilities assumed, we make significant estimates and assumptions, especially with respect to intangible assets. Critical estimates in valuing certain intangible assets include, but are not limited to, future expected cash flows from customer relationships and acquired developed technology and discount rates. Our estimates of fair value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable and, as a result, actual results may differ materially from estimates. Other estimates associated with the accounting for acquisitions may change as additional information becomes available regarding the assets acquired and liabilities assumed. Any change in facts and circumstances that existed as of the acquisition date and impacts our preliminary estimates is recorded to goodwill if identified within the measurement period. Subsequent to the measurement period or our final determination of fair value of assets and liabilities whichever is earlier the adjustments will affect our earnings.

In addition, we estimate the economic lives of certain acquired assets and these lives are used to calculate depreciation and amortization expense. If our estimates of the economic lives change, depreciation or amortization expenses could be accelerated or slowed.

Research and Development ("R&D") Expense

Costs related to R&D, which primarily consists of labor and benefits, supplies, facilities, consulting and outside service fees, are charged to expense as incurred.

Loss Contingencies

We are subject to the possibility of various loss contingencies arising in the ordinary course of business. We consider the likelihood of loss or impairment of an asset or the incurrence of a liability, as well as our ability to reasonably estimate the amount of loss in determining loss contingencies. An estimated loss is accrued when it is probable that an asset has been impaired or a

liability has been incurred and the amount of loss can be reasonably estimated. We regularly evaluate current information available to determine whether such accruals should be adjusted and whether new accruals are required.

Asset Retirement Obligations (“ARO”)

Our ARO are legal obligations associated with the retirement of long-lived assets pertaining to leasehold improvements. These liabilities are initially recorded at fair value and the related asset retirement costs are capitalized by increasing the carrying amount of the related assets by the same amount as the liability. Asset retirement costs are subsequently depreciated over the useful lives of the related assets. Subsequent to initial recognition, we record period-to-period changes in the ARO liability resulting from the passage of time and revisions to either the timing or the amount of the original estimate of undiscounted cash flows. We derecognize ARO liabilities when the related obligations are settled.

Note 2. Recently Issued Accounting Pronouncements

Accounting Pronouncements Recently Adopted

In May 2014, the Financial Accounting Standards Board (“FASB”) issued ASU 2014-09 (Topic 606), which amended the existing accounting standards for revenue recognition. Topic 606 outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers. The guidance is effective for annual reporting periods including interim reporting periods beginning after December 15, 2017. On July 1, 2018, we adopted Topic 606 using the modified retrospective method applied to all contracts that are not completed contracts at the date of initial adoption (i.e., July 1, 2018). Results for reporting periods after July 1, 2018 are presented under Topic 606, while prior period amounts are not adjusted and continue to be reported in accordance with our historical accounting under Topic 605. The adoption of Topic 606 did not have a material impact on the nature and timing of our revenues, consolidated statements of operations, cash flows and balance sheets and therefore, we do not present results for the year ended June 29, 2019 under Topic 605. Refer to “Note 1. Description of Business and Summary of Significant Accounting Policies” for the changes in our accounting policies due to adoption of Topic 606.

Select consolidated balance sheet line items, as if we had adopted Topic 606 prior to July 1, 2018 are summarized below as of the periods presented (*in millions*):

	June 30, 2018	Adjustments	July 1, 2018
Assets:			
Accounts receivable, net	$ 197.1	$ 0.6	$ 197.7
Inventories	174.1	(1.2)	172.9
Stockholders’ equity:			
Retained earnings	$ 166.4	$ (0.6)	$ 165.8

In August 2016, FASB issued ASU 2016-15, S*tatement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments*, which clarifies how companies present and classify certain cash receipts and cash payments in the statement of cash flows. The amendments contained in ASU 2016-15 are effective for interim and annual periods beginning after December 15, 2017. We adopted ASU 2016-15 on July 1, 2018 on a prospective basis. The application of ASU 2016-15 will have a material impact on our consolidated financial statements if we elect to settle the principal amounts of our 2024 Notes (refer to “Note 13. Convertible Notes”) in cash, and upon the repayment of the term loan (refer to “Note 7. Term Loan Facility”). The principal repayment will be bifurcated between (i) cash outflows for operating activities of $146.9 million for the portion related to accreted interest attributable to debt discount, and (ii) financing activities for the remainder of $803.1 million.

In January 2017, FASB issued ASU 2017-01, *Business Combinations (Topic 805)*, which clarifies the definition of a business. For accounting and financial reporting purposes, businesses are generally comprised of three elements: inputs, processes, and outputs. Integrated sets of assets and activities capable of providing these three elements may not always be considered a business, and the lack of one of the three elements does not always disqualify the set from being a business. The issuance of ASU 2017-01 provides a clarifying test to determine when a set of assets and activities is not a business. Primarily, the test requires that when substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or group of similar identifiable assets, the set is not a business. The amendments contained in ASU 2017-01 are effective for annual periods beginning after December 15, 2017, including interim periods within those periods. We adopted ASU 2017-01 on July 1, 2018 on a prospective basis. The implementation of ASU 2017-01 did not have an impact on our consolidated financial statements.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

In October 2016, FASB issued ASU 2016-16, *Accounting for Income Taxes: Intra-Entity Asset Transfers of Assets other than Inventory*. The new guidance removes the prohibition against the immediate recognition of the current and deferred income tax effects of intra-entity transfers of assets other than inventory. The new guidance became effective for us in the first quarter of our fiscal 2019. The adoption of ASU 2016-16 did not have a material impact on our consolidated financial statements.

In August 2018, FASB issued ASU 2018-15, *Intangibles-Goodwill and Other-Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract.* ASU 2018-15 requires an entity in a hosting arrangement that is a service contract to follow the guidance in Subtopic 350-40 to determine which implementation costs to capitalize as an asset related to the service contract and which costs to expense. Implementation costs capitalized must be expensed over the term of the hosting arrangement, including the period covered by an option to extend the arrangement. The standard is effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years, and should be applied either retrospectively or prospectively to all implementation costs incurred after the date of adoption. Early adoption is permitted, including adoption in any interim period, for all entities. We early adopted ASU 2018-15, which did not have a material impact on our consolidated financial statements.

In August 2018, the Securities and Exchange Commission ("SEC") adopted amendments to certain disclosure requirements in Securities Act Release No. 33-10532, *Disclosure Update and Simplification*. Among the amendments is the requirement to present the changes in stockholders' equity in the interim financial statements (either in a separate statement or footnote) in quarterly reports on Form 10-Q. The analysis should present a reconciliation of the beginning balance to the ending balance of each period for which a consolidated statement of operations is required to be filed. The final rule was effective on November 5, 2018. The Company adopted the final rule in our third quarter of fiscal 2019, and has included a reconciliation of the changes in statements of redeemable convertible preferred stock and stockholders' equity in the Form 10-Q for the fiscal quarter ended March 30, 2019 filed with the Securities and Exchange Commission.

Accounting Pronouncements Not Yet Effective

In August 2018, FASB issued ASU 2018-14, *Compensation-Retirement Benefits-Defined Benefit Plans-General (Topic 715-20): Disclosure Framework-Changes to the Disclosure Requirements for Defined Benefit Plans*. ASU 2018-14 modifies the disclosure requirements for defined benefit pension plans and other postretirement benefit plans. The new guidance is effective for fiscal years ending after December 15, 2020 and early adoption is permitted. ASU 2018-14 should be applied retrospectively to all periods presented and is effective for us in our fiscal 2021. We are currently evaluating the impact of ASU 2018-14 on our consolidated financial statements and related disclosures.

In August 2018, FASB issued ASU 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement.* ASU 2018-13 modifies the disclosure requirements for fair value measurements. The new guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019 and early adoption is permitted. ASU 2018-13 requires that certain of the amendments be applied prospectively, while other amendments should be applied retrospectively to all periods presented. ASU 2018-13 is effective for us in our first quarter of fiscal 2021. We are currently evaluating the impact of ASU 2018-13 on our consolidated financial statements and related disclosures.

In February 2018, FASB issued ASU 2018-02, *Income Statement-Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*, which allows companies to reclassify stranded tax effects resulting from the Tax Act, from accumulated other comprehensive income to retained earnings. The guidance also requires certain new disclosures regardless of the election. The amendments in ASU 2018-02 are effective for all entities for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years. Early adoption is permitted. ASU 2018-02 is effective for us in the first quarter of fiscal 2020. The implementation of ASU 2018-02 will not have a material impact on our consolidated financial statements and related disclosures.

In January 2017, FASB issued ASU 2017-04, *Intangibles - Goodwill and Other (Topic 350): Simplifying the Accounting for Goodwill Impairment*. ASU 2017-04 removes the requirement to perform a hypothetical purchase price allocation to measure goodwill impairment. A goodwill impairment charge will be the amount by which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill. The amendments contained in ASU 2017-04 are effective for interim and annual periods beginning after December 15, 2019, with early adoption permitted, which should be applied prospectively. ASU 2017-14 is effective for us in our first quarter of fiscal 2020. The implementation of ASU 2017-04 will not have a material impact on our consolidated financial statements and related disclosures.

In June 2016, FASB issued ASU 2016-13, *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* and subsequent amendments, ASU 2018-19, ASU 2019-04 and ASU 2019-05 (collectively, Topic 326).

Topic 326 requires measurement and recognition of expected credit losses for financial assets held. Topic 326 is effective for annual periods beginning after December 15, 2019, including interim periods within those periods, with early adoption permitted. ASU 2016-13 is effective for us in our fiscal 2021. We are currently evaluating the impact of the adoption of Topic 326 on our consolidated financial statements and related disclosures.

In February 2016, FASB issued ASU 2016-02, *Leases (Topic 842)* and subsequent amendments to the initial guidance: ASU 2017-13, ASU 2018-10, ASU 2018-11, ASU 2018-20 and ASU 2019-01 (collectively, Topic 842). The new guidance generally requires an entity to recognize on its balance sheet operating and financing lease liabilities and corresponding right-of-use assets. The new guidance contained in Topic 842 is effective for annual periods beginning after December 15, 2018, including interim periods within those periods, with early adoption permitted. The standard is effective for us in our first quarter of fiscal 2020 and provides an optional transition method that allows entities to apply the standard prospectively, with any cumulative-effect adjustment recorded to opening retained earnings in the period of adoption. We will adopt the new standard using this optional transition method. We have elected the practical expedients to not reassess prior conclusions related to contracts containing leases, lease classification, and initial direct costs for contracts that existed prior to adoption date. We have also elected to combine lease and non-lease components and to keep leases with an initial term of 12 months or less off the balance sheet and recognize the associated lease payments in the consolidated statements of operations on a straight-line basis over the lease term. We expect to recognize operating lease right-of-use assets between $90.0 million to $100.0 million and operating lease liabilities between $80.0 million to $90.0 million on our condensed consolidated balance sheet as of the date of adoption, June 30, 2019. The difference between the operating lease right-of-use assets and operating lease liabilities primarily represents the existing asset recognized in relation to the favorable terms of an operating lease acquired through a business combination offset by our deferred rent balances. Our accounting for finance leases is not expected to change substantially from the legacy Topic 840. Other than disclosed, we do not expect the new standard to have a material impact on our remaining consolidated financial statements.

Note 3. Earnings Per Share

The following table sets forth the computation of basic and diluted net income attributable to common stockholders per share (*in millions, except per share data*):

	Years Ended		
	June 29, 2019	June 30, 2018	July 1, 2017
Basic Earnings per Common Share			
Net income/(loss)	$ (36.4)	$ 248.1	$ (102.5)
Less: Cumulative dividends on Series A Preferred Stock	(0.3)	(0.9)	(0.9)
Less: Earnings allocated to Series A Preferred Stock	(1.2)	(5.7)	—
Net income/(loss) attributable to common stockholders - Basic	$ (37.9)	$ 241.5	$ (103.4)
Weighted average common shares outstanding including Series A Preferred Stock	70.7	63.8	62.1
Less: Weighted average Series A Preferred Stock	—	(1.5)	(1.5)
Basic weighted average common shares outstanding	70.7	62.3	60.6
Net income/(loss) per share attributable to common stockholders - Basic	$ (0.54)	$ 3.88	$ (1.71)
Diluted Earnings per Common Share			
Net income/(loss) attributable to common stockholders - Basic	$ (37.9)	$ 241.5	$ (103.4)
Net income/(loss) attributable to common stockholders - Diluted	$ (37.9)	$ 241.5	$ (103.4)
Weighted average common shares outstanding for basic earnings per common share	70.7	62.3	60.6
Effect of dilutive securities from 2015 Equity Incentive Plan	—	1.0	—
Effect of dilutive securities from Series A Preferred Stock	—	—	—
Diluted weighted average common shares outstanding	70.7	63.3	60.6
Net income/(loss) per share attributable to common stockholders - Diluted	$ (0.54)	$ 3.82	$ (1.71)

For the years ended June 29, 2019 and July 1, 2017, our diluted earnings per share attributable to common stockholders is the same as basic EPS as we are in net loss position. For the year ended June 30, 2018, our diluted earnings per share attributable to common stockholders is calculated using the "treasury stock" method because it is more dilutive than the "if-converted" method.

Our Series A Preferred Stock was considered a participating security where the holders of Series A Preferred Stock had the right to participate in undistributed earnings with holders of common stock. On November 2, 2018, the remaining 35,805 shares of our Series A Preferred Stock were converted into 1.5 million shares of our common stock. Refer to "Note 12. Non-Controlling Interest Redeemable Convertible Preferred Stock and Derivative Liability" for further discussion. Prior to conversion, the holders of our Series A Preferred Stock were entitled to share in dividends, on an as-converted basis, if the holders of our common stock were to receive dividends. Up through the date of conversion, we used the two-class method to compute earnings per share. The two-class method is an earnings allocation formula that determines earnings per share for each class of common stock and participating security according to dividends declared (or accumulated) and participation rights in undistributed earnings. In determining the amount of net earnings to allocate to common stockholders, earnings are allocated to both common and participating securities based on their respective weighted-average shares outstanding during the period. Diluted earnings per common share is calculated similar to basic earnings per common share except that it gives effect to all potentially dilutive common stock equivalents outstanding for the period, using the treasury stock method. Diluted earnings per common share is computed using the more dilutive of the treasury stock method or the if-converted method.

Potentially dilutive common shares result from the assumed exercise of outstanding stock options, assumed vesting of outstanding equity awards, assumed issuance of stock under the employee stock purchase plan, and assumed conversion of our outstanding $450 million in aggregate principal amount of 0.25% Convertible Notes due in 2024 (the "2024 Notes"), all using the treasury stock method. We have the ability and intent to settle the $450 million face value of the 2024 Notes in cash. Therefore, we use the treasury stock method for calculating the dilutive impact of the 2024 Notes. The 2024 Notes will have no impact on diluted earnings per share until the average price of our common stock exceeds the conversion price of $60.62. Refer to "Note 13. Convertible Notes" for further discussion.

Anti-dilutive potential shares from the 2015 Equity Incentive Plan are excluded from the calculation of diluted earnings per share if their exercise price exceeded the average market price during the period or the share-based awards were determined to be anti-dilutive based on applying the treasury stock method.

Note 4. Accumulated Other Comprehensive Income (Loss)

Our accumulated other comprehensive income (loss) consists of the accumulated net unrealized gains or losses on foreign currency translation adjustments, the defined benefit obligations, and available-for-sale securities.

As of June 29, 2019 and June 30, 2018, balances for the components of accumulated other comprehensive income (loss) were as follows (*in millions*):

	Foreign currency translation adjustments, net of tax	Defined benefit obligations, net of tax (1)	Unrealized gain (loss) on available-for-sale securities, net of tax	Total
Beginning balance as of July 2, 2016	$ 11.7	$ (2.3)	$ —	$ 9.4
Other comprehensive income (loss)	(1.2)	(0.8)	—	(2.0)
Beginning balance as of July 1, 2017	10.5	(3.1)	—	7.4
Other comprehensive income (loss)	(0.2)	0.8	(1.6)	(1.0)
Ending balance as of June 30, 2018	10.3	(2.3)	(1.6)	6.4
Other comprehensive income (loss)	(0.6)	(1.2)	2.5	0.7
Ending balance as of June 29, 2019	$ 9.7	$ (3.5)	$ 0.9	$ 7.1

(1) Refer to "Note 18. Employee Benefit Plans" in the Notes to Consolidated Financial Statements on the computation of net periodic cost for pension plans.

Note 5. Business Combination

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On December 10, 2018, we acquired all of the outstanding common stock of Oclaro, a provider of optical components and modules for the long-haul, metro and data center markets. Oclaro's products provide differentiated solutions for optical networks and high-speed interconnects driving the next wave of streaming video, cloud computing, application virtualization and other bandwidth-intensive and high-speed applications. This acquisition strengthens our product portfolio, including gaining Oclaro's indium phosphide laser and photonic integrated circuit and coherent component and module capabilities; broadens our revenue mix; and positions us strongly to meet the future needs of our customers.

Pursuant to the merger agreement, Prota Merger Sub, Inc., a Delaware corporation and a wholly owned subsidiary of Lumentum ("Merger Sub"), merged with and into Oclaro (the "Merger"), with Oclaro surviving the Merger. Each outstanding share of Oclaro common stock, par value $0.01 per share, was automatically converted into the right to receive the following consideration (collectively, the "Merger Consideration"), without interest:

- $5.60 in cash (the "Cash Consideration") and;
- 0.0636 of a share of Lumentum common stock, par value $0.001 per share (the "Exchange Ratio").

The total fair value of consideration given in connection with the acquisition of Oclaro consisted of the following:

	Shares	Per Share	Total Consideration (in millions)
Cash paid for outstanding Oclaro common stock			$ 964.8
Lumentum common shares issued to Oclaro stockholders	10,941,436	$ 41.80	457.4
Replacement equity awards for Oclaro equity awards			2.7
Total consideration			$ 1,424.9

Each Oclaro restricted stock unit award ("Oclaro RSU") that did not become vested at the close of the transaction was converted into a Lumentum restricted stock unit award (a "Lumentum RSU") with similar terms and conditions, including vesting, that were applicable to such Oclaro RSU, at a ratio of one Oclaro share to 0.1933 shares of Lumentum common stock. The 0.1933 ratio was determined based on the sum of (i) the 0.0636 shares of common stock received by Oclaro common stockholders for every one share of Oclaro common stock, plus (ii) the $5.60 per share received by Oclaro common stockholders, divided by $43.189 (Lumentum's average closing price for the 10 trading days ending on December 4, 2018, the third trading day prior to the Closing Date).

Each Oclaro stock option ("Oclaro Option"), whether vested or unvested, was converted into a Lumentum stock option ("Lumentum Option") with similar terms and conditions, including vesting, that were applicable to such Oclaro Option, except that (i) the number of shares subject to the Lumentum Option equals the number of Oclaro shares subject to such Oclaro Option multiplied by 0.1933 and (ii) the exercise price of the Lumentum Option equals the exercise price per share of the Oclaro Option divided by 0.1933. Any Oclaro Option that was held by non-employees was cancelled and converted into the right to receive the Merger Consideration for each net option share covered by such Oclaro Option, subject to applicable withholding taxes.

In addition, each Oclaro restricted stock award ("Oclaro Restricted Stock Award") and Oclaro RSU that became vested with the close of the transaction was converted into the right to receive the Merger Consideration.

The total transaction consideration was $1.4 billion, which was funded by the issuance of Lumentum common stock, new debt, and cash balances of the combined company. We also recorded $18.3 million in acquisition-related costs in the year ended June 29, 2019, representing professional and other direct acquisition costs. These costs are recorded within selling, general and administrative operating expense and within interest and other income (expense), net in our consolidated statements of operations. The Company also incurred $9.3 million of debt financing costs which has been recorded as a contra liability. "Refer to Note 7. Term Loan Facility."

From the acquisition date, Oclaro contributed $250.1 million of our consolidated net revenue for the year ended June 29, 2019. Due to the continued integration of the combined businesses, it is impractical to determine Oclaro's contribution to our net income.

We allocated the fair value of the purchase consideration to the tangible assets, liabilities and intangible assets acquired, including in-process research and development, or IPR&D, generally based on their estimated fair values. The excess purchase price over those fair values is recorded as goodwill. IPR&D is initially capitalized at fair value as an intangible asset with an indefinite life and assessed for impairment thereafter. When an IPR&D project is completed, the IPR&D is reclassified as an amortizable purchased intangible asset and amortized over the asset's estimated useful life. Our valuation assumptions of acquired assets and assumed liabilities require significant estimates, especially with respect to intangible assets. Our preliminary allocation of the purchase price of Oclaro, based on the estimated fair values of the assets acquired and liabilities assumed as of the acquisition date, is as follows (*in millions*):

	Purchase Price Allocation		
	Previously Reported December 10, 2018 (Provisional)	**Measurement Period Adjustments**	**As Adjusted June 29, 2019**
Cash and cash equivalents	$ 345.0	$ —	$ 345.0
Accounts receivable, net	68.0	—	68.0
Inventories	153.2	1.8	155.0
Prepayments and other current assets	33.7	—	33.7
Property, plant and equipment, net	128.6	6.1	134.7
Intangibles	444.0	—	444.0
Deferred income tax asset	54.1	(11.5)	42.6
Other non-current assets	16.6	—	16.6
Accounts payable	(57.8)	—	(57.8)
Accrued payroll and related expenses	(11.4)	—	(11.4)
Accrued expenses	(8.3)	—	(8.3)
Other current liabilities	(8.1)	2.0	(6.1)
Deferred tax liability	(55.8)	(20.0)	(75.8)
Other non-current liabilities	(10.3)	(2.6)	(12.9)
Goodwill	333.4	24.2	357.6
Total purchase price	$ 1,424.9	$ —	$ 1,424.9

The provisional amounts presented in the table above pertained to the preliminary purchase price allocation reported in our Form 10-Q for the quarter ended December 29, 2018. The measurement period adjustments were primarily related to the sale of several product lines within our Datacom business based in Sagamihara, Japan and the transfer of related employees to Cambridge Industries Group ("CIG"). This business was acquired on December 10, 2018 as part of the acquisition of Oclaro. These assets and liabilities were recorded at fair value less cost to sell and the adjustments to fair value were recorded as measurement period adjustments. The measurement period adjustments also included tax adjustment of $31.5 million upon the completion of additional analysis involving refining the amount of Oclaro's tax attributes that may be utilizable going forward, deferred tax asset valuation allowances, and the effects of the Tax Act.

The merger consideration allocation set forth herein is preliminary and may be revised as additional information becomes available during the measurement period which could be up to 12 months from the closing date of the acquisition. Any such revisions or changes may be material.

We do not believe that the measurement period adjustments had a material impact on our consolidated statements of operations, balance sheets or cash flows in any periods previously reported.

Goodwill and intangibles have been assigned to the OpComms segment. The preliminary goodwill of $357.6 million arising from the acquisition is attributed to the expected synergies, including future cost efficiencies, and other benefits that are expected to be generated by combining Lumentum and Oclaro. Substantially all of the goodwill recognized is not expected to be deductible for tax purposes. See "Note 6. Goodwill and Other Intangible Assets" for more information on goodwill and IPR&D.

During the second quarter of fiscal 2019, we recorded $20.9 million in restructuring and stock-based compensation expense in our consolidated statements of operations, attributable to severance and employee related benefits associated with Oclaro's executive severance and retention agreements. These retention agreements provide, under certain circumstances, for payments

and benefits upon an involuntary termination of employment, including following a change in control of Oclaro. The payments and benefits payable under these arrangements in the event of a change in control of Oclaro are subject to a "double trigger," meaning that both a change in control of Oclaro and a subsequent involuntary termination of employment by Lumentum are required. In other words, the change in control of Oclaro does not by itself trigger any payments or benefits. Instead, payments and benefits are paid only if the employment of the employee is subsequently terminated without "cause" (or the employee resigns for "good reason") during a specified period following the change in control. We incurred total expense of $20.9 million during the second quarter of fiscal 2019, of which $5.7 million relates to cash severance as part of our restructuring expense which is recorded within restructuring and related charges in our consolidated statements of operations (refer to "Note 14. Restructuring and Related Charges") and $15.2 million relates to the acceleration of equity awards which is recorded within both cost of sales and selling, general and administrative expense, in our consolidated statements of operations (refer to "Note 17. Stock-Based Compensation and Stock Plans").

We continually evaluate our existing portfolio of businesses to maximize long-term shareholder value. As discussed above, we sold several product lines within our Datacom business based in Sagamihara, Japan along with the transfer of the related employees to CIG for $25.5 million in net cash. The disposition was completed on April 18, 2019. This business did not meet the criteria for assets held-for-sale under the relevant accounting guidance as of December 10, 2018, the date of our acquisition of Oclaro, in our purchase price allocation. The assets and liabilities transferred to CIG were $33.5 million and $7.0 million, respectively.

Assets and liabilities transferred as a result of this disposition on April 18, 2019 were as follows *(in millions):*

Assets:		
Cash	$	1.0
Inventories		4.8
Other Intangible assets		1.0
Property, plant and equipment, net		26.7
Total	$	33.5
Liabilities:		
Retirement obligation	$	4.9
Capital lease obligation		0.8
Other liabilities		1.3
Total	$	7.0
Net	$	26.5

As part of the transaction, we will also provide transition services to CIG for a period of up to 24 months and the cost of these services will be reimbursed to us by CIG. The purpose of these services is to provide short-term assistance to the buyer in assuming the operations of the purchased business.

Supplemental Pro Forma Information

The supplemental pro forma financial information presented below is for illustrative purposes only and is not necessarily indicative of the financial position or results of operations that would have been realized if the acquisition had been completed on the date indicated, does not reflect synergies that might have been achieved, nor is it indicative of future operating results or financial position. The pro forma adjustments are based upon currently available information and certain assumptions we believe are reasonable under the circumstances.

The following supplemental pro forma information presents the combined results of operations for the years ended June 29, 2019 and June 30, 2018, as if Oclaro had been acquired as of the beginning of fiscal year 2018. The supplemental pro forma information includes adjustments to amortization and depreciation for acquired intangible assets and property and equipment, adjustments to share-based compensation expense, the fair value adjustments on the inventories acquired, transaction costs, interest expense and amortization of the term loan debt issuance costs. For fiscal year 2018, nonrecurring pro forma adjustments directly attributable to the Oclaro acquisition included (i) restructuring and stock-based compensation expense of $20.9 million, (ii) the purchase accounting effect of inventories acquired of $60.3 million and (iii) transaction costs of $25.5 million.

The unaudited supplemental pro forma financial information for the periods presented is as follows (*in millions*):

	Years Ended	
	June 29, 2019	June 30, 2018
Net revenue	$ 1,779.4	$ 1,790.9
Net income	21.5	156.2

Note 6. Goodwill and Other Intangible Assets

Goodwill

On December 10, 2018, we completed the merger with Oclaro. We recognized goodwill in the amount of $357.6 million for the acquisition of Oclaro and allocated it to our OpComms segment. The following table presents the changes in goodwill by our reportable segments during the years ended June 29, 2019 and June 30, 2018 (*in millions)*:

	Optical Communications	Commercial Lasers	Total
Balance as of July 1, 2017	$ 5.9	$ 5.5	$ 11.4
Foreign currency translation adjustment	—	(0.1)	(0.1)
Balance as of June 30, 2018	$ 5.9	$ 5.4	$ 11.3
Acquisition of Oclaro	333.4	—	333.4
Measurement period adjustments (1)	24.2	—	24.2
Balance as of June 29, 2019	$ 363.5	$ 5.4	$ 368.9

(1) Refer to "Note 5. Business Combination" for details of these measurement period adjustments.

Impairment of Goodwill

We review goodwill for impairment during the fourth quarter of each fiscal year or more frequently if events or circumstances indicate that an impairment loss may have occurred. Based on the impairment analysis performed in the fourth quarter of each year presented, the fair value of our reporting unit substantially exceeded the carrying value; as such, our annual qualitative assessment did not indicate that a more detailed quantitative analysis was necessary.

Other Intangible Assets

In connection with our acquisition of Oclaro on December 10, 2018, we recorded $443.0 million as our preliminary estimate of the fair value of the acquired developed technologies and other intangible assets. The intangible assets acquired from Oclaro consist of the following:

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Intangible assets	Fair value (in millions)	Weighted average amortization period (in years)
Acquired developed technologies	$ 182.0	4.4 years
Customer relationships	145.0	8 years
In-process research and development [1]	94.0	n/a
Order backlog	22.0	1 year
Total intangible assets [1]	$ 443.0	

(1) The intangible assets as of June 29, 2019 exclude $1.0 million In-process research and development assets subsequently sold to CIG. Refer to “Note 5. Business Combination”.

The intangible assets are amortized on a straight-line basis over the estimated useful lives, except for customer relationships and order backlog, which are amortized using an accelerated method of amortization over the expected customer lives, which more accurately reflects the pattern of realization of economic benefits expected to be obtained. Acquired developed technologies and order backlog are amortized to cost of sales and customer relationships is amortized to selling, general and administrative. IPR&D is initially capitalized at fair value as an intangible asset with an indefinite life and assessed for impairment thereafter. When an IPR&D project is completed, the IPR&D is reclassified as an amortizable purchased intangible asset and amortized over the asset’s estimated useful life expected to range between 4 to 9 years.

The following tables present details of our other intangibles, including those acquired in connection with the Oclaro acquisition, as of the periods presented (*in millions*):

June 29, 2019	Gross Carrying Amount	Accumulated Amortization	Net
Acquired developed technologies	$ 287.5	$ (125.2)	$ 162.3
Customer relationships and order backlog	171.3	(32.2)	139.1
In-process research and development	94.0	—	94.0
Other intangibles	2.7	(2.7)	—
Total intangible assets	$ 555.5	$ (160.1)	$ 395.4

June 30, 2018	Gross Carrying Amount	Accumulated Amortization	Net
Acquired developed technologies	$ 105.5	$ (98.5)	$ 7.0
Customer relationships	4.3	(4.3)	—
Other intangibles	2.7	(2.7)	—
Total intangible assets	$ 112.5	$ (105.5)	$ 7.0

The amounts in the tables above include cumulative foreign currency translation adjustments, reflecting movement in the currencies of the underlying intangibles.

During fiscal 2019, 2018, and 2017, we recorded $54.6 million, $3.2 million, and $6.8 million, respectively, of amortization related to intangibles assets.

The following table presents details of amortization for the periods presented *(in millions)*:

	Years ended		
	June 29, 2019	June 30, 2018	July 1, 2017
Cost of sales	$ 46.6	$ 3.2	$ 6.5
Selling, general and administrative	8.0	—	0.3
Total	$ 54.6	$ 3.2	$ 6.8

Based on the carrying amount of our acquired developed technologies and other intangibles, excluding IPR&D, as of June 29, 2019, and assuming no future impairment of the underlying assets, the estimated future amortization is as follows *(in millions):*

Fiscal Years		
2020	$	71.9
2021		66.3
2022		63.6
2023		40.6
2024		21.8
Thereafter		37.2
Total	$	301.4

Note 7. Term Loan Facility

On March 11, 2018, in connection with the Oclaro merger, Lumentum entered into a commitment letter with Deutsche Bank Securities Inc. and Deutsche Bank AG New York Branch (“Deutsche Bank”), pursuant to which, Deutsche Bank committed to provide a senior secured term loan facility to finance the merger.

On December 10, 2018 (the “Closing Date”), concurrent with the closing of the Oclaro merger, Lumentum entered into a Credit and Guarantee Agreement (the “Credit Agreement”), by and among Lumentum, certain subsidiaries of Lumentum, the lenders party thereto, and Deutsche Bank, as administrative agent and collateral agent for the lenders. The Credit Agreement provides for a senior secured term loan facility (the “Term Loan Facility”) in an aggregate principal amount of $500.0 million. The term loans available under the Term Loan Facility were fully drawn on the Closing Date and the proceeds of the term loans were used to consummate the merger and pay fees and expenses in connection with the merger and the Term Loan Facility.

The term loans will mature on the seventh anniversary of the Closing Date, at which time all outstanding principal and accrued and unpaid interest on the term loans must be repaid. Commencing on the last business day of the first full fiscal quarter after the Closing Date, the term loans will amortize in equal quarterly installments equal to 0.25% of the original principal amount of the Term Loans, with the balance payable due on December 10, 2025, the maturity date. We are required to make mandatory prepayments of the outstanding principal amount of term loans with the net cash proceeds from the disposition of certain assets and the receipt of insurance proceeds upon certain casualty and condemnation events, in each case, to the extent in excess of the certain threshold amounts and to the extent not reinvested within a specified time period. We are also required to make mandatory prepayments of the outstanding principal amount of term loans from the incurrence of certain types of indebtedness and from any excess cash flow beyond stated threshold amounts. We have the right to prepay the term loans, in whole or in part, at any time without premium or penalty, subject to certain limitations and a 1.00% soft call premium applicable during the first six months following the Closing Date.

The term loans bear interest at a rate equal to an applicable margin plus, at our option, either (a) a base rate equal to the highest of (i) the prime rate then in effect, (ii) the federal funds rate, plus 0.50% and (iii) an adjusted LIBOR rate determined on the basis of a one-month interest period, plus 1.0%, subject to a floor of 0.0%, or (b) an adjusted LIBOR rate, subject to a floor of 0.0%. The applicable margin with respect to the initial term loans is equal to 2.50% in the case of LIBOR rate loans and 1.50% in the case of base rate loans. The applicable margin is adjusted following the first full fiscal quarter after the Closing Date, if our first lien net leverage ratio is equal to or less than 0.50:1.00, to 2.25% in the case of LIBOR rate loans and 1.25% in the case of base rate loans. During the year ended June 29, 2019, we recorded and paid a contractual interest expense of $13.8 million related to the term loans, this amount is included in interest and other income (expense), net in our consolidated statements of operations.

The commitment letter with Deutsche Bank required payment of a ticking fee. During the year ended June 29, 2019, we recorded a total ticking fee of $2.7 million. This ticking fee is included in interest and other income (expense), net in our consolidated statements of operations. During the year ended June 29, 2019, we paid $2.5 million of principal on the term loan.

The Credit Agreement permits us to add one or more incremental term loan facilities. Incremental loans are subject to certain additional conditions, including, without limitation, obtaining additional commitments from the lenders then party to the Credit Agreement or from new lenders.

Our obligations under the Credit Agreement are required to be guaranteed by certain of our domestic subsidiaries meeting materiality thresholds set forth in the Credit Agreement. Such obligations, including the guaranties, are secured by substantially

all of the assets of Lumentum and Lumentum's subsidiary guarantors (other than customarily excluded assets) pursuant to a Pledge and Security Agreement, dated as of December 10, 2018, by and among Lumentum and Deutsche Bank.

The Credit Agreement contains customary affirmative and negative covenants, including covenants limiting the ability of Lumentum and its restricted subsidiaries to, among other things, incur debt, grant liens, undergo certain fundamental changes, make investments, make certain restricted payments, dispose of assets, and enter into transactions with affiliates, in each case, subject to limitations and exceptions set forth in the Credit Agreement. The Credit Agreement also contains customary events of default that include, among other things, certain payment defaults, cross defaults to other indebtedness, covenant defaults, change of control defaults, judgment defaults, and bankruptcy and insolvency defaults. If an event of default exists, the lenders may require the immediate payment of all obligations under the Credit Agreement, and may exercise certain other rights and remedies provided for under the Credit Agreement, the other loan documents and applicable law. As of June 29, 2019, we were in compliance with all of the covenants.

We incurred $9.3 million of debt issuance costs in connection with the Term Loan Facility which were capitalized and recorded as a contra liability in our consolidated balance sheet. These costs will be amortized to interest expense using the effective interest rate method from the issuance date of December 10, 2018, through the end of the term of the loan. As of June 29, 2019, the effective interest rate is 5.20% and the stated interest rate is 4.94%.

The following table sets forth balance sheet information related to the term loan as of June 29, 2019 (*in millions*):

	June 29, 2019	
Principal	$	500.0
Repayment of principal		(2.5)
Unamortized value of the debt issuance costs		(8.5)
Net carrying value	$	489.0
Term loan, current	$	5.0
Term loan, non-current		484.0

The following table sets forth interest expense information related to the term loan, including interest expense associated with the ticking fee, for the periods presented *(in millions)*:

	Years Ended	
	June 29, 2019	
Contractual interest expense	$	13.8
Ticking fee		2.7
Amortization of the debt issuance costs		0.8
Total interest expense	$	17.3

Note 8. Asset Acquisition

On March 30, 2018, we entered into a Transition Services Agreement ("TSA") with one of our contract manufacturers to wind down the production of our products at their facility in China and to facilitate an orderly transition of manufacturing to either our manufacturing facility in Thailand or our third party contract manufacturers, including the purchase of the manufacturing equipment. Under the terms of the TSA, we are required to pay $5.3 million in cash upon completion of certain milestones related to the purchase of equipment. During the year ended June 29, 2019, we paid $1.3 million and accrued $4.0 million for the manufacturing equipment acquired under this TSA. Entire contract consideration of $5.3 million is included in machinery and equipment within property, plant and equipment in our consolidated balance sheet as of June 29, 2019.

We are also required to share cost of retention and severance, and to reimburse for certain other direct and indirect costs incurred by our contract manufacturer for transition services provided. These costs are expensed as incurred. We have now fully exited from operations with this contract manufacturer.

Note 9. Balance Sheet Details

Accounts receivable allowances

As of June 29, 2019 and June 30, 2018, our accounts receivable allowance balance was $4.5 million and $2.6 million respectively.

Inventories

The components of inventories were as follows (*in millions*):

	June 29, 2019	June 30, 2018
Raw materials and purchased parts	$ 78.3	$ 20.9
Work in process [(1)]	72.5	55.0
Finished goods	78.0	98.2
Inventories [(2)]	$ 228.8	$ 174.1

(1) For fiscal 2018, we have reclassified $20.5 million of capitalized manufacturing overhead from prepayments and other current assets to inventory work in process to conform to current period presentation.

(2) The inventory balance as of June 29, 2019 includes $5.7 million, net of amortization, related to the inventory step-up adjustment from the Oclaro acquisition.

Prepayments and other current assets

The components of prepayments and other current assets were as follows (*in millions*):

	June 29, 2019	June 30, 2018
Prepayments	$ 32.4	$ 19.5
Advances to contract manufacturers	8.7	14.0
Value added tax receivable	11.9	4.0
Vendor receivable	36.3	4.3
Assets held-for-sale	4.9	—
Other current assets	3.3	2.7
Prepayments and other current assets	$ 97.5	$ 44.5

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Property, plant and equipment, net

The components of property, plant and equipment, net were as follows (*in millions*):

	June 29, 2019	June 30, 2018
Land	$ 44.2	$ 10.6
Buildings and improvement	103.7	55.1
Machinery and equipment [1]	516.5	463.6
Computer equipment and software	25.4	26.3
Furniture and fixtures	4.9	2.2
Leasehold improvements	31.2	25.8
Construction in progress	46.8	52.6
	772.7	636.2
Less: Accumulated depreciation [1]	(339.4)	(329.3)
Property, plant and equipment, net	$ 433.3	$ 306.9

(1) Included in the table above are our capital lease assets of $16.0 million, gross and $11.2 million in accumulated depreciation as of June 29, 2019, and $15.6 million, gross and $5.2 million in accumulated depreciation as of June 30, 2018.

In fiscal 2019, we purchased a property in San Jose, California for $54.6 million settled in cash. We plan to relocate our corporate headquarters to this new San Jose location by the end of the calendar year 2019. The preliminary allocations of value were $21.7 million to buildings and improvements and $32.9 million to the land. The total amount of $54.6 million is included in our property, plant and equipment, gross as of June 29, 2019.

During fiscal 2019, 2018 and 2017, we recorded depreciation expense of $102.9 million, $74.0 million, and $54.2 million, respectively.

Our construction in progress primarily includes machinery and equipment which we expect to place in service in the next 12 months.

Other current liabilities

The components of other current liabilities were as follows *(in millions)*:

	June 29, 2019	June 30, 2018
Warranty accrual [1]	$ 7.5	$ 6.6
Restructuring accrual and related charges [2]	14.6	1.9
Deferred revenue and customer deposits	2.9	2.8
Capital lease obligation [3]	0.4	7.3
Income tax payable [4]	8.7	0.7
Other current liabilities	5.1	2.8
Other current liabilities	$ 39.2	$ 22.1

(1) Refer to “Note 19. Commitments and Contingencies.”

(2) Refer to “Note 14. Restructuring and Related Charges.”

(3) In addition to the $0.4 million of capital lease obligations recorded within other current liabilities, we also recorded $0.4 million within accounts payable in the consolidated balance sheet as of June 29, 2019. Refer to “Note 19. Commitments and Contingencies”

(4) Refer to “Note 16. Income Taxes.”

Other non-current liabilities

The components of other non-current liabilities were as follows (*in millions*):

	June 29, 2019	June 30, 2018
Asset retirement obligation	$ 4.5	$ 2.7
Pension and related accruals (1)	7.9	3.5
Deferred rent	2.2	2.6
Unrecognized tax benefit	18.7	6.1
Capital lease obligation	—	0.4
Other non-current liabilities	0.4	3.4
Other non-current liabilities	$ 33.7	$ 18.7

(1) In connection with our acquisitions of Oclaro in fiscal 2019 and Time-Bandwidth in fiscal 2014, we assumed defined benefit plans for Japan and Switzerland employees, respectively. As of June 29, 2019, the projected benefit obligations for Japanese and Swiss employees were $2.8 million and $5.0 million, respectively, and were included in other non-current liabilities in our consolidated balance sheet. Refer to “Note 18. Employee Benefit Plans” for more details. Pension and related accruals as of June 29, 2019 also include $0.1 million attributable to post-retirement benefits for executives.

Note 10. Cash, Cash Equivalents and Short-term Investments

The following table summarizes our cash, cash equivalents and short-term investments by category for the periods presented (*in millions*):

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
June 29, 2019:				
Cash	$ 213.8	$ —	$ —	$ 213.8
Cash equivalents:				
Commercial paper	37.4	—	—	37.4
Money market funds	168.1	—	—	168.1
U.S. Treasury securities	13.3	—	—	13.3
Total cash and cash equivalents	$ 432.6	$ —	$ —	$ 432.6
Short-term investments:				
Certificates of deposit	$ 1.9	$ —	$ —	$ 1.9
Commercial paper	22.3	—	—	22.3
Asset-backed securities	54.9	0.2	—	55.1
Corporate debt securities	207.6	0.9	(0.1)	208.4
Municipal bonds	1.3	—	—	1.3
Mortgage-backed securities	6.6	—	—	6.6
Foreign government bonds	6.2	—	—	6.2
U.S. Agency securities	4.6	—	—	4.6
U.S. Treasury securities	29.4	0.1	—	29.5
Total short-term investments	$ 334.8	$ 1.2	$ (0.1)	$ 335.9
June 30, 2018:				
Cash	$ 103.6	$ —	$ —	$ 103.6
Cash equivalents:				
Certificates of deposit	3.0	—	—	3.0
Commercial paper	112.1	—	—	112.1
Money market funds	0.8	—	—	0.8
U.S. Treasury securities	143.6	—	—	143.6
U.S. Agency securities	34.2	—	—	34.2
Total cash and cash equivalents	$ 397.3	$ —	$ —	$ 397.3
Short-term investments:				
Certificates of deposit	$ 7.5	$ —	$ —	$ 7.5
Commercial paper	10.5	—	—	10.5
Asset-backed securities	68.0	—	(0.2)	67.8
Corporate debt securities	220.6	0.1	(1.5)	219.2
Municipal bonds	1.6	—	—	1.6
Mortgage-backed securities	4.2	—	—	4.2
Foreign government bonds	3.4	—	—	3.4
Total short-term investments	$ 315.8	$ 0.1	$ (1.7)	$ 314.2

We use the specific-identification method to determine any realized gains or losses from the sale of our short-term investments classified as available-for-sale. During fiscal 2019, 2018 and 2017, we did not realize significant gains or losses on a gross level from the sale of our short-term investments classified as available-for-sale.

During fiscal 2019, 2018 and 2017, our other income (expense), net was $15.8 million, $8.5 million, and $2.3 million, respectively, and includes interest income on cash equivalents and short-term investments of $13.9 million, $8.5 million, and $1.1 million, respectively.

The components of other income (expense), net are as follows for the years presented (*in millions*):

	Years Ended		
	June 29, 2019	June 30, 2018	July 1, 2017
Foreign exchange gains (losses), net	(0.6)	(0.3)	0.6
Interest income	13.9	8.5	1.1
Other income (expense), net	2.5	0.3	0.6
Total other income (expense), net	$ 15.8	$ 8.5	$ 2.3

The following table summarizes unrealized losses on our cash equivalents and short-term investments by category and length of time the investment has been in a continuous unrealized loss position as of the periods presented *(in millions)*:

	Less than 12 months		12 Months or Greater		Total	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
June 29, 2019:						
Commercial paper	$ —	$ —	$ —	$ —	$ —	$ —
Asset-backed securities	4.2	—	5.9	—	10.1	—
Corporate debt securities	9.6	—	35.9	(0.1)	45.5	(0.1)
Foreign government bonds	—	—	2.1	—	2.1	—
U.S. government bonds	6.9	—	—	—	6.9	—
Total	$ 20.7	$ —	$ 43.9	$ (0.1)	$ 64.6	$ (0.1)
June 30, 2018:						
Certificates of deposit	$ 5.4	$ —	$ —	$ —	$ 5.4	$ —
Commercial paper	8.5	—	—	—	8.5	—
Asset-backed securities	66.6	(0.2)	0.3	—	66.9	(0.2)
Corporate debt securities	188.6	(1.5)	2.0	—	190.6	(1.5)
Municipal bonds	0.6	—	—	—	0.6	—
U.S. Agency securities	4.0	—	—	—	4.0	—
Foreign government bonds	3.4	—	—	—	3.4	—
Total	$ 277.1	$ (1.7)	$ 2.3	$ —	$ 279.4	$ (1.7)

The following table classifies our short-term investments by contractual maturities (*in millions*):

	June 29, 2019		June 30, 2018	
	Amortized Cost	Fair Value	Amortized Cost	Fair Value
Due in 1 year	$ 178.9	$ 179.1	$ 150.1	$ 149.6
Due in 1 year through 5 years	148.1	149.0	157.2	156.1
Due in 5 years through 10 years	6.0	6.0	6.1	6.1
Due after 10 years	1.8	1.8	2.4	2.4
	$ 334.8	$ 335.9	$ 315.8	$ 314.2

All available-for-sale securities have been classified as current, based on management's intent and ability to use the funds in current operations.

Note 11. Fair Value Measurements

We determine fair value based on the fair value hierarchy, which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value assumes that the transaction to sell the asset or transfer the liability occurs in the principal or most advantageous market for the asset or liability and establishes that the fair value of an asset or liability shall be determined based on the assumptions that market participants would use in pricing the asset or liability. The classification of a financial asset or liability within the hierarchy is based upon the lowest level input that is significant to the fair value measurement. The fair value hierarchy prioritizes the inputs into three levels that may be used to measure fair value:

Level 1:	Inputs are unadjusted quoted prices in active markets for identical assets or liabilities.
Level 2:	Inputs are quoted prices for similar assets and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument.
Level 3:	Inputs are unobservable inputs based on our assumptions.

The fair value of our Level 1 financial instruments, such as money market funds, which are traded in active markets, is based on quoted market prices for identical instruments. The fair value of our Level 2 fixed income securities is obtained from an independent pricing service, which may use quoted market prices for identical or comparable instruments or model driven valuations using observable market data or inputs corroborated by observable market data. Our marketable securities are held by custodians who obtain investment prices from a third-party pricing provider that incorporates standard inputs in various asset price models. Our procedures include controls to ensure that appropriate fair values are recorded, including comparing the fair values obtained from our pricing service against fair values obtained from another independent source.

Prior to the conversion of the Series A Preferred Stock in the second quarter of fiscal 2019, we estimated the fair value of the embedded derivative for the Series A Preferred Stock using the binomial lattice model. The binomial lattice model requires various assumptions to be made to determine the fair value of the embedded derivatives. These assumptions represent Level 3 inputs. Refer to "Note 12. Non-Controlling Interest Redeemable Convertible Preferred Stock and Derivative Liability."

In February 2017, we completed the acquisition of a privately held company to enhance our manufacturing and vertical integration capabilities for a total purchase consideration of $8.7 million. We estimated the fair value of our Level 3 contingent consideration related to this acquisition at the present value of the expected contingent payments, determined using a probabilistic approach. We estimated the likelihood of meeting the production targets at 90 percent and recorded $2.7 million as fair value of such contingent consideration in other current liabilities on the consolidated balance sheet as of June 29, 2019. This contingent consideration will result in a cash payment of $3.0 million (based on the exchange rate as of the acquisition date), if and when the production targets are achieved, which we expect to occur within the following 12 months. We are required to reassess the fair value of contingent payments on a periodic basis. There was no change in the fair value of our contingent consideration during fiscal 2019, 2018 or 2017.

Our pension assets consist of multiple institutional funds (“pension funds”) of which the fair values are based on the quoted prices of the underlying funds. Pension funds are mainly classified as Level 2 assets since such funds are not directly traded in active markets. Refer to “Note 18. Employee Benefit Plans.”

Based on quoted market prices as of June 29, 2019, the fair value of the Convertible Notes (“Note 13. Convertible Notes”) was approximately $527.0 million, determined using Level 2 inputs as they are not actively traded in markets.

Financial assets and liabilities measured at fair value on a recurring basis are summarized below (*in millions*):

	Level 1	Level 2	Level 3	Total
June 29, 2019 (1)				
Assets:				
Cash equivalents:				
Commercial paper	$ —	$ 37.4	$ —	$ 37.4
Money market funds	168.1	—	—	168.1
U.S. Treasury securities	13.3	—	—	13.3
Short-term investments:				
Certificates of deposit	—	1.9	—	1.9
Commercial paper	—	22.3	—	22.3
Asset-backed securities	—	55.1	—	55.1
Corporate debt securities	—	208.4	—	208.4
Municipal bonds	—	1.3	—	1.3
Mortgage-backed securities	—	6.6	—	6.6
Foreign government bonds	—	6.2	—	6.2
U.S. Agency securities	—	4.6	—	4.6
U.S. Treasury securities	29.5	—	—	29.5
Total assets	$ 210.9	$ 343.8	$ —	$ 554.7
Other accrued liabilities:				
Acquisition contingencies	$ —	$ —	$ 2.7	$ 2.7
Total other accrued liabilities	$ —	$ —	$ 2.7	$ 2.7

(1) Excludes $213.8 million in cash held in our bank accounts as of June 29, 2019.

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	Level 1	Level 2	Level 3	Total
June 30, 2018: [(1)]				
Assets:				
Cash equivalents:				
Certificates of deposit	$ —	$ 3.0	$ —	$ 3.0
Commercial paper	—	112.1	—	112.1
Money market funds	0.8	—	—	0.8
U.S. Treasury securities	143.6	—	—	143.6
U.S. Agency securities	—	34.2	—	34.2
Short-term investments:				
Certificates of deposit	—	7.5	—	7.5
Commercial paper	—	10.5	—	10.5
Asset-backed securities	—	67.8	—	67.8
Corporate debt securities	—	219.2	—	219.2
Municipal bonds	—	1.6	—	1.6
Mortgage-backed securities	—	4.2	—	4.2
Foreign government bonds	—	3.4	—	3.4
Total assets	$ 144.4	$ 463.5	$ —	$ 607.9
Other accrued liabilities:				
Derivative liability	$ —	$ —	$ 52.4	$ 52.4
Acquisition contingencies	—	—	2.7	2.7
Total other accrued liabilities	$ —	$ —	$ 55.1	$ 55.1

(1) Excludes $103.6 million in cash held in our bank accounts as of June 30, 2018.

Assets Measured at Fair Value on a Non-Recurring Basis

We periodically review our intangible and other long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Determination of recoverability is based on the lowest level of identifiable estimated undiscounted cash flows resulting from use of the asset and its eventual disposition. If not recoverable, an impairment loss would be calculated based on the excess of the carrying amount over the fair value. During the annual impairment testing performed in fiscal 2019, we concluded that our intangible assets were not impaired.

We also valued certain long-lived assets at fair value on a non-recurring basis as of June 29, 2019 as part of our long-lived asset impairment testing and recorded an impairment charge of $30.7 million during fiscal 2019. Fair value was determined by utilizing a market approach incorporating both observable and unobservable inputs, and are deemed to be Level 3 fair value inputs. Refer to “Note 5. Business Combination” and “Note 15. Impairment Charges.”

Note 12. Non-Controlling Interest Redeemable Convertible Preferred Stock and Derivative Liability

On July 31, 2015, our wholly-owned subsidiary, Lumentum Inc., issued 40,000 shares of its Series A Preferred Stock to Viavi Solutions Inc. (“Viavi”). Pursuant to a securities purchase agreement between us, Viavi and Amada Holdings Co., Ltd. (“Amada”), 35,805 shares of Series A Preferred Stock were sold by Viavi to Amada in August 2015. The remaining 4,195 shares of the Series A Preferred Stock were canceled.

As of June 30, 2018, the Series A Preferred Stock was referred to as our Non-Controlling Interest Redeemable Convertible Preferred Stock within these consolidated financial statements, and was recorded at $35.8 million.

On October 15, 2018, we issued a 30-day notice of intent to the holders of Series A Preferred Stock to convert all shares of Series A Preferred Stock at a conversion price equal to the Issuance Value divided by $24.63 plus the accrued and unpaid dividends on each share and any past due dividends, whether or not authorized or declared. On November 2, 2018, we received notice from Amada of their intent to convert the Series A Preferred Stock. Upon the conversion of the 35,805 shares of Series A Preferred

Stock, we issued 1.5 million shares of our common stock to Amada and recorded $79.4 million in additional paid in capital in the consolidated balance sheet.

Up through the date of conversion, the Series A Preferred Stock conversion feature is bifurcated from the Series A Preferred Stock and accounted for separately as a derivative liability. The derivative liability is measured at fair value each reporting period, and at the date of conversion, with the change in fair value recorded in the consolidated statements of operations. We estimated the fair value of the embedded derivative using the binomial lattice model. We applied the binomial lattice model to value the embedded derivative using a "with-and-without method," where the value of the Series A Preferred Stock, including the embedded derivative, is defined as the "with", and the value of the Series A Preferred Stock, excluding the embedded derivative, is defined as the "without". The binomial lattice model requires the following inputs: (i) the Company's common stock price; (ii) conversion price; (iii) term; (iv) yield; (v) recovery rate for the Series A Preferred Stock; (vi) estimated stock volatility; and (vii) risk-free rate. The fair value of the embedded derivative was determined using Level 3 inputs under the fair value hierarchy (unobservable inputs). Changes in the inputs into this valuation model have a material impact in the estimated fair value of the embedded derivative. For example, a decrease (increase) in the stock price and the volatility results in a decrease (increase) in the estimated fair value of the embedded derivative. The changes in the fair value of the bifurcated embedded derivative for the Series A Preferred Stock are primarily related to the change in the price of our common stock and are reflected in the consolidated statements of operations as "Unrealized gain (loss) on derivative liability."

Up through the date of conversion, holders of Series A Preferred Stock, in preference to holders of common stock or any other class or series of our outstanding capital stock ranking in any such event junior to the Series A Preferred Stock, were entitled to receive, when and as declared by the board of directors, quarterly cumulative cash dividends at the annual rate of 2.5% of the Issuance Value per share on each outstanding share of Series A Preferred Stock. The accrued dividends were payable on March 31, June 30, September 30 and December 31 of each year commencing on September 30, 2015. The accrued dividends as of November 2, 2018, the effective date of the conversion of all outstanding Series A Preferred Stock, and June 30, 2018 were $0.3 million and $0.4 million, respectively.

During the years ended June 29, 2019, June 30, 2018, and July 1, 2017, we paid $0.7 million, $0.7 million, and $0.9 million, respectively, in dividends to the holders of Series A Preferred Stock.

Prior to the conversion of the Series A Preferred Stock on November 2, 2018, we marked to market the embedded derivative, resulting in a gain of $8.8 million in our fiscal 2019.

The following table provides a reconciliation of the fair value of the embedded derivative for the Series A Preferred Stock for the years ended June 29, 2019, June 30, 2018, and July 1, 2017 (*in millions*):

	Years Ended		
	June 29, 2019	June 30, 2018	July 1, 2017
Balance as of beginning of period	$ 52.4	$ 51.6	$ 10.3
Unrealized (gain) loss on the Series A Preferred Stock derivative liability up through the conversion date	(8.8)	0.8	41.3
Settlement of the derivative liability upon conversion of Series A Preferred Stock	(43.6)	—	—
Balance as of end of period	$ —	$ 52.4	$ 51.6

Note 13. Convertible Notes

In March 2017, we issued the 2024 Notes in a private placement to qualified institutional buyers pursuant to Rule 144A under the Securities Act of 1933, as amended (the "Securities Act"). The 2024 Notes are governed by an indenture between the Company, as the issuer, and U.S. Bank National Association, as trustee (the "Indenture"). The 2024 Notes are unsecured and do not contain any financial covenants, restrictions on dividends, incurrence of senior debt or other indebtedness, or the issuance or repurchase of securities by us.

The 2024 Notes bear interest at a rate of 0.25% per year. Interest on the 2024 Notes is payable semi-annually in arrears on March 15 and September 15 of each year, beginning on September 15, 2017. The 2024 Notes will mature on March 15, 2024, unless earlier repurchased by us or converted pursuant to their terms.

The initial conversion rate of the 2024 Notes is 16.4965 shares of common stock per $1,000 principal amount of 2024 Notes, which is equivalent to an initial conversion price of approximately $60.62 per share, a 132.5% premium to the fair market value

at the date of issuance. Prior to the close of business on the business day immediately preceding December 15, 2023, the 2024 Notes will be convertible only under the following circumstances: (1) during any fiscal quarter (and only during such fiscal quarter), if the last reported sale price of our common stock for at least 20 trading days (whether or not consecutive) during the period of 30 consecutive trading days ending on the last trading day of the immediately preceding fiscal quarter is greater than or equal to 130% of the applicable conversion price, or $78.80 on each applicable trading day; (2) during the five consecutive business day period after any five consecutive trading day period (the "measurement period") in which the trading price per $1,000 principal amount of notes for each trading day of such measurement period was less than 98% of the product of the last reported sale price of our common stock and the applicable conversion rate on each such trading day; or (3) upon the occurrence of specified corporate events. On or after December 15, 2023 until the close of business on the second scheduled trading day immediately preceding the maturity date, holders may convert their notes at any time. In addition, upon the occurrence of a make-whole fundamental change, we will, in certain circumstances, increase the conversion rate by a number of additional shares for a holder that elects to convert 2024 Notes in connection with such make-whole fundamental change.

We may not redeem the 2024 Notes prior to their maturity date and no sinking fund is provided for the 2024 Notes. Upon the occurrence of a fundamental change, holders may require us to repurchase all or a portion of their 2024 Notes for cash at a price equal to 100% of the principal amount of the 2024 Notes to be repurchased, plus any accrued and unpaid interest.

We considered the features embedded in the 2024 Notes other than the conversion feature, including the holders' put feature, our call feature, and the make-whole feature, and concluded that they are not required to be bifurcated and accounted for separately from the host debt instrument.

Prior to the Tax Matters Agreement settlement condition ("TMA settlement condition"), because we could only settle the 2024 Notes in cash, we determined that the conversion feature met the definition of a derivative liability. We separated the derivative liability from the host debt instrument based on the fair value of the derivative liability. As of the issuance date, March 8, 2017, the derivative liability fair value of $129.9 million was calculated using the binomial valuation approach. The residual principal amount of the 2024 Notes of $320.1 million before issuance costs was allocated to the debt component. We incurred approximately $7.7 million in transaction costs in connection with the issuance of the 2024 Notes. These costs were allocated to the debt component and recognized as a debt discount. We amortize the debt discount, including both the initial value of the derivative liability and the transaction costs, over the term of the 2024 Notes using the effective interest method. The effective interest rate of the 2024 Notes is 5.4% per year. As of June 29, 2019, the remaining debt discount amortization period was 56 months.

During the year ended July 1, 2017, we satisfied the TMA settlement condition. As such, the value of the conversion option will no longer be marked to market and was reclassified to additional paid-in capital within stockholders' equity on our consolidated balance sheet. The value of the conversion option at the time of issuance will be treated as an original issue discount for purposes of accounting for the debt component of the notes. The debt component will accrete up to the principal amount over the expected term of the debt. These accounting standards do not affect the actual amount we are required to repay, and the amount shown in the table below for the notes is the aggregate principal amount of the notes and does not reflect the debt discount we will be required to recognize.

The 2024 Notes consisted of the following components as of the periods presented (*in millions*):

Liability component:		June 29, 2019		June 30, 2018
Principal	$	450.0	$	450.0
Unamortized debt discount		(98.1)		(115.8)
Net carrying amount of the liability component	$	351.9	$	334.2

The following table sets forth interest expense information related to the 2024 Notes for the periods presented *(in millions, except percentages)*:

	June 29, 2019	June 30, 2018	July 1, 2017
Contractual interest expense	$ 1.1	$ 1.2	$ 0.4
Amortization of the debt discount	17.7	16.7	5.1
Total interest expense	$ 18.8	$ 17.9	$ 5.5
Effective interest rate on the liability component	5.4%	5.4%	5.4%

We have the ability and intent to settle the $450 million face value of the debt in cash. Therefore, we use the treasury stock method for calculating the dilutive impact of the debt. The 2024 Notes will have no impact to diluted earnings per share until the average price of our common stock exceeds the conversion price of $60.62.

Note 14. Restructuring and Related Charges

We have initiated various strategic restructuring actions primarily intended to reduce costs, consolidate our operations, rationalize the manufacturing of our products and align our business in response to market conditions and as a result of our acquisition of Oclaro on December 10, 2018.

The following table summarizes the activity of restructuring and related charges during the years ended June 29, 2019 and June 30, 2018 (*in millions*):

	Years Ended		
	June 29, 2019	June 30, 2018	July 1, 2017
Balance as of beginning of period	$ 1.9	$ 3.8	$ 5.7
Charges	31.9	7.2	12.0
Payments	(19.2)	(9.1)	(13.9)
Balance as of end of period	$ 14.6	$ 1.9	$ 3.8

In our effort to continually maximize long-term shareholder value, following our acquisition of Oclaro, on March 5, 2019, we announced our plan to discontinue development and manufacturing of Lithium Niobate modulators. A plan to wind down operations over the next couple of quarters was announced to employees in San Donato, Italy. Development and manufacturing will also be discontinued in our San Jose, California manufacturing locations within the next few quarters in order to facilitate our customers' transition to new products.

We also announced our plan to discontinue the development and manufacturing of future Datacom transceiver products which impacted our Milpitas and Shenzhen Datacom module teams. While we expect strong growth in Datacom volumes in the future, the market at the transceiver level is gross margin challenged due to extreme competition. Following the Oclaro acquisition, we have a differentiated leadership position across a range of photonic chips on which the Datacom, wireless, and access markets critically rely.

In connection with the restructuring plan and our plans to consolidate our operations, the Company calculated the fair value of the facilities-related charges of $1.6 million based on estimated future discounted cash flows which included the amount and timing of estimated sublease rental receipts that the Company could reasonably obtain over the remaining lease term and the discount rate.

During fiscal 2019, we recorded $31.9 million in restructuring and related charges in our consolidated statements of operations.

- During the first quarter of 2019, we recorded $1.3 million of severance costs primarily due to an internal re-organization in order to extend our market leadership position by strengthening product quality, to develop new enabling technologies required to support a winning long-term portfolio roadmap, and to develop commercial proposals and new product introduction ("NPI") priorities to maintain and grow our position while driving new customer and eco-system partner engagements.

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- During the second quarter of 2019, we recorded $5.7 million primarily attributable to severance and employee related benefits associated with Oclaro's executive severance and retention agreements. These retention agreements provide, under certain circumstances, for payments and benefits upon an involuntary termination of employment.

- During the third quarter of 2019, we recorded $21.1 million primarily attributable to severance and employee related benefits associated with the wind down of operations for Lithium Niobate modulators and Datacom modules. We also recorded an additional $1.6 million of lease restructuring charges for the former Oclaro corporate headquarters.

During fiscal 2018, we recorded $7.2 million in restructuring and related charges in the consolidated statements of operations.

- During the fourth quarter of fiscal 2018, we initiated a new restructuring plan in order to realign the organization and enable further investment in key priority areas. As a result, a restructuring charge of $3.4 million was recorded for severance costs and employee benefits. In total, 52 employees in manufacturing, R&D and SG&A functions were terminated in connection with this new restructuring plan.

- We also incurred restructuring and related charges of $3.8 million from restructuring plans approved prior to fiscal 2016 primarily related to the shut down of our manufacturing facility in Bloomfield, Connecticut as a result of the transfer of certain production processes into existing sites in the United States or to contract manufacturers.

During fiscal 2017, we recorded $12.0 million in restructuring and related charges. Of the $12.0 million charge recorded during fiscal 2017, $2.1 million related to severance, retention and employee benefits.

Any changes in the estimates of executing our restructuring activities will be reflected in our future results of operations.

Note 15. Impairment Charges

The following table summarizes the activity of impairment charges during the years ended June 29, 2019, June 30, 2018, and July 1, 2017 (*in millions*):

	Years Ended		
	June 29, 2019	June 30, 2018	July 1, 2017
Impairment charges	$ 30.7	$ —	$ —

As was previously discussed in "Note 14. Restructuring and Related Charges", we have announced plans to discontinue the development and manufacturing of future Datacom transceiver products. As a result of these actions we recorded an impairment charge of $30.7 million to our Long-lived assets that were not deemed to be useful, were retired from active use and classified as assets held-for-sale. These assets were valued at fair value less cost to sell. We classified the assets within Level 3 of the fair value hierarchy.

In fiscal 2019, we also recorded inventory write down charges of $20.8 million related to the decision to exit the Datacom module and Lithium Niobate product lines in our cost of goods sold of consolidated statements of operations.

These actions do not qualify as discontinued operations for disclosure purposes as they do not represent a strategic shift having a major effect on an entity's operations and financial results.

Refer to "Note 5. Business Combination", "Note 9. Balance Sheet Details", "Note 11. Fair Value Measurements" and "Note 14. Restructuring and Related Charges" for details.

Note 16. Income Taxes

Our income (loss) before income taxes consisted of the following (*in millions*):

	Years Ended		
	June 29, 2019	June 30, 2018	July 1, 2017
Domestic	$ (21.9)	$ 37.8	$ (78.4)
Foreign	(11.4)	91.6	18.6
Income (loss) before income taxes	$ (33.3)	$ 129.4	$ (59.8)

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Our income tax (benefit) expense consisted of the following (*in millions*):

	Years Ended		
	June 29, 2019	June 30, 2018	July 1, 2017
Federal:			
Current	$ 13.8	$ 1.2	$ 13.7
Deferred	(0.1)	(120.4)	—
	13.7	(119.2)	13.7
State:			
Current	0.1	1.0	0.1
Deferred	0.4	(1.3)	—
	0.5	(0.3)	0.1
Foreign:			
Current	10.3	1.2	2.1
Deferred	(21.4)	(0.4)	26.8
	(11.1)	0.8	28.9
Total income tax (benefit) expense	$ 3.1	$ (118.7)	$ 42.7

The comparability of our operating results of fiscal 2019 compared to the corresponding prior year was impacted by the U.S. Tax Cuts and Jobs Act of 2017 (the "Tax Act"), which was enacted on December 22, 2017. The Tax Act introduced significant changes to U.S. income tax law including reducing the U.S. federal statutory tax rate from 35% to 21% and imposing new taxes on certain foreign-sourced earnings and certain intercompany payments. Due to the timing of the enactment and the complexity involved in applying the provisions of the Tax Act, we made reasonable estimates of the effects and recorded provisional amounts in our financial statements as of fiscal 2018 in accordance with SEC Staff Accounting Bulletin No. 118 ("SAB 118"). During the period ended December 29, 2018, we completed our accounting for the Tax Act with no material adjustment to our provisional estimates recorded.

The provision for income taxes differs from the amount computed by applying the U.S. Federal statutory income tax rate to our income before provision for income taxes as follows *(in millions*):

	Years Ended		
	June 29, 2019	June 30, 2018	July 1, 2017
Income tax (benefit) expense computed at federal statutory rate	$ (7.0)	$ 36.3	$ (20.9)
State taxes, net of federal benefit	0.7	(0.5)	0.1
Foreign rate differential	(17.8)	(24.3)	(4.7)
Change in valuation allowance	7.4	(206.0)	21.5
Tax Act - tax rate change	—	80.5	—
Tax credits	(7.1)	(11.0)	(2.9)
Permanent items	(0.6)	(0.8)	0.3
Stock-based compensation	5.9	(1.0)	4.9
Fair value adjustment	0.5	0.2	36.5
Subpart F and GILTI	13.4	2.0	—
Unrecognized tax benefits	4.8	7.9	8.4
Prior year true-up	(0.3)	(1.8)	(0.1)
Other	0.2	(0.2)	(0.4)
Audit settlement	3.0	—	—
Total income tax (benefit) expense	$ 3.1	$ (118.7)	$ 42.7

Our provision for income taxes for fiscal 2019 increased compared to fiscal 2018 primarily as a result of $206.0 million of income tax benefit related to the release of valuation allowance against our U.S. federal and certain state deferred tax assets and $80.5 million of income tax expense related to the remeasurement of our net deferred tax assets as a result of reduction in the U.S.

federal corporate tax rate, both of which were recognized during fiscal 2018. Our provision for income taxes was also impacted by the benefit of our foreign income being taxed at lower rates than the U.S. statutory rate, as well as the benefit of research and development tax credits.

The components of our net deferred taxes consisted of the following (*in millions*):

	Years Ended	
	June 29, 2019	June 30, 2018
Gross deferred tax assets:		
Intangibles	$ 111.7	$ 123.3
Tax credit carryforwards	66.5	47.1
Net operating loss carryforwards	134.6	7.1
Inventories	11.3	12.4
Accruals and reserves	19.6	7.2
Fixed assets	32.3	10.1
Capital loss carryforwards	12.1	12.3
Unclaimed research and experimental development expenditure	25.6	25.6
Stock-based compensation	3.4	3.5
Other	—	0.5
Gross deferred tax assets	417.1	249.1
Valuation allowance	(190.3)	(99.4)
Deferred tax assets	226.8	149.7
Gross deferred tax liabilities:		
Intangible amortization	(90.8)	(0.8)
Convertible notes	(20.1)	(23.6)
Other	(2.2)	—
Deferred tax liabilities	(113.1)	(24.4)
Total net deferred tax assets	$ 113.7	$ 125.3

We assess our ability to realize the deferred tax assets on a quarterly basis and establish a valuation allowance if the deferred tax assets are not more-likely-than-not to be realized. We weigh all available positive and negative evidence, including our earnings history and results of recent operations, reversals of deferred tax liabilities, projected future taxable income, and tax planning strategies.

As of each reporting date, we consider new evidence, both positive and negative, that could affect our view of the future realization of deferred tax assets. During fiscal 2018, we determined that there is sufficient positive evidence to conclude that it is more-likely-than-not that the U.S. federal and certain states deferred tax assets are realizable. We, therefore, released the valuation allowance against our U.S. federal and certain states resulting in an income tax benefit of $207.2 million.

Due to the weight of negative evidence, we continue to maintain a full valuation allowance on our California, Thailand, and the U.K. deferred tax assets and partial valuation allowance on our Canadian deferred tax assets. In the event the Company determines that it will be able to realize all or part of the U.K., California, or Canada deferred tax assets in the future, the valuation allowance will be reversed in the period in which the Company makes such determination. Based on the information currently available, we do not believe that a significant portion of our valuation allowance for the U.K., Thailand, California, and Canada will be released in the next 12 months. Such a release would result in the recognition of certain deferred tax assets and a decrease in the income tax expense for the period in which the release is recorded.

As a result of meeting certain capital funding, capital investments and hiring requirements, income from operations in Thailand was exempt from income tax in fiscal 2019 and fiscal 2018.

As of June 29, 2019, the Company had federal and foreign net operating loss carryforwards of $181.4 million and $562.0 million, respectively. These carryforwards will begin to expire in the fiscal years ending 2020 and 2025, respectively. The federal and foreign tax attributes carried forward are subject to various rules which impose limitations on the utilization.

Additionally, the Company has federal, state, and foreign research and other tax credit carryforwards of $11.8 million, $36.7 million, and $49.2 million, respectively. The federal credits will begin to expire in the fiscal year ending 2033 and California credits can be carried forward indefinitely. The foreign tax credits will begin to expire in the fiscal year ending 2020.

The Tax Act generally provides greater flexibility for us to access and utilize our cash held by certain of our foreign subsidiaries and we intend to repatriate all or some of the earnings of our subsidiaries in the Cayman Islands, Japan and Hong Kong. As to all other foreign subsidiaries, we intend to reinvest these earnings indefinitely outside of the U.S. As a result, U.S. income and foreign withholding taxes associated with the repatriation of $27.2 million of undistributed earnings of foreign subsidiaries, other than the Cayman Islands, Japan and Hong Kong subsidiaries, have not been provided for. We estimate that an additional $1.8 million of foreign withholding taxes would have to be provided if these earnings were repatriated back to the U.S.

The aggregate changes in the balance of our unrecognized tax benefits between July 2, 2016 and June 29, 2019 are as follows *(in millions)*:

Balance at July 1, 2017	$	13.3
Additions based on the tax positions related to the prior year		1.2
Additions based on tax positions related to current year		11.3
Balance at June 30, 2018	$	25.8
Additions based on the tax positions related to the prior year		3.7
Decreases related to settlement with Tax Authorities		(0.7)
Additions based on tax positions related to current year		29.2
Balance at June 29, 2019	$	58.0

As of June 29, 2019, we had $18.7 million of unrecognized tax benefits, which, if recognized, would affect the effective tax rate. We are subject to examination of income tax returns by various domestic and foreign tax authorities. The timing of resolutions and closures of tax audits is highly unpredictable. Although it is possible that certain tax audits may be concluded within the next 12 months, we cannot reasonably estimate the impact to tax expense and net income from tax exams that could be resolved or closed within next 12 months. However, we believe that we have adequately provided under GAAP for potential audit outcomes. Subject to audit timing and uncertainty, we expect the amount of unrecognized tax benefit that would become recognized due to expiration of the statute of limitations and affect the effective tax rate to be $1.9 million over the next 12 months. During the three months ended March 30, 2019, we settled the Canadian income tax examination for fiscal years 2000 and 2001, which resulted in a $1.5 million decrease in unrecognized tax benefit.

Our policy is to recognize accrued interest and penalties related to unrecognized tax benefits within the income tax provision. The amount of interest and penalties accrued as of June 29, 2019 and June 30, 2018 were $1.0 million and $0.9 million, respectively.

The major tax jurisdictions where we file tax returns are the U.S. federal government, the state of California, Japan, the United Kingdom, Thailand, China and Canada. As of June 29, 2019, our fiscal 2009 to 2019 tax returns are open to potential examination in one or more jurisdictions. In addition, certain net operating loss and credit carryforwards may extend the ability of the tax authorities to examine our tax returns beyond the regular limits.

On June 7, 2019, the Ninth Circuit Court of Appeals, reversing a previous decision of the U.S. Tax Court, held that the U.S. Treasury Department's regulations requiring the inclusion of stock-based compensation expense in a taxpayer's cost-sharing calculations were valid. Our financial statements have been prepared consistent with this outcome, but we will continue to monitor any ongoing developments, including the possibility of rehearing or appeal to the U.S. Supreme Court, to determine if future changes are required.

Note 17. Stock-Based Compensation and Stock Plans

Description of Lumentum Stock-Based Benefit Plans

Equity Incentive Plan

As of June 29, 2019, we had 2.4 million shares subject to stock options, restricted stock units, restricted stock awards, and performance stock units issued and outstanding under the 2015 Equity Incentive Plan (the "2015 Plan").

Restricted stock units, restricted stock awards, and performance stock units are performance-based, time-based or a combination of both and are expected to vest over one to four years. The fair value of these grants is based on the closing market price of our common stock on the date of award. The exercise price for stock options is equal to the fair value of the underlying stock at the date of grant. We issue new shares of common stock upon exercise of stock options. Options generally become exercisable over a three-year or four-year period and, if not exercised, expire from five to ten years after the date of grant.

As of June 29, 2019, 3.9 million shares of common stock under the 2015 Plan were available for grant.

Replacement Awards

In connection with the acquisition of Oclaro, we issued equity awards to Oclaro employees, consisting of stock options and restricted stock units ("replacement awards") in exchange for their Oclaro equity awards. The replacement awards consisted of less than 0.1 million stock options with a weighted average grant date fair value of $34.34, and 1.0 million restricted stock units with a weighted average grant date fair value of $41.80. The terms of these replacement awards are substantially similar to the original Oclaro equity awards. The fair value of the replacement awards for services rendered through December 10, 2018, the acquisition date, was recognized as a component of the merger consideration, with the remaining fair value of the replacement awards related to the post-combination services recorded as stock-based compensation over the remaining vesting period.

Restricted Stock Units

Restricted stock units ("RSUs") under the 2015 Plan are grants of shares of our common stock, the vesting of which is based on the requisite service requirement. Generally, our RSUs are subject to forfeiture and expected to vest over one to four years. For annual refresh grants, RSUs generally vest ratably on an annual, or combination of annual and quarterly, basis over three years.

Restricted Stock Awards

Restricted stock awards ("RSAs") under the 2015 Plan are grants of shares of our common stock that are subject to various restrictions, including restrictions on transferability and forfeiture provisions. RSAs are expected to vest over one to four years, and the shares acquired may not be transferred by the holder until the vesting conditions (if any) are satisfied.

Performance Stock Units

Performance stock units ("PSUs") under the 2015 Plan are grants of shares of our common stock that vest upon the achievement of certain performance and service conditions. We begin recognizing compensation expense when we conclude that it is probable that the performance conditions will be achieved. We reassess the probability of vesting at each reporting period and adjust our compensation cost based on this probability assessment. Our PSUs are subject to risk of forfeiture until performance and service conditions are satisfied and generally vest over three years.

In November 2018, our board of directors approved the grant of 0.2 million PSUs to senior members of our management team. At the beginning of fiscal 2019, we determined that the achievement of the performance conditions was probable, and as such, began recording stock-based compensation associated with these PSUs. Based on performance conditions actually achieved in fiscal 2019, we recorded $2.0 million expense related to these grants.

Employee Stock Purchase Plan

Our 2015 Employee Stock Purchase Plan (the "2015 Purchase Plan") provides eligible employees with the opportunity to acquire an ownership interest in the Company through periodic payroll deductions and provides a 15% purchase price discount as well as a six-month look-back period. The 2015 Purchase Plan is structured as a qualified employee stock purchase plan under Section 423 of the Internal Revenue Code of 1986. However, the 2015 Purchase Plan is not intended to be a qualified pension, profit sharing or stock bonus plan under Section 401(a) of the Internal Revenue Code of 1986 and is not subject to the provisions of the Employee Retirement Income Security Act of 1974. The 2015 Purchase Plan will terminate upon the date on which all shares available for issuance have been sold. Of the 3.0 million shares authorized under the 2015 Purchase Plan, 2.0 million shares remained available for issuance as of June 29, 2019.

Stock-Based Compensation

The impact on our results of operations of recording stock-based compensation by function during fiscal 2019, 2018, and 2017 was as follows *(in millions)*:

	Years Ended		
	June 29, 2019	June 30, 2018	July 1, 2017
Cost of sales	$ 15.1	$ 12.6	$ 7.5
Research and development	13.8	14.2	11.6
Selling, general and administrative	41.8	20.0	13.6
	$ 70.7	$ 46.8	$ 32.7

Total income tax benefit associated with stock-based compensation recognized in our consolidated statements of operations during the years presented was as follows *(in millions)*:

	Years Ended		
	June 29, 2019	June 30, 2018	July 1, 2017
Income tax benefit associated with stock-based compensation	$ (8.9)	$ (16.6)	$ (13.1)

Approximately $3.5 million and $2.6 million of stock-based compensation was capitalized to inventory as of June 29, 2019 and June 30, 2018, respectively.

In connection with the acquisition of Oclaro, we accelerated certain equity awards for Oclaro employees. The total stock-based compensation expense associated with the acceleration of equity awards was $15.2 million, out of which $10.0 million was settled in cash in our second quarter of fiscal 2019. Refer to “Note 5. Business Combination.”

Stock Option and Stock Award Activity

We did not grant any stock options during fiscal 2019, 2018, or 2017, other than those assumed in connection with the Oclaro merger. As of June 29, 2019, there were less than 0.05 million stock options outstanding under the 2015 Plan, all of which were replacement awards issued in connection with the Oclaro acquisition.

The following table summarizes our awards activity in fiscal 2019, 2018, and 2017 *(in millions, except per share amounts)*:

	Stock Options		Restricted Stock Units		Restricted Stock Awards		Performance Stock Units	
	Number of Shares	Weighted-Average Exercise Price	Number of Shares	Weighted-Average Grant Date Fair Value per Share	Number of Shares	Weighted-Average Grant Date Fair Value per Share	Number of Shares (1)	Weighted-Average Grant Date Fair Value per Share
Balance as of July 2, 2016	0.3	$ 17.8	2.5	$ 21.3	—	$ —	0.1	$ 14.4
Granted	—	—	1.0	35.6	0.3	32.5	—	—
Vested/Exercised	(0.3)	14.3	(1.4)	22.3	—	—	(0.1)	14.4
Canceled	—	—	(0.2)	23.8	—	—	—	—
Balance as of July 1, 2017	—	$ —	1.9	$ 27.9	0.3	$ 32.5	—	$ —
Granted	—	—	1.1	54.5	—	—	0.1	52.0
Vested/Exercised	—	—	(1.1)	26.6	(0.2)	32.5	—	—
Canceled	—	—	(0.2)	38.8	—	—	—	—
Balance as of June 30, 2018	—	$ —	1.7	$ 43.1	0.1	$ 32.5	0.1	$ 52.0
Assumed in Oclaro merger	*	34.3	1.0	41.8	—	—	—	—
Granted	—	—	1.0	60.3	—	—	0.2	55.9
Vested/Exercised	*	26.2	(1.0)	41.5	(0.1)	32.5	(0.1)	49.0
Canceled	—	—	(0.5)	50.2	*	32.8	*	53.8
Balance as of June 29, 2019	*	$ 38.8	2.2	$ 52.4	*	$ 32.5	0.2	$ 56.0

* Less than 0.05 million

(1) In fiscal 2018, we granted 0.1 million PSUs to senior members of our management team subject to revenue performance condition. The number of awards granted in fiscal 2018 represented 100% of target goal; under the terms of the awards, the recipient could earn between 0% and 200% of the original grant. The performance condition was achieved in fiscal 2018. In first quarter of fiscal 2019, our board of directors approved an increase in the original number of PSUs based on the actual achievement.

As of June 29, 2019, $96.8 million of stock-based compensation cost related to awards granted to our employees remains to be amortized. That cost is expected to be recognized over an estimated amortization period of 2.0 years.

A summary of awards available for grant is as follows *(in millions)*:

	Awards Available for Grant
Balance as of July 2, 2016	4.7
Authorized	3.0
Granted	(1.3)
Canceled	0.2
Balance as of July 1, 2017	6.6
Authorized	—
Granted	(1.2)
Canceled	0.2
Balance as of June 30, 2018	5.6
Replacement awards in connection with Oclaro acquisition	(1.0)
Granted	(1.2)
Canceled	0.5
Balance as of June 29, 2019	3.9

Employee Stock Purchase Plan Activity

The 2015 Purchase Plan expense for fiscal 2019, 2018, and 2017 were $3.6 million, $3.3 million, and $2.7 million, respectively. The expense related to the 2015 Purchase Plan is recorded on a straight-line basis over the relevant subscription period. During fiscal 2019, 2018, and 2017, there were 0.3 million, 0.2 million, and 0.3 million shares issued to employees through the 2015 Purchase Plan.

We estimate the fair value of the 2015 Purchase Plan shares on the date of grant using the Black-Scholes option-pricing model. The assumptions used to estimate the fair value of the 2015 Purchase Plan shares to be issued during the periods presented were as follows:

	June 29, 2019	June 30, 2018
Expected term (years)	0.5	0.5
Expected volatility	60.1%	58.8%
Risk-free interest rate	2.47%	2.02%
Dividend yield	—%	—%

Note 18. Employee Benefit Plans

401(k) Plan

In the United States, the Company sponsors the Lumentum 401(k) Retirement Plan (the “401(k) Plan”), a defined contribution plan under ERISA, which provides retirement benefits for its eligible employees through tax deferred salary deductions. The 401(k) Plan allows employees to contribute up to 50% of their annual compensation, with contributions limited to $19,000 in calendar year 2019 as set by the Internal Revenue Service.

Employees are eligible for matching contributions after completing 180 days of service. The Company’s match is contributed on a per-pay-period basis and is based on employees’ before-tax contributions and compensation each pay period. All matching contributions are made in cash and vest immediately under the 401(k) Plan. In fiscal 2019 and 2018, we made matching contributions to the 401(k) Plan in the amount of $3.7 million and $3.4 million, respectively.

Canada Retirement Plans

In Canada, the Company sponsors the Group Registered Retirement Savings Plan (the “RRSP”) and Deferred Profit Sharing Plan (the “DPSP”), defined contribution plans which provide retirement benefits for eligible employees through tax deferred salary deductions.

The RRSP allows employees to contribute up to 5% of their eligible earnings in a pay period, with contributions limited to C$26,500 ($20,250 based on the applicable exchange rate as of June 29, 2019) in calendar year 2019 as set by the Canada Revenue Agency. Based on the employee’s contribution to the RRSP, the Company makes a matching contribution to the DPSP. The Company makes a 100% matching contribution on the first 3% of the employees’ before-tax contributions and a 50% matching contribution on the following 2% of the employees’ before-tax contributions, up to an annual maximum of C$4,000.

The Company’s match is contributed on a per-pay-period basis and is based on employees’ before-tax contributions and compensation each pay period. Employees are eligible for matching contributions after completing 180 days of service. In fiscal 2019 and 2018, we made matching contributions in the amount of $1.0 million and $1.3 million into the DPSP.

U.K. Defined Contribution Plan

In connection with the acquisition of Oclaro in December 2018, we assumed a defined contribution plan which provides retirement benefits to employees in the U.K. Contributions under this plan from the acquisition date were $0.9 million in fiscal 2019.

Japan Defined Contribution Plan

In connection with the acquisition of Oclaro in December 2018, we assumed a defined contribution plan which provides retirement benefits to employees in Japan. Under the defined contribution plan, contributions are provided based on grade level and totaled $0.2 million for period from the acquisition date through June 29, 2019. Employees can elect to receive the benefit as additional salary or contribute the benefit to the plan on a tax-deferred basis.

Switzerland Defined Benefit Plan

In connection with the acquisition of Time-Bandwidth during fiscal 2014, we assumed a defined benefit plan which covers certain employees in Switzerland (the “Switzerland Plan”). The Switzerland Plan is open to new participants. Benefits are generally based upon an employee’s age and compensation. As of June 29, 2019, the Switzerland Plan was partially funded. Our policy for partially funded plans is to make contributions equal to or greater than the requirements prescribed by law or regulation; however, at our discretion, we can elect to make additional contributions to the plan.

We account for our obligations under the Switzerland Plan in accordance with the authoritative guidance which requires us to record our obligation to the participants, as well as the corresponding net periodic cost. We determine our obligation to the participants and our net periodic cost principally using actuarial valuations provided by third-party actuaries. The net obligation of $5.0 million as of June 29, 2019 is recorded in our consolidated balance sheets as non-current liabilities and is reflective of the total projected benefit obligation (“PBO”) less the fair value of plan assets.

LUMENTUM HOLDINGS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The change in the benefit obligations and plan assets of the Switzerland Plan were as follows *(in millions)*:

	2019	2018
Change in projected benefit obligation:		
Benefit obligation at beginning of year	$ 12.1	$ 11.0
Service cost	0.9	0.9
Interest cost	0.1	0.1
Plan participants' contribution	0.5	0.5
Actuarial (gains)/losses	1.1	(0.3)
Benefits paid	(1.0)	0.4
Plan amendments	(0.6)	—
Foreign exchange impact	0.2	(0.5)
Benefit obligation at end of year	$ 13.3	$ 12.1
Change in plan assets:		
Fair value of plan assets at beginning of year	$ 8.6	$ 7.1
Actual return on plan assets	(0.3)	0.3
Employer contribution	0.4	0.5
Plan participants' contribution	0.4	0.5
Benefits paid	(1.0)	0.4
Foreign exchange impact	0.2	(0.2)
Fair value of plan assets at end of year	$ 8.3	$ 8.6
Funded status [(1)]	$ (5.0)	$ (3.5)
Changes in benefit obligations and plan assets recognized in other comprehensive income (loss):		
Prior service cost	$ (0.6)	$ —
Amortization of accumulated net actuarial gain (loss)	(0.1)	(0.2)
Net actuarial (gain) loss	1.9	(0.4)
	$ 1.2	$ (0.6)
Accumulated benefit obligation	$ 11.6	$ 11.0

(1) As of June 29, 2019 and June 30, 2018, $5.0 million and $3.5 million was recorded in other non-current liabilities on our consolidated balance sheets to account for the PBO under the Switzerland Plan. Refer to "Note 9. Balance Sheet Details" in the Notes to Consolidated Financial Statements.

Net periodic pension cost associated with the Switzerland Plan in fiscal 2019, 2018 and 2017 include the following components:

	2019	2018	2017
Service cost	$ 0.9	$ 0.9	$ 0.6
Interest cost	0.1	0.1	—
Expected return on plan assets	(0.3)	(0.2)	(0.1)
Amortization of net (gain) loss	0.1	0.2	0.2
Net periodic pension cost	$ 0.8	$ 1.0	$ 0.7

Assumptions

Underlying both the calculation of the PBO and net periodic cost are actuarial valuations. These valuations use participant-specific information such as salary, age and assumptions about interest rates, compensation increases and other factors. At a minimum, we evaluate these assumptions annually and make changes as necessary.

The discount rate reflects the estimated rate at which the pension benefits could be effectively settled. In developing the discount rate, we consider the yield available on an appropriate AA or AAA corporate bond index, adjusted to reflect the term of the plan's liabilities.

The expected return on assets was estimated by using the weighted average of the real expected long-term return (net of inflation) on the relevant classes of assets based on the target asset mix and adding the chosen inflation assumption.

The following table summarizes the assumptions used to determine net periodic cost and benefit obligation for the Switzerland Plan:

	Pension Benefit Plans	
	2019	2018
Assumptions used to determine net periodic cost:		
Discount rate	0.5%	0.7%
Expected long-term return on plan assets	3.2%	2.8%
Salary increase rate	2.3%	2.3%
Assumptions used to determine benefit obligation at end of year:		
Discount rate	0.5%	1.0%
Salary increase rate	2.3%	2.3%

Fair Value Measurement of Plan Assets

The following table sets forth the plan's assets at fair value and the percentage of assets allocations as of June 29, 2019 *(in millions, except percentage data)*:

				Fair value measurement as of June 29, 2019	
	Target Allocation	Total	Percentage of Plan Asset	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)
Assets:					
Global equity	28%	$ 2.3	28%	$ —	$ 2.3
Fixed income	30%	2.6	31%	—	2.6
Alternative investment	21%	1.3	16%	—	1.3
Cash	1%	0.3	3%	0.3	—
Other	20%	1.8	22%	—	1.8
Total Assets	100%	$ 8.3	100%	$ 0.3	$ 8.0

LUMENTUM HOLDINGS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The following table sets forth the plan's assets at fair value and the percentage of assets allocations as of June 30, 2018 *(in millions, except percentage data)*:

				Fair value measurement as of June 30, 2018	
	Target Allocation	Total	Percentage of Plan Asset	Quoted Prices in Active Markets for Identical Assets	Significant Other Observable Inputs (Level 2)
Assets:					
Global equity	28%	$ 2.4	28%	$ —	$ 2.4
Fixed income	30%	2.8	33%	—	2.8
Alternative investment	18%	1.5	17%	—	1.5
Cash	1%	0.2	1%	0.2	—
Other	23%	1.7	21%	—	1.7
Total Assets		$ 8.6	100%	$ 0.2	$ 8.4

Our pension assets consist of multiple institutional funds ("pension funds") of which the fair values are based on the quoted prices of the underlying funds. Pension funds are classified as Level 2 assets since such funds are not directly traded in active markets. Global equity consists of several funds that invest primarily in Swiss and foreign equities; fixed income consists of several funds that invest primarily in investment grade domestic and overseas bonds; Other consists of several funds that primarily invest in hedge fund, private equity, global real estate and infrastructure funds.

Future Benefit Payments

We estimate our expected benefit payments to defined benefit pension plan participants based on the same assumptions used to measure our PBO at year end which includes benefits attributable to estimated future compensation increases. Based on this approach, we expect future benefit payments to be $0.6 million during the 10 year period between fiscal 2020 and fiscal 2029 and the remaining $4.4 million of payments in fiscal years subsequent to fiscal 2029.

Japan Defined Benefit Plan

In connection with the acquisition of Oclaro in December 2018, we assumed a defined benefit plan which provides benefits to employees in Japan (the "Japan Plan"). The Japan Plan is open to new participants. Benefits are generally based upon an employee's individual grade level and years of service. Employees are entitled to a lump sum benefit upon retirement or upon certain instances of termination. As of June 29, 2019, there were no Japan Plan assets.

We account for our obligations under the Japan Plan in accordance with the authoritative guidance which requires us to record our obligation to the participants, as well as the corresponding net periodic cost. We determine our obligation to the participants and our net periodic cost principally using actuarial valuations provided by third-party actuaries. The net obligation of $2.8 million as of June 29, 2019 is recorded in our consolidated balance sheets as non-current liabilities and is reflective of the total PBO.

LUMENTUM HOLDINGS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The change in the benefit obligations of the Japan Plan were as follows *(in millions):*

	2019
Change in projected benefit obligation:	
Benefit obligation at beginning of year	$ —
Assumed pension liability in connection with Oclaro acquisition	7.2
Service cost	0.3
Actuarial losses	0.1
Benefits paid	(0.1)
Transfer of benefit obligation in connection with sale of net assets	(4.9)
Foreign exchange impact	0.2
Benefit obligation at end of year	$ 2.8
Changes in benefit obligations recognized in other comprehensive income (loss):	
Net actuarial loss	$ 0.2
Accumulated benefit obligation at end of year	$ 2.8

Net periodic pension cost associated with the Japan Plan in fiscal 2019 includes the following components:

	2019
Service cost	$ 0.3
Interest cost	*
Net periodic pension cost	$ 0.3

* Less than $0.05 million

Assumptions

Underlying both the calculation of the PBO and the net periodic cost are actuarial valuations. These valuations use participant-specific information such as salary, age and assumptions about interest rates, compensation increases and other factors. At a minimum, we evaluate these assumptions annually and make changes as necessary.

The discount rate reflects the estimated rate at which the pension benefits could be effectively settled. In calculating the discount rate, we consider the yield available on an appropriate rates of fixed income governmental bonds, adjusted to reflect the term of the plan's liabilities.

The following table summarizes the assumptions used to determine the net pension cost and benefit obligation for the Japan Plan:

	2019
Assumptions used to determine net periodic cost:	
Discount rate	0.3%
Salary increase rate	2.1%
Assumptions used to determine benefit obligation at end of year:	
Discount rate	0.1%
Salary increase rate	2.0%

Future Benefit Payments

We estimate our expected benefit payments to the Japan Plan participants based on the same assumptions used to measure our PBO at year end which includes benefits attributable to estimated future compensation increases. Based on this approach, we expect future benefit payments to be $1.9 million during the 10 year period between fiscal 2020 and fiscal 2029 and the remaining $0.9 million of payments in fiscal years subsequent to fiscal 2029.

Note 19. Commitments and Contingencies

Operating Leases

We lease certain real and personal property from unrelated third parties under non-cancellable operating leases that expire at various dates through fiscal 2033. Certain leases require us to pay property taxes, insurance and routine maintenance, and include escalation clauses.

As of June 29, 2019, the total future minimum annual lease payments under non-cancellable operating leases, net of sublease income, were as follows (*in millions*):

Fiscal Years		
2020	$	13.9
2021		12.1
2022		11.2
2023		11.3
2024		9.8
Thereafter		31.7
Total minimum operating lease payments [1]	$	90.0

(1) As of June 29, 2019, we sublease a floor of office space in our Ottawa location that is not fully utilized. Under this sublease, we will receive approximately $2.1 million in sublease income over the next four years. In addition, as part of our sale to CIG (refer to “Note 5. Business Combination”), we sublease certain portions of the building until fiscal 2022, which will result in $4.5 million in sublease income over the contract term. The amounts set forth in the table above are net of these sublease income amounts.

In fiscal 2019, 2018 and 2017, rental expense relating to building and equipment was $15.8 million, $12.1 million and $10.1 million, respectively. Non-cancellable sublease proceeds from our subleases were approximately $1.0 million, $0.7 million, and $0.7 million, respectively, during the fiscal years 2019, 2018, and 2017. The amounts of our rental expense for the years presented are net of these sublease income amounts.

Capital Leases

As of June 29, 2019, equipment acquired under capital lease agreements, including those assumed as part of the Oclaro acquisition, was $16.0 million. Our capital lease assets are included in property, plant and equipment, net in our consolidated balance sheets as of June 29, 2019. Amortization expense on these capital lease assets are recorded as depreciation expense and is included in cost of sales in our consolidated statements of operations for fiscal 2019, 2018, and 2017. Our capital lease obligations are recorded at the lesser of the estimated fair market value of the leased property or the net present value of the aggregate future minimum lease payments and is included in other current liabilities and other non-current liabilities in our consolidated balance sheets as of June 29, 2019. Refer to “Note 9. Balance Sheet Details” for capital lease obligation amounts in other current liabilities and other non-current liabilities. Interest on these obligations is included in interest expense in our consolidated statements of operations.

As of June 29, 2019, the future minimum annual lease payments under our capital leases were $0.8 million, which we expect to pay within the following fiscal year.

Acquisition Contingencies

In February 2017, we incurred liabilities in the amount of $3.6 million related to an acquisition of a privately held company. The amount of up to $3.0 million is expected to be paid within the following 12 months contingent upon meeting certain production targets. We estimated the likelihood of meeting the production targets at 90 percent and recorded $2.7 million as fair value of contingent consideration in other current liabilities on the consolidated balance sheet as of June 29, 2019.

We also retained $0.9 million of the purchase price as security for any potential liabilities of the seller under the representations, warranties and indemnifications included in the purchase agreement, which resulted in the cash payment of $1.0 million to the seller during fiscal 2019 (based on exchange rate at the date of transaction).

Term Loan

The estimated future interest and principal payments related to the term loan are as follows as of June 29, 2019:

Fiscal Years		
2020	$	29.2
2021		29.0
2022		28.7
2023		28.6
2024		28.2
Thereafter		505.6
Total term loan payments	$	649.3

0.25% Convertible Notes due 2024

The future interest and principal payments related to the 2024 Notes are as follows as of June 29, 2019:

Fiscal Years		
2020	$	1.1
2021		1.1
2022		1.1
2023		1.1
2024		451.2
Thereafter		—
Total 2024 Notes payments	$	455.6

Purchase Obligations

Purchase obligations of $216.4 million as of June 29, 2019, represent legally-binding commitments to purchase inventory and other commitments made in the normal course of business to meet operational requirements.

Although open purchase orders are considered enforceable and legally binding, the terms generally allow the option to cancel, reschedule and adjust the requirements based on our business needs prior to the delivery of goods or performance of services. Obligations to purchase inventory and other commitments are generally expected to be fulfilled within one year.

We depend on a limited number of contract manufacturers, subcontractors and suppliers for raw materials, packages and standard components. We generally purchase these single or limited source products through standard purchase orders or one-year supply agreements and have no significant long-term guaranteed supply agreements with such vendors. While we seek to maintain a sufficient safety stock of such products and maintain on-going communications with our suppliers to guard against interruptions or cessation of supply, our business and results of operations could be adversely affected by a stoppage or delay of supply, substitution

of more expensive or less reliable products, receipt of defective parts or contaminated materials, increases in the price of such supplies, or our inability to obtain reduced pricing from our suppliers in response to competitive pressures.

Product Warranties

We provide reserves for the estimated costs of product warranties at the time revenue is recognized. We typically offer a twelve month warranty for most of our products. However, in some instances depending upon the product, product component or application of our products by the end customer, our warranties can vary and generally range from six months to five years. We estimate the costs of our warranty obligations on an annualized basis based on our historical experience of known product failure rates, use of materials to repair or replace defective products and service delivery costs incurred in correcting product failures. In addition, from time to time, specific warranty accruals may be made if unforeseen technical problems arise with specific products. We assess the adequacy of our recorded warranty liabilities and adjust the amounts as necessary.

The following table presents the changes in our warranty reserve during fiscal 2019 and 2018 (*in millions*):

	Years Ended	
	June 29, 2019	**June 30, 2018**
Balance as of beginning of period	$ 6.6	$ 9.7
Warranties assumed in Oclaro acquisition [1]	1.8	—
Provision for warranty [2]	5.9	5.0
Utilization of reserve	(6.8)	(8.1)
Balance as of end of period	$ 7.5	$ 6.6

(1) The amount is reduced by $2.0 million measurement period adjustment recorded in other current liabilities on our consolidated balance sheet in the fourth quarter of fiscal 2019. Refer to “Note 5. Business Combination”.

(2) In fiscal 2018, the provision for warranty does not include a settlement payment of $5.1 million received from a vendor for a quality issue.

Environmental Liabilities

Our research and development (“R&D”), manufacturing and distribution operations involve the use of hazardous substances and are regulated under international, federal, state and local laws governing health and safety and the environment. We apply strict standards for protection of the environment and occupational health and safety to sites inside and outside the United States, even if not subject to regulations imposed by foreign governments. We believe that our properties and operations at our facilities comply in all material respects with applicable environmental laws and occupational health and safety laws. However, the risk of environmental liabilities cannot be completely eliminated and there can be no assurance that the application of environmental and health and safety laws will not require us to incur significant expenditures. We are also regulated under a number of international, federal, state and local laws regarding recycling, product packaging and product content requirements. The environmental, product content/disposal and recycling laws are gradually becoming more stringent and may cause us to incur significant expenditures in the future.

Legal Proceedings

We are subject to a variety of claims and suits that arise from time to time in the ordinary course of our business. While management currently believes that resolving claims against us, individually or in the aggregate, will not have a material adverse impact on our financial position, results of operations or statements of cash flows, these matters are subject to inherent uncertainties and management’s view of these matters may change in the future. We accrue for loss contingencies when it is both probable that we will incur the loss and when we can reasonably estimate the amount of the loss or range of loss. As of June 29, 2019, we did not have any material claims or proceedings that were probable or reasonably possible.

Merger Litigation

In connection with our acquisition of Oclaro, seven lawsuits were filed by purported stockholders of Oclaro challenging the proposed merger (the “Merger”). Two of the seven suits were putative class actions filed against Oclaro, its directors, Lumentum, Prota Merger Sub, Inc. and Prota Merger, LLC: Nicholas Neinast v. Oclaro, Inc., et al., No. 3:18-cv-03112-VC, in the United States District Court for the Northern District of California (filed May 24, 2018) (the “Neinast Lawsuit”); and Adam Franchi v. Oclaro,

Inc., et al., No. 1:18-cv-00817-GMS, in the United States District Court for the District of Delaware (filed June 9, 2018) (the "Franchi Lawsuit). Both the Neinast Lawsuit and the Franchi Lawsuit were voluntarily dismissed with prejudice.

The other five suits, styled as Gerald F. Wordehoff v. Oclaro, Inc., et al., No. 5:18-cv-03148-NC (the "Wordehoff Lawsuit"), Walter Ryan v. Oclaro, Inc., et al., No. 3:18-cv-03174-VC (the "Ryan Lawsuit"), Jayme Walker v. Oclaro, Inc., et al., No. 5:18-cv-03203-EJD (the "Walker Lawsuit"), Kevin Garcia v. Oclaro, Inc., et al., No. 5:18-cv-03262-VKD (the "Garcia Lawsuit"), and SaiSravan B. Karri v. Oclaro, Inc., et al., No. 3:18-cv-03435-JD (the "Karri Lawsuit" and, together with the other six lawsuits, the "Lawsuits"), were filed in the United States District Court for the Northern District of California on May 25, 2018, May 29, 2018, May 30, 2018, May 31, 2018, and June 9, 2018, respectively. These five Lawsuits named Oclaro and its directors as defendants only and did not name Lumentum. The Wordehoff, Ryan, Walker, and Garcia Lawsuits have been voluntarily dismissed, and the Wordehoff, Ryan, and Walker dismissals were with prejudice. The Karri Lawsuit has not yet been dismissed. The Ryan Lawsuit was, and the Karri Lawsuit is, a putative class action.

The Lawsuits generally alleged, among other things, that Oclaro and its directors violated Section 14(a) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Rule 14a-9 promulgated thereunder by disseminating an incomplete and misleading Form S-4, including proxy statement/prospectus. The Lawsuits further alleged that Oclaro's directors violated Section 20(a) of the Exchange Act by failing to exercise proper control over the person(s) who violated Section 14(a) of the Exchange Act.

The remaining Lawsuit (the Karri Lawsuit) currently purports to seek, among other things, damages to be awarded to the plaintiff and any class if the Merger is consummated, and litigation costs, including attorneys' fees. The defendants intend to defend the Karri Lawsuit vigorously.

Indemnifications

In the normal course of business, we enter into agreements that contain a variety of representations and warranties and provide for general indemnification. Exposure under these agreements is unknown because claims may be made against us in the future and we may record charges in the future as a result of these indemnification obligations. As of June 29, 2019, we did not have any material indemnification claims that were probable or reasonably possible.

Audit Proceedings

We are under audit by various domestic and foreign tax authorities with regards to income tax and indirect tax matters. In some, although not all cases, we have reserved for potential adjustments to our provision for income taxes and accrual of indirect taxes that may result from examinations by these tax authorities or final outcomes in judicial proceedings, and we believe that the final outcome of these examinations, agreements or judicial proceedings will not have a material effect on our results of operations. If events occur which indicate payment of these amounts is unnecessary, the reversal of the liabilities would result in the recognition of benefits in the period we determine the liabilities are no longer necessary. If our estimates of the federal, state, and foreign income tax liabilities and indirect tax liabilities are less than the ultimate assessment, it could result in a further charge to expense.

In connection with our acquisition of Oclaro, we recorded $1.1 million in Malaysia Goods and Services Tax ("GST") refund claims within prepaid expenses and other current assets in our consolidated balance sheet at June 29, 2019. The refund claim represents an initial claim of $2.5 million of GST, net of reserves, that were previously denied by the Malaysian tax authorities in 2016. We are currently appealing the denial of these claims, and believe that additional options may be available to us if we do not obtain a favorable resolution. Although we have taken action to minimize the impact of the GST with respect to our ongoing operations, we believe it is reasonably possible that, ultimately, we may not be able to recover some of these GST amounts.

Note 20. Operating Segments and Geographic Information

Our chief executive officer is our CODM. The CODM allocates resources to the segments based on their business prospects, competitive factors, net revenue and gross margin. We do not track all of our property, plant and equipment by operating segments. The geographic identification of these assets is set forth below.

We are an industry leading provider of optical and photonic products defined by revenue and market share addressing a range of end-market applications including optical communications and commercial lasers. We have two operating segments, Optical Communications, which we refer to as OpComms, and Commercial Lasers, which we refer to as Lasers. Our OpComms products address the following markets: telecommunications ("Telecom"), data communications ("Datacom"), and consumer and industrial ("Consumer and Industrial"), and include product lines from the acquisition of Oclaro. The two operating segments were primarily determined based on how the CODM views and evaluates our operations. Operating results are regularly reviewed by

the CODM to make decisions about resources to be allocated to the segments and to assess their performance. Other factors, including market separation and customer specific applications, go-to-market channels, products and manufacturing, are considered in determining the formation of these operating segments.

OpComms

Our OpComms products address the following markets: Telecom, Datacom and Consumer and Industrial.

Our OpComms products include a wide range of components, modules and subsystems to support customers including carrier networks of access (local), metro (intracity), long-haul (city-to-city and worldwide) and submarine (undersea) applications. Additionally, our products address enterprise, cloud, and data center applications, including storage-access networks (“SANs”), local-area networks (“LANs”) and wide-area networks (“WANs”). These products enable the transmission and transport of video, audio and text data over high-capacity fiber-optic cables. We maintain leading positions in these fast growing OpComms markets through our extensive product portfolio, including reconfigurable optical add/drop multiplexers (“ROADMs”), coherent DWDM pluggable transceivers, and tunable small form-factor pluggable transceivers. We also sell laser chips for use in the manufacture of high-speed Datacom transceivers.

In the Consumer and Industrial market, our OpComms products include laser light sources, which are integrated into 3D sensing platforms being used in applications for mobile devices, gaming, computers, and other consumer electronics devices. New emerging applications include virtual and augmented reality, as well as automotive and industrial segments. Our products include vertical cavity surface emitting lasers (“VCSELs”) and edge emitting lasers which are used in 3D sensing depth imaging systems. These systems simplify the way people interact with technology by enabling the use of natural user interfaces. Systems are used for biometric identification, surveillance, and process efficiency, among numerous other application spaces. Emerging applications for this technology include various mobile device applications, autonomous vehicles, self-navigating robotics and drones in industrial applications and 3D capture of objects coupled with 3D printing. In addition, our industrial diode lasers are used primarily as pump sources for pulsed and kilowatt class fiber lasers.

Lasers

Our Lasers products serve our customers in markets and applications such as sheet metal processing, general manufacturing, biotechnology, graphics and imaging, remote sensing, and precision machining such as drilling in printed circuit boards, wafer singulation, glass cutting and solar cell scribing.

Our Lasers products are used in a variety of OEM applications including diode-pumped solid-state, fiber, diode, direct-diode and gas lasers such as argon-ion and helium-neon lasers. Fiber lasers provide kW-class output powers combined with excellent beam quality and are used in sheet metal processing and metal welding applications. Diode-pumped solid-state lasers provide excellent beam quality, low noise and exceptional reliability and are used in biotechnology, graphics and imaging, remote sensing, materials processing and precision machining applications. Diode and direct-diode lasers address a wide variety of applications, including laser pumping, thermal exposure, illumination, ophthalmology, image recording, printing, plastic welding and selective soldering. Gas lasers such as argon-ion and helium-neon lasers provide a stable, low-cost and reliable solution over a wide range of operating conditions, making them well suited for complex, high-resolution OEM applications such as flow cytometry, DNA sequencing, graphics and imaging and semiconductor inspection.

We also provide high-powered and ultrafast lasers for the industrial and scientific markets. Manufacturers use high-power, ultrafast lasers to create micro parts for consumer electronics and to process semiconductor, LED, and other types of chips. Use of ultrafast lasers for micromachining applications is being driven primarily by the increasing use of consumer electronics and connected devices globally.

We do not allocate research and development, sales and marketing, or general and administrative expenses to our segments because management does not include the information in its measurement of the performance of the operating segments. In addition, we do not allocate amortization and impairment of acquisition-related intangible assets, stock-based compensation and certain other charges impacting the gross margin of each segment because management does not include this information in its measurement of the performance of the operating segments.

LUMENTUM HOLDINGS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Information on reportable segments utilized by our CODM is as follows (*in millions)*:

	Years Ended		
	June 29, 2019	June 30, 2018	July 1, 2017
Net revenue:			
OpComms	$ 1,370.2	$ 1,059.2	$ 857.8
Lasers	195.1	188.5	143.8
Net revenue	$ 1,565.3	$ 1,247.7	$ 1,001.6
Gross profit:			
OpComms	$ 534.1	$ 402.3	$ 287.3
Lasers	84.4	82.8	59.9
Total segment gross profit	618.5	485.1	347.2
Unallocated corporate items:			
Stock-based compensation	(15.1)	(12.6)	(7.5)
Amortization of intangibles	(46.6)	(3.2)	(6.5)
Amortization of inventory step up	(54.6)	—	—
Inventory write down due to product lines exit	(20.8)	—	—
Integration related costs	(6.6)	—	—
Other charges (1)	(48.9)	(37.2)	(15.1)
Gross profit	$ 425.9	$ 432.1	$ 318.1

(1) The increase in “other charges” of unallocated corporate items for fiscal 2019 compared to fiscal 2018, primarily relates to set-up costs of our facility in Thailand, including costs of transferring the manufacturing of product lines to Thailand of $45.8 million in our fiscal 2019 compared to $27.0 million in fiscal 2018.

The increase in “other charges” of unallocated corporate items for fiscal 2018 compared to fiscal 2017, primarily relates to set-up costs of our facility in Thailand, including costs of transferring the manufacturing of product lines to Thailand of $27.0 million in our fiscal 2018 compared to $1.8 million in fiscal 2017.

The table below discloses our total net revenue attributable to each of our two reportable segments. In addition, it discloses the percentage of our total net revenue attributable to our product offerings which serve the Telecom, Datacom, and Consumer and Industrial markets which accounted for 10% or more of our total net revenue during the periods presented (*in millions, except percentage data*):

	Years Ended					
	June 29, 2019		June 30, 2018		July 1, 2017	
OpComms:						
Telecom	$ 786.5	50.2%	$ 476.3	38.1%	$ 610.7	61.0%
Datacom	166.4	10.6%	150.4	12.1%	201.3	20.0%
Consumer and Industrial	417.3	26.7%	432.5	34.7%	45.8	4.6%
Total OpComms	$ 1,370.2	87.5%	$ 1,059.2	84.9%	$ 857.8	85.6%
Lasers	195.1	12.5%	188.5	15.1%	143.8	14.4%
Total Revenue	$ 1,565.3		$ 1,247.7		$ 1,001.6	

We operate in three geographic regions: Americas, Asia-Pacific, and EMEA (Europe, Middle East, and Africa). Net revenue is assigned to the geographic region and country where our product is initially shipped. For example, certain customers may request shipment of our product to a contract manufacturer in one country, which may differ from the location of their end customers. The following table presents net revenue by the three geographic regions we operate in and net revenue from countries that represented 10% or more of our total net revenue *(in millions, except percentage data):*

LUMENTUM HOLDINGS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

	Years Ended					
	June 29, 2019		June 30, 2018		July 1, 2017	
Net revenue:						
Americas:						
United States	$ 100.9	6.4%	$ 115.1	9.2%	$ 147.9	14.8%
Mexico	214.9	13.7	145.8	11.7	185.1	18.5
Other Americas	4.3	0.3	7.0	0.6	9.2	0.9
Total Americas	$ 320.1	20.4%	$ 267.9	21.5%	$ 342.2	34.2%
Asia-Pacific:						
Hong Kong	$ 387.9	24.8%	$ 183.0	14.7%	$ 226.7	22.6%
Japan	176.0	11.2	194.7	15.6	99.2	9.9
South Korea	162.4	10.4	146.1	11.7	4.9	0.5
Other Asia-Pacific	356.1	22.7	354.2	28.3	220.5	22.0
Total Asia-Pacific	$ 1,082.4	69.1%	$ 878.0	70.3%	$ 551.3	55.0%
EMEA	$ 162.8	10.5%	$ 101.8	8.2%	$ 108.1	10.8%
Total net revenue	$ 1,565.3		$ 1,247.7		$ 1,001.6	

During fiscal 2019, 2018 and 2017, net revenue from customers outside the United States, based on customer shipping location, represented 93.6%, 90.8% and 85.2% of net revenue, respectively. Our net revenue from Mexico increased in fiscal 2019 compared to 2018 due to increased demand for our ROADM products from one of our large customers who manufactures in Mexico, while net revenue from Hong Kong grew due to a change in shipment destination of a large portion of our 3D sensing products for mobile devices.

During the years ended June 29, 2019, June 30, 2018, and July 1, 2017, net revenue generated from a single customer which represented 10% or greater of total net revenue is summarized as follows:

	Years Ended		
	June 29, 2019	June 30, 2018	July 1, 2017
Customer A	21.0%	30.0%	*
Customer B	15.2%	11.0%	16.7%
Customer C	13.7%	11.0%	18.5%
Customer D	*	*	12.4%
*Represents less than 10% of total net revenue			

Our accounts receivable was concentrated with three customers as of June 29, 2019, who represented 17%, 17% and 10% of gross accounts receivable, respectively, compared with two customers as of June 30, 2018, who represented 11% and 10% of gross accounts receivable, respectively.

Long-lived assets, namely net property, plant and equipment, net, were identified based on the physical location of the assets in the corresponding geographic areas as of the periods indicated *(in millions)*:

	June 29, 2019	June 30, 2018
Property, Plant and Equipment, net		
Thailand	$ 157.1	$ 107.4
United States	156.2	97.6
China	33.5	70.0
Japan	28.3	0.5
Other countries	58.2	31.4
Total long-lived assets	$ 433.3	$ 306.9

We purchase a substantial portion of our inventory from contract manufacturers and vendors located primarily in Taiwan, Thailand, and Malaysia. During fiscal 2019, 2018 and 2017, net inventory purchased from a single contract manufacturer which represented 10% or greater of total net purchases is summarized as follows:

	Years Ended		
	June 29, 2019	June 30, 2018	July 1, 2017
Vendor A	47%	44%	50%
Vendor B	17%	20%	27%
Vendor C	11%	21%	*
Vendor D	*	*	14%
*Represents less than 10% of total net purchases			

Note 21. Quarterly Financial Information (Unaudited)

The following table presents our quarterly consolidated statements of operations for fiscal 2019 and 2018 (*in millions, except per share data*):

	June 29, 2019	March 30, 2019	December 29, 2018	September 29, 2018	June 30, 2018	March 31, 2018	December 30, 2017	September 30, 2017
Net revenue	$ 404.6	$ 432.9	$ 373.7	$ 354.1	$ 301.1	$ 298.8	$ 404.6	$ 243.2
Cost of sales	304.6	316.5	244.5	227.3	204.8	201.0	232.7	173.9
Amortization of acquired intangibles	13.2	28.1	4.4	0.8	0.8	0.8	0.8	0.8
Gross profit	86.8	88.3	124.8	126.0	95.5	97.0	171.1	68.5
Operating expenses:								
Research and development	49.5	57.7	42.8	34.6	38.5	38.2	43.8	36.3
Selling, general and administrative	49.4	55.2	62.7	33.0	32.7	33.2	35.7	26.6
Restructuring and related charges	1.7	21.1	7.8	1.3	3.4	0.1	0.8	2.9
Impairment charges	—	30.7	—	—	—	—	—	—
Total operating expenses	100.6	164.7	113.3	68.9	74.6	71.5	80.3	65.8

LUMENTUM HOLDINGS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Income/(loss) from operations	(13.8)	(76.4)	11.5	57.1	20.9	25.5	90.8	2.7
Unrealized gain (loss) on derivative liability	—	—	10.9	(2.1)	7.8	(20.7)	7.9	4.2
Interest and other income (expense), net	(7.3)	(6.1)	(4.7)	(2.4)	(1.0)	(2.1)	(3.2)	(3.4)
Income/(loss) before income taxes	(21.1)	(82.5)	17.7	52.6	27.7	2.7	95.5	3.5
Provision for (benefit from) income taxes	4.7	(8.2)	1.4	5.2	(5.8)	—	(109.3)	(3.6)
Net income/(loss)	$ (25.8)	$ (74.3)	$ 16.3	$ 47.4	$ 33.5	$ 2.7	$ 204.8	$ 7.1
Net income/(loss) attributable to common stockholders - Basic	$ (25.8)	$ (74.3)	$ 16.1	$ 46.1	32.5	2.4	199.8	6.7
Net income/(loss) attributable to common stockholders - Diluted	$ (25.8)	$ (74.3)	$ 5.4	$ 46.1	25.7	2.4	196.9	2.9
Net income/(loss) per share attributable to common stockholders:								
Basic	$ (0.34)	$ (0.98)	$ 0.24	$ 0.73	$ 0.52	$ 0.04	$ 3.21	$ 0.11
Diluted	$ (0.34)	$ (0.98)	$ 0.08	$ 0.72	$ 0.40	$ 0.04	$ 3.05	$ 0.04
Shares used to compute net income/(loss) per share attributable to common stockholders:								
Basic	76.5	76.2	66.8	63.1	62.7	62.4	62.2	61.7
Diluted	76.5	76.2	67.8	63.9	65.0	63.3	64.6	64.5

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

(a) Evaluation of Disclosure Controls and Procedures

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Management, with the participation of our chief executive officer and our chief financial officer, evaluated the effectiveness of our disclosure controls and procedures as of June 29, 2019. The term "disclosure controls and procedures," as defined in Rules 13a-15 and 15d-15 under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives, and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of June 29, 2019, our chief executive officer and chief financial officer concluded that our disclosure controls and procedures were effective at a reasonable assurance level.

(b) Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act). Management conducted an assessment of the effectiveness of our internal control over financial reporting based on the criteria set forth in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based on the assessment, management has concluded that its internal control over financial reporting was effective as of June 29, 2019 to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with U.S. GAAP.

On December 10, 2018, we acquired Oclaro (see "Note 5. Business Combination" to the accompanying consolidated financial statements for additional information). Management excluded Oclaro from its assessment of internal control over financial reporting as of June 29, 2019. Total assets and revenues of Oclaro excluded from our assessment of internal control over financial reporting, were 24% as of June 29, 2019, and 16% for the year ended June 29, 2019, respectively. We are in the process of integrating the acquired business into our existing operations and evaluating the internal controls over financial reporting of the acquired business.

Deloitte & Touche LLP, the independent registered public accounting firm that audited the consolidated financial statements included in this Form 10-K, has issued a report, included herein, on the effectiveness of the Company's internal control over financial reporting as of June 29, 2019.

(c) Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting as defined in Exchange Act Rules 13a-15(f) and 15d-15(f), identified in connection with the evaluation required by Exchange Act Rules 13a-15(d) or 15d-15(d) that occurred during our most recently completed fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

(d) Inherent Limitations on Effectiveness of Controls

Our management, including the CEO and CFO, recognizes that our disclosure controls and procedures or our internal control over financial reporting cannot prevent or detect all possible instances of errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. The design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of Lumentum Holdings Inc.

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Lumentum Holdings Inc. and subsidiaries (the "Company") as of June 29, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of June 29, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended June 29, 2019, of the Company and our report dated August 27, 2019, expressed an unqualified opinion on those financial statements.

As described in *Management's Report on Internal Control Over Financial Reporting*, management excluded from its assessment the internal control over financial reporting at Oclaro, Inc. (Oclaro). Oclaro was acquired on December 10, 2018 and its financial statements constitute 24% and 16% of consolidated total assets and revenues, respectively, as of and for the year ended June 29, 2019. Accordingly, our audit did not include the internal control over financial reporting at Oclaro.

Basis for Opinion

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

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

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

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

/s/ DELOITTE & TOUCHE LLP

San Jose, California
August 27, 2019

ITEM 9B. OTHER INFORMATION

None.

PART III

The SEC allows us to include information required in this report by referring to other documents or reports we have already filed or will soon be filing. This is called "incorporation by reference." We intend to file our definitive proxy statement for our 2019 annual meeting of stockholders (the "Proxy Statement") pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this report, and certain information to be contained therein is incorporated in this report by reference.

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required for this Item is set forth in the Proxy Statement and incorporated herein by reference.

ITEM 11. EXECUTIVE COMPENSATION

The information required for this Item is set forth in the Proxy Statement and incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required for this Item is set forth in the Proxy Statement and incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required for this Item is set forth in the Proxy Statement and incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required for this Item is set forth in the Proxy Statement and incorporated herein by reference.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENTS SCHEDULES

1. Financial Statements

The financial statements filed as part of this report are listed in the "Index to Financial Statements" under Part II, Item 8 of this report.

	Page
Report of Independent Registered Public Accounting Firm	54
Consolidated Statements of Operations—Years Ended June 29, 2019, June 30, 2018, and July 1, 2017	55
Consolidated Statements of Comprehensive Income (Loss)—Years Ended June 29, 2019, June 30, 2018, and July 1, 2017	56
Consolidated Balance Sheets—June 29, 2019 and June 30, 2018	57
Consolidated Statements of Cash Flows—Years Ended June 29, 2019, June 30, 2018, and July 1, 2017	58
Consolidated Statements of Redeemable Convertible Preferred Stock and Stockholders' Equity—Years Ended June 29, 2019, June 30, 2018, and July 1, 2017	60
Notes to Consolidated Financial Statements	62

2. Financial Statement Schedules

The following additional financial statement schedules should be considered in conjunction with our consolidated financial statements. All other financial statement schedules have been omitted because the required information is not present in amounts sufficient to require submission of the schedule, not applicable, or because the required information is included in the Consolidated Financial Statements or Notes thereto.

LUMENTUM HOLDINGS INC.

FINANCIAL STATEMENT SCHEDULES

SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS

	(in millions)				
	Balance at Beginning of Period	**Assumed in Oclaro Acquisition**	**Increase (decrease) to Income Statement**	**Write Offs and Other Adjustments**	**Balance at End of Period**
Accounts receivable allowance:					
Fiscal year ended June 29, 2019	$ 2.6	$ 3.3	$ (0.2)	$ (1.2)	$ 4.5
Fiscal year ended June 30, 2018	$ 1.8	$ —	$ 0.9	$ (0.1)	$ 2.6
Fiscal year ended July 1, 2017	$ 0.9	$ —	$ 1.0	$ (0.1)	$ 1.8

	(in millions)			
Description	**Balance at Beginning of Period**	**Additions Charged to Expenses or Other Accounts***	**Deductions Credited to Expenses or Other Accounts****	**Balance at End of Period**
Deferred tax valuation allowance:				
Fiscal year ended June 29, 2019	$ 99.4	$ 153.9	$ (63.0)	$ 190.3
Fiscal year ended June 30, 2018	$ 296.4	$ 234.1	$ (431.1)	$ 99.4
Fiscal year ended July 1, 2017	$ 321.4	$ 16.7	$ (41.7)	$ 296.4

* Additions include current year additions charged to expenses and current year build due to increases in net deferred tax assets, return to provision true-ups, other adjustments to deferred taxes.

** Deductions include current year releases credited to expenses and current year reductions due to decreases in net deferred tax assets, return to provision true-ups, other adjustments to deferred taxes.

3. Exhibits

The following exhibits are filed herewith or are incorporated by reference to exhibits previously filed with the Securities and Exchange Commission.

		Incorporated by Reference			Filed
Exhibit No.	Exhibit Description	Form	Exhibit	Filing Date	Herewith
2.1	Contribution Agreement	8-K	2.1	8/6/2015	
2.1	Agreement and Plan of Merger, dated as of March 11, 2018, by and among Lumentum Holdings Inc., Oclaro, Inc., Prota Merger Sub, Inc. and Prota Merger, LLC	8-K	2.1	3/12/2018	
2.2	Separation and Distribution Agreement	8-K	2.2	8/6/2015	
3.1	Amended and Restated Certificate of Incorporation	8-K	3.1	8/6/2015	
3.2	Amended and Restated Bylaws	8-K	3.2	8/6/2015	
4.1	Stockholder’s and Registration Rights Agreement	8-K	4.1	8/6/2015	
4.2	Indenture, dated March 8, 2017, between Lumentum Holdings Inc. and U.S. Bank National Association	8-K	4.1	3/9/2017	
4.3	Form of 0.250% Convertible Senior Notes due 2024 (included in Exhibit 4.2)	8-K	4.2	3/9/2017	
4.4	Description of Capital Stock				X

10.1	Tax Matters Agreement	8-K	10.1	8/6/2015	
10.2*	Employee Matters Agreement	8-K	10.2	8/6/2015	
10.3	Intellectual Property Matters Agreement	8-K	10.3	8/6/2015	
10.4	2015 Equity Incentive Plan as amended	8-K	10.2	11/9/2016	
10.5	2015 Employee Stock Purchase Plan	S-8	99.2	7/29/2015	
10.6*	Executive Officer Performance-Based Incentive Plan	8-K	10.3	11/9/2016	
10.7	Change in Control and Severance Benefits Plan, effective May 8, 2018	10-K	10.6	8/28/2018	
10.8*	Employment Agreement for Alan Lowe	8-K	10.4	8/6/2015	
10.9*	Form of Indemnification Agreement	10-K	10.8	9/25/2015	
10.10	Purchase Agreement, dated as of March 2, 2017, between Lumentum Holdings Inc. and Goldman Sachs & Co., as representative of the Initial Purchasers listed in Schedule I thereto.	8-K	10.1	3/9/2017	
10.11	Commitment Letter, dated as of March 11, 2018, by and among Lumentum Holdings Inc., Deutsche Bank Securities Inc. and Deutsche Bank AG New York.	8-K	10.1	3/12/2018	
10.12*	Separation Agreement and General Release between Lumentum Operations LLC and Aaron Tachibana dated July 31, 2018	10-K	10.11	8/28/2018	
10.13	Credit and Guaranty Agreement, dated as of December 10, 2018, by and among Lumentum Holdings Inc. and Deutsche Bank AG New York Branch	8-K	10.1	12/10/2018	
10.14*	Offer Letter, by and between the Registrant and Wajid Ali, dated as of January 11, 2019	10-Q	10.1	5/7/2019	
10.15	Real Estate Purchase and Sale Agreement between MNCVAD-Graymark Ridder Park LLC and Lumentum Operations LLC, dated May 7, 2019				X
21.1	Subsidiaries of Lumentum Holdings Inc.				X
23.1	Consent of Independent Registered Public Accounting Firm (Deloitte & Touche LLP)				X
31.1	Certification of the Chief Executive Officer pursuant to Securities Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				X
31.2	Certification of the Chief Financial Officer pursuant to Securities Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				X
32.1†	Certification of the Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				X
32.2†	Certification of the Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				X

101	The following financial information from Lumentum Holdings Inc.'s Annual Report on Form 10-K for the fiscal year ended June 29, 2019 formatted in Inline XBRL (eXtensible Business Reporting Language): (i) Consolidated Statements of Operations for the fiscal years ended June 29, 2019, June 30, 2018 and July 1, 2017; (ii) Consolidated Statements of Comprehensive Income (Loss) for the fiscal years ended June 29, 2019, June 30, 2018 and July 1, 2017; (iii) Consolidated Balance Sheets as of June 29, 2019 and June 30, 2018; (iv) Consolidated Statements of Cash Flows for the fiscal years ended June 29, 2019, June 30, 2018 and July 1, 2017; (v) Consolidated Statements of Redeemable Convertible Preferred Stock and Stockholders' Equity for the fiscal years ended June 29, 2019, June 30, 2018 and July 1, 2017; and (vi) Notes to the Consolidated Financial	X
104	The cover page from Lumentum Holdings Inc.'s Annual Report on Form 10-K for the fiscal year ended June 29, 2019, formatted in Inline XBRL (included as Exhibit 101).	X

* Indicates management contract or compensatory plan or arrangement.

† The certifications furnished in Exhibits 32.1 and 32.2 that accompany this Annual Report on Form 10-K, are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of the Registrant under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Annual Report on Form 10-K, irrespective of any general incorporation language contained in such filing.

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 Annual Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: August 27, 2019 LUMENTUM HOLDINGS INC.

By: /s/ Wajid Ali

By: Wajid Ali
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Wajid Ali and Judy Hamel, and each of them individually, as his or her attorney-in-fact, each with full power of substitution, for him or her in any and all capacities to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that said attorney-in-fact, or his or her substitute, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K 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/ ALAN LOWE Alan Lowe	President, Chief Executive Officer and Director (principal executive officer)	August 27, 2019
/s/ WAJID ALI Wajid Ali	Executive Vice President, Chief Financial Officer (principal financial officer)	August 27, 2019
/s/ MATTHEW SEPE Matthew Sepe	Chief Accounting Officer (principal accounting officer)	August 27, 2019
/s/ HAROLD COVERT Harold Covert	Director	August 27, 2019
/s/ JULIE JOHNSON Julie Johnson	Director	August 27, 2019
/s/ PENELOPE HERSCHER Penelope Herscher	Director	August 27, 2019
/s/ BRIAN LILLIE Brian Lillie	Director	August 27, 2019
/s/ SAMUEL THOMAS Samuel Thomas	Director	August 27, 2019
/s/ IAN SMALL Ian Small	Director	August 27, 2019

Exhibit 4.4

DESCRIPTION OF SECURITIES REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

The following description of the capital stock of Lumentum Holdings Inc. (“us”, “our”, “we”, or the “Company”) is a summary. This summary is not complete and is subject to and qualified in its entirety by reference to the complete text of our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws, each previously filed with the Securities and Exchange Commission and incorporated by reference as an exhibit to the Annual Report on Form 10-K of which this Exhibit 4.4 is a part, as well as to the relevant provisions of the general corporation law of the state of Delaware (the “DGCL”). We encourage you to read our certificate of incorporation, bylaws and the applicable provisions of the DGCL carefully.

General

Our authorized capital stock consists of 990,000,000 shares of common stock, par value $0.001 per share, and 10,000,000 shares of preferred stock, par value $0.001 per share, all of which shares of preferred stock are undesignated. Our board of directors may establish the rights and preferences of the preferred stock from time to time.

Common Stock

Each holder of our common stock is entitled to one vote for each share on all matters to be voted upon by the common stockholders, and there are no cumulative voting rights. Subject to any preferential rights of any outstanding preferred stock, holders of our common stock are entitled to receive ratably the dividends, if any, as may be declared from time to time by our board of directors out of funds legally available for that purpose. If there is a liquidation, dissolution or winding up of the Company, holders of our common stock are entitled to ratable distribution of its assets remaining after the payment in full of liabilities and any preferential rights of any then-outstanding preferred stock.

Holders of our common stock have no preemptive or conversion rights or other subscription rights, and there are no redemption or sinking fund provisions applicable to the common stock. All outstanding shares of our common stock are fully paid and non-assessable. The rights, preferences and privileges of the holders of our common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

Preferred Stock

Under the terms of our amended and restated certificate of incorporation, our board of directors are authorized, subject to limitations prescribed by the DGCL and by our amended and restated certificate of incorporation, to issue up to 10,000,000 shares of preferred stock in one or more series without further action by the holders of its common stock. Our board of directors has the discretion, subject to limitations prescribed by the DGCL and by our amended and restated certificate of incorporation, to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock.

Anti-Takeover Provisions

Charter and Bylaw Provisions

The provisions of Delaware law, our amended and restated certificate of incorporation and amended and restated bylaws include a number of provisions that may have the effect of delaying, deferring or discouraging another person from acquiring control of our company and discouraging takeover bids. These provisions may also have the effect of encouraging persons considering unsolicited tender offers or other unilateral takeover proposals to negotiate with our board of directors rather than pursue non-negotiated takeover attempts. These provisions include the items described below.

Board Vacancies

Our amended and restated bylaws provide that any vacancy on our board of directors, however occurring, including a vacancy resulting from an increase in the size of our board of directors, may only be filled by the affirmative vote of a majority of our directors then in office even if less than a quorum.

No Cumulative Voting

The DGCL provides that stockholders are not entitled to the right to cumulate votes in the election of directors unless our amended and restated certificate of incorporation provides otherwise. Our amended and restated certificate of incorporation and our amended and restated bylaws provide that there shall be no cumulative voting.

No Written Consent of Stockholders

Our amended and restated certificate of incorporation provides that all stockholder actions are required to be taken by a vote of the stockholders at an annual or special meeting, and that stockholders may not take any action by written consent in lieu of a meeting.

Meetings of Stockholders

Our amended and restated bylaws provide that a majority of the members of our board of directors then in office, the chairman of the board of directors or the chief executive officer may call special meetings of stockholders and only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders. Our amended and restated bylaws limit the business that may be conducted at an annual meeting of stockholders to those matters properly brought before the meeting.

Advance Notice Requirements

Our amended and restated bylaws establish advance notice procedures for stockholders seeking to bring business before an annual meeting of stockholders. These procedures provide that notice of stockholder proposals must be timely given in writing to our corporate secretary prior to the meeting at which the action is to be taken. Generally, to be timely, notice must be received at our principal executive offices not less than 60 days prior to the first anniversary date of the annual meeting for the preceding year. The notice must contain certain information specified in the amended and restated bylaws.

Blank Check Preferred Stock

Our amended and restated certificate of incorporation provides for authorized shares of preferred stock. The existence of authorized but unissued shares of preferred stock may enable our board of directors to render more difficult or to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest, or otherwise. For example, if in the due exercise of its fiduciary obligations, our board of directors were to determine that a takeover proposal is not in the best interests of us or our stockholders, our board of directors could cause shares of preferred stock to be issued without stockholder approval in one or more private offerings or other transactions that might dilute the voting or other rights of the proposed acquirer or insurgent stockholder or stockholder group. In this regard, our amended and restated certificate of incorporation grants our board of directors broad power to establish the rights and preferences of authorized and unissued shares of preferred stock. The issuance of shares of preferred stock could decrease the amount of earnings and assets available for distribution to holders of shares of common stock. The issuance may also adversely affect the rights and powers, including voting rights, of these holders and may have the effect of delaying, deterring or preventing a change in control of us.

Delaware General Corporation Law

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 three-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner. A “business combination” includes, among other things, a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. An “interested stockholder” is a person or entity who, together with affiliates and associates, owns, or did own within three years prior to the determination of interested stockholder status, 15% or more of the corporation’s voting stock. Under Section 203, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions:

- before the stockholder became interested, our board of directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;

- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers, and employee stock plans, in some instances; or

- at or after the time the stockholder became interested, the business combination was approved by our board of directors and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

Any provision of our amended and restated certificate of incorporation, amended and restated bylaws or Delaware law that has the effect of delaying, preventing or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock, and could also affect the price that some investors are willing to pay for our common stock.

Choice of Forum

Our restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for any derivative action or proceeding brought on our behalf; any action asserting a breach of fiduciary duty; any action asserting a claim against us arising pursuant to the DGCL, our restated certificate of incorporation or our restated bylaws; or any action asserting a claim against us that is governed by the internal affairs doctrine. The enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could find these types of provisions to be inapplicable or unenforceable.

Limitations of Liability; Indemnification of Directors and Officers

Reference is made to Section 102(b)(7) of the DGCL, which permits a corporation in its certificate of incorporation or an amendment thereto to eliminate or limit the personal liability of a director for violations of the director's fiduciary duty, except (i) for any breach of the director's fiduciary 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 DGCL (providing for liability of directors for unlawful payment of dividends or unlawful stock purchases or redemptions), or (iv) for any transaction from which the director derived an improper personal benefit. Our amended and restated certificate of incorporation contains the provisions permitted by Section 102(b)(7) of the DGCL.

Reference is made to Section 145 of the DGCL, which provides that a corporation may indemnify any persons, including directors and officers, who are, or are threatened to be made, parties to any threatened, pending or completed legal action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of such corporation), by reason of the fact that such person is or was a director, officer, employee or agent of such corporation, or is or was serving at the request of such corporation as a director, officer, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorney's fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, provided such director, officer, employee or agent acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the corporation's best interests and, with respect to any criminal actions or proceedings, had no reasonable cause to believe that his or her conduct was unlawful. A Delaware corporation may indemnify directors and/or officers in an action or suit by or in the right of the corporation under the same conditions, except that no indemnification is permitted without judicial approval if the director or officer is adjudged to be liable to the corporation. Where a director or officer is successful on the merits or otherwise in the defense of any action referred to above, the corporation must indemnify him or her against the expenses which such director or officer actually and reasonably incurred.

Our amended and restated certificate of incorporation provides indemnification of directors and officers to the fullest extent permitted by applicable law. We have obtained liability insurance for each director and officer for certain losses arising from claims or charges made against them while acting in their capacities as directors or officers of us. We have entered into indemnification agreements with each of our executive officers and directors. These agreements provide that, subject to limited exceptions and among other things, we will indemnify each of our executive officers and directors to the fullest extent permitted by law and advance expenses to each indemnitee in connection with any proceeding in which a right to indemnification is available.

Registration Rights

Amada Holdings Co., Ltd. ("Amada") is entitled to rights with respect to the registration of its shares under the Securities Act of 1933, as amended (the "Securities Act"). These registration rights are contained in the Securities Purchase Agreement by and between the Company, Viavi Solutions Inc. (formerly JDS Uniphase Corporation), and Amada, dated May 12, 2015 (the "Securities Purchase Agreement"). The registration rights provided for in the Securities Purchase Agreement will expire (i) five years following the Series A Preferred Stock's conversion into shares of our common stock, which took place on November 2, 2018, or, (ii) immediately prior to a "Liquidation Event" (as such term is defined in the Series A Preferred Stock certificate of designation). Subject to certain conditions, we will pay the registration expenses of Amada. In an underwritten offering, the managing underwriter, if any, has the right, subject to specified conditions, to limit the number of shares Amada may include in the offering.

Demand Registration Rights

Amada can on one occasion request that we register all or a portion of its shares. The request for registration must cover at least that number of shares with an anticipated aggregate offering price of at least $15 million. If we determine that it would be detrimental to our stockholders to effect such a demand registration, we have the right to defer such registration once for a period of up to 90 days.

Piggyback Registration Rights

If we propose to register any of our securities under the Securities Act, in connection with the public offering of such securities solely for cash, Amada's converted shares of our common stock will be entitled to certain "piggyback" registration rights allowing Amada to include its converted shares in such registration, subject to certain marketing and other limitations. As a result, whenever we propose to file a registration statement under the Securities Act, other than with respect to a registration related to (i) a company stock plan, (ii) the exchange of securities in certain corporate reorganizations, or (iii) a registration in which the only stock being registered is stock issuable upon the conversion of debt securities that are also being registered, Amada is entitled to notice of the registration and has the right, subject to limitations that the underwriters may impose on the number of shares included in the registration, to include its converted shares in the registration.

Listing

Our common stock is listed on the Nasdaq Stock Market under the symbol "LITE."

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A.

REAL ESTATE PURCHASE AND SALE AGREEMENT

1001 RIDDER PARK DRIVE, 1717 FOX DRIVE AND 1751 FOX DRIVE,
SAN JOSE, CALIFORNIA

THIS REAL ESTATE PURCHASE AND SALE AGREEMENT (this "**Agreement**") is dated as of May 7, 2019 (the "**Effective Date**"), by and between **MNCVAD-GRAYMARK RIDDER PARK LLC** , a Delaware limited liability company ("**Seller**"), and **LUMENTUM OPERATIONS LLC**, a Delaware limited liability company ("**Buyer**"). Seller and Buyer are sometimes collectively referred to herein as "**Parties**" and individually as "**Party**."

IN CONSIDERATION of the respective agreements hereinafter set forth, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Seller and Buyer agree as follows:

1. Property Included in Sale. Seller hereby agrees to sell and convey to Buyer, and Buyer hereby agrees to purchase from Seller, subject to the terms and conditions set forth in this Agreement and the Closing Documents, all of Seller's right, title and interest in and to the following:

(a) that certain real property located at 1001 Ridder Park Drive, 1717 Fox Drive, and 1751 Fox Drive in the City of San Jose ("**City**"), County of Santa Clara, State of California and more particularly described in Exhibit A attached hereto with APNs 237-03-068, 237-03-067, 237-03-066, 237-03-079 and 237-03-078 (the "**Real Property**");

(b) any rights, privileges, and easements appurtenant to the Real Property, to the extent owned by Seller, including, without limitation, to the extent owned by Seller, minerals, oil, gas, and other hydrocarbon substances on and under the Real Property, development rights, air rights, water, water rights, riparian rights, and water stock relating to the Real Property and rights-of-way or other appurtenances benefitting the Real Property (collectively, the "**Appurtenances**");

(c) any improvements and fixtures to the extent owned by Seller and located on the Real Property, including, without limitation, the buildings located thereon as well as any other structures located on the Real Property, all apparatus, installed equipment, and appliances to the extent owned by Seller and located on or in and used in connection with the operation or occupancy of the Real Property, and any on-site parking (collectively, the "**Improvements**");

(d) any tangible personal property, if any, to the extent owned by Seller and located on or used in connection with the ownership, operation, and maintenance of the Real Property and Improvements (excluding data in digital or computer files and any computer software or hardware) (collectively, the "**Personal Property**");

(e) to the extent assignable, without third party consents or any cost or expense to Seller except as expressly provided in Section 4(d), all right, title, and interest of Seller in and to the following: "Assumed Contracts", licenses, permits, approvals, certificates of occupancy, dedications, subdivision maps, entitlements, studies, reports, surveys, plans, marks, logos, names (excluding MNCVAD-Graymark or any name including MNCVAD, Graymark, New York Life, New York Life Real Estate Investors, NYL Real Estate Investors, NYL, NYLIM, NYL Investors and any name including such terms or abbreviations), and telephone numbers used exclusively in the ownership, use, operation, or maintenance of the Real Property, Improvements, or Personal Property (collectively, the "**Intangible Property**"); and

(f) Seller's rights and interest as landlord under any leases ("**Leases**"), including all amendments, modifications and renewals, in effect as of the Closing (except for any past due rents or other past due monetary obligations under the Leases) (excluding data in digital or computer files and any computer software or hardware), a right to all security deposits under the Leases and any and all guaranties of the Leases (subject to applicable laws and the terms of the applicable Leases respecting said security deposits). For convenience, this Agreement refers to "Leases" even if there is only one lease. If there is only one lease, the reference to "Leases" shall be deemed to refer to such lease and references to the "tenants" shall be deemed to refer to the "tenant."

All of the items referred to in subparagraphs (a), (b), (c), (d), (e) and (f) above are collectively referred to as the "**Property**."

Schedule 1 attached hereto sets forth an index of defined terms used in this Agreement.

2. Purchase Price.

(a) Contemporaneously with the execution and delivery of this Agreement, Buyer has delivered to Seller and Seller hereby acknowledges the receipt of funds in the amount of One Hundred Dollars ($100.00) (the "**Independent Contract Consideration**"), which amount the Parties bargained for and agreed to as consideration for Buyer's right to inspect and purchase the Property pursuant to this Agreement and for Seller's execution, delivery and performance of this Agreement. The Independent Contract Consideration is in addition to and independent of any other consideration or payment provided in this Agreement, is nonrefundable, and is fully earned and shall be retained by Seller notwithstanding any other provision of this Agreement.

(b) The purchase price of the Property is Fifty-Four Million Dollars ($54,000,000.00) (the "**Purchase Price**") and shall be paid as follows:

(i) Upon the mutual execution and delivery of this Agreement, Buyer shall deposit in escrow with Chicago Title Insurance Company (in such capacity, "**Escrow Agent**" and in its capacity as the issuer or prospective issuer of the Title Policy, as defined below, the "**Title Company**"), 455 Market Street, Suite 2100, San Francisco, CA 94105, Attn: Terina J. Kung, Escrow Officer, phone: (415) 291-5128, email: terina.kung@ctt.com, an earnest money deposit of One Million and No/100 Dollars ($1,000,000.00) (the "**Initial Deposit**"). "**Business Day**" means any day, other than a Saturday, Sunday, or holiday, on which commercial banks in the State of New York are open for business.

(ii) On or before the date of expiration of the Due Diligence Period, if this Agreement has not been terminated in accordance with the provisions of Section 4(j), then Buyer shall deposit with the Escrow Agent an additional earnest money deposit in the amount of One Million and No/100 Dollars ($1,000,000.00) (the "**Additional Deposit**"). The Initial Deposit together with the Additional Deposit when and if made, and all interest earned thereon, are collectively herein called the "Deposit". Unless Buyer terminates this Agreement prior to the end of the Due Diligence Period in accordance with Section 4(j), then the Deposit shall be nonrefundable to Buyer, except as otherwise set forth in this Agreement.

(iii) Escrow Agent shall hold the Deposit in a joint escrow account for the benefit of Buyer and Seller.

(iv) If the sale of the Property as contemplated hereunder is consummated, then the Deposit shall be credited against the Purchase Price. The balance of the Purchase Price, as adjusted pursuant to the express terms and provisions of this Agreement below, shall be deposited into the joint escrow with the Escrow Agent in immediately available funds at least one (1) Business Day prior to the closing of the purchase and sale contemplated hereunder (the "**Closing**"). The Closing shall occur on May 21, 2019 (i.e., fifteen (15) days following the expiration of the Due Diligence Period), and such date shall be referred to herein as the "**Closing Date**." The Closing shall be deemed to have occurred upon the delivery and recording of the Deed unless the Parties agree to an escrow Closing based upon the Escrow Agent's irrevocable and unconditional commitment to disburse monies due Seller and issue Buyer's Title Policy in advance of recordation of the Deed.

(c) The Escrow Agent joins herein below to evidence its agreement to hold all funds deposited with the Escrow Agent in accordance with the terms and conditions of this Agreement. Further, the following provisions shall control with respect to the rights, duties, and liabilities of the Escrow Agent.

(i) The Escrow Agent acts hereunder as a depository only and is not responsible or liable in any manner whatsoever for the (A) sufficiency, correctness, genuineness, or validity of any written

instrument, notice, or evidence of a Party's receipt of any instruction or notice which is received by the Escrow Agent, or (B) identity or authority of any person executing such instruction notice or evidence.

(ii) The Escrow Agent shall have no responsibility hereunder except for the performance by it in good faith of the acts to be performed by it hereunder, and the Escrow Agent shall have no liability except for its own negligence or willful misconduct or breach of this Agreement.

(iii) The Escrow Agent shall be reimbursed by whichever of Buyer or Seller is the losing party for any reasonable expenses incurred by the Escrow Agent arising from a dispute with respect to the amount held in escrow, including the cost of any legal expenses, should the Escrow Agent deem it necessary to retain an attorney with respect to the disposition of the amount held in escrow.

(d) If there is a dispute between Buyer and Seller concerning whether or not Buyer or Seller is entitled to the Deposit following a termination of this Agreement, then either Party may have such dispute, claim, or controversy determined by arbitration (the "**Arbitration**") in the JAMS office nearest the Property, before a single arbitrator (the "**Arbitrator**"). The Party requesting arbitration shall advance any initial administrative fees and costs of JAMS necessary for JAMS immediately to commence the arbitration, but shall be reimbursed for the same if determined to be the prevailing party. The arbitration shall be administered by JAMS pursuant to its Streamlined Arbitration Rules and Procedures except that the Parties shall use commercially reasonable efforts to cause the Arbitration to be concluded and the award (the "**Award**") given to the Parties in writing within twenty (20) days after either Party requests Arbitration (the "**Outside Date**"). JAMS shall choose a retired judge as the Arbitrator from its real property panel of Arbitrators, on the first (1st) Business Day after the Arbitration is requested and the Parties waive the right to select the Arbitrator. If the Arbitrator so selected is not acceptable to either of the Parties, for good cause, the Party to whom the Arbitrator is not acceptable shall have one (1) Business Day, after the selection is made by JAMS, to reject the Arbitrator and to state the cause for rejection. The Parties waive any provision of law which would give the Parties a longer period to reject the Arbitrator selected by JAMS. If either Party rejects the first Arbitrator selected by JAMS, then JAMS shall, within one (1) Business Day after the rejection, select another retired judge as the Arbitrator and the process outlined above shall be repeated until an Arbitrator is selected and not rejected. If Seller rejects an Arbitrator selected by JAMS, then the Outside Date shall be extended two (2) Business Days for each instance that an Arbitrator selected by JAMS is rejected by Seller. Discovery shall be allowed pursuant to California Code of Civil Procedure Section 1283.05. The Parties shall cooperate in taking commercially reasonable actions required to cause the arbitration to be concluded within such twenty (20) day period but not later than the Outside Date. The arbitration shall be concluded even if it is not completed by the Outside Date. Judgment on the Award may be entered in any court having jurisdiction. The Arbitrator may, in the Award, allocate all or part of the costs of the Arbitration, including the fees of the Arbitrator and the reasonable attorneys' fees of the prevailing party.

NOTICE: BY INITIALING IN THE SPACE BELOW YOU ARE AGREEING TO HAVE ANY DISPUTE ARISING OUT OF THE MATTERS INCLUDED IN THIS SECTION 2(d) DECIDED BY NEUTRAL ARBITRATION AS PROVIDED BY CALIFORNIA LAW AND YOU ARE GIVING UP ANY RIGHTS YOU MIGHT POSSESS TO HAVE THE DISPUTE LITIGATED IN A COURT OR JURY TRIAL. BY INITIALING IN THE SPACE BELOW YOU ARE GIVING UP YOUR JUDICIAL RIGHTS TO DISCOVERY AND APPEAL, UNLESS THOSE RIGHTS ARE SPECIFICALLY INCLUDED IN THE "ARBITRATION OF DISPUTES" PROVISION. IF YOU REFUSE TO SUBMIT TO ARBITRATION AFTER AGREEING TO THIS PROVISION, YOU MAY BE

COMPELLED TO ARBITRATE UNDER THE AUTHORITY OF THE CALIFORNIA CODE OF CIVIL PROCEDURE. YOUR AGREEMENT TO THIS ARBITRATION PROVISION IS VOLUNTARY.

WE HAVE READ AND UNDERSTAND THE FOREGOING AND AGREE TO SUBMIT DISPUTES ARISING OUT OF THE MATTERS INCLUDED IN THE "ARBITRATION OF DISPUTES" PROVISION TO NEUTRAL ARBITRATION.

/s/ RB	/s/ JH
SELLER'S INITIALS	BUYER'S INITIALS

3. Transfer of Title to the Property.

(a) At the Closing, Seller shall convey to Buyer title to the Real Property, the Appurtenances and the Improvements by duly executed and acknowledged Grant Deed in the form attached hereto as Exhibit B (the "**Deed**"). Evidence of delivery of title shall be the Title Company's irrevocable commitment to issue to the Buyer, effective as of the date and time the Deed is recorded, a CLTA Owner's Policy of Title Insurance with coverage in the amount of the Purchase Price, insuring that fee simple title to the Real Property and the Improvements and title to the Appurtenances is vested in Buyer subject only to the Permitted Exceptions (the "**Title Policy**").

(b) At the Closing, Seller shall transfer all of Seller's right, title and interest, if any, in and to any Personal Property and Intangible Property (other than the Leases) by a Bill of Sale and Assignment of Contracts and Intangible Property in the form attached hereto as Exhibit C (the "**Assignment of Intangible Property**").

(c) At the Closing, Seller shall assign to Buyer all of Seller's right, title and interest in and to the Leases and Buyer shall assume all of Seller's obligations under the Leases by an Assignment and Assumption of Leases in the form attached hereto as Exhibit D (the "**Assignment and Assumption of Leases**"). The Leases in effect as of the Effective Date are more fully described on the schedule attached hereto as Exhibit E (the "**Schedule of Leases**").

4. Due Diligence Period; As-Is Purchase.

(a) Due Diligence Period. Buyer, or its designees, shall have until 5:00 p.m. (Pacific Daylight Time) on May 6, 2019 (the "**Due Diligence Period**"), to conduct its due diligence review with respect to the Property, including, without limitation, conducting examinations, inspections, testing, studies and investigations of the Property (collectively, the "**Due Diligence**") in the manner and subject to the limitations contained herein.

(b) Due Diligence Deliveries. Buyer and Seller acknowledge that Buyer shall review and inspect all documents and other information described on Exhibit I attached hereto (collectively, the "**Due Diligence Documents**") and any other documents provided or made available by or on behalf of Seller or obtained by Buyer with respect to the Property. Except as otherwise expressly provided herein, Seller makes no representation or warranty as to the truth, accuracy, or completeness of the Due Diligence Documents or any other studies, documents, reports, or other information provided to Buyer by or on behalf of Seller.

(c) Further Document Review. Subject to the provisions of this Section 4(c), Seller shall provide Buyer with reasonable access to Seller's relevant files with respect to the Property located at NYL Investors LLC, One Front Street, Suite 550, San Francisco, California 94111 for inspection and copying, but in no event shall any originals of files be removed. On two (2) Business Days advance written notice from Buyer to Seller, Seller shall, to the extent in Seller's actual possession or under Seller's actual control, provide access to all of Seller's books and records relating exclusively to the Property, but excluding any books, records and files that Seller deems confidential, proprietary or privileged, or other information prepared for internal purposes, including budgets, correspondence or documents relating to Buyer's acquisition of the Property, or information relating to prior prospective sales of the Property, work product, marketing studies, appraisals of the Property, and information relating to Seller itself for inspection and copying.

(d) Contracts. All unrecorded contracts in Seller's possession relating to Seller's ownership or operation of the Property in effect on the Effective Date and that may be assignable to Buyer at Closing are as specified on Exhibit F attached hereto ("**Contracts**"), excluding, however, all property management contracts with Seller, all insurance policies, and all sale or leasing brokerage listing agreements (collectively, "**Excluded Contracts**"), none of which Excluded Contracts will be assigned to Buyer at the Closing. The Leases are neither Contracts nor Excluded Contracts. Prior to the expiration of the Due Diligence Period, Buyer shall notify Seller in writing of any Contracts specified on Exhibit F attached hereto Buyer disapproves and does not want to assume at Closing. Seller shall (i) terminate at Closing all Contracts disapproved by Buyer in writing prior to the end of the Due Diligence Period, and pay any damages, penalty or fee imposed by any party to any such Contract in connection with such termination, and (ii) terminate all Excluded Contracts as of the Closing. Only those Contracts specified on Exhibit F attached hereto that Buyer approves of in writing prior to the end of the Due Diligence Period shall be assigned to, and assumed by, Buyer at Closing (the "**Assumed Contracts**"), with Seller being responsible for the payment of any fee or other charge imposed by any party to any such Assumed Contract in connection with such transfer. The list of Assumed Contracts will be attached to the Assignment of Intangible Property.

(e) Title Matters; Buyer's Objections; Seller's Right to Cure.

(i) Buyer hereby confirms receipt of (a) the existing survey of the Real Property, if any (the "**Survey**"), and (b) a

preliminary title report for the Real Property issued by the Title Company and copies of or hyperlinks to all documents referenced as exceptions therein (the "**PTR**"). Buyer may obtain, at its sole cost and expense, an updated survey of the Property (the "**Updated Survey**"). Within two (2) Business Days after Buyer's receipt of the Updated Survey, Buyer shall deliver a copy of the same to Seller and the Title Company.

(ii) Buyer shall be obligated to accept title to the Property, subject solely to the following matters: (i) as of the Closing Date, the lien of any real property taxes and assessments not yet due and payable including any supplementary taxes and assessments relating to the period after Closing which may be imposed as a result of Buyer's purchase of the Property from Seller; (ii) all matters of record which are approved or deemed approved by Buyer in accordance with Section 4(f); (iii) matters disclosed by the Survey or the Updated Survey which are approved or deemed approved by Buyer in accordance with Section 4(f); (iv) the rights of tenants under the Leases; (v) zoning regulations and ordinances, building restrictions and regulations of governmental agencies having jurisdiction over the Property; and (vi) matters created by, through or under Buyer. All of the foregoing shall be, collectively, the "**Permitted Exceptions**."

(iii) Seller agrees to pay and remove, or, at Seller's election to cause the Title Company to insure over to Buyer's reasonable satisfaction, any mechanic's lien or other monetary lien recorded against title to the Property, but excluding those caused by any tenant under the Leases, any new liens or encumbrances recorded against title to the Property after the Effective Date and voluntarily created by Seller, and any property taxes and assessments that become delinquent prior to Closing (collectively referred to as the "**Removed Liens**").

(f) Title Review. In the event Buyer objects to any matters affecting title which are not Permitted Exceptions, Buyer shall, on or before the tenth (10th) day following the Effective Date deliver a title objection letter to Seller and Title Company identifying any such objections (the "**Title Objection Letter**"). Any matters affecting title that are not timely objected to in the Title Objection Letter shall be deemed approved by Buyer and shall constitute additional Permitted Exceptions. In the event Buyer timely delivers the Title Objection Letter, Seller shall have until the date which is five (5) Business Days after receipt of the Title Objection Letter within which to notify Buyer in writing (the "**Seller Response Notice**") whether Seller elects to endeavor to eliminate or modify any such identified objections. If Seller delivers the Seller Response Notice indicating its election to endeavor to eliminate or modify any such identified objections, then it shall be a condition precedent to Buyer's obligation to purchase the Property that such identified objections are eliminated or modified to Buyer's reasonable satisfaction. If no such Seller Response Notice is given, Seller shall be deemed to have elected not to eliminate or to modify any matters affecting title to the Property other than the Removed Liens. Seller shall have no obligation to so eliminate or modify any unacceptable exceptions or matters affecting title to the Property or to incur any cost or expense in connection therewith other than with respect to the Removed Liens. In the event that Seller has not agreed to endeavor to eliminate or modify a Buyer's title objection, other than Removed Liens, Buyer shall, prior to the end of the Due Diligence Period, either (a) waive in writing such objections and accept title to the Property subject to such title objections, or (b) terminate this Agreement by notice to Seller, in which event the Deposit shall be paid to Buyer and, thereafter, the Parties shall have no further rights or obligations hereunder except for those obligations which expressly survive the termination of this Agreement. Unless Buyer timely delivers a Termination Notice, Buyer shall be deemed to have waived all objections to title to the Property other than those (i) that Seller has agreed to endeavor to eliminate or modify and (ii) Removed Liens. If after the end of the Due Diligence Period and prior to the Closing Date any new title exceptions ("**New Exceptions**") are first disclosed in writing to Buyer and Buyer timely objects to such New Exceptions, then subject to the provisions of this Section 4(f), Seller shall have five (5) Business Days following the giving of written notice by Buyer to Seller objecting to such New Exception(s) to notify Buyer in writing whether or not Seller elects to endeavor, at Seller's sole option, to cause such exceptions to be removed as exceptions or insured against to Buyer's reasonable satisfaction at no expense to Buyer, which, in either case, shall be deemed the cure of such title defect. If Seller elects to endeavor to cause such exceptions to be removed or insured against, then it shall be a condition precedent to Buyer's obligation to purchase the Property that such identified objections are eliminated or modified to Buyer's reasonable satisfaction. If such five (5) Business Day period extends beyond the then scheduled Closing Date, the Closing Date shall be extended until the first Business Day following the expiration of such period. If such exceptions are not so cured, Buyer may (i) waive in writing such objectionable title exceptions and proceed to Closing, or (ii) terminate this Agreement and obtain a return of the Deposit within three (3) Business Days and, thereafter, the Parties shall have no further rights or obligations hereunder except for those obligations which expressly survive the termination of this Agreement. If Buyer fails to object to or waive in writing any New Exceptions within three (3) Business Days after Buyer first discovers or learns about such New Exceptions as described above, then such New Exceptions shall be deemed to be additional Permitted Exceptions.

(i) Seller shall be entitled to one or more extensions of the Closing Date (not to exceed thirty (30) days in the aggregate) for the purposes of removal of any exceptions to title.

(g) Site Visits.

(i) Access to Property. Buyer and its Licensee Parties shall have access to the Property pursuant to the April 16, 2019 Access Agreement. As used herein, the term "**Licensee Parties**" shall mean Buyer's current and prospective lenders and investors, and each of their principals, directors, employees, partners, accountants, advisors, agents, contractors, consultants, or representatives and their respective agents, subcontractors, consultants, and representatives of any tier, who inspect, investigate, test, or evaluate the Property on behalf of Buyer or its current and prospective lenders and investors.

(ii) Contents of Notice; Seller Representative. The notice to be given to the Seller prior to any entry onto the Property shall describe generally the scope of any Due Diligence which Buyer intends to conduct during Buyer's access to the Property. Seller shall have the right to have a representative present during any visits to or inspections of the Property by Buyer or any Licensee Parties.

(iii) Physically Intrusive Due Diligence. If Buyer desires to conduct any physically intrusive Due Diligence such as, but not limited to, sampling of soils or the like, Buyer shall provide not less than two (2) Business Days prior written notice thereof to Seller, which notice shall identify exactly what procedures Buyer desires to perform and shall request Seller's express written consent thereto. Seller may withhold or

condition its consent to any physically intrusive Due Diligence in Seller's sole and absolute discretion.

(iv) Third Party Consents Required for Due Diligence Activity. If Buyer desires to undertake any Due Diligence activity which would require the approval of any governmental or quasi-governmental body or agency having jurisdiction over Seller or the Property (each a "**Governmental Entity**"), or of a tenant, and provided that Seller has approved such Due Diligence, Seller, at no cost or expense to Seller, shall contact such entity, as applicable, and request consent with respect to such Due Diligence and shall diligently pursue obtaining such consent, at Buyer's expense, with expenses reasonably paid or incurred by Seller to be reimbursed by Buyer within five (5) Business Days after written request. In no event shall Seller be liable to Buyer as a result of the withholding of any such consent by any such entity.

(v) Compliance With Law, Leases and Available Documents in Conducting Due Diligence. Buyer and all Licensee Parties shall, in performing such Due Diligence, (i) comply in all material respects with the agreed upon procedures, (ii) comply in all material respects with any and all laws, ordinances, rules, and regulations applicable to the Property, and (iii) will not engage in any activities which would violate any Lease or any publicly available documents, including, but not limited to, recorded documents or any licenses, permits, approvals, certificates of occupancy, dedications, subdivision maps or entitlements. All Due Diligence shall be conducted to avoid any unreasonable disturbance of occupants of the Property or of properties adjacent to or in the vicinity of the Property.

(vi) Insurance. Prior to any of the Licensee Parties entering the Real Property to conduct the inspections and tests described in this Section 4, Buyer shall obtain and maintain, on behalf of itself and the other Licensee Parties, or shall cause each of the other Licensee Parties who enter the Property to maintain (and shall deliver to Seller evidence thereof), at Buyer's or the Licensee Parties' sole cost and expense, (a) commercial general liability insurance, from an insurer reasonably acceptable to Seller, in the amount of not less than $2,000,000 aggregate liability, with such policies to name Seller, the property manager, and any of their respective affiliates specified by any of them in writing as additional insureds, which insurance shall provide coverage against any claim for personal liability or physical property damage caused by any of the Licensee Parties in connection with such inspections and tests and/or the entry or activities of the Licensee Parties upon the Property, and (b) workers' compensation insurance having limits no less than those required by state statute and federal statute, if applicable. In addition, Buyer shall obtain excess (umbrella) liability insurance, meeting the requirements above, with limits of not less than Five Million Dollars ($5,000,000) per occurrence.

(vii) Payment for Inspections and Examinations and Restoration. Buyer shall promptly pay when due the costs of all entry and inspections and examinations done with regard to the Property. Buyer shall promptly restore the Property to substantially the same condition in which the Property was found before any such entry, inspection, or examination was undertaken.

(viii) Mechanics Liens. Buyer covenants and agrees not to suffer or permit any lien of mechanics or materialmen or others to be placed against the Real Property or any part thereof with respect to work or services claimed to have been performed for or materials claimed to have been furnished to Buyer or the Licensee Parties at the Real Property or any part thereof. In the event such lien or claim of lien is not released and removed within five (5) days after written notice from Seller, Seller, at its sole option and in addition to any of its other rights and remedies, may take any and all action necessary to release and remove such lien or claim of lien (it being agreed by Buyer that Seller shall have no duty to investigate the validity thereof), and Buyer shall promptly upon notice thereof reimburse Seller for all sums, costs and expenses, including court costs and attorneys' and expenses, incurred by Seller in connection with such lien or claim of lien. The terms and provisions of this clause (viii) shall survive the termination of this Agreement.

(h) Discussions and Interviews. Any discussions or interviews with any officer, director, shareholder, member, manager, employee or agent of Seller, of any tenant of the Property, or of any Governmental Entity shall be conducted, at Seller's election, in the presence of the Designated Representative, or an agent or employee of Seller approved by the Designated Representative. Seller shall make either the Designated Representative or another agent or employee approved by the Designated Representative available to Buyer for such discussions or interviews, provided that Buyer gives Seller written notice of Buyer's intent to conduct such interview or discussions at least one (1) Business Days prior to the date Buyer intends to conduct such interviews or discussions. Notwithstanding the foregoing provisions of this Section, Buyer shall not be required to notify Seller prior to contacting any Governmental Entity in connection with obtaining information that is publicly available or of a ministerial or administrative nature, including, without limitation, routine inquiries about current zoning and the Property's compliance.

(i) As-Is Purchase. Buyer acknowledges that prior to expiration of the Due Diligence Period, subject to the limitations of this Agreement, Buyer will have had the opportunity to inspect the Property and observe the physical characteristics and condition of the Property and any and all other matters, as to, concerning or with respect to any matter whatsoever relating to the Property or this Agreement or of concern to Buyer ("**Property Conditions**"), including, but not limited to: title; the environmental condition of the Property, including the presence or absence of Hazardous Materials in, on, or about the Property; pest and geological conditions of the Property; the Leases; the Contracts; the financial condition of the Property; the suitability of the Property for any and all activities and/or uses which may be conducted thereon; the compliance of or by the Property with any and all laws, rules, ordinances or regulations of any applicable governmental authority or body (including environmental, zoning, building codes, and the status of any development or use rights respecting the Property); the availability of permits, licenses and approvals respecting the Property; the economic or engineering feasibility of any alteration or renovation of the Property that may be contemplated by Buyer; the habitability, merchantability, marketability, profitability or fitness for a particular purpose of the Property; and the physical condition of the Improvements, including construction defects, deferred maintenance, and other adverse physical conditions or defects. Buyer further acknowledges and agrees that, except for any express representations, warranties, or agreements made by Seller in this Agreement or in the Closing Documents ("**Seller's Representations**"), neither Seller nor any of Seller's employees, agents, or representatives have made any representations, warranties, or agreements, express or implied, by or on behalf of Seller as to any matters concerning the Property Condition. Except for Seller's Representations, Seller disclaims any and all such representations, warranties, and agreements and Buyer agrees that, except for Seller's Representations, any inaccuracy or deficiency in information, advice, or documents given to Buyer shall be solely the responsibility and risk of Buyer, and shall not be chargeable in any respect to Seller. Buyer acknowledges that, except for Seller's Representations, it is not relying on any statement or representation, whether express or implied, oral or written, that has been made or that in the future may be made by Seller or any of Seller's employees, agents, attorneys or representatives concerning the Property Condition.

Buyer hereby acknowledges and agrees, except for Seller's Representations, that the Property is to be purchased, conveyed, and accepted by Buyer in its present condition, "**AS IS**," "**WHERE IS**" and "**WITH ALL FAULTS**".

By the end of the Due Diligence Period, subject to the limitations of this Agreement, Buyer will have examined, reviewed, and inspected the Property Conditions and other matters which, in Buyer's judgment, bear upon the Property and its value and suitability for Buyer's purposes. Upon Closing, Buyer will acquire the Property solely on the basis of Buyer's own examinations, reviews, and inspections and the title insurance protection afforded by the Title Policy and Seller's Representations.

Upon Closing, Buyer shall assume the risk that Property Conditions may not have been revealed by Buyer's investigations. The release and waiver of claims set forth below shall be referred to as the "**Release**." Upon the Closing, except with respect to Seller's Representations, Buyer, on its own behalf and on behalf of each of its successors and assigns and each and all of its and their respective agents, representatives, trustees, property managers (whether agents or independent contractors), investment managers, investment advisors, attorneys, consultants, contractors, partners, managers, members, shareholders, parents, subsidiaries, affiliates, joint ventures, directors, officers and employees and each of their agents, representatives, trustees, property managers (whether agents or independent contractors), investment managers, investment advisors, attorneys,

consultants, contractors, partners, managers, members, shareholders, parents, subsidiaries, affiliates, joint ventures, directors, officers and employees of any tier (collectively, "**Waiver Parties**") releases Seller and its agents, representatives, trustees, property managers (whether agents or independent contractors), investment managers, investment advisors, attorneys, consultants, contractors, partners, managers, members, shareholders, beneficiaries, parents, subsidiaries, affiliates, joint ventures, directors, officers and employees and each of their agents, representatives, trustees, property managers (whether agents or independent contractors), investment managers, investment advisors, attorneys, consultants, contractors, partners, managers, members, shareholders, beneficiaries, parents, subsidiaries, affiliates, joint ventures, directors, officers and employees of any tier and each of their respective successors and assigns (collectively, "**Released Parties**") from, and waives any and all liability, claims, demands, damages and costs (including attorneys' fees and expenses) of any and every kind or character, known or unknown, for, arising from, or attributable to, any and all Property Conditions, including, without limitation, any and all actual, threatened or potential claims, claims for contribution under Environmental Laws, suits, proceedings, actions, causes of action, demands, liabilities, losses, obligations, orders, requirements or restrictions, liens, penalties, fines, charges, debts, damages, costs, and expenses of every kind and nature, whether now known or unknown, whether foreseeable or unforeseeable, whether under any foreign, federal, state or local law (both statutory and non-statutory), and, whether asserted or demanded by a third party against any of the Waiver Parties or incurred directly or indirectly by any of the Waiver Parties themselves (collectively, "**Claims**"), which any of the Waiver Parties has or may have arising from or related to the following (collectively, "**Released Claims**"): (i) the physical condition of the Property, the financial condition of the Property, or the financial condition of the tenants under the Leases, the value of the Property or its suitability for Buyer's use, the status of any of the Leases or of the tenants thereunder, the ownership, management or operation of the Property, including any claim or demand by any tenant for the refund or return of any security deposit or other deposit to the extent credited to Buyer at Closing, or the accuracy or completeness of any information reviewed by Buyer in connection with its investigations of the Property and which may have been relied upon by Buyer in deciding to purchase the Property, (ii) any Handling of any Waste Materials or Hazardous Materials at, beneath, to, from, or about the Property, (iii) any compliance or non-compliance with Environmental Laws regarding any Waste Materials, Hazardous Materials or any Handling related thereto at, beneath, to, from, or about the Property, (iv) any acts, omissions, services or other conduct related to any of the foregoing items "(i)" through "(iii)," inclusive, and/or (v) any condition, activity, or other matter respecting the Property that is not addressed by any of the foregoing items "(i)" through "(iv)," inclusive, and that is related to pollution or protection of the environment, natural resources, or public health; provided, however, the Released Claims shall not include claims for breach of Seller's Representations or intentional fraud. Buyer acknowledges that any condition of the Property which Buyer discovers or desires to correct or improve prior to or after the Closing Date shall be at Buyer's sole expense. This Release shall survive the Closing and the recording of the Deed conveying the Property from Seller to Buyer.

TO THE FULLEST EXTENT NOT PROHIBITED BY LAW, BUYER HEREBY EXPRESSLY AND SPECIFICALLY WAIVES THE BENEFITS OF SECTION 1542 OF THE CALIFORNIA CIVIL CODE ("SECTION 1542") AND ANY SUCCESSOR LAWS. SECTION 1542 PROVIDES AS FOLLOWS:

"A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS THAT THE CREDITOR OR RELEASING PARTY DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE AND THAT, IF KNOWN TO HIM OR HER, WOULD HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR OR RELEASED PARTY."

BUYER ACKNOWLEDGES THAT THIS WAIVER AND RELEASE IS VOLUNTARY AND WITHOUT ANY DURESS OR UNDUE INFLUENCE, AND IS GIVEN AS PART OF THE CONSIDERATION FOR THE AGREEMENTS SET FORTH HEREIN. BUYER EXPRESSLY ACKNOWLEDGES THAT IT MAY HEREAFTER DISCOVER FACTS DIFFERENT FROM OR IN ADDITION TO THOSE, WHICH IT NOW BELIEVES TO BE TRUE WITH RESPECT TO THE RELEASE OF CLAIMS. BUYER AGREES THAT THE FOREGOING RELEASE SHALL BE AND REMAIN EFFECTIVE IN ALL RESPECTS NOTWITHSTANDING SUCH DIFFERENT OR ADDITIONAL FACTS.

BUYER HAS BEEN ADVISED BY ITS LEGAL COUNSEL AND UNDERSTANDS THE SIGNIFICANCE OF THIS WAIVER OF SECTION 1542 RELATING TO UNKNOWN, UNSUSPECTED AND CONCEALED CLAIMS, AND BUYER HEREBY SPECIFICALLY ACKNOWLEDGES THAT BUYER HAS CAREFULLY REVIEWED THIS SUBSECTION AND DISCUSSED ITS IMPORT WITH LEGAL COUNSEL AND THAT THE PROVISIONS OF THIS SUBSECTION ARE A MATERIAL PART OF THIS AGREEMENT. BY ITS INITIALS BELOW, BUYER ACKNOWLEDGES THAT IT FULLY UNDERSTANDS, APPRECIATES AND ACCEPTS ALL OF THE TERMS OF THIS SUBSECTION AND RELEASE.

NOTWITHSTANDING ANY OTHER PROVISION IN THIS AGREEMENT TO THE CONTRARY, THE WAIVERS, RELEASES, ACQUITTALS, AND DISCHARGES REFERRED TO ABOVE SHALL NOT BE APPLICABLE TO: (I) ANY CLAIMS ARISING OUT OF ANY BREACH OF COVENANTS, REPRESENTATIONS, OR WARRANTIES OF SELLER THAT ARE EXPRESSLY SET FORTH IN THE AGREEMENT; (II) DAMAGE TO PERSONAL PROPERTY OR PERSONAL OR BODILY INJURY WHICH OCCURRED ON THE REAL PROPERTY, OR ANY PART THEREOF, PRIOR TO THE CLOSE OF ESCROW, THROUGH NO ACT OR OMISSION ON THE PART OF BUYER AND/OR BUYER'S AGENTS, EMPLOYEES, CONSULTANTS OR CONTRACTORS; (III) ANY OBLIGATIONS OF SELLER UNDER THIS AGREEMENT OR ANY DOCUMENT DELIVERED BY SELLER TO BUYER AS OF THE CLOSING HEREUNDER THAT SURVIVE THE CLOSING HEREUNDER; (IV) AND ANY INTENTIONAL FRAUD COMMITTED BY SELLER.

________/s/ JH___________
BUYER'S INITIALS

As used in this Agreement, the following terms have the following definitions:

(1) "**Environmental Laws**" means any applicable foreign, federal, state or local law, statute, regulation, rule, ordinance, permit, prohibition, restriction, license, requirement, agreement, consent, or approval, or any determination, directive, judgment, decree or order of any executive, administrative or judicial authority at any federal, state or local level (whether now existing or subsequently adopted or promulgated) relating to pollution or the protection of the environment, natural resources or public health and safety.

(2) "**Handling**" means, at any time and to any extent and in any manner whatsoever, any presence of or any handling, storing, transferring, transporting, treating, using, recycling, separating, sorting, incinerating, transforming, reconstituting, containing, containerizing, packaging, manufacturing, generating, abandoning, covering, capping, dumping, closing, maintaining, disposing, placing, discarding, encapsulating, filling, landfilling, investigating, monitoring, remediating, removing, responding to, reporting on, testing, releasing, contamination resulting from, spilling, leaking, pouring, emitting, emptying, discharging, injecting, escaping, migrating, or leaching.

(3) "**Hazardous Materials**" means any material, waste, chemical, compound, substance, mixture, or byproduct that is identified, defined, designated, listed, restricted or otherwise regulated under Environmental Laws as a "hazardous constituent," "hazardous substance," "hazardous material," "extremely hazardous material," "hazardous waste," "acutely hazardous waste," "hazardous waste constituent," "infectious waste," "medical waste," "biohazardous waste," "extremely hazardous waste," "pollutant," "toxic pollutant," or "contaminant," or any other formulation intended to classify substances by reason of properties that are deleterious to the environment, natural resources or public health or safety including, without limitation, ignitability, corrosiveness, reactivity, carcinogenicity, toxicity, and reproductive toxicity. The term Hazardous Materials shall include, without limitation, the following:

i. a "Hazardous Substance," "Hazardous Material," "Hazardous Waste," or "Toxic Substance" under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. Section 9601, et seq., the Hazardous Materials Transportation Act, 49 U.S.C. Section 5101, et seq. or the Solid Waste Disposal Act, 42 U.S.C. Section 6901, et seq., including any regulations promulgated thereunder, as any of the foregoing may be amended;

ii. "Oil" or a "Hazardous Substance" under Section 311 of the Federal Water Pollution Control Act, 33 U.S.C. Section 1321, as may be amended, as well as any other hydrocarbonic substance, fraction, distillate or by-product;

iii. an "Acutely Hazardous Waste," "Extremely Hazardous Waste," "Hazardous Waste," or "Restricted Hazardous Waste," under Section 25110.02, 25115, 25117 or 25122.7 of the California Health and Safety Code, or listed pursuant to Section 25140 of the California Health and Safety Code, as any of the foregoing may be amended;

iv. a "Hazardous Material," "Hazardous Substance" or "Hazardous Waste" under Section 25117, 25260, 25281, 25316, 25501, or 25501.1 of the California Health and Safety Code, as any of the foregoing may be amended;

v. any substance or material defined, identified or listed as an "Acutely Hazardous Waste," "Extremely Hazardous Material," "Extremely Hazardous Waste," "Hazardous Constituent,"

"Hazardous Material," "Hazardous Waste," "Hazardous Waste Constituent," or "Toxic Waste" pursuant to Division 4.5, Chapters 10 or 11 of Title 22 of the California Code of Regulations, as may be amended;

vi. any substance or material listed by the State of California as a chemical known by the State to cause cancer or reproductive toxicity pursuant to Section 25249.8 of the California Health and Safety Code, as may be amended;

vii. a "Biohazardous Waste" or "Medical Waste" under Sections 117635 or 117690 of the California Health and Safety Code, as may be amended;

viii. mold;

ix. asbestos and any asbestos containing material; and

x. a substance that, due to its characteristics or interaction with one or more other materials, wastes, chemicals, compounds, substances, mixtures, or byproducts, damages or threatens to damage the environment, natural resources or public health or safety, or is required by any law or public entity to be remediated, including remediation which such law or public entity requires in order for property to be put to any lawful purpose.

(4) "**Waste Materials**" means any putrescible or nonputrescible solid, semisolid, liquid or gaseous waste of any type whatsoever, including, without limitation:

i. any garbage, trash, refuse, paper, rubbish, ash, industrial or commercial or residential waste, demolition or construction wastes, abandoned vehicles or parts thereof, discarded home and industrial appliances, sewage, sewage sludge, manure, vegetable or animal solid and semisolid waste, and any other item intended to be or actually dumped, abandoned, discarded, treated, transformed, incinerated, disposed of or recycled;

ii. any "solid waste" as defined in the Solid Waste Disposal Act, 42 U.S.C. Section 6901, et seq., including any regulations promulgated thereunder, as any of the foregoing may be amended;

iii. any "solid waste" as defined in the California Integrated Waste Management Act of 1989, California Public Resources Code Sections 40000, et seq., including any regulations promulgated thereunder, as any of the foregoing may be amended; and

iv. any "waste" as defined in the Porter Cologne Water Quality Control Act, California Water Code Sections 13000 et seq., including any regulations promulgated thereunder, as any of the foregoing may be amended.

(j) Expiration of Due Diligence Period. Unless Buyer delivers a notice (the "**Termination Notice**") to Seller before the end of the Due Diligence Period that Buyer elects to terminate this Agreement, Buyer shall be deemed to have elected to proceed with the transactions contemplated in this Agreement and to waive further diligence and investigation without any conditions or qualifications. If this Agreement is terminated in accordance with this Section 4(j), Buyer shall obtain a return of the Deposit within three (3) Business Days and neither Party shall have any rights or obligations hereunder (except to the extent otherwise provided herein with respect to obligations and liabilities that expressly survive the termination of this Agreement). If Buyer does not timely deliver the Termination Notice, the Deposit shall be deemed nonrefundable to Buyer, except in instances of Seller default under this Agreement, failure of the Buyer's Conditions Precedent to be satisfied or waived in writing by Buyer, or as otherwise expressly set forth in this Agreement. Buyer may determine to deliver or not to deliver a Termination Notice in its sole and absolute discretion for any reason or no reason.

(k) Termination of Agreement. If this Agreement is terminated prior to Closing for any reason other than Seller's default, then, Buyer shall return to Seller, within five (5) Business Days after termination, all original documents delivered to Buyer pursuant to Sections 4(b) and 4(c) and copies made by Buyer and its partners, attorneys, accountants, consultants, agents and prospective lenders, provided that Buyer (a) may retain one copy of such documents for compliance purposes, (b) will not be required to purge any electronic documents in its electronic archive system, and (c) may retain copies of any notes or summaries made from such documents so long as such notes or summaries are kept subject to the terms of this Agreement. Buyer shall not deliver to Seller any third party reports and studies relating to the Property procured or

obtained by Buyer, or any other person for the benefit of Buyer. The provisions of this Section 4(j) shall survive any termination of this Agreement.

(l) Natural Hazard Disclosures. As used herein, the term "Natural Hazard Area" shall mean those areas identified as natural hazard areas or natural hazards in the Natural Hazard Disclosure Act, California Government Code Sections 8589.3, 8589.4 and 51183.5, and California Public Resources Code Sections 2621.9, 2694 and 4136, and any successor statutes or laws (the "**Act**"). Seller shall use reasonable efforts to have the Title Company prepare and provide to Buyer a Natural Hazard Disclosure Statement (the "**Disclosure Statement**") in a form required by the Act no later than ten (10) Business Days prior to the expiration of the Due Diligence Period. Buyer acknowledges that Seller shall retain the services of the Title Company to examine the maps and other information made available to the public by government agencies for the purpose of enabling Seller to fulfill its disclosure obligations with respect to the Act and to prepare the written report of the result of its examination (the "**Report**"). Buyer acknowledges that the Report fully and completely discharges Seller from its disclosure obligations under the Act and under California Civil Code Sections 1102 through 1102.17. Buyer acknowledges and agrees that nothing contained in the Disclosure Statement limits Buyer from its opportunity to fully investigate and satisfy itself with the condition of the Property during the Due Diligence Period, including, without limitation, whether the Property is located in any Natural Hazard Area. Buyer further acknowledges and agrees that the matters set forth in the Disclosure Statement or Report may change on or prior to the Closing and that Seller has no obligation to update, modify or supplement the Disclosure Statement or Report. Buyer is solely responsible for preparing and delivering its own Disclosure Statement to subsequent prospective purchasers of the Property.

5. Conditions to Closing.

(a) Buyer's Conditions. The following conditions are precedent to Buyer's obligation to purchase the Property (the "**Conditions Precedent**"):

(i) Title Insurance. Title Company shall have issued or shall have irrevocably and unconditionally committed in writing to issue the Title Policy. Buyer may request additional title policy forms or endorsements, but such shall not constitute a Condition Precedent.

(ii) [Intentionally Omitted].

(iii) Deliveries Complete. Seller shall have delivered to Buyer or Escrow Agent the documents listed in Sections 7(c) and 7(e) of this Agreement.

(iv) Representations and Warranties. Seller's Representations shall be true and correct in all material respects on and as of the Closing Date, as if made on and as of such date, except to the extent that they expressly relate to an earlier date. Seller shall have performed in all material respects each and every covenant, undertaking and agreement required to be performed by Seller under this Agreement and all of Seller's representations and warranties set forth in this Agreement shall be true and correct in all material respects as of the expiration of the Due Diligence Period and as of the Closing Date as if made on such date, as evidenced by the delivery by Seller of certificates of Seller, in form and substance reasonably acceptable to Buyer, updating and setting forth any information which qualifies any of the Seller's representations and warranties set forth herein no later than one (1) Business Day prior to the Closing (such certificate being referred to herein as the "**Seller Closing Certificate**"). Any such qualifications shall be deemed to modify the Seller's representations herein but, if the qualifications are material, shall give Buyer the right to terminate this Agreement and recover the Deposit without recourse against Seller for such qualifications except to the extent such qualifications were caused by Seller's knowing concealment. In addition, Seller's representations shall be deemed modified to the extent that Buyer is deemed to know prior

to the end of the Due Diligence Period that Seller's representations are inaccurate, untrue or incorrect in any way, but Buyer does not timely deliver the Termination Notice. Buyer shall be "deemed to know" any fact, circumstance or information or shall have "deemed knowledge" of the same to the extent (a) any Buyer's representative has actual knowledge of a particular fact or circumstance or information that is inconsistent with any Seller's representation, or (b) this Agreement, the closing documents executed by Seller, the documents and materials with respect to the Property delivered or made available to any Buyer's representative in connection with the transaction, or any reports prepared or obtained by any Buyer's representative in connection with Buyer's due diligence discloses a particular fact or circumstance or contains information which is inconsistent with any Seller's representation. If Buyer has the right to terminate this Agreement due to any qualifications made in the Seller Closing Certificate, but does not do so and proceeds with the Closing, then Buyer shall have no recourse against Seller due to such qualifications.

(b) Seller's Conditions. The following conditions are conditions precedent to Seller's obligation to sell the Property (the "**Seller's Conditions**"):

(i) Deposit of Funds. Buyer shall have deposited the Purchase Price into escrow, subject to the adjustments set forth in Section 2 and Section 7(f) of this Agreement.

(ii) Deliveries Complete. Buyer shall have delivered to Seller or Escrow Agent the documents listed in Section 7(d) of this Agreement.

(iii) Representations and Warranties. Buyer's representations and warranties shall be true and correct in all material respects on and as of the Closing Date, as if made on and as of such date, except to the extent that they expressly relate to an earlier date.

(c) Waiver of Condition. At any time on or before the date specified for the satisfaction of any condition, Seller or Buyer may elect in writing to waive the benefit of any such condition to its obligations hereunder. By closing the transaction contemplated by this Agreement, Seller and Buyer shall be conclusively deemed to have waived the benefit of any remaining unfulfilled conditions set forth in this Section 5, except to the extent that the same expressly survive Closing. Subject to the last sentence of this Section 5(c), in the event any of the conditions set forth in this Section 5 are neither waived nor fulfilled, Seller or Buyer (as appropriate) may terminate this Agreement (subject to the notice and cure rights set forth in this Agreement) and exercise such rights and remedies, if any, that such Party may pursuant to the terms of Section 6. The Parties shall be entitled to one or more extensions of the Closing Date (not to exceed thirty (30) days in the aggregate) for the purposes of satisfying any condition to Closing.

6. Remedies.

(a) If Buyer is in breach or default under this Agreement, which breach or default has not been cured by Buyer within ten (10) days (the "**Cure Period**") after written notice from Seller, then (i) Seller may waive such breach or default and proceed to Close, or (ii) Seller may terminate this Agreement, in which case the Deposit shall be paid to and retained by Seller as liquidated damages and as Seller's sole remedy for such breach or default and neither Party shall have any obligation to the other hereunder, except for provisions of this Agreement which expressly state they survive the termination of this Agreement. **THE PARTIES HEREBY AGREE THAT SELLER'S ACTUAL DAMAGES IN SUCH EVENT WOULD BE EXTREMELY DIFFICULT OR IMPRACTICABLE TO DETERMINE AND THAT THE AMOUNT OF THE DEPOSIT PLUS ANY INTEREST ACCRUED THEREON REPRESENTS THE PARTIES' REASONABLE ESTIMATE OF SUCH DAMAGES. THE PAYMENT OF SUCH AMOUNT AS LIQUIDATED DAMAGES IS NOT INTENDED AS A FORFEITURE OR PENALTY WITHIN THE MEANING OF CALIFORNIA CIVIL CODE SECTIONS 3275 OR 3369, BUT IS**

INTENDED TO CONSTITUTE LIQUIDATED DAMAGES TO SELLER PURSUANT TO CALIFORNIA CIVIL CODE SECTIONS 1671, 1676 AND 1677. THEREFORE, BY PLACING THEIR INITIALS BELOW, THE PARTIES ACKNOWLEDGE THAT THE DEPOSIT HAS BEEN AGREED UPON, AFTER NEGOTIATION, AS THE PARTIES' REASONABLE ESTIMATE OF SELLER'S DAMAGES AND AS SELLER'S EXCLUSIVE REMEDY AGAINST BUYER, AT LAW OR IN EQUITY, IN THE EVENT THE SALE OF THE PROPERTY IS NOT CONSUMMATED BY REASON OF A BREACH OR DEFAULT UNDER THIS AGREEMENT BY BUYER. HOWEVER, NOTHING IN THIS SECTION SHALL (x) PRECLUDE THE RECOVERY OF REASONABLE ATTORNEYS' FEES OR OTHER ACTUAL OUT-OF-POCKET THIRD PARTY COSTS PURSUANT TO SECTION 14(g) INCURRED BY SELLER IN ENFORCING THIS AGREEMENT, (y) LIMIT THE EFFECTIVENESS OF THE INDEMNIFICATION OBLIGATIONS OF BUYER UNDER SECTION 11 AND 14(b)OF THIS AGREEMENT, NOR (z) PRECLUDE THE SELLER'S EXERCISE OF REMEDIES PURSUANT TO SECTION 6(b).

/s/ RB	/s/ JH
SELLER'S INITIALS	BUYER'S INITIALS

(b) If Seller terminates this Agreement pursuant to a right given to it hereunder and Buyer subsequently takes any action which interferes with Seller's ability to sell, exchange, transfer, lease, dispose of or finance the Property or take any other actions with respect thereto, including, without limitation, the filing of any *lis pendens* or other form of attachment against the Property, then notwithstanding Section 6(a), and in addition to Seller's rights in Section 6(a), Seller shall have the right to seek, and the named Buyer, and any permitted assignee of Buyer's interest hereunder, shall be liable for, all loss, cost, damage, liability or expense including, without limitation, reasonable attorneys' fees, court costs and disbursements and consequential damages incurred by Seller by reason of such action to contest by Buyer.

(c) If Seller is in breach or default under this Agreement, which breach or default has not been by Seller within the Cure Period, then (i) Buyer may waive such breach or default and proceed to Close, or (ii) Buyer may terminate this Agreement, in which case the Deposit shall be paid to and retained by Buyer and Buyer shall be entitled to recover its out-of-pocket expenses, which may include, but are not limited to all title, escrow, financing, legal, environmental, architectural, engineering, professional and inspection fees and expenses incurred by Buyer and any other expenses incurred by Buyer in connection with the performance of its due diligence review of the Property and shall not exceed One Hundred and Fifty Thousand No/100 Dollars ($150,000.00), as Buyer's sole remedy for such breach or default and neither Party shall have any obligation to the other hereunder, except for provisions of this Agreement which expressly state they survive the termination of this Agreement; or (iii) Buyer may commence an action for specific performance (but not damages hereunder), provided that any action for specific performance must be commenced within thirty (30) days after the expiration of the Cure Period. If Buyer elects to seek specific performance of this Agreement, then as a condition precedent to any suit for specific performance, Buyer shall have on or before the scheduled Closing Date, fully performed all of its obligations hereunder which are capable of being performed (other than the payment of the Purchase Price, which shall be paid as and when required by the court in the suit for specific performance). If Seller defaults in the performance of any of its obligations under this Agreement, Buyer shall not prepare, file or record a lis pendens against the Property and expressly waives any and all rights to do so. Buyer acknowledges that a material inducement to Seller's decision to sell the Property to Buyer is the agreement of Buyer not to impede or interfere with a subsequent sale of the Property by filing a lis pendens against the Property and that Seller will be damaged if Buyer fails to comply with the requirements of this Section 6(c).

7. Closing and Escrow.

(a) Upon mutual execution of this Agreement, the Parties shall deposit an executed counterpart of this Agreement with Escrow Agent as instructions to Escrow Agent as the escrow holder for consummation of the purchase and sale contemplated hereby. Seller and Buyer each agrees to execute such additional escrow instructions as may be appropriate, or reasonably required by Escrow Agent, to enable the escrow holder to comply with this Agreement; provided that in the event of any conflict between the provisions of this Agreement and any supplementary escrow instructions, the terms of this Agreement shall control.

(b) The Closing hereunder shall be held and delivery of all items to be made at the Closing shall be made at the offices of Escrow Agent on or before 11:00 a.m. (Pacific Daylight Time) on the Closing Date.

(c) At least one (1) Business Day prior to the Closing, Seller shall deliver to Escrow Agent, the following:

(i) a duly executed and acknowledged Deed;

(ii) two (2) duly executed counterparts of the Assignment of Intangible Property;

(iii) two (2) duly executed counterparts of the Assignment and Assumption of Leases;

(iv) executed counterparts of all transfer declarations applicable to the Property;

(v) duly executed notices to the tenants under the Leases of the sale of the Property, in the form of Exhibit J attached hereto

(vi) an affidavit pursuant to Section 1445(b)(2) of the United States Internal Revenue Code of 1986, as amended (the

"**Code**") and on which Buyer is entitled to rely, that Seller is not a "foreign person" within the meaning of Section 1445(f)(3) of the Code, substantially in the form of Exhibit H attached hereto, and a California form 593-C, together with such affidavits and other documentation as may be required pursuant to any tax withholding laws or requirements of the State where the Property is located;

(vii) a gap indemnity in favor of Title Company in form and substance approved by Title Company and reasonably satisfactory to Seller, in the event of an escrow Closing prior to recordation of the Deed pursuant to Section 2(b)(iii);

(viii) [intentionally omitted];

(ix) the Seller Closing Certificate;

(x) a duly executed counterpart of the Closing Statement;

(xi) the originals or certified copies of any documents representing any Intangible Property being conveyed to Buyer, each to the extent in Seller's possession, provided that such items may be delivered to Buyer outside of escrow on the Closing Date;

(xii) keys to all doors to the Improvements which are in Seller's or its agents' possession (it being understood that such items may be delivered by Seller at the Property or to a mutually agreeable location on the Closing Date); and

(xiii) such resolutions and authorizations relating to Seller's authority to undertake the transaction contemplated hereby as shall be reasonably required by Title Company.

Buyer may waive compliance on Seller's part under any of the foregoing items by an instrument in writing.

(d) At least one (1) Business Day prior to the Closing, Buyer shall deliver to Escrow Agent, the following:

(i) two (2) duly executed counterparts of the Assignment of Intangible Property;

(ii) two (2) duly executed counterparts of the Assignment and Assumption of Leases;

(iii) a Preliminary Change of Ownership Report;

(iv) executed counterparts of all applicable transfer declarations;

(v) a duly executed counterpart of the Closing Statement; and

(vi) such resolutions and authorizations relating to Buyer's power and authority to undertake the transaction contemplated hereby as shall be reasonably required by Seller or Title Company.

In addition, the Purchase Price, as adjusted for prorations and costs as provided herein shall have been delivered to Escrow Agent, as escrow holder.

Seller may waive compliance on Buyer's part under any of the foregoing items by an instrument in writing.

(e) Seller and Buyer shall each deposit such other instruments as are reasonably required by the Title Company and/or Escrow Agent, or otherwise required to close the escrow and consummate the purchase and sale of the Property in accordance with the terms hereof. In the event the Title Company requires Seller to provide an owner's declaration, Seller shall execute and deliver the owner's declaration in the form of Exhibit K attached hereto. The documents and instruments to be delivered pursuant to Sections 7(c) and 7(d) and this Section 7(e) shall be referred to herein, collectively, as the "**Closing Documents**".

(f) The following are to be apportioned as of the Closing Date and the applicable adjustment(s) shall be made to the Purchase Price delivered to Seller:

(i) Rents. Rent, percentage rent (if any), operating cost pass-throughs and other additional rent or charges payable to landlord under the Leases (collectively "**Rent**") and prepaid Rent under the Leases shall be apportioned as of the Closing Date, only to the extent then paid, based on the actual number of days in the month or other applicable period during which the Closing occurs. Unallocated security deposits then held by Seller shall be considered a credit due to Buyer for Closing settlement purposes. Seller shall be entitled to invoice and collect from the tenants after the Closing any Rent payable for periods prior to Closing, provided that Seller shall not be permitted to bring any action to terminate any Lease or evict any tenant. With respect to any Rent arrearages existing under the Leases or operating cost pass-throughs billed by or paid to Buyer after Closing, Buyer promptly shall pay to Seller any amounts actually collected which are applicable to the period preceding the Closing Date; provided that, all such amounts collected by Buyer or Seller after the Closing Date shall be applied first to Rent due for the month in which the Closing occurs, then to unpaid Rent that has accrued for any month after the month of Closing, and then to any unpaid Rent that has accrued for any month prior to the Closing Date. Buyer shall cooperate with Seller in recovering any Rent payable for periods prior to Closing by including such amounts in Buyer's monthly billing statements for no longer than six (6) months after the Closing Date.

(ii) Leasing Costs. At Closing, (a) Buyer and Seller shall prorate any and all Lease Expenses paid or incurred by Seller

prior to Closing arising out of or in connection with any new lease or modifications of any Lease entered into between the date of the Access Agreement (the "**Commencement Date**") and the Closing; and (b) Seller shall give Buyer a credit for any and all unpaid and due and owing Lease Expenses owed to or for the benefit of tenants of the Property with respect to Leases as in effect on the Commencement Date. For purposes of determining Buyer's and Seller's *pro rata* share of the amounts to be prorated pursuant to clause (a), such Lease Expenses shall be amortized over the full term of the subject Lease or modification, as the case may be, and apportioned between Buyer and Seller as of 12:01 a.m. on the Closing Date based upon the proportion of the affected term of the applicable Lease or modification that falls within each of Buyer's and Seller's period of ownership of the Property. "**Lease Expenses**" means any and all costs, expenses, and fees paid or incurred by Seller prior to Closing in connection with any new lease or Lease modification, including, without limitation, (i) leasing commissions, (ii) expenses incurred for tenant improvements, (iii) legal fees, (iv) free rent, rent abatements, or rent concessions, and (v) expenses incurred to satisfy or terminate the obligations of a tenant under another lease.

(iii) Utility Charges. To the extent that Seller (rather than the tenants) is responsible for utility charges, utility charges will be prorated between Buyer and Seller based on the most recently issued bills therefor, subject to adjustment after the Closing when the next bills are available, or if current meter readings are available, on the basis of such readings. Seller will request that all utility meters for the Property be read as close to the Closing Date as feasible.

(iv) Other Apportionments and Closing Costs. Amounts payable under the Assumed Contracts, annual or periodic permit and/or inspection fees, and liability for other Property operation and maintenance expenses and other recurring costs will be apportioned as of the Closing Date. Buyer shall pay: (A) the cost of the portion of the title insurance premiums not paid by Seller and the cost of any endorsement(s) Buyer may have chosen to add to the Title Policy; (B) all fees, costs and expenses incurred in connection with Buyer's due diligence activities; and, (C) one-half of the real estate transfer taxes imposed by the City. Seller shall pay: (U) all recording fees for the recording of the Deed; (V) the cost of the Title Policy if it were for the standard ALTA coverage without endorsement (other than endorsements to cure any title exceptions that Seller has agreed to cure); (W) Escrow Agent's fees (except as otherwise provided by this Section 7(f)(iv)) (X) all real estate transfer tax not payable by the Buyer; and (Y) the commission/fee payable to Seller's Broker; and (Z) the cost of any endorsements to the Title Policy obtained to cure title objections in accordance with Section 4(e). The preceding allocation of costs is consistent with the custom and practice in the County of Santa Clara. If this Agreement is terminated due to a default of Seller hereunder, then Seller shall pay all escrow fees and charges incurred in connection with such termination, and if this Agreement is terminated for any other reason, then Buyer shall pay all such escrow fees and charges. Each Party shall pay its own legal fees and expenses incurred in connection with the transactions contemplated by this Agreement. Payment of all other costs incurred in connection with the transaction contemplated by this Agreement shall be allocated between Buyer and Seller in accordance with the custom of the County where the Property is located, as reasonably determined by Escrow Agent.

(v) Real Estate Taxes and Special Assessments. General real estate taxes and assessments paid by the tenants under the Leases shall not be prorated. Subject to the preceding sentence, general real estate taxes and assessments payable during the tax year in which Closing occurs will be prorated at the Closing on an accrual basis on the basis of the taxes and assessments that accrue and are due and payable during the tax year in which the Closing occurs as follows: (i) Seller shall be responsible for that portion of such taxes and assessments equal to (A) the total of such taxes due and payable during the tax year in which the Closing occurs, multiplied by (B) a fraction, the numerator of which shall be the number of days in such tax year prior to the Closing Date, and the denominator of which shall be 365; and (ii) Buyer shall be responsible for that portion of such taxes and assessments equal to (A) the total of such taxes due and payable during the tax year in which the Closing occurs, multiplied by (B) a fraction, the numerator of which shall be the number of days in such tax year subsequent to and including the Closing Date, and the denominator of which shall be 365. Notwithstanding anything to the contrary herein, Seller shall be entitled to any and all tax refunds relating to the period before the Closing Date, regardless of when the refunds are received, except if and to the extent that such refunds are payable to tenants of the Property at the time such refunds are received under the terms of their respective Leases, in which case the refundable portion of the amount received shall be paid to such tenants. Buyer shall pay any such refund received by Buyer to Seller, less amounts paid to tenants as described above, within five (5) Business Days of receipt by Buyer or its successors-in-interest. Seller shall have the sole authority to prosecute any tax protest, challenge or appeal for a tax year ending prior to the Closing Date and Buyer shall reasonably cooperate (with Seller paying any out-of-pocket costs incurred by Buyer in doing so) in the prosecution of any such protest, challenge or appeal.

(vi) Closing Statement. Escrow Agent shall prepare a preliminary Closing settlement statement and shall deliver such statement to Buyer and Seller for approval no less than three (3) Business Days prior to the Closing Date (the approved statement being referred to as the "**Closing Statement**").

(vii) Post-Closing Reconciliation. Seller and Buyer hereby agree that if any of the Section 7(f) prorations cannot be calculated accurately as of the Closing Date, then the same shall be estimated based on current information then known, such as the most recent tax bills, for the purposes of Closing, and within thirty (30) days after the Closing Date, or as soon as sufficient information is available to permit the Parties to effectively calculate such prorations, but in no event later than the date which is three hundred sixty-five (365) days following the Closing Date, the Parties shall make such adjustments to the prorations as necessary to reflect the accurate information, and the Parties shall then make such payments to one another as necessary to correct any errors made in the prorations as of the Closing Date once such correct information is available. Either Party owing the other Party a sum of money based on such subsequent prorations shall pay such sum to the other Party within ten (10) Business Days after such calculations.

(viii) Survival. The provisions of Section 7(f) shall survive the Closing until the date which is three hundred sixty-five (365) days following the expiration of the calendar year in which the Closing occurs.

8. Representations and Warranties of Seller. The phrase "to Seller's knowledge" means to the actual (and not constructive), present knowledge of Andrew Jenkins (the "**Seller's Designated Representative**"), of Seller, without any duty of inquiry, investigation or inspection. There

shall be no personal liability on the part of the Seller's Designated Representative arising out of any of the Seller's representations. Seller hereby represents and warrants to Buyer as follows, which representations and warranties shall be true as of the Effective Date, and as of the Closing Date, subject to the provisions of Sections 5(a)(iv), 10 and 14(m):

(a) Status. Seller is duly organized or formed, validly existing and qualified and empowered to conduct its business, and has full power and authority to enter into and perform the terms of this Agreement**.**

(b) Authorization. This Agreement is duly authorized and executed by Seller, and this Agreement and all documents required to be executed by Seller in connection herewith, are and shall be, when executed, valid, legally binding obligations of Seller, enforceable in accordance with their terms. To Seller's Knowledge, neither the execution and delivery of this Agreement, nor the performance by Seller of the obligations hereunder, will conflict with or result in the breach of any contract, agreement, law, rule or regulation to which Seller is a party or by which Seller is bound. No action, proceeding or investigation is pending or, to Seller's Knowledge, threatened against Seller, before any governmental or other authority that would affect its ability to carry out its obligations under this Agreement.

(c) Litigation. Seller has not received any written notice of any current, pending, or threatened litigation, claim, audit, action, proceeding before or by any court, public board or body or governmental or administrative agency or instrumentality against Seller or the Property, including, without limitation, any condemnation proceedings, which would, in the reasonable judgment of Seller, adversely affect the Property

(d) Condemnation. To Seller's knowledge, Seller has not received any written notice of any pending or threatened condemnation or eminent domain action by any governmental authority with respect to all or any part of the Property.

(e) Leases. Attached hereto as Exhibit E is a schedule of the Leases as of the Effective Date. The information set forth in said Exhibit E is accurate in all material respects as of the Effective Date and all such Leases are in writing except as set forth on Exhibit E and if any such Lease is not in writing the material terms of the tenancy, to Seller's knowledge, are set forth in Exhibit E. If there are any inconsistencies between the information set forth in Exhibit E and the provisions of such Leases or copies thereof which have been exhibited or provided to Buyer or its representative(s), then the provisions of the Leases shall prevail and Exhibit E shall be deemed amended accordingly. To Seller's knowledge, there are no leasing commissions payable or which will become payable with respect to the Leases.

(f) Contracts. Seller has not entered into any service agreements, equipment leasing contracts, or other contracts relating to the management of the Property which will be in force after the Closing, except for the Leases and the Contracts and, if applicable, any document recorded against any part of the Property. To Seller's knowledge, there is no monetary default or material non-monetary default under the Contracts.

(g) Compliance. To Seller's knowledge, (i) Seller has not received any written notice that the Property is not in compliance with any laws or ordinances applicable to the ownership and operation of the Property and (ii) no license or permit that has not been obtained is required for the use, ownership or operation of the Property.

(h) Environmental Matters. To Seller's knowledge, the Due Diligence Documents include all of the recent third party reports relating to Hazardous Materials at the Property and issued to Seller within the last four (4) years of the Effective Date.

(i) Non-foreign Person. Seller is not a "foreign person" as that term is defined in Section 1445(f) of the Code and any similar provisions of applicable state law, and the regulations issued thereunder.

(j) Non-foreign Assets. **Seller** is in compliance with the requirements of Executive Order No. 13224, 66 Fed Reg. 49079 (September 25, 2001) (the "Order") and other similar requirements contained in the rules and regulations of the Office of Foreign Asset Control, Department of the Treasury ("OFAC") and in any enabling legislation or other Executive Orders in respect thereof (the Order and such other rules, regulations, legislation, or orders are collectively called the "Orders"). **Seller**:

(i) is not listed on the Specially Designated Nationals and Blocked Persons List maintained by OFAC pursuant to the Order or on any other list of terrorists or terrorist organizations maintained pursuant to any of the rules and regulations of OFAC or pursuant to any other applicable Orders (such lists are collectively referred to as the "Lists");

(ii) has not been determined by competent authority to be subject to the prohibitions contained in the Orders; and

(iii) is not owned or controlled by, nor acts for or on behalf of, any person or entity on the Lists or any other person or entity that has been determined by competent authority to be subject to the prohibitions contained in the Orders

(iv) is not knowingly engaged in, and will not knowingly engage in, any dealings or transactions or be otherwise associated with such persons or entities on the Lists or that has been determined by competent authority to be subject to the prohibitions contained in the Orders; and

(v) agrees to cooperate with Buyer in providing such additional information and documentation on Seller's legal or beneficial ownership, policies, procedures and sources of funds as Buyer reasonably deems necessary or prudent solely to enable it to comply with Orders or anti-money laundering laws as now in existence or hereafter amended.

9. Representations and Warranties of Buyer. The phrase "to Buyer's knowledge" means to the actual (and not constructive), present knowledge of Judy Hamel (the "**Buyer's Designated Representative**"), of Buyer, without any duty of inquiry, investigation or inspection. There

shall be no personal liability on the part of the Buyer's Designated Representative arising out of any of the Buyer's representations. Buyer hereby represents and warrants to Seller as of the Effective Date and as of the Closing Date as follows (such representations and warranties to survive the Closing):

(a) Status. Buyer is duly organized or formed, validly existing and qualified and empowered to conduct its business, and has full power and authority to enter into and perform the terms of this Agreement.

(b) Authorization. This Agreement is duly authorized and executed by Buyer, and this Agreement and all documents required to be executed by Buyer in connection herewith, are and shall be, when executed, valid, legally binding obligations of Buyer, enforceable in accordance with their terms. To Buyer's knowledge, neither the execution and delivery of this Agreement, nor its performance by Buyer, will conflict with or result in the breach of any contract, agreement, law, rule or regulation to which Buyer is a party or by which Buyer is bound. There are no actions or proceedings pending or, to Buyer's knowledge, threatened to liquidate, reorganize, place in bankruptcy or dissolve Buyer, and Buyer is contemplating no such action.

(c) Proceedings. No action, proceeding or investigation is pending or, to Buyer's knowledge, threatened against Buyer, before any governmental or other authority that would affect its ability to carry out its obligations under this Agreement.

(d) Non-foreign Assets. Buyer is and will remain in compliance with the requirements of the Orders. Buyer:

(i) is not listed on the Lists;

(ii) has not been determined by competent authority to be subject to the prohibitions contained in the Orders;

(iii) is not and will not become owned or controlled by, nor acts for or on behalf of, any person or entity on the Lists or any other person or entity that has been determined by competent authority to be subject to the prohibitions contained in the Orders;

(iv) is not knowingly engaged in, and will not knowingly engage in, any dealings or transactions or be otherwise associated with such persons or entities on the Lists or that has been determined by competent authority to be subject to the prohibitions contained in the Orders; and

(v) agrees to cooperate with Seller in providing such additional information and documentation on Buyer's legal or beneficial ownership, policies, procedures and sources of funds as Seller reasonably deems necessary or prudent solely to enable Buyer to comply with Orders or anti-money laundering laws as now in existence or hereafter amended.

(e) ERISA. Buyer is not, nor is acting on behalf of, an entity or person that is either (i) a benefit plan investor as defined under 29 CFR Section 2510.3-101, as modified by Section 3(42) of the Employee Retirement Income Security Act of 1974, as amended (the "Plan Assets Regulation") or (ii) any other entity that holds ERISA "plan assets" under the Plan Assets Regulation. No transaction contemplated in the Agreement will be subject to any rules or regulations applicable to a "governmental plan" (as defined in Section 3(32) of ERISA) by virtue of Buyer's involvement.

10. Warranties and Indemnifications.

(a) Seller's Representations Deemed Modified. To the extent that Buyer knows or is deemed to know prior to the expiration of the Due Diligence Period that Seller's Representations are inaccurate, untrue or incorrect in any way, such Seller's Representations shall be deemed modified to reflect Buyer's knowledge and deemed knowledge.

(b) Breach Prior to Closing. If after the expiration of the Due Diligence Period but prior to the Closing, either Buyer or Seller obtains actual knowledge that any of the representations or warranties made herein are untrue, inaccurate of incorrect in any material respect, such Party shall give the other Party written notice thereof within five (5) Business Days of obtaining such knowledge (but, in any event, prior to the Closing). In the event of any breach of Seller's Representations, Seller shall have the right to cure such misrepresentation or breach and shall be entitled to a reasonable extension of the scheduled Closing Date (not to exceed thirty (30) days) for the purposes of such cure. The untruth, inaccuracy or incorrectness of Seller's Representations shall be deemed material for all purposes of this Agreement only if Buyer's aggregate damages resulting from the untruth, inaccuracy or incorrectness of Seller's Representations are reasonably estimated to exceed $100,000. If any of Seller's Representations are untrue, inaccurate or incorrect but are not, in the aggregate, untrue, inaccurate, or incorrect in any material respect

as set forth herein, Buyer shall be deemed to waive such misrepresentation or breach of warranty, and Buyer shall be required to consummate the transaction contemplated by this Agreement without any reduction of or credit against the Purchase Price.

11. Indemnity. Buyer hereby waives and agrees to protect, indemnify, defend and hold the Released Parties free and harmless from and against any and all losses, damages, injuries, accidents, fires or other casualties, liabilities, claims, costs or expenses (including, but not limited to, any and all damage to any portion of the Property and reasonable attorneys' fees and expenses) of any kind or character (i) to any person or property relating to any personal injury, bodily injury, death or property damage resulting from due diligence activities on the Property by or for Buyer; or (ii) for any violation of any law, ordinance or regulation resulting therefrom. Counsel retained by Buyer for purposes of this Section 11 shall be reasonably acceptable to Seller. Buyer's obligations hereunder shall not apply to claims or liabilities to the extent caused by the willful misconduct or gross negligence of Seller or the Released Parties seeking the benefit of this Section 11. Buyer shall have no responsibility or liability for: (a) any adverse condition or defect on or affecting the Property not caused by Buyer during its inspections; (b) the discovery of hazardous materials or substances not introduced by Buyer except to the extent that the Buyer's actions exacerbate any condition discovered; and (c) the discovery or legally required disclosure by Buyer of any pre-existing condition of or on the Property. The indemnification provisions of this Section 11 and the covenants, representations and warranties provided in this Agreement shall survive the Closing or earlier termination of this Agreement.

12. Risk of Loss. In the event any of the Property is damaged or destroyed prior to the Closing Date, and such damage or destruction (a) (i) would cost less than the Purchase Price to repair and is fully covered by Seller's insurance, except for the deductible amounts thereunder, or (ii) is not insured but would cost less than One Million No/100 Dollars ($1,000,000) to repair or restore, and (b) does not materially and adversely affect required access to or parking at the Property ("**Loss of Access**") and (c) does not give rise to any right of any tenant(s) representing ten percent (10%) or more of the gross monthly rents of the Property to terminate its or their Lease(s) pursuant to the terms of such Lease(s), unless such rights have been waived ("**Loss of Tenant)**, then this Agreement shall remain in full force and effect, and Buyer shall acquire the Property upon the terms and conditions set forth herein ("**Immaterial Casualty**"). In such event, Buyer shall receive a credit against the Purchase Price equal to the lesser of the cost of repairs or restoration required to be completed after the Closing or the deductible amounts under Seller's insurance policies, except the portion applied to repairs, and except to the extent reimbursable by tenants under any of the Leases), less the amount of Seller's costs in connection with such damage or destruction, and Seller shall assign to Buyer all of Seller's right, title and interest in and to all proceeds of insurance on account of such damage or destruction. In the event of a casualty other than an Immaterial Casualty or in the event that the Property becomes the subject of any condemnation proceeding involving a material portion of the rentable Improvements or a substantial access to the Property or a Loss of Access or a Loss of Tenant, then Buyer shall have the right, at its election, to terminate this Agreement by delivery of notice of termination to Seller within ten (10) days after having been given notice of such circumstance but in any event prior to the scheduled Closing Date, whereupon Buyer and Seller shall instruct Escrow Agent to return the Deposit to Buyer, and Buyer and Seller shall be released from all obligations hereunder pertaining to the Property (other than the provisions which expressly survive the termination of this Agreement). If Buyer elects not to terminate this Agreement, Seller shall assign to Buyer all of Seller's right, title, and interest in any proceeds of insurance or condemnation awards on account of such damage or destruction less Seller's reasonable costs and expenses incurred in obtaining the proceeds or award, as applicable, and the costs and expenses incurred by Seller prior to Closing respecting any repairs or restoration work made by Seller as a result of the casualty or condemnation, and the Purchase Price shall be reduced only by an amount equal to the lesser of the cost of repairs or restoration remaining to be completed or the unpaid portion, if any, of the deductible(s) payable in connection with any insurance proceeds received. For the purpose of determining any credit to Buyer

under this Section 12, the deductible applicable to any uninsured loss shall be deemed to be Zero Dollars ($0). Any repairs or restoration elected to be made by Seller pursuant to this Section 12 shall be first paid out of insurance proceeds and the deductible and made as promptly as reasonably possible, and at Seller's election in its sole and absolute discretion, the Closing shall be extended until the repairs or restoration are/is substantially completed.

13. Covenants.

(a) Seller's Covenants. Seller hereby covenants and agrees as follows prior to Closing:

(i) Maintenance Duties. Before the Closing, Seller shall use commercially reasonable efforts to maintain the Property ("**Maintenance Duties**") in a manner consistent with past practices. Notwithstanding the above, Seller's Maintenance Duties shall specifically exclude the obligation: (A) to repair or correct normal wear and tear or deferred maintenance, or (B) to expend more than Ten Thousand and No/100 Dollars ($10,000.00) with respect to Maintenance Duties in the aggregate, excluding amounts clearly reimbursable in full by tenants under the Leases.

(ii) New Leases and Contracts. Seller shall not enter into any new lease or new contract, or any amendment of any existing lease or contract, or grant any material approval, consent (including, without limitation, any consent to assign or sublease) or waiver under any lease or contract, to the extent such action would bind Buyer after the Closing, without (i) in the case of any leases contracts, amendments, approvals, consents or waivers entered into during the Due Diligence Period, obtaining Buyer's prior consent thereto, which consent shall not be unreasonably withheld, conditioned or delayed, or (ii) in the case of lease contracts, amendments, approvals, consents or waivers entered into after the end of the Due Diligence Period, obtaining Buyer's prior consent thereto, which consent may be withheld, conditioned or delayed in Buyer's sole and absolute discretion for any reason or no reason; provided, that nothing in the foregoing prohibits Seller from entering into any Lease or Contract amendment which memorializes a right of the counterparty thereunder over which Seller has no discretion (such as, by way of example only, a tenant's right of renewal). If Buyer does not reasonably disapprove Seller's request within three (3) Business Days following receipt of such written request, such lease, contract, amendment, approval, consent or waiver shall be unconditionally and irrevocably deemed to have been approved by Buyer.

(iii) Additional Covenants. Seller shall operate the Property in a manner consistent with past practices and perform all of its material obligations as landlord under the terms of the Leases and maintain its current insurance. Seller shall not, without Buyer's prior written consent, which consent may be withheld, conditioned or delayed in Buyer's sole and absolute discretion for any reason or no reason after the end of the Due Diligence Period (i) modify any entitlements affecting the Property, or (ii) make or permit any alterations to the Property.

14. Miscellaneous.

(a) Notices. Except as otherwise specifically provided in this Agreement, any notice, consent, request or approval required or permitted to be given under this Agreement shall be in writing and shall be deemed to have been given upon (i) hand delivery, (ii) one Business Day after being deposited with Federal Express or another reliable overnight courier service, (iii) transmission by email during regular business hours at the receiver's location, and with a confirming copy sent the same Business Day by United States mail or deposited the same Business Day with Federal Express or another reliable overnight courier service, or (iv) three (3) Business Days after being deposited in the United States mail, registered or certified mail, postage prepaid, return receipt required and addressed as follows:

If to Seller: MNCVAD-Graymark Ridder Park LLC

c/o NYL Investors LLC

One Front Street, Suite 550

San Francisco, California 94111

Attention: Andrew Jenkins

Telephone: (415) 402-4111

Facsimile: (415) 402-4149

Email: Andrew_Jenkins@nylinvestors.com

With a copy to: NYL Investors LLC

One Front Street, Suite 550

San Francisco, California 94111

Attention: Legal Department – Real Estate

Telephone: (415) 402-4153

Email: Lillith_E_Shilton@newyorklife.com

And a copy to: Allen Matkins Leck Gamble Mallory & Natsis LLP

Three Embarcadero Center, Twelfth Floor

San Francisco, California 94111

Attention: Lee F. Gotshall-Maxon

Telephone: (415) 273-7423

Email: lgotshallmaxon@allenmatkins.com

If to Buyer: Lumentum Operations LLC

400 North McCarthy Blvd.

Milpitas, California 95035

Attention: Chris Ohman

Telephone: (408) 546-5483

Email: Chris.Ohman@lumentum.com

With a copy to: Lumentum Operations LLC

400 North McCarthy Blvd.

Milpitas, California 95035

Attention: Legal Department

Telephone: (408) 546-5483

Email: judy.hamel@lumentum.com

And a copy to: Hoge Fenton Jones & Appel

60 South Market St., Suite 1400.

San Jose, California 95113-2396

Attention: Sean Cottle

Telephone: (408) 947-2404

Email: sean.cottle@hogefenton.com

If to the Escrow Agent: Chicago Title Insurance Company

455 Market Street, Suite 2100

San Francisco, CA 94105

Attn: Terina J. Kung, Escrow Officer

Telephone No.: (415) 291-5128

Email: terina.kung@ctt.com

or such other address as any Party may from time to time specify in writing to the other. Notice of change of address shall be given by written notice in the manner detailed in this Section 14(a). Rejection or other refusal to accept or the inability to deliver because of changed address of which no notice was given shall be deemed to constitute receipt of the notice, demand, request or communication sent.

(b) Brokers/Intermediaries. Buyer and Seller each represent that it has not had any conversations or dealings with any broker, finder or other intermediary in connection with the Property other than Colliers International ("**Seller's Broker**") and CBRE ("**Buyer's Broker**"). Seller shall pay a real estate commission to Seller's Broker pursuant to a separate agreement with Seller's Broker, and Buyer shall pay a real estate commission to Buyer 's Broker pursuant to a separate agreement with Buyer's Broker. Buyer agrees to defend, indemnify, and hold harmless Seller, and Seller agrees to defend, indemnify, and hold harmless Buyer from and against any and all liabilities, claims, demands, damages and costs of any kind

(including reasonable attorneys' fees, costs and expenses) arising from or connected with any broker's or finder's fee or commission or charge claimed to be due by any person arising from or by reason of Buyer's or Seller's, as applicable, conduct with respect to this transaction (other than the commission to be paid to Seller's Broker by Seller or to Buyer's Broker by Buyer). The provisions of this Section shall survive the Closing hereunder or earlier termination of this Agreement

(c) Successors and Assigns. This Agreement shall be binding upon, and inure to the benefit of the Parties hereto and their respective successors, heirs, administrators, and assigns. Buyer shall not assign this Agreement or its rights hereunder to any individual or entity without the prior written consent of Seller, except that upon written notice to Seller, Buyer may assign all its rights and delegate its duties under this Agreement to an entity that: (i) is controlled by or under common control with Buyer; and (ii) delivers, on or before the date that is five (5) Business Days before the Closing Date, to Seller a duly executed assignment and assumption, in form and substance reasonably satisfactory to Seller, of all of the duties and obligations of Buyer by the proposed assignee (including an express statement of the assumption of the representations and warranties in Section 9); provided that such assignment document shall include a provision that Buyer shall remain liable to Seller for the performance of the obligations of "Buyer" hereunder and such assignment shall not relieve Buyer from its obligations hereunder; and provided further that the assignment shall not delay Closing. Seller may not assign or otherwise transfer its interest under this Agreement. Subject to the foregoing, this Agreement shall inure to the benefit of and shall be binding upon Seller and Buyer and their respective successors and assigns.

(d) Amendments. Except as otherwise provided herein, this Agreement may be amended or modified only by an instrument executed by the Parties to be bound.

(e) Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State in which the Property is located.

(f) Integration of Prior Agreements. The obligations of the Parties under the Access Agreement dated April 16, 2019 between Seller and Buyer (the "**Access Agreement**") shall continue to apply to any claims or obligations arising thereunder prior to the Effective Date of this Agreement. Except as provided in the preceding sentence, this Agreement and the exhibits hereto constitute the entire agreement between the Parties and supersede all prior negotiations, correspondence, agreements and understandings between the Parties relating to the subject matter hereof. The Recitals and all exhibits attached hereto are incorporated herein by reference.

(g) Enforcement. In the event a dispute arises concerning the performance, meaning or interpretation of any provision of this Agreement, the defaulting party or the party not prevailing in such dispute, as the arbitrator, judicial referee, or court shall determine, shall pay any and all reasonable, third-party, out-of-pocket costs and expenses incurred by the other Party in enforcing or establishing its rights hereunder, including, without limitation, arbitration and court costs and attorneys' and experts' fees. Any such attorneys' fees and other expenses incurred by either Party in enforcing a judgment in its favor under this Agreement shall be recoverable separately from and in addition to any other amount included in such judgment, and such attorneys' fees obligation is intended to be severable from the other provisions of this Agreement and to survive the Closing or earlier termination of this Agreement and not be merged into any such judgment.

(h) Confidentiality.

(i) Confidential Information; General Agreement Not to Disclose; Permitted Disclosures. Buyer agrees that the information provided to or made available to Buyer by Seller or its agents is proprietary and confidential in nature and will be delivered to or made available to Buyer solely to assist Buyer in determining the feasibility of purchasing the Property. Buyer further agrees that all studies, reports, test results or other information obtained by Buyer from Seller or its agent in connection with its observations or inspection of the Property shall remain confidential. Buyer agrees not to disclose any of the foregoing information, or any of the provisions, terms or conditions thereof, to any person or entity, or any of the terms of this Agreement or of any letter of intent or other agreement or letter pertaining to the Property, to any person or entity; provided that Buyer shall be permitted to disclose material information with respect to the

Property or the terms of this Agreement to employees, consultants, attorneys, or accountants employed by Buyer to review such information in connection with Buyer's Due Diligence, and to potential lenders and/or joint venture partners, provided that, prior to any such disclosure, Buyer notifies the persons and entities to whom such disclosures are made of the confidential nature of the information disclosed or discovered and the provisions of this Section with respect to such information.

(ii) Procedure Upon Receipt of Request or Demand for Disclosure. If Buyer receives a request, pursuant to the terms of a subpoena, order, civil investigation, demand or similar process to disclose anything required under this Agreement to be held confidential, Buyer agrees to promptly notify Seller, in writing, of the existence, terms, and circumstances surrounding such request, to consult with Seller on the advisability of taking legally available steps to resist or narrow such request, and if disclosure of such information is required, Buyer shall furnish only that portion of the confidential information which, on the advice of its counsel, Buyer is legally compelled to disclose; provided, however, that Seller may, at its sole cost and expense, exercise efforts to obtain an order or other reliable assurance that confidential treatment will be accorded to any such portion of the confidential information so required to be disclosed.

(iii) Exception to General Rule Prohibiting Disclosure. Seller agrees that portions of the confidential information need not be treated confidentially by Buyer if such portions of the confidential information (i) are or become generally known or available publicly through no act or failure to act of Buyer, or (ii) were already known by Buyer prior to disclosure to Buyer, or (iii) are or become available to Buyer from a source other than Seller.

(i) Time of the Essence; Dates. Time is of the essence in this Agreement. If any of the dates specified in this Agreement shall fall on a Saturday, a Sunday, or a holiday, such date shall be deemed to have expired at 5:00 p.m. (Pacific Daylight Time) on the next Business Day, notwithstanding anything to the contrary herein. Any action which is to be taken a specified number of days or Business Days before an identified date shall be timely if taken before 5:00 p.m. (Pacific Daylight Time) on the date which is the specified number of days before the identified date, including, in counting the specified number of days, the identified date. For example, if an action is to be taken at least two (2) Business Days before a date which falls on a Wednesday during a week when Monday through Wednesday, inclusive, are all Business Days, then the action shall be timely if taken before 5:00 p.m. (Pacific Time) on the Monday in such week.

(j) Severability. If any provision of this Agreement, or the application thereof to any person, place or circumstance, shall be held by a court of competent jurisdiction to be invalid, unenforceable or void, the remainder of this Agreement and such provisions as applied to other persons, places and circumstances shall remain in full force and effect.

(k) Counterparts. This Agreement may be executed in any number of counterparts, including those transmitted by .pdf or DocuSign, each of which will be deemed an original, but all of which taken together will constitute one and the same instrument. The signature page of any counterpart may be detached therefrom without impairing the legal effect of the signature(s) thereon provided such signature page is attached to any other counterpart identical thereto except having additional signature pages executed by other parties to this Agreement attached thereto. The Parties hereby acknowledge and agree that signatures transmitted by electronic mail in so-called "pdf" or DocuSign format shall be legal and binding and shall have the same full force and effect as if an original of this Agreement had been delivered. Buyer and Seller (i) intend to be bound by the signatures on any document sent by electronic mail, (ii) are aware that the other Party will rely on such signatures, and (iii) hereby waive any defenses to the enforcement of the terms of this Agreement based on the foregoing forms of signature

(l) 1031 Exchange. Upon request of a Party hereto (the "**Requesting Party**"), the other Party (the "**Cooperating Party**") shall cooperate in effecting one or more tax-deferred like kind exchanges under Section 1031 of the Code in connection with the transaction contemplated by this Agreement, including the execution of escrow instructions and other documents therefor; provided that, the Requesting Party will pay any and all additional fees, costs or expenses connected with such exchange. Requesting Party may assign its rights in, and delegate its duties under, this Agreement (in part or in whole), as well as transfer its interest in the Property, to an exchange intermediary, and Requesting Party may add such intermediary as an additional party to the escrow; provided that, Requesting Party shall remain primarily liable under this Agreement, such assignment, delegation or transfer shall not delay Closing, and Cooperating Party incurs no additional expense as a result thereof. Without limiting the foregoing, Cooperating Party shall not by this Agreement or acquiescence to any exchange requested by Requesting Party have Cooperating Party's rights under this Agreement modified or diminished in any manner or be responsible for compliance with or be deemed to have warranted to Requesting Party that any such exchange in fact complies with Section 1031 of the Code. Cooperating Party shall have the right to review and approve any documents to be executed by Cooperating Party in connection with any such exchange requested by Requesting Party; provided, however, such approval shall not be unreasonably withheld, conditioned or delayed. Cooperating Party shall have no obligation to execute any documents or to undertake any action by which Cooperating Party would or might incur any liability or obligation not otherwise provided for in the other provisions of this Agreement or to take title to any additional property. Neither the conveyance of title to the Property to Requesting Party's designated intermediary, or qualified exchange accommodation title holder (if applicable), nor any exchange shall amend or modify the representations, warranties and covenants of Requesting Party to Cooperating Party under this Agreement or the survival thereof pursuant to this Agreement in any respect, nor shall any such conveyance or exchange result in a release of Requesting Party with respect to such representations, warranties and/or covenants. Requesting Party hereby agrees to indemnify, defend, and hold Cooperating Party harmless from and against any and all losses, damages, injuries, liabilities, claims, costs or expenses (including, but not limited to, reasonable attorneys' fees) arising from any such exchange requested by Requesting Party (other than what would have been applicable under this Agreement without such exchange), which indemnification agreement shall expressly survive the Closing and not be merged therein. Requesting Party will be relying solely upon the advice and counsel of professionals of the Requesting Party's choice in structuring, executing and consummating any such exchange.

(m) Survival and Limitations.

(i) The Parties agree that Seller's Representations shall expire and shall be of no further force or effect as of nine (9) months following the Closing Date (the "**Limitation Period**"). If Buyer, within the Limitation Period, gives notice to Seller of any breach of such Seller's Representations or any Post-Closing Default (the "**Notice**"), which Notice shall not be effective unless it sets forth, in detail and with particularity, the breach or default and the factual basis for asserting the same, and if Seller fails to cure such breach or Post-Closing Default, as the case may be, within thirty (30) days following the giving of such Notice, or, if such breach or Post-Closing Default cannot reasonably be cured within thirty (30) days, Seller shall be provided with an additional reasonable time period to cure such breach, so long as such cure has been commenced within such thirty (30) days and has been diligently pursued and is concluded within one hundred twenty (120) days following the giving of such Notice, then Buyer's sole remedy shall be an action at law for damages as a consequence thereof, which must be commenced, if at all, prior to the expiration of the Overall Limitation Period. The Limitation Period shall apply to known as well as unknown breaches of such Seller's Representations; provided that, the Closing shall be deemed to constitute a waiver of any breach of which Buyer is deemed to know or had actual knowledge as of the Closing Date. Buyer shall not have the right to bring a cause of action for a breach of a Seller's Representation unless the damage to Buyer on account of such breach (individually or when combined with damages from other breaches) equals or

exceeds Twenty-Five Thousand and No/100 Dollars ($25,000.00), and Buyer agrees that the post-Closing maximum liability of Seller for the alleged breach of any or all Seller's Representation and/or any Post-Closing Default is limited to One Million and No/100 Dollars ($1,000,000.00) as more particularly set forth in Section 14(m)(ii).

The term "**Post-Closing Defaults**" means all (i) post-Closing defaults by Seller under this Agreement and the agreements and instruments to be delivered by Seller at Closing including, without limitation, the Deed, and (ii) all pre-Closing Seller defaults not waived pursuant to this Agreement and not known or deemed to be known by Buyer as of Closing. In the event of one or more Post-Closing Defaults, Buyer's sole and exclusive remedy shall be to seek actual damages in an amount (including attorneys' fees and costs) not to exceed the limits set forth in this Section 14(m). The provisions of this Section 14(m) shall survive any termination of this Agreement.

(ii) The aggregate liability of Seller to Buyer and all those claiming by or through Buyer for claims, demands, damages, expenses (including attorneys' fees), suits, awards, judgments and liabilities asserted, awarded or otherwise recovered against Seller in connection with this Agreement, any document executed by Seller in connection with this Agreement and/or the Property, including claims for breaches of Seller's Representations and any and all Post-Closing Defaults, shall not exceed One Million and No/100 Dollars ($1,000,000.00). Notwithstanding anything to the contrary, the limitations of liability of this Section 14(m)(ii) shall not apply with respect to Buyer's right to recover its attorneys' fees and expenses in accordance with Section 13(g).

(iii) Any right of Buyer to bring a claim, suit or demand under this Agreement or any document executed by Seller pursuant to this Agreement shall expire and shall be of no further force or effect as of the Limitation Period. Notwithstanding the foregoing, if Buyer delivers the Notice within the Limitation Period, Buyer may bring a claim, suit or demand under this Agreement within ninety (90) days from the Limitation Period (the "**Overall Limitation Period**") with respect to the breach identified in the Notice. Buyer's right to bring such claim, suit or demand shall be subject to any applicable notice and cure rights described in Section 14(m)(i) above; provided that, if such cure rights and cure period extend beyond the Limitation Period, then the Overall Limitation Period shall be extended to the date that is ninety (90) days after Seller's cure period has expired. The Overall Limitation Period referred to herein shall apply to known as well as unknown breaches of this Agreement or any such document or other bases for claims that may be brought under this Agreement or any such document.

(n) Exculpation. Buyer and Seller each agree that it does not have and will not have any claims or causes of action against any disclosed or undisclosed officer, director, employee, trustee, shareholder, partner, principal, parent, subsidiary or other affiliate of the other, or any officer, director, employee, trustee, shareholder, partner, or principal of any such parent, subsidiary or other affiliate (collectively, "**Affiliates**"), arising out of or in connection with this Agreement or the transactions contemplated hereby (including, without limitation, under any documents executed pursuant hereto). Subject to the limitations set forth in this Agreement, Buyer and Seller agree to look solely to the other and its assets for the satisfaction of any liability or obligation arising under this Agreement, the transactions contemplated hereby or the documents executed pursuant hereto, or for the performance of any of the covenants, warranties or other agreements contained herein or therein, and further agrees not to sue or otherwise seek to enforce any personal obligation against any Affiliates with respect to any matters arising out of or in connection with this Agreement, the transactions contemplated hereby or the documents executed pursuant hereto. Without limiting the generality of the foregoing provisions of this Section 14(n), Buyer and Seller each hereby unconditionally and irrevocably waives any and all claims and causes of action of any nature whatsoever it may now or hereafter have against Affiliates, and hereby unconditionally and irrevocably releases and

discharges Affiliates from any and all liability whatsoever which may now or hereafter accrue in favor of Buyer or Seller, as applicable, against Affiliates, in connection with or arising out of this Agreement, the transactions contemplated hereby or the documents executed pursuant hereto. The provisions of this Section 14(n) shall survive the termination of this Agreement and the Closing.

(o) Designation of Reporting Person. In order to assure compliance with the requirements of Section 6045 of the Code, and any related reporting requirements of the Code, the Parties hereto agree as follows:

(i) Provided Escrow Agent shall execute a statement in writing in form and substance reasonably acceptable to the Parties hereunder pursuant to which Escrow Agent agrees to assume all responsibilities for information reporting required under Section 6045(e) of the Code, Seller and Buyer shall designate Escrow Agent as the person to be responsible for all information reporting under Section 6045(e) of the Code (the "**Reporting Person**"). If Escrow Agent refuses to execute a statement pursuant to which it agrees to be the Reporting Person, Seller and Buyer shall agree to appoint another third party as the Reporting Person.

(ii) Seller and Buyer hereby agree:

(1) to provide to the Reporting Person all information and certifications regarding such Party, as reasonably requested by the Reporting Person or otherwise required to be provided by a Party to the transaction described herein under Section 6045 of the Code; and

(2) to provide to the Reporting Person such Party's taxpayer identification number and a statement (on Internal Revenue Service Form W-9 or an acceptable substitute form, or on any other form the applicable current or future Code sections and regulations might require and/or any form requested by the Reporting Person), signed under penalties of perjury, stating that the taxpayer identification number supplied by such Party to the Reporting Person is correct.

(p) Headings. The titles and headings of the various Sections hereof are intended solely for means of reference and are not intended for any purpose whatsoever to modify, explain or place any construction on any of the provisions of this Agreement.

(q) Construction. The Parties acknowledge that with respect to the transactions contemplated herein, (A) each Party and their counsel have reviewed and revised this Agreement and that the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Agreement or any amendments or exhibits thereto; (B) neither Party has received from the other any accounting, tax, legal or other advice, and (C) each Party has relied solely upon the advice of their own accounting, tax, legal and other advisor.

Each Party hereto agrees to retain this Agreement for not less than four (4) years from the end of the calendar year in which the Closing occurs, and to produce it to the Internal Revenue Service upon a valid request therefor.

[Remainder of page intentionally left blank]

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the date first above written.

SELLER: MNCVAD-GRAYMARK RIDDER PARK LLC,

a Delaware limited liability company

By: /s/ Ross T. Berry

Name: Ross T. Berry

Title: Vice President

BUYER: LUMENTUM OPERATIONS LLC,
a Delaware limited liability company

By: /s/ Judy Hamel

Name: Judy Hamel

Title: SVP, General Counsel

ESCROW AGENT JOINDER

Escrow Agent joins herein in order to evidence its agreement to hold the Deposit and to perform the duties and obligations of Escrow Agent set forth in this Agreement.

Dated: May 7, 2019

CHICAGO TITLE INSURANCE COMPANY
By: /s/ Terina J. Kung
Name: Terina J. Kung
Title: AVP, Senior Commercial Escrow Officer

LIST OF EXHIBITS

Schedule 1 Definitions

Exhibit A Description of Real Property

Exhibit B Form of Deed

Exhibit C Form of Bill of Sale and Assignment of Contracts and Intangible Property

Exhibit D Form of Assignment and Assumption of Leases

Exhibit E Schedule of Leases

Exhibit F Schedule of Contracts

Exhibit G [Intentionally Omitted]

Exhibit H Form of FIRPTA Affidavit

Exhibit I List of Due Diligence Documents

Exhibit J Form of Notice to Tenants

Exhibit K Form of Owner's Declaration

Access Agreement Section 13(f)
Additional Deposit Section 2(b)(ii)
Affiliates Section 14(n)
Agreement Preamble
Termination Notice Section 4(i)
Appurtenances Section 1(b)
Arbitration Section 2(d)
Arbitrator Section 2(d)
Assignment and Assumption of Leases Section 3(c)
Assignment of Intangible Property Section 3(b)
Assumed Contracts Section 4(d)
Award Section 2(d)
Business Day Section 2(b)(i)
Buyer Preamble
Buyer's Designated Representative Section 9
Claims Section 4(h)
Closing Section 2(b)(iv)
Closing Date Section 2(b)(iv)
Closing Documents Section 7(e)
Closing Statement Section 7(f)(vi)
Code Section 7(c)(vi)
Commencement Date Section 7(f)(ii)

Conditions Precedent   Section 5(a)
Contracts   Section 4(d)
Cooperating Party   Section 13(l)
Cure Period   Section 6(c)
Deed   Section 3(a)
Deposit   Section 2(b)(ii)
Disclosure Statement   Section 4(k)
Due Diligence   Section 4(a)
Due Diligence Documents   Section 4(b)
Due Diligence Period   Section 4(a)
Effective Date   Preamble
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Handling   Section 4(h)(2)
Hazardous Materials   Section 4(h)(3)
Immaterial Casualty   Section 12
Improvements   Section 1(c)
Independent Contract Consideration   Section 2(a)
Initial Deposit   Section 2(b)(i)
Intangible Property   Section 1(e)
Lease Expenses   Section 7(f)(ii)
Leases   Section 1(f)
Licensee Parties   Section 4(f)(i)
Limitation Period   Section 14(m)(i)
Lists   Section 8(j)
Loss of Access   Section 12
Loss of Tenant   Section 12
Maintenance Duties   Section 12(a)(i)
New Exceptions   Section 4(f)
Notice   Section 14(m)(i)
OFAC   Section 8(j)
Order   Section 8(j)
Orders   Section 8(j)
Outside Date   Section 2(d)
Overall Limitation Period   Section 14(m)(iii)
Permitted Exceptions   Section 4(e)
Personal Property   Section 1(d)
Post-Closing Defaults   Section 14(m)(i)
Property   Section 1
Property Conditions   Section 4(h)
PTR   Section 4(e)
Purchase Price   Section 2(b)
Real Property   Section 1(a)
Release   Section 4(h)
Released Claims   Section 4(h)
Released Parties   Section 4(h)
Removed Liens   Section 4(e)
Rent   Section 7(f)(i)
Report   Section 4(k)
Reporting Person   Section 13(o)(i)
Requesting Party   Section 13(l)
Schedule of Leases   Section 3(c)
SECTION 1542   Section 4(h)
Seller   Preamble
Seller Closing Certificate   Section 5(a)(iv)
Seller Response Notice   Section 4(f)
Seller's Broker   Section 13(b)
Seller's Conditions   Section 5(b)
Seller's Designated Representative   Section 8
Seller's Representations   Section 4(h)
Survey   Section 4(e)
Title Company   Section 2(b)(i)
Title Objection Letter   Section 4(f)

Title Policy   Section 3(a)
to Buyer's knowledge   Section 9
to Seller's knowledge   Section 8
Updated Survey   Section 4(e)
Waiver Parties   Section 4(h)
Waste Materials   Section 4(h)(4)

EXHIBIT A

LEGAL DESCRIPTION

[to follow]

EXHIBIT B

FORM OF GRANT DEED

RECORDING REQUESTED BY AND
WHEN RECORDED RETURN TO:

____

____

____

MAIL TAX STATEMENTS TO:

____

____

____

(SPACE ABOVE THIS LINE RESERVED FOR RECORDER'S USE)

GRANT DEED

The undersigned grantor(s) declare(s)

¨ This transfer is exempt from the documentary transfer tax.
þ **The documentary transfer tax is $__________** and **City Tax is $__________** and is computed on:
þ the full value of the interest or property conveyed.
¨ the full value less the liens or encumbrances remaining thereon at the time of sale.
Parcel Number: ____
The property is located in the City of San Jose, California

FOR GOOD AND VALUABLE CONSIDERATION, receipt and sufficiency of which are hereby acknowledged, **MNCVAD-Graymark Ridder Park LLC**, a Delaware limited liability company ("**Grantor**"), hereby does grant, bargain, and sell and convey unto [___________________], a _____________________ ("**Grantee**"), the real property located in the City of San Jose, County of Santa Clara, State of California, described on Exhibit A attached hereto and made a part hereof, together with, all and singular, the tenements, hereditaments, easements, rights-of-way and appurtenances belonging or in anywise appertaining to the same, and the improvements thereon (the "**Property**").

This conveyance is subject to all matters of record and any matters which could be ascertained by a proper inspection or survey of such Property.

[Signature page follows]

MAIL TAX STATEMENTS AS DIRECTED ABOVE

EXHIBIT B

./
-/5-2-19//

3285553_2

IN WITNESS WHEREOF, Grantor has caused these presents to be executed as of this ___ day of _____, 20__.

Grantor: **MNCVAD-GRAYMARK RIDDER PARK LLC**,
a Delaware limited liability company

By: __

Name: __

Title: __

./
-/5-2-19//
3285553_2

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of _______________________)

On ________________________, before me, __,
(insert name of notary)
Notary Public, personally appeared ___, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature__ (Seal)

EXHIBIT A

LEGAL DESCRIPTION

EXHIBIT B

PERMITTED ENCUMBRANCES

EXHIBIT C

FORM OF BILL OF SALE AND ASSIGNMENT OF CONTRACTS AND INTANGIBLE PROPERTY

THIS BILL OF SALE AND ASSIGNMENT OF CONTRACTS AND INTANGIBLE PROPERTY (this "**Assignment**") is made and entered into as of this _____ day of ________, 20___ (the "**Effective Date**") between MNCVAD-Graymark Ridder Park LLC, a Delaware limited liability company ("**Assignor**"), and [_______________________], a _____________________ ("**Assignee**").

FOR GOOD AND VALUABLE CONSIDERATION, the receipt and sufficiency of which are hereby acknowledged by Assignor and Assignee, effective as of the Effective Date, Assignor hereby assigns and transfers unto Assignee all of its right, title, claim and interest, if any, in and under:

(A) The "Personal Property" (as defined in that certain Real Estate Purchase and Sale Agreement dated as of __________, 20__ between Assignor and [Assignee] (the "**Purchase Agreement**"));

(B) the "Assumed Contracts" (as defined in the Agreement) listed in Schedule 1 attached hereto; and

(C) any other "Intangible Property" (as defined in the Agreement).

ASSIGNOR AND ASSIGNEE FURTHER HEREBY AGREE AS FOLLOWS:

1. As of the Effective Date, Assignee hereby assumes and agrees to perform all of Assignor's obligations under the Assumed Contracts, to the extent the same arise and accrue on or after the date hereof.

2. Notwithstanding anything to the contrary in this Assignment, the Purchase Agreement or any of the other documents executed and delivered by Assignor and Assignee in connection herewith and therewith, Assignor reserves and retains any benefits, on a non-exclusive basis, reasonably necessary under the Assumed Contracts and other Intangible Property to the extent that the same relate to any matter with respect to the afore-said real property for which Assignor may continue to have liability from and after the Effective Date (including, without limitation, any liability under or pursuant to the Purchase Agreement). Assignee hereby agrees to reasonably cooperate (at Assignor's sole cost and expense) with the reasonable requests of Assignor in enforcing its benefits under the Leases to the extent such benefits are reserved by Assignor pursuant to the terms of the foregoing.

3. This Assignment shall be binding on and inure to the benefit of the parties hereto, their heirs, executors, administrators, successors in interest and assigns.

4. This Assignment shall be governed by and construed in accordance with the laws of the State of California.

5. Assignee hereby expressly acknowledges and affirms the provisions of Sections 4(i) and 14(m) and (n) of the Purchase Agreement, the terms of which are incorporated herein by reference and shall apply to and as between Assignor and Assignee and this Assignment as they apply to and as between Seller, Buyer and the Purchase Agreement, respectively. Inclusion of Section 4(i) of the Purchase Agreement shall include all of the paragraphs and subparagraphs of such Section 4(i).

6. This Assignment may be executed in any number of counterparts, each of which will be deemed an original, but all of which taken together shall constitute one and the same instrument. The signature page of any counterpart may be detached therefrom without impairing the legal effect of the signature(s) thereon, provided such signature page is attached to any other counterpart identical thereto (except for additional signature pages executed by other parties).

7. To the extent allowed by law, Assignee shall indemnify, hold harmless, and defend the Assignor and its respective members, partners, affiliates, parent business organizations, subsidiary business organizations, shareholders, officers, directors, beneficiaries, agents, employees, attorneys and representatives and their respective successors and assigns from and against all Claims, as defined in the Purchase Agreement, resulting from any breach by Assignee of any of the obligations assumed by Assignee hereunder. Assignee's obligations hereunder shall not apply to Claims to the extent caused by the willful misconduct or gross negligence of the party seeking the benefit of this paragraph 7.

[Signature page follows]

IN WITNESS WHEREOF, Assignor and Assignee have executed this Assignment the day and year first above written.

ASSIGNOR: MNCVAD-GRAYMARK RIDDER PARK LLC,
a Delaware limited liability company

By: __

Name: __

Title: __

ASSIGNEE: [________________________],
a ____________________

By: __

Name: __

Title: __

Exhibit A to
Assignment of
Intangible Property

Schedule 1 to
Assignment of
Intangible Property

Schedule of Assumed Contracts

[Insert]

EXHIBIT D

FORM OF ASSIGNMENT AND ASSUMPTION OF LEASES

THIS ASSIGNMENT AND ASSUMPTION OF LEASES (this "**Assignment**") is made this ______ day of _____________, 20___ (the "**Effective Date**"), between MNCVAD-GRAYMARK RIDDER PARK, a Delaware limited liability company ("**Assignor**"), and [____________________], a ____________________ ("**Assignee**"), who agree as follows:

1. Assignment and Assumption. For good and valuable consideration including, without limitation, the terms and conditions of that certain Real Estate Purchase and Sale Agreement, dated _______, 20___, between Assignor and [Assignee] (the "**Purchase Agreement**"), the receipt and sufficiency of which are hereby acknowledged by Assignor and Assignee, effective as of the Effective Date, (a) Assignor assigns to Assignee all of its right, title and interest in, to, and under the Leases described on the attached Schedule 1 (the "**Leases**"), and (b) Assignee accepts the assignment and hereby assumes and agrees to perform, as a direct obligation to the parties to the Leases described on Schedule 1 all the obligations and liabilities of Assignor as landlord under the Leases first arising and accruing from and after the Effective Date, together with any and all obligations with respect to the repayment or credit for any security deposits under such Leases to the extent credited to Buyer at Closing. Notwithstanding the foregoing, Assignor reserves and retains any benefits reasonably necessary under the Leases to the extent that the same relate to any matter for which Assignor may continue to have liability from and after the Effective Date (including, without limitation, any liability under or pursuant to the Purchase Agreement). Assignee hereby agrees to reasonably cooperate (at Assignor's sole cost and expense) with the reasonable requests of Assignor in enforcing its benefits under the Leases to the extent such benefits are reserved by Assignor pursuant to the terms of the foregoing.

2. Successors and Assigns. This Assignment shall be binding upon and inure to the benefit of the parties and their respective successors and assigns.

3. Severability. If any provision of this Assignment shall be held invalid or unenforceable for any reason and to any extent, the remainder of this Assignment shall not be affected, but shall be enforced to the greatest extent permitted by law.

4. Law. This Assignment shall be governed by and construed in accordance with the laws of the State of California.

5. Incorporation. Assignee hereby expressly acknowledges and affirms the provisions of Sections 4(i) and 14(m) and (n) of the Purchase Agreement, the terms of which are incorporated herein by reference and shall apply to and as between Assignor and Assignee and this Assignment as they apply to and as between Seller, Buyer and the Purchase Agreement, respectively. Inclusion of Section 4(i) of the Purchase Agreement shall include all of the paragraphs and subparagraphs of such Section 4(i).

6. Counterparts. This Assignment may be executed in any number of counterparts, each of which will be deemed an original, but all of which taken together shall constitute one and the same instrument. The signature page of any counterpart may be detached therefrom without impairing the legal effect of the signature(s) thereon, provided such signature page is attached to any other counterpart identical thereto (except for additional signature pages executed by other parties).

7. Indemnity. To the extent allowed by law, Assignee shall indemnify, hold harmless, and defend the Assignor and its respective members, partners, affiliates, parent business organizations, subsidiary business organizations, shareholders, officers, directors, beneficiaries, agents, employees, attorneys and representatives and their respective successors and assigns from and against all Claims, as defined in the Purchase Agreement, resulting from any breach by Assignee of any of the obligations assumed by Assignee hereunder. Assignee's obligations hereunder shall not apply to Claims to the extent caused by the willful misconduct or gross negligence of the party seeking the benefit of this paragraph 7.

[*Signature page follows*]

IN WITNESS WHEREOF, this Assignment has been executed as of the date first above written.

ASSIGNOR: MNCVAD-GRAYMARK RIDDER PARK LLC,
a Delaware limited liability company

By: __

Name: __

Title: __

ASSIGNEE: [__________________________],
a ____________________

By: __

Name: __

Title: __

SCHEDULE 1 TO ASSIGNMENT AND ASSUMPTION OF LEASES

SCHEDULE OF LEASES

1.

EXHIBIT E

SCHEDULE OF LEASES

1.

EXHIBIT F

SCHEDULE OF CONTRACTS

EXHIBIT G

[INTENTIONALLY OMITTED]

EXHIBIT H

FORM OF FIRPTA AFFIDAVIT

Section 1445 of the Internal Revenue Code of 1986 (the "**Code**") provides that a transferee of a U.S. real property interest must withhold tax if the transferor is a foreign person. For U.S. tax purposes (including Section 1445 of the Code), the owner of a disregarded entity (which has legal title to a U.S. real property interest under local law) will be the transferor of the property and not the disregarded entity. To inform ____________________, a ________________, the transferee of certain real property located in [___________________] that withholding of tax is not required upon the disposition of such U.S. real property interest by the undersigned ("**Transferor**"), the undersigned hereby certifies the following on behalf of Transferor:

1. Transferor is not a foreign corporation, foreign partnership, foreign trust, or foreign estate (as those terms are defined in the Code and the regulations promulgated thereunder);

2. Transferor's U.S. employer identification number is __________________;

3. Transferor's office address is: c/o NYL Investors LLC, One Front Street, Suite 550, San Francisco, California 94111; and

4. Transferor is not a disregarded entity as defined in §1.1445-2(b)(2)(iii).

Transferor understands that this certification may be disclosed to the Internal Revenue Service by Transferee and that any false statement contained herein could be punished by fine, imprisonment, or both.

Under penalty of perjury, I declare that I have examined this certificate and to the best of my knowledge and belief it is true, correct and complete, and I further declare that I have authority to sign this document on behalf of Transferor.

Date: ________________, 20___

MNCVAD-GRAYMARK RIDDER PARK LLC,

a Delaware limited liability company

By: __

Name: __

Title: __

EXHIBIT I

LIST OF DUE DILIGENCE DOCUMENTS

Third Parties

- PCA
- ALTA
- Phase I Environmental
- Natural Hazard
- Structural Seismic
- Zoning Report
- Abestos-Containing O&M
- Parking Survey
- Title Report

Financial Information

- Operating Statements
- Budget
- Tax Bills

Property Information

- Structural drawings
- CAD Files
- Spansion TI Close Out
- HVAC Equipment list 1751
- 1001 & 1717 Roof warranties

EXHIBIT J

FORM OF NOTICE TO TENANTS

_________, 20___

VIA U.S. MAIL

[TENANT]

____

____

____

Re: [PROPERTY DESCRIPTION]

Dear __________:

This letter is to inform you that the above-referenced property has been sold by the undersigned to _________________, a _________________ (the "**Buyer**") and the undersigned has assigned its interest in your lease. In connection therewith, Buyer is "**Landlord**" under that certain ___________________ dated _________, by and between the undersigned, as landlord, and ________, as lessee (the "**Lease**"). In order to receive credit for payments under the Lease, from and after the date hereof, all payments shall be made in accordance with the directions set forth in this letter.

All future notices and other communication should be delivered to Buyer, c/o the building manager, at the following address:

____
____
____
____

Commencing with the rent and other charges due on or after the date hereof, all payments due under the Lease should be paid and delivered as follows:

____
____
____

Your security deposit, if any, has been transferred to Buyer

Please indicate your receipt and acceptance of the terms of this Notice by executing and returning the enclosed counterpart of this Notice to Buyer. Thank you for your cooperation.

MNCVAD-GRAYMARK RIDDER PARK LLC,

a Delaware limited liability company

By: __

Name: __

Title: __

ACCEPTED AND AGREED TO:

,

a __________

By:__________
Name: ________
Title:__________

EXHIBIT K

FORM OF OWNER'S DECLARATION

To: Chicago Title Insurance Company

455 Market Street, Suite 2100

San Francisco, CA 94105

Attn: Terina J. Kung, Escrow Officer

Re: Title No. __________

Property: 1001 Ridder Park Drive, 1717 Fox Drive and 1751 Fox Drive, San Jose, California

1. Lumentum Operations LLC, a Delaware limited liability company ("**Buyer**"), has requested Chicago Title Insurance Company to issue its policy of title insurance insuring an interest in or title to real property described in Exhibit A (the "**Property**") pursuant to that certain Commitment for Title Insurance prepared by Chicago Title Insurance Company effective as of __________ (the "**Commitment**") without exception to or providing certain affirmative insurance against unrecorded matters.

2. MNCVAD-Graymark Ridder Park LLC, a Delaware limited liability company, is the declarant hereunder ("**Declarant**").

3. Declarant hereby affirms that to its knowledge there are no parties in possession of the Property or entitled to possession of the Property under unrecorded leases other than those shown on Exhibit B and any sublessees or other parties whose rights derive from the leases on the attached Exhibit B. The phrases "to its knowledge" or "to Declarant's knowledge" mean to the actual (and not constructive), present knowledge of Andrew Jenkins.

4. Other than as set forth on Exhibit C, during the period of ninety (90) days immediately preceding the date of this Declaration, to Declarant's knowledge, no work has been done, no surveys or architectural or engineering plans have been prepared, and no materials have been furnished in connection with the erection, equipment, repair, protection or removal of any building or other structure on the land or in connection with the improvement of the land in any manner whatsoever for which payment has not been made.

This Declaration is made to induce Chicago Title Insurance Company to issue its policy of title insurance (the "**Title Policy**") to Buyer with respect to the above-referenced order number. Chicago Title Insurance Company may rely on this Declaration for purposes of issuing the Commitment and the Title Policy and for no other purposes whatsoever.

Executed under penalty of perjury on this ______ day of _______, 20___.

[Signature page follows]

DECLARANT: MNCVAD-GRAYMARK RIDDER PARK LLC,
a Delaware limited liability company

By: __

Name: __

Title: __

Exhibit A to Owner's Declaration

Legal Description

Exhibit B to Owner's Declaration

Tenant Roll

[insert]

Exhibit C to Owner's Declaration

Labor and Material Furnished

[insert]

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EXHIBIT B

Exhibit 21.1

LIST OF SUBSIDIARIES
LUMENTUM HOLDINGS INC.

AS OF JUNE 29, 2019

Name of Entity	State or Other Jurisdiction of Incorporation or Organization
DOMESTIC	
CCOP International Holdings Inc.	Delaware
E20 Communications Inc.	Delaware
Lightwave Electronics Corporation	California
Lumentum Inc.	Delaware
Lumentum Operations LLC	Delaware
Lumentum Optical Corporation	Massachusetts
Lumentum Research LLC	Delaware
Oclaro (North America), Inc.	Delaware
Lumentum Fiber Optics, Inc.	Delaware
Lumentum Optics Inc.	Delaware
Oclaro, LLC	Delaware
SDL PIRI, Inc.	Delaware
INTERNATIONAL	
Bookham International Ltd.	Cayman Islands
Bookham Nominees Ltd.	United Kingdom
Lumentum Asia Limited	Hong Kong
Lumentum (BVI) Ltd	British Virgin Islands
Lumentum BC Research ULC	Canada
Lumentum Canada Ltd.	Canada
Lumentum Communication Technology (Shenzhen) Co., Ltd.	China
Lumentum d.o.o. Optièna vlakna	Slovenia
Lumentum HoldCo Limited	Hong Kong
Lumentum HoldCo Limited - Taiwan Branch	Taiwan
Lumentum International (Thailand) Co., Ltd.	Thailand
Lumentum International (Thailand) Co., Ltd. - Branch	Thailand
Lumentum International Tech Co.	Cayman Islands
Lumentum Israel Ltd	Israel
Lumentum Japan Inc.	Japan
Lumentum K.K.	Japan
Lumentum Netherlands B.V.	Netherlands
Lumentum Netherlands B.V. - France Branch	France
Lumentum Netherlands B.V. - Germany Branch	Germany
Lumentum Netherlands B.V. - Italy Branch	Italy
Lumentum Netherlands B.V. - UK Branch	United Kingdom
Lumentum Ottawa Inc.	Canada
Lumentum SK Limited	South Korea
Lumentum Switzerland AG	Switzerland

Lumentum Taiwan Co., Ltd.	Taiwan
Lumentum Tech LLC	Cayman Islands
Lumentum Technologies Limited	Canada
Oclaro (Canada) Inc.	Canada
Oclaro (North America), Inc. (branch office -- San Donato, Italy)	Italy
Oclaro Germany GmbH	Germany
Oclaro Innovations LLP	United Kingdom
Oclaro Malaysia Sdn Bhd	Malaysia
Oclaro Technology (Shenzhen) Co. Ltd.	China
Lumentum Technology UK Limited	United Kingdom
Oclaro Technology Limited (rep office-Hong Kong)	Hong Kong
Oclaro Thailand Ltd.	Thailand

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-228905, 333-215937, and 333-205918 on Form S-8 of our reports dated August 27, 2019, relating to the consolidated financial statements and consolidated financial statement schedule of Lumentum Holdings Inc. and subsidiaries (the “Company”), and the effectiveness of the Company’s internal control over financial reporting, appearing in this Annual Report on Form 10-K of the Company for the year ended June 29, 2019.

/s/ DELOITTE & TOUCHE LLP

San Jose, California

August 27, 2019

Exhibit 31.1

LUMENTUM HOLDINGS INC.
CERTIFICATION PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002

I, Alan Lowe, certify that:

1. I have reviewed the Annual Report on Form 10-K of Lumentum Holdings Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d - 15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: August 27, 2019

/s/ ALAN LOWE

Alan Lowe
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

LUMENTUM HOLDINGS INC.
CERTIFICATION PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002

I, Wajid Ali, certify that:

1. I have reviewed the Annual Report on Form 10-K of Lumentum Holdings Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d - 15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: August 27, 2019

/s/ WAJID ALI

Wajid Ali
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

LUMENTUM HOLDINGS INC.
CERTIFICATION PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K of Lumentum Holdings Inc. (the “Company”) for the year ended June 29, 2019 as filed with the Securities and Exchange Commission (the “Report”), I, Alan Lowe, President and Chief Executive Officer (Principal Executive Officer) of the Company, hereby certify as of the date hereof, solely for purposes of Title 18, Chapter 63, Section 1350 of the United States Code, that to the best of my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company at the dates and for the periods indicated.

Dated: August 27, 2019

/s/ ALAN LOWE

Alan Lowe
President and Chief Executive Officer
(Principal Executive Officer)

The foregoing certification is being furnished pursuant to 18 U.S.C. Section 1350. It is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and it is not to be incorporated by reference into any filing of Lumentum Holdings Inc., regardless of any general incorporation language in such filing.

Exhibit 32.2

LUMENTUM HOLDINGS INC.
CERTIFICATION PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K of Lumentum Holdings Inc. (the “Company”) for the year ended June 29, 2019 as filed with the Securities and Exchange Commission (the “Report”), I, Wajid Ali, Executive Vice President,
Chief Financial Officer (Principal Financial Officer) of the Company, hereby certify as of the date hereof, solely for purposes of Title 18, Chapter 63, Section 1350 of the United States Code, that to the best of my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company at the dates and for the periods indicated.

Dated: August 27, 2019

/s/ WAJID ALI

Wajid Ali
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)

The foregoing certification is being furnished pursuant to 18 U.S.C. Section 1350. It is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and it is not to be incorporated by reference into any filing of Lumentum Holdings Inc., regardless of any general incorporation language in such filing.