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 July 2, 2022
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)

1001 Ridder Park Drive, San Jose, California 95131
(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 has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

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

As of January 1, 2022, the aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant was approximately $4,648 million based on the closing sales price of the registrant's common stock as reported on the NASDAQ Stock Market on December 31, 2021 of $105.77 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 17, 2022, the Registrant had 68.1 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 July 2, 2022.

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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 relate to, among other things, our markets and industry, products and strategy, the impact of export regulation changes, the impact of the COVID-19 pandemic and related responses of business and governments to the pandemic on our business and results of operations, 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 expectations regarding U.S.-China relations, market and regulatory conditions, trends and uncertainties in our business and financial results, and our merger with NeoPhotonics and the successful integration of NeoPhotonics's business (including personnel), 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," "contemplate," "believe," "predict," "potential" 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," "us," "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 ("OpComms") and Commercial Lasers ("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 automotive, 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") assemble into communications networking systems, which they sell to communication service providers, hyperscale cloud operators and 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, gaming, and other applications, including to the automotive industry, who then integrate our devices within their products, for eventual resale to consumers and also into other industrial applications.

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. We believe the world is becoming more reliant on ever-increasing amounts of data flowing through optical networks and data centers. Lumentum's products and technology enable the scaling of these optical networks and data centers to higher capacities. We expect the accelerating shift to digital and virtual approaches to all aspects of work and life that is driving staggering amounts of data in the world's networks and cloud datacenters will continue into the future. Virtual meetings, video calls, and hybrid in-person and virtual environments for work and other aspects of life will continue to drive strong needs for bandwidth growth and present dynamic new challenges that our technology addresses. As manufacturers demand higher levels of precision, new materials, and factory and energy efficiency, suppliers of manufacturing tools globally are turning to laser-based approaches, including the types of lasers Lumentum supplies. Laser-based 3D sensing and LiDAR for security, industrial and automotive applications are rapidly developing markets. The technology enables computer vision applications that enhance security, safety, and new functionality in the electronic devices that people rely on every day. The use of LiDAR and in-cabin 3D sensing in automobile and delivery vehicles over time significantly adds to our long-term market opportunity. Frictionless and contactless biometric security and access control is of increasing focus globally given the world's experience with the COVID-19 pandemic. Additionally, we expect 3D-enabled machine vision solutions to expand significantly in industrial applications in the coming years.

We operate in two reportable segments: OpComms and 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, South America, Asia-Pacific, and Europe, with employees engaged in research and development ("R&D"), administration, manufacturing, support and sales and marketing activities. Our headquarters are located in San Jose, California, and we employed approximately 6,815 full-time employees around the world as of July 2, 2022.

Lumentum was incorporated in Delaware as a wholly owned subsidiary of JDS Uniphase Corporation ("JDSU") on February 10, 2015. In August 2015, we were spun-off from JDSU and became an independent publicly-traded company through the distribution of our common stock by JDSU to its stockholders (the "Separation"). In 2015, JDSU was renamed Viavi Solutions Inc. ("Viavi"). 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 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 machining laser market and expanded our addressable market.

In December 2018, we completed the acquisition of 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 strengthened our product portfolio, by adding Oclaro's indium phosphide laser and photonic integrated circuit and coherent component and module capabilities which broadened our revenue mix and positions us strongly to meet the future needs of our customers.

On August 3, 2022, we completed our merger ("the Merger") with NeoPhotonics Corporation ("NeoPhotonics"), which we expect to expand our opportunities in the market for optical components used in cloud and telecom network infrastructure.

Internet, cloud, mobile, and broadband access network capacity requirements continue to grow at an unrelenting pace driven by the digital transformation of work and life, high-bandwidth video, gaming, and other applications. After the Merger, Lumentum has a broader portfolio of next generation products and technologies positioned to address the market opportunity created by this strong growth in network capacity requirements, including NeoPhotonics ultra-pure light tunable lasers and photonics technologies for speed over distance applications.

On August 15, 2022, we completed a transaction to acquire a business that develops and markets products for use in telecommunications and datacenter infrastructure, including Digital Signal Processors (DSP's), ASICs and optical transceivers. This acquisition will enable us to expand our business in our OpComms segment.

Industry Trends and Business Risks

Our business is driven by end-market applications which benefit from the performance advantages of optical and photonics solutions.

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 applications 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 have been and are continuing to be designed into 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, more environmentally friendly, 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 coupled with changing export regulations with China have fluctuated significantly in recent years and has created volatility and uncertainty in our future demand.

Impact of COVID-19 to Our Business

Since February 2020, the COVID-19 pandemic has caused public health officials to recommend, and governments to enact, precautions to mitigate the spread of the virus, including travel restrictions and bans, extensive social distancing guidelines, closure or restrictions on business and quarantine or other types of "shelter-in-place" orders in many regions of the world. The pandemic and these related responses continue to cause a global slowdown of economic activity (including a decrease in demand for a broad variety of goods and services), disruptions in global supply chains, labor shortages, and significant volatility and potential disruption of financial markets. The ultimate extent to which COVID-19 will impact our business depends on future developments, which are highly uncertain and very difficult to predict, including the effectiveness and utilization of vaccines for COVID-19 and its variants, the severity of COVID-19 and its variants, and the effectiveness of the actions to contain or limit their spread.

From the start of the COVID-19 pandemic, we proactively implemented preventative measures and protocols, which we continuously assess and update for changes in conditions and emerging trends. Some of these measures have included complying with local, state or federal orders that require employees to work from home, instructing employees to work from home in certain jurisdictions, limiting the number of employees onsite which slowed our manufacturing operations in certain countries, enhancing use of personal protective equipment and restricting non-critical business travel by our employees, enacting vaccine and testing mandates in certain jurisdictions, and implementing health and safety enhancements. These measures are intended to safeguard our team members, contractors, suppliers, customers, distributors, and communities, and to ensure business continuity. Currently, our major production facilities in Europe, Asia, and the United States remain open. At most of our locations, we have transitioned from business continuity plans to return-to-office plans while continuing to maintain high standards of employee safety and sanitization protocols.

In the geographies where we have operations, we have, in general and where applicable, been deemed an essential business and been permitted to continue manufacturing and conducting new product development operations in a more limited capacity during the pandemic. This stems from our critical role in global supply chains for the world's communications and health-care systems. However, the pandemic continues to affect our suppliers and manufacturers who are experiencing component materials and labor shortages. Given the continually evolving situation, particularly in light of the recent Delta and Omicron variants, it is difficult to predict the magnitude and duration of the impact of the COVID-19 pandemic to our markets, its effects, or precisely when our ability to supply our products will return to full capacity. We are continuing to actively monitor the situation and may take further actions altering our business operations that we determine are in the best interests of our employees, customers, communities, business partners, suppliers and stockholders, or as required by federal, state, or local authorities. It is not clear what the potential effects any such alterations or modifications may have on our business, including the effects on our customers, employees and prospects, or on our financial results for the future.

Our primary strategic focus for several years has been technology and product leadership combined with close customer relationships in long-term healthy and growing markets. We believe this strategy is even more apt, and our long-term opportunity is not diminished, with COVID-19. We believe there are long-term opportunities, as the world's experience with COVID-19 could drive an increasingly digital and virtual world, touching all aspects of life and work, that increasingly emphasizes the importance of communications systems, cloud services, augmented and virtual reality, and enhanced security. Additionally, ever advancing electronic devices are needed to consume, produce, and communicate digital and virtual content. All these trends could drive the need for higher volumes of higher performing optical devices that we could supply. As such, we expect to continue to invest strongly in new products, technology and customer programs.

For more information on risks associated with the COVID-19 outbreak and regulatory actions, please refer to the section titled "Risk Factors" in Item 1A of Part I of this report.

Supply Chain Constraints

Our business and our customers' businesses have been negatively impacted by worldwide logistics and supply chain issues, including constraints on available cargo capabilities and limited availability of once broadly available supplies of both raw materials and finished components. COVID-19 has also created dynamics in the semiconductor component supply chains that have led to shortages of the types of components we and our customers require in our products. These shortages have impacted our ability to meet demand and generate revenue from certain products in fiscal 2022 and, they continue to impact our ability to meet demand today. If our ability to procure needed semiconductor components does not improve, this will impact our ability to supply our products to our customers and may reduce our revenue and profit margin. In addition, if our customers are unable to procure needed semiconductor components, this could reduce their demand for our products and reduce our revenue. The impact of semiconductor component shortages may continue in the near term as supplier and customer buffer inventories and safety stocks are exhausted. Due to the global supply chain constraint, we have had to incur incremental supply and procurement costs in order to increase our ability to fulfill demands from our customers. These costs have increased our inventory balances as of July 2, 2022 and may decrease our gross margin in the near term. We expect component supply to be a challenge at least into the second half of fiscal 2023. For more information on risks associated with supply chain constraints, please refer to the section titled "Risk Factors" in Item 1A of Part I of this report.

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 and for further information regarding our operating segments, please refer to "Note 19. Operating Segments and Geographic Information" to the consolidated financial statements.

<u>OpComms</u>

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 for 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 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 dense wavelength division multiplexing (“DWDM”) pluggable transceivers, and tunable small form-factor pluggable transceivers. We also sell laser chips for use in manufacturing of high-speed Datacom transceivers.

In the Consumer and Industrial market, our OpComms diode laser products include vertical cavity surface emitting lasers (“VCSELs”) and edge emitting lasers. In the Consumer end-market, our laser light sources are integrated into 3D sensing cameras which are used in applications in mobile devices, gaming, payment kiosks, computers, and other consumer electronics devices. Applications include biometric identification, computational photography, virtual and augmented reality, and natural user interfaces. Emerging applications for our lasers include automotive safety systems, LiDAR for advanced driver assistance systems in automobiles and autonomous vehicles, self-navigating robotics and drones in industrial applications, and 3D capture of objects coupled with 3D imaging or printing. In the industrial end-market, our diode lasers are used primarily as pump sources for pulsed and kilowatt class fiber lasers.

Customers

Our OpComms customers include Accelink, Alphabet, Amazon, Apple, Ciena, Cisco Systems (including Acacia Communications, which was acquired by Cisco), Comcast, Infinera, Nokia Networks (including Alcatel-Lucent International), and ZTE. During fiscal 2022, 2021, and 2020, 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		
	July 2, 2022	**July 3, 2021**	**June 27, 2020**
Apple	28.7 %	30.2 %	26.0 %
Ciena	12.6 %	10.1 %	*
Huawei	*	10.8 %	13.2 %

*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 and existing 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.

We believe increasing speeds at the edge of the network, including the significant increase in speed in 5G mobile networks, combined with increasing demand for high bandwidth applications and services, including streaming video, will result in increasing demand for additional capacity in datacenter interconnect, metro regional and long-haul networks. The dynamically reconfigurable nature of today’s networks enables lower operating costs and other competitive advantages, allowing communications 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 innovations, particularly in the area of photonic integration, have resulted in products that have more functionality, are significantly smaller in size, require less power, and are more cost-effective than our historical products. 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, connections between cloud datacenters, and backhaul of data from wireless mobile networks. Transmission products, such as our tunable transponder, transceiver and transmitter modules, transmit and receive high-speed data signals at the ingress/egress points of networks. These products use dense wavelength division multiplexing (“DWDM”) technology to maximize the fiber transmission capacity while lowering the cost per bit to meet the needs of increasing internet and cloud 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 the conditioning of optical 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 cloud data center market is one of the fastest growing segments in optical communications both in terms of network equipment investments and increasing volumes of higher speed optical transceivers. Additionally, the increased bandwidth needs of 5G wireless applications will drive growth in the volumes of high speed optical transceivers. Historically, we have supplied optical transceivers, but we have shifted our strategy to supplying the 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 vertical cavity surface emitting lasers (“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”) chips 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, computational photography 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 energy efficient, more agile and more reliable, making us a valuable business and technology partner for NEMs, network operators, consumer electronic companies, cloud service providers and data center operators.

Competition

We compete against various companies in the markets we serve, including Coherent (previously named II-VI), Acacia Communications (acquired by Cisco in 2021), Accelink, ams AG, Broadcom Inc., Furukawa Electric, Mitsubishi Electric, 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. Some of these competitors are also our customers.

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, ASM Pacific Technology, DISCO, KLA-Tencor, Lasertec, Life Technologies, LPKF Laser & Electronics, Malvern Panalytical, and MKS Instruments. During fiscal 2022, 2021, and 2020, 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 singulation of silicon and other types of 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, more energy efficient 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 (previously named II-VI), IPG Photonics, MKS Instruments, and TRUMPF Group.

Mergers and 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.

NeoPhotonics

On November 4, 2021, we announced a merger agreement with NeoPhotonics. On August 3, 2022, we completed the merger with NeoPhotonics, pursuant to which Lumentum acquired all of the outstanding shares of NeoPhotonics stock. The addition of NeoPhotonics expands Lumentum’s opportunity in some of the fastest growing markets for optical components used in cloud and telecom network infrastructure. We expect the integrated company to be better positioned to serve the needs of a global customer base who is increasingly utilizing photonics to accelerate the shift to digital and virtual approaches to work and life, the proliferation of IoT, 5G, and next-generation mobile networks, and the transition to advanced cloud computing architectures. Please refer to “Note 4. Business Combination” to the consolidated financial statements.

Other Acquisition

On August 15, 2022, we completed a transaction to acquire a business that develops and markets products for use in telecommunications and datacenter infrastructure, including Digital Signal Processor (DSP’s), ASICs and optical transceivers. This acquisition will help us to expand our business in our OpComms segment. Please refer to “Note 21. Subsequent Events” to the consolidated financial statements.

Research and Development

We devote substantial resources to research and development (“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 consumer electronics, mobile device, automotive, and industrial 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

We use a combination of contract manufacturers and our own manufacturing facilities. Our significant manufacturing facilities are located in the United States, Thailand, China, the United Kingdom, Slovenia, and Japan.

In fiscal 2022, we retained the same manufacturing footprint as we had in 2021, with the focus on Business Continuity Planning (BCP) for our own manufacturing facilities and contract manufacturing sites to ensure we have alternate sources and flexibility for some of our higher demand products. In addition, we purchased land and buildings in Thailand and Slovenia with a fair value of $15.1 million in order to expand our manufacturing capacity. Please refer to “Note 8. Balance Sheet Details” to the consolidated financial statements.

In fiscal 2021, we transitioned manufacturing of our backend wafer and test processes from San Jose, California to our other manufacturing operations. We also ceased manufacturing certain of our specialty products in San Jose, transferring the raw materials to the existing customer.

In fiscal 2020, as part of our plan to discontinue development and manufacturing of Lithium Niobate modulators, we sold the assets associated with certain Lithium Niobate product lines manufactured by our San Donato, Italy site. Additionally, in fiscal 2020, we discontinued the development and manufacturing of future Datacom transceiver modules which impacted the California and China based Datacom module teams. This affected manufacturing in our Thailand factory as well. 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 manufacturers to plan and procure components and manage the inventory in these locations.

Sources and Availability of Raw Materials

We use various suppliers and contract manufacturers to supply parts and components for manufacturing 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 alternate sources at acceptable prices and quality within a reasonable time, or at all, such as the current shortages in semiconductor components; therefore, the risk of loss or interruption of such supply 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 July 2, 2022, we owned approximately 915 U.S. patents and 900 foreign patents with expiration dates ranging from July 2022 through August 2041, and had approximately 600 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 July 2, 2022 and July 3, 2021, our backlog was $594.0 million and $521.1 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 significant portion of our revenue arises from vendor-managed inventory (VMI) arrangements where the timing and volume of customer utilization is difficult to predict. Products that are shipped through VMI are not included our reported backlog amounts above.

Human Capital Resources

As of July 2, 2022, we employed approximately 6,815 full-time employees, including approximately 5,169 employees in manufacturing, 897 employees in R&D and 749 employees in SG&A. As of July 2, 2022, we employed approximately 6,815 full-time employees, including approximately 5,169 employees in manufacturing, 897 employees in R&D and 749 employees in SG&A. Of the 6,815 employees, 20% are represented by two national collective bargaining agreements with local chapters and one labor union. One of collective bargaining agreements will come up for renewal in December 2022. We believe that our relations with both our union and non-union employees are satisfactory.

We believe that the future performance of our Company relies upon the strength of our employees, and our ability to recruit, retain, develop and motivate the services of executive, engineering, sales and marketing, and support personnel is critical to our success. We strive to meet these objectives by offering competitive pay and benefits in a diverse, inclusive and safe workplace and by providing opportunities for our employees to grow and develop their careers. We believe that our employee relations are strong.

Competitive Pay and Benefits

We provide compensation and benefits packages that we believe are competitive within the applicable market. We use a combination of compensation and other programs (which vary by region and salary grade) to attract, motivate and retain our employees, including semi-annual performance bonuses, stock awards, an employee stock purchase plan, health savings and flexible spending accounts, paid time off, family leave, tuition assistance programs, health and wellness benefits and programs, and on-site fitness centers. We review our benefits packages annually, or more frequently as needed, to ensure we remain competitive with our peers and continue to attract and retain talent throughout our organization.

Employee Recruitment, Retention and Development

We are committed to recruiting, hiring, retaining, promoting and engaging a diverse workforce to best serve our global customers. We have established relationships with professional associations and industry groups to proactively attract talent, and we partner with universities for our internship program. We believe that our commitment to our internship program and university partnerships contributes to developing the next generation of talent and provides a pipeline of recent college graduates into our talent pool. We offered both remote and hybrid internship opportunities during the last three fiscal years that enabled us to continue building our talent pipeline despite the COVID-19 pandemic.

Diversity, Inclusion & Belonging

As a global and multicultural company driven by innovation, Lumentum is building a diverse and inclusive culture where differences are valued, and employees feel they belong. Lumentum's focus on diversity, inclusion, and belonging is felt across the entire organization. We are committed to creating a diverse and welcoming workplace that includes employees with diverse backgrounds and experiences. Lumentum believes that employee and thought diversity delivers more innovation and ultimately better business results.

As part of our efforts continue to ensure Lumentum's practices support a culture of diversity through our commitment to ensuring pay equity as a standard global practice, increasing the representation of underrepresented populations, increasing the percentage of women in senior leadership positions, and developing a pipeline of future leaders through our early career hire initiatives for new employees. Our work is driven by a Diversity, Inclusion, and Belonging Council comprised of global representation of all business units and functions. Our diversity work is also enhanced by employee resource groups supporting women in North America, Switzerland, Slovenia, UK, Italy, and Japan, early career hires in North America and EMEA, Black, Asian American and Pacific Islander, LatinX in North America, LGBTQIA+, Persons with Disabilities, Working Parents, and our Veteran employees.

Material Government Regulations

Our business activities are international and subject us to various federal, state, local and foreign laws in the countries in which we operate, and our products and services are subject to laws and regulations affecting the sale of our products.

Environment

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 our separation from JDSU and trading as an independent public company, 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.

Global Trade

As our business operates in many global jurisdictions, the import and export of our products and services are subject to laws and regulations including international treaties, U.S. export controls and sanctions laws, customs regulations, and local trade rules around the world which vary widely across different countries and may change from time to time. Such laws, rules and regulations may delay the introduction of some of our products or impact our competitiveness through restricting our ability to do business in certain places or with certain entities and individuals, or by requiring us to comply laws concerning transfer and disclosure of sensitive or controlled technology. For example, the U.S. and other governments have imposed restrictions on the import and export of, among other things, certain telecommunications products and components. The consequences of any failure to comply with domestic and foreign trade regulations could limit our ability to conduct business in certain areas or with certain customers.

For additional information concerning regulatory compliance and a discussion of the risks associated with governmental regulations that may materially impact us, please refer to the section entitled "Risk Factors" in Item 1A of Part I of this Report.

International Operations

During fiscal 2022, 2021 and 2020, net revenue from customers outside the United States based on the geographic region and country where our product is initially shipped, represented 89.8%, 92.3% and 91.1% 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. 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. Please refer to "Note 19. Operating Segments and Geographic Information" to the consolidated financial statements. For information regarding risks associated with our international operations, please refer to "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

Investing in our common stock involves a high degree of risk. You should carefully consider the risks and uncertainties described below, together with all of the other information in this Annual Report on Form 10-K, including the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes, before making a decision to invest in our common stock. Our business, financial condition, results of operations or prospects could also be harmed by risks and uncertainties not currently known to us or that we currently do not believe are material. If any of the risks actually occur, our business, financial condition, results of operations and prospects could be adversely affected. In that event, the market price of our common stock could decline, and you could lose part or all of your investment.

Risk Factor Summary

Our business operations are subject to numerous risks, factors and uncertainties, including those outside of our control, that could cause our actual results to be harmed, including risks regarding the following:

General Economic Factors

- the impact of the ongoing COVID-19 pandemic and responsive measures; and
- challenges relating to supply chain constraints

Operational Factors

- changes in technology and intense competition;
- our reliance on a limited number of customers;
- our ability to sell to a significant customer;
- our reliance on a limited number of suppliers;
- our ability to timely procure components needed to manufacture our products;
- our ability to manufacture our products;
- our leverage in negotiations with large customers;
- order cancellations, reductions or delays in delivery schedules by our customers or distributors;
- any delay in collecting or failure to collect accounts receivable;
- defects in our products;
- our international operations;
- our strategic transactions;
- our level of success in accessing new markets and obtaining new customers;
- our implementation strategy for our acquisitions;
- changes in spending levels, demand and customer requirements for our products;
- our international structure;
- restructure charges;
- fluctuations in foreign currency;
- our ability to hire and retain key personnel;
- the effects of immigration policy on our ability to hire and retain employees;
- our ability to protect our product and proprietary rights;
- our reliance on licensed third-party technology;

- the unpredictability of our results of operations;
- actual or perceived security or privacy breaches or incidents, as well as defects, errors or vulnerabilities in our technology and that of third-party providers;
- factors relating to our intellectual property rights as well as the intellectual property rights of others; and
- merger and acquisition related risks

Regulatory and Legal Factors

- our ability to obtain government authorization to export our products;
- our ability to obtain antitrust approvals in connection with certain strategic transactions;
- the threat of tariffs;
- changes in tax laws;
- litigation risks, including intellectual property litigation;
- changes in social and environmental responsibility regulations, policies and provisions, as well as customer and investor demands;
- changes in laws and the adoption and interpretation of administrative rules and regulations, including U.S. and international customs and export regulations; and
- our ability to maintain an effective system of disclosure controls and internal control over financial reporting

Financing and Transactional Risks

- our future capital requirements; and
- our ability to service our current and future debt

Risk Related to Our Merger with NeoPhotonics

- failure to successfully integrate NeoPhotonics to our business;
- failure to realize the benefits expected from the Merger; and
- litigation in connection with the Merger

Governance Risks and Risks Related to Ownership of Our Capital Stock

- dilution related to our 2024 Notes, 2026 Notes and 2028 Notes (each as defined below);
- provisions of Delaware law and our certificate of incorporation and bylaws that may make a merger, tender offer or proxy contest difficult;
- exclusive forum provisions in our bylaws;
- the volatility of the trading price of our common stock; and
- our intention not to pay dividends for the foreseeable future

Risks Related to Our Business

Our business operations, financial performance, results of operations, financial position and the achievement of our strategic objectives has been affected, and may be materially and adversely affected by the ongoing COVID-19 pandemic.

Our business, results of operations and financial performance have been negatively impacted by the evolution of the COVID-19 pandemic and related countermeasures and public health responses, such as shelter-in-place orders, social distancing protocols, and travel restrictions in many of the countries and regions in which we have operations or manufacturing partners. The full extent to which the COVID-19 pandemic could impact our financial performance and results of operation will depend on future developments that are highly uncertain and cannot be accurately predicted, including COVID-19 infections intensifying or returning in various geographic areas, the severity and transmission rate of variants of the virus, new medical and other information that may emerge concerning COVID-19, the effectiveness of vaccines, and the actions by governmental entities or others to address it, contain it or treat its impact.

From the start of the COVID-19 pandemic, in early February 2020 Lumentum proactively implemented certain measures to limit the spread of the virus, such as travel restrictions, temporarily closed or limited the number of employees permitted onsite in our offices and manufacturing sites in several heavily impacted locations, implementation of vaccination guidelines in accordance with government mandates, and implemented work-from-home rules at most of our facilities. These measures as well as others taken by us and others have caused, and may continue to cause, disruption and delays in our ability to operate and manufacture, test and assemble products in our internal facilities, particularly in the United States, China, Thailand and the United Kingdom. Our ability to continue certain research and development activities has also been limited, which could materially and adversely affect our ability to develop new products and technologies on the timelines we previously anticipated. New and potentially more contagious variants of the COVID-19 virus continue to develop in several countries, including regions in which we have significant operations. If there is any further decline of the situation in countries where we operate or if the current situation persists for an extended period, our employees and operations could be significantly impacted.

In addition, we have experienced disruption and delays with our manufacturing partners, for example in Malaysia, limitations were imposed at certain times on which businesses could operate and the amount of the workforce permitted to perform manufacturing operations, and in the third quarter of fiscal 2022, we experienced a temporary factory closure in China as a result of an increase in the number of COVID-19 cases, as required by local government mandates. These and other limitations have, in some instances, been reinstated, and could be reinstated again, if the number of COVID-19 cases in particular regions increases and there is considerable uncertainty regarding the duration of such limitations and potential future restrictions, and complexity in ensuring compliance. Our supply chain has been, and continues to be, affected by measures implemented in response to the pandemic and in certain cases, our suppliers have not had the materials, capacity or capability to supply us with the components necessary for continuing our manufacturing operations or development efforts at our normal levels, such as the impacts we are experiencing from the shortages in semiconductor components. There are also restrictions and delays on logistics, such as air cargo carriers, as well as increased logistics costs due to limited capacity and high demands for freight forwarders. Similarly, our customers have also experienced, and could continue to experience, disruptions in their operations, which may result in reduced, delayed, or canceled orders, and has increased collection risks, which may adversely affect our results of operations. Further, we have seen delayed deployments of 5G networks, particularly in China, which has harmed and may continue to harm our OpComms revenue. These disruptions, delays and restrictions have adversely affected our revenue and results of operations and could be extended or further restrictions could be put in place in other regions, which would materially and adversely impact our revenue, results of operations and financial condition.

The ultimate impact of the COVID-19 pandemic on our operations and financial performance depends on many factors that are not within our control, including, but not limited, to: governmental, business and individuals’ actions that have been and continue to be taken in response to the pandemic (including restrictions on travel and transport and workforce pressures); the impact of the pandemic and actions taken in response on global and regional economies, travel, and economic activity; the availability of federal, state, local or non-U.S. funding programs; general economic uncertainty in key global markets and financial market volatility, including increasing levels of inflation in the United States; global economic conditions and levels of economic growth; and the pace of recovery when the COVID-19 pandemic subsides (including the availability and efficacy of treatments and vaccines and the impact of new variants on recovery). In addition, the global economic volatility has significantly impacted the foreign exchange markets, and the currencies of various countries in which we operate and in which we have significant volume of local-currency denominated expenses have seen significant volatility. The magnitude of the impact of COVID-19 on our business operations remains uncertain and difficult to predict, and the situation remains highly dynamic. We have experienced and will continue to experience in subsequent periods, disruptions to our business that will adversely impact our business, financial condition and results of operations.

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. We do not have a guarantee of supply from these suppliers and as a result, there is no assurance that we would be able to secure the equipment or components that we require, in sufficient quantity, quality and on reasonable terms. 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. Furthermore, the COVID-19 pandemic and related supply chain disruptions and labor market constraints have created heightened risk that sole suppliers or limited number of suppliers may be unable to meet their obligations to us. If we experience any significant difficulty in obtaining the materials or services used in the conduct of our business, these supply challenges may limit our ability to fully satisfy customer demand.

Challenges relating to current supply chain constraints, including semiconductor components, could adversely impact our business, results of operations and financial condition.

Due to increased demand across a range of industries, our business and customers' businesses have experienced and are continuing to experience supply constraints due to both constrained manufacturing capacity, as well as component parts shortages, in particular semiconductor components, as our vendors have also been facing supply constraints, and increased logistics costs due to air travel and transport restrictions that limited the availability of flights on which we ship our products. The COVID-19 pandemic has also contributed to and exacerbated this strain and may continue to cause volatility and uncertainty in customer demand. This constrained supply environment has adversely affected and could further affect availability, lead-times and cost of components. These challenges have resulted in extended lead-times to our customers and have had a negative impact on our ability to recognize associated revenue and have resulted in and may continue to result in an increase in accelerated ordering for certain of our products. As a result, we may experience increases in the costs to manufacture our products and may not be able to manufacture and deliver all of the orders placed by our customers in time. We continue to work with our suppliers to ensure that we are able to continue manufacturing and distributing our products, and in the quantities requested by our customers; however, we continue to experience disruption to our supply chain that could impact our operations. 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. Limits on manufacturing availability or capacity or delays in production or delivery of components or raw materials due to COVID-related restrictions or otherwise could further delay or inhibit our ability to obtain supply of components and produce finished goods inventory. There can be no assurance that the current supply chain impacts will not continue, or worsen, in the future. These supply chain constraints and their related challenges could result in shortages, increased material costs or use of cash, engineering design changes, and delays in new product introductions, each of which could adversely impact our business, results of operations and financial condition.

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 and enhancements, 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, and is further impacted by the disruptions caused by COVID-19 on our ability to continue with research and development activities and on our customers' abilities to introduce new products and offerings. 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. Future demand for our products is uncertain and will depend to a great degree on continued technological development and the introduction of new or enhanced products. If this does not continue, sales of our products may decline which could adversely impact our business, results of operations and financial condition.

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 that enable us to increase revenues while maintaining consistent margins, 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 financial performance in certain business lines and growth prospects will continue to depend in part on a small number of customers. Many of our customers purchase products under purchase orders or under contracts that do not contain volume or long-term purchase commitments. Therefore, these customers may alter their purchasing behavior with little or no notice to us for various reasons, including developing, or, in the case of our distributors, their customers developing, their own product solutions; choosing to purchase or distribute product from our competitors; incorrectly forecasting end market demand for their products; or experiencing a reduction in their market share in the markets for which they purchase our products. 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, or may experience financial difficulty which affects their ability to pay for products, particularly in light of the impacts of COVID-19 on their businesses and markets, 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. We may also experience pricing pressure with certain of our customers that may adversely affect our revenue and margins, or, if the ongoing relationship no longer benefits us, we may decide to suspend or terminate our relationship with such customers. Our relationships with large customers may also be harmed to the extent the impacts of the COVID-19 pandemic prevent us from being able to satisfy their orders in a timely manner. There are also continuing trade tensions, including an uncertain regulatory environment, in the U.S. and countries in Asia, which have and could continue to 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 August 17, 2020, the Bureau of Industry and Security of the U.S. Department of Commerce (“BIS”) issued final rules that further restricted access by Huawei Technologies Co. Ltd. to items produced domestically and abroad from U.S. technology and software. The final rules prevent us from selling certain products to Huawei entities without a license issued subject to the Export Administration Regulations (“EAR”). Further, even if there are products unaffected by the rule or for which we are able to obtain an export license, Huawei may not be able to source products from other suppliers due to the final rules, which could impact Huawei’s demand for our products. We are dependent upon our ability to obtain export licenses, or exceptions to export license requirements, from U.S. and other foreign regulatory agencies. There is no assurance that we will be issued these licenses or be granted exceptions, and failure to obtain such licenses or exceptions could limit our ability to sell our products into certain countries and negatively impact our business, financial condition and operating results.

Under the current regulatory regime, our business with Huawei has been and will continue to be more limited than it was in the past. For example, we have been unable to supply certain additional products and may be limited or unable to work with Huawei on future product developments 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 cannot be certain what additional actions the U.S. government may take with respect to Huawei or other entities in China or other countries, including additional 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 through August 2020, including the restrictions on Huawei's access to foreign-made chips made using U.S. technology which could have a long-term adverse effect on our business. The U.S. government has added other customers of ours to the Entity List, such as FiberHome Technologies Group in May 2020, and may continue to do so or otherwise restrict our ability to ship products which may harm our business, financial condition and results of operations. In April 2021, BIS added other China-based technology companies into the Entity List, including seven supercomputing companies in April 2021 and twenty-three more entities located in China in July 2021, thereby further expanding the scope of companies subject to trade restrictions.

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 further excess and obsolete inventory charges and/or underutilized capacity charges in future periods. In addition, we sell various non-customized products to Huawei in which Huawei represents a significant portion of the related products' demand. We have taken charges, and may have significant future charges, for common components which become excess as a result of the inability to sell to Huawei. Future charges related to trade restrictions could be caused by either additional regulatory restrictions enacted with respect to Huawei, or revisions to our estimates of the impact from already-enacted restrictions. Additional charges may also occur with respect to customized products that we manufacture for other customers in the event that such customers were to be added to the Entity List or otherwise if our ability to sell to such customers were restricted. We believe this trade uncertainty has caused and may in the future cause delays or cancellations, which could adversely affect our business, financial conditions and operating results.

Intense competition in our markets may lead to an accelerated reduction in our prices, revenues, margins 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 Coherent (previously named II-VI), Acacia Communications (acquired by Cisco in 2021), Accelink, ams AG, Broadcom Inc., Fujitsu Optical Components, Furukawa Electric, IPG Photonics, Mitsubishi Electric, MKS Instruments, Molex, and O-Net Communications, Sumitomo Electric Industries, and Trumpf Group. As we expand into new markets, we face competition not only from our existing competitors, but also from new competitors, including existing companies with strong technological and sales positions in those markets. We may not be able to compete successfully against either current or future competitors, particularly, in light of increasing consolidation. 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. These competitors may be able to devote greater resources than we can to the development, promotion, sale and support of their products. Additionally, the merger or consolidation of significant competitors, for example, II-VI's acquisition of Finisar in September of 2019 and its acquisition of Coherent on July 1, 2022, the acquisition of Acacia Communications by Cisco in March 2021, and the acquisition of OSRAM by AMS in December 2019, may result in competitors with greater resources, enable them to offer a different market approach, or a lower cost structure through economies of scale or other efficiencies that we may be unable to match and which may intensify competition in the various markets. Further, our competitors may seek to vertically integrate by buying suppliers that also supply products or components to us, which could enable them to further reduce prices, or could increase our costs. 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.

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:

- impacts related to business disruptions and restrictions related to COVID-19, including supply chain disruptions and labor shortages;

- changes in general IT spending;
- less effective protection of intellectual property;
- 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, the addition of FiberHome in May 2020, amendment to the Foreign-Produced Direct Product Rule in August 2020 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;
- the imposition of sanctions on customers in China may cause those customers to seek domestic alternatives to our products, including developing alternatives internally, and our customers demand for our products could be impacted by their inability to obtain other materials subject to sanctions. For example, sanctions on sales to certain parties of U.S. semiconductors and semiconductor equipment has caused a delay in 5G deployment in China while the affected companies seek alternative solutions, which has reduced the demand for our products from some of our Chinese customers;
- varying and potentially conflicting laws and regulations;
- overlapping, differing or more burdensome tax structure and laws;
- potential global or regional recession as a result of the COVID-19 pandemic and related responses of individuals, governments and private industry;
- markets for 5G infrastructure not developing in the manner or in the time periods we anticipate, including as a result of unfavorable developments with evolving laws and regulations worldwide;
- inflationary pressures that may occur as a result of economic recovery following the COVID-19 pandemic;
- wage inflation or a tightening of the labor market;
- the impact of recessions and other economic conditions in economies outside the United States, including, for example, dips in the manufacturing Purchasing Managers Index as well as the Institute for Supply Management data in the Eurozone;
- tax and customs changes that adversely impact our global sourcing strategy, manufacturing practices, transfer-pricing, or competitiveness of our products for global sales;
- volatility in oil prices and increased costs, or limited supply of other natural resources;
- political developments, geopolitical unrest or other conflicts in foreign nations, including Brexit, the war in Ukraine and political developments in Hong Kong and the potential impact such developments or further actions could have on our customers in the markets in which we operate; 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 on an absolute or relative basis, 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

Additionally, our business is impacted by fluctuations in local economies and currencies. The COVID-19 pandemic and resulting global economic volatility has significantly impacted the foreign exchange markets, and the currencies of various countries in which we operate and have significant volume of local-currency denominated expenses have seen significant volatility. We expect such volatility to continue, which could negatively impact our results by making our non-U.S. operations more expensive when reported in U.S. dollars, primarily due to the costs of payroll.

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.

Like most other multinational companies, we are also highly dependent upon the ability to ship products to customers and to receive shipments from our suppliers. The COVID-19 pandemic and resulting government policies have resulted in variable limitations on our ability to receive supplies and ship our products to customers. In the event of a disruption in the worldwide or regional shipping infrastructure, our access to supplies and our ability to deliver products to customers would correspondingly be negatively impacted. While we have experienced certain disruptions, including increased costs to ship products and delays in receiving components, they have not had a material adverse impact on our business. However, any such disruption in the future would likely materially and adversely affect our operating results and financial condition.

In addition to the above risks related to our international operations, we also face risks related to health epidemics, such as the COVID-19 pandemic. An outbreak of a contagious disease, and other adverse public health developments, particularly in Asia, could have a material and adverse effect on our business operations. The effects could include restrictions on our ability to travel to support our sites in Asia or our customers located there, disruptions in our ability to distribute products, and/or temporary closures of our facilities in Asia or the facilities of our suppliers or customers and their contract manufacturers. Disruption to the operations of our suppliers or customers and their contract manufacturers due to COVID-19 have impacted and will likely continue to impact our sales and operating results. For additional information regarding the impact of COVID-19 on our business, please refer to the risk factor above titled “Our business operations, financial performance, results of operations, financial position and the achievement of our strategic objectives may be materially and adversely affected by the ongoing COVID-19 pandemic.”

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

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, 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 and inability to meet customer demand. In addition, if we experience problems with our manufacturing facilities or are unable to continue operations at any of these sites, including as a result of social, geopolitical, environmental or health factors, damage caused by natural disasters, or other problems or events beyond our control, including pandemics or widespread health epidemics such as COVID-19, 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. Our manufacturing is heavily concentrated in regions in Asia, and we would be severely impacted if there were further escalation of COVID-19 or related restrictions imposed by governments or private industry in that region. For example, in the third quarter of fiscal 2022, we experienced a temporary factory closure in China as a result of an increase in the number of COVID-19 cases, as required by local government mandates.

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. If operations at these contract manufacturers is adversely impacted, such as by natural disasters, or restrictions due to COVID-19 or any resulting economic impact to their business, this would likely materially impact our financial condition and results of operations. Our ability to control the quality of products produced by contract manufacturers has and may in the future be impaired due to COVID-19 disruptions, and quality issues might not be resolved in a timely manner. Additionally, if our contract manufacturers continue experiencing disruptions or discontinue operations, we may be required to identify and qualify alternative manufacturers, which is expensive and time consuming. If we are required to change or qualify a new contract manufacturer, this would likely cause business disruptions and adversely affect our results of operations, and could harm our existing customer relationships.

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 and revenue, 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.

Our manufacturing operations and those of our contract manufacturers may be affected by natural disasters such as earthquakes, typhoons, tsunamis, fires and public health crises, including a global pandemic such as COVID-19, 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 one of our former contract manufacturers experienced a labor strike 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. We are heavily dependent on a small number of manufacturing sites. Our business and operations would be severely impacted by any significant business disruptions for which we may not receive adequate recovery from insurance. There is also an increased focus on corporate social and environmental responsibility in our industry. As a result, a number of our customers may adopt policies that include social and environmental responsibility provisions that their suppliers should comply with. These provisions may be difficult and expensive to comply with, given the complexity of our supply chain. We may be unable to cause our suppliers or contract manufacturers to comply with these provisions which may adversely affect our relationships with customers.

In addition, for a variety of reasons, including changes in circumstances at our contract manufacturers, restrictions or inability to operate due to COVID-19, 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. As a result of such transfers, our contract manufacturers may prioritize other customers or otherwise be unable or unwilling 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 supply chain, 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.

Further, certain of our suppliers 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 suppliers 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. In addition, many of our products are sourced from suppliers based outside of the United States, primarily in Asia. Uncertainty with respect to our suppliers' abilities due to COVID-19 impacts, 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, for example, tariffs on the import of certain products manufactured in China, 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. Any such developments could have a material impact on our ability to meet our customers' expectations and may materially impact our operating results and financial condition.

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 reputation, operating results, and customer relationships.

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 loss of customers.

Our products are complex and defects and quality issues are 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, which may contain defects. 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 manufacturing resources, and cause significant customer relation problems or loss of customers, or risk exposure to product liability suits, all of which would harm our business. Additionally, changes in our or our suppliers' manufacturing processes or the inadvertent use of defective materials by us or our suppliers could result in a material adverse effect on our ability to achieve acceptable manufacturing yields and product reliability. To the extent that we do not achieve and maintain our projected yields or product reliability, our business, operating results, financial condition and customer relationships would be adversely affected.

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 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 demand for, or sales of our products to customers located in China or other customers selling to Chinese end users or increase the cost for our products, which would directly impact our business and results of operations.

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

We expect to continue to expand and diversify our operations with additional acquisitions and strategic transactions, such as our recent acquisition of NeoPhotonics Corporation ("NeoPhotonics") on August 3, 2022, as well as acquire complementary technologies, products, assets and businesses. We may be unable to identify or complete prospective acquisitions for many reasons, including competition from other potential acquirers, the effects of consolidation in our industries and potentially high valuations of acquisition candidates. Even if we do identify acquisitions or enter into agreements with respect to such acquisitions, we may not be able to complete the acquisition due to competition, regulatory requirements or restrictions or other reasons, as occurred with the termination of our Merger Agreement with Coherent in March 2021. 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;
- failure to achieve the anticipated transaction benefits or the projected financial results and operational synergies;
- unforeseen expenses, delays or conditions imposed upon the acquisition or transaction, including due to required regulatory approvals or consents, or fees that may be triggered upon a failure to consummate an acquisition or transaction for certain reasons;
- 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, assets, facilities and personnel of the purchased businesses;
- disruption due to the integration and rationalization of operations, products, technologies and personnel;
- loss of customers, suppliers or partners; and
- failure to consummate an acquisition resulting in negative publicity and/or negative impression of us in the investment community that could impact on our stock price

Further, an acquisition or strategic transaction may not further our business strategy as we expected or we may overpay for, or otherwise not realized the expected return on, our investments. We have also faced litigation in connection with acquisitions, some of which continues following the consummation of the acquisition. Such litigation may be costly and diverts management time and attention.

We have in the past, and may in the future, divest or reduce our investment in certain businesses or product lines from time to time. For example, in the fourth quarter of fiscal year 2019, we completed the divestiture of our Datacom module business in Japan, and in the second quarter of fiscal year 2020 we sold the assets associated with certain Lithium Niobate product lines manufactured by our San Donato, Italy site. Such divestitures involve risks, such as difficulty separating portions from our other 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, such as our recent acquisition of NeoPhotonics, we may be unsuccessful in implementing our acquisitions strategy, or integrating acquired companies, businesses 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. Accordingly, we may not realize the anticipated benefits from acquired companies, businesses or assets. The challenges involved integrating businesses and acquisitions include:

- difficulty preserving relationship with customers, suppliers or partners;
- potential difficulties in completing projects associated with in-process R&D;
- unanticipated liabilities or our exposure for known contingencies and liabilities may exceed our estimates;
- insufficient net revenue or unexpected expenses that negatively impact our margins and profitability;
- unexpected losses of key employees of the acquired company, or inability to maintain our company culture;
- unexpected expenses for cost of litigation against us or our directors and officers, or against the acquired company, in connection with an acquisition;
- potential adverse effects on our ability to attract, recruit, retain, and motivate current and prospective employees;
- 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, including administrative functions, finance and human resources;
- increasing the scope, geographic diversity and complexity of our operations;
- difficulties in integrating operations across different cultures and languages and to address the particular economic, currency, political, and regulatory risks associated with specific countries;
- difficulties in integrating acquired technology;
- difficulties in coordinating and integrating geographically separated personnel, organizations, systems and facilities;
- difficulty managing customer transitions or entering into new markets;
- difficulties in consolidating facilities and transferring processes and know-how;
- diversion of management's attention from other business concerns;
- temporary loss of productivity or operational efficiency;
- dilution of our current stockholders as a result of any issuance of equity securities as acquisition consideration;
- adverse tax or accounting impact;
- expenditure of cash that would otherwise be available to operate our business; and
- 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 and 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 manufacturing, results in lower gross margins from lower yields and additional rework costs. Additionally, the duration and impact of COVID-19 could exacerbate factors that affect our manufacturing yields. 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 structure, which could materially and adversely affect our operating results.

We operate under a defined international structure. If substantial modifications to the international structure or the way we operate our business are made, such as if future acquisitions or divestitures occur, if changes in domestic and international tax laws negatively impact the structure, if we do not operate our business consistent with the structure and applicable tax provisions, if we fail to achieve our revenue and profit goals, or if the international structure or our application of arm's-length principles to intercompany arrangements is successfully challenged by the U.S. or foreign tax authorities, our effective tax rate may increase, which could have a material adverse effect on our operating and financial results.

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. For example, a number of countries, as well as organizations such as the Organization for Economic Cooperation and Development, have announced a plan to adopt the global minimum tax initiative and the U.S. has implemented a 15% minimum tax on corporations and a 1% excise tax on certain share buybacks. The Organization for Economic Cooperation and Development has also 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 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. Such proposed changes, as well as regulations and legal decisions interpreting and applying these changes, may have significant impacts on our effective tax rate, cash tax expenses and net deferred tax assets in future periods. Other countries also continue to enact and consider enacting new laws, which could increase our tax obligations, cause us to change the way we do business or our operations or otherwise 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.

Our subsidiary in Thailand has been granted certain tax holidays by the Thailand government. As we do not currently meet the tax holiday requirements, income earned in Thailand is subject to the regular statutory income tax rate.

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 the 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. Recently, our exposure to foreign currencies has increased as our non-U.S. manufacturing footprint has expanded. We continue to look for opportunities to leverage the lower cost of non-U.S. manufacturing, including the United Kingdom, Thailand, and Japan. While these geographies are lower cost than the U.S. and such concentration will in general lower our total cost to manufacture, this increase in concentration in non-U.S. manufacturing will also increase the volatility of our 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. The COVID-19 pandemic has had a significant impact on the exchange markets, which heightened this risk, and we expect this higher level of volatility in foreign exchange markets will likely continue.

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. Investments, partnerships and acquisitions involve risks and uncertainties which could materially and adversely affect our operating and financial results. In March 2017, we issued and sold a total of $450 million in aggregate principal amount of 2024 Notes, in December 2019, we issued and sold a total of $1,050 million in aggregate principal amount of 2026 Notes, and in March 2022, we issued and sold a total of $861 million aggregate principal amount of 2028 Notes. 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.

If we fail to effectively manage our growth or, alternatively, our spending during downturns, our business could be disrupted, which could harm our operating results.

Growth in sales, combined with the challenges of managing geographically dispersed operations, can place a significant strain on our management systems and resources, and our anticipated growth in future operations could continue to place such a strain. The failure to effectively manage our growth could disrupt our business and harm our operating results. Our ability to successfully offer our products and implement our business plan in evolving markets requires an effective planning and management process. In economic downturns, we must effectively manage our spending and operations to ensure our competitive position during the downturn, as well as our future opportunities when the economy improves, remain intact. The failure to effectively manage our spending and operations could disrupt our business and harm our operating results.

Any failure, disruption or security breach or incident of or impacting 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 operation, 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, financial reporting, 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 confidential or otherwise protected information about our employees, our customers' employees, or other business partners. 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 may 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 or that are used by acquired entities or businesses 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 to or acquisition or other authorized processing of confidential information or otherwise affect service reliability and threaten the confidentiality, integrity and availability of our systems and information stored or otherwise processed on our systems. During the COVID-19 pandemic, cyber threats have increased due to increased remote work and other attacks, including in the form of phishing emails, malware attachments and malicious websites have also increased. Additionally, cybersecurity researchers have reported an increase in cyber-attack activity, and warned of increased risks of cyber-attacks, in connection with the conflict between Russia and Ukraine. While we work to safeguard our internal network systems and validate the security of our third-party providers to mitigate these potential risks, including through information security policies and employee awareness and training, there is no assurance that such actions will be sufficient to prevent future cyber-attacks or security breaches or incidents. We have been in the past, and may be in the future, subject to social engineering and other cybersecurity attacks, and these attacks may become more prevalent with substantial portion of our workforce being distributed geographically, particularly given the increased remote access to our networks and systems as a result. Further, our third-party service providers may have been and may be in the future subject to such attacks or otherwise may suffer security breaches or incidents. In addition, actions by our employees, service providers, partners, contractors, or others, whether malicious or in error, could affect the security of our systems and confidential information. Further, a breach of our information technology infrastructure or those of our third-party service providers could result in the misappropriation of intellectual property, business plans or trade secrets. Any failure or compromise of our systems or those of our third-party service providers could result in unauthorized access to, or unauthorized use, acquisition, disclosure, or other processing of such information, and any actual or perceived security breach or incident 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 incidents or other unauthorized access by third parties to our facilities or our information systems could lead to unauthorized access to, or misappropriation, disclosure, or other processing 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, disruption, accident or security breach or incident 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 inappropriate access to, or use, disclosure or otherwise processing of confidential information. Any actual or alleged disruption to, or security breach or incident affecting, our systems or those of our third-party partners could cause significant damage to our reputation, lead to theft or misappropriation of our protected intellectual property and trade secrets, result in claims, investigations, regulatory proceedings, claims, demands and litigation, legal obligations or liability, affect our relationships with our customers, require us to bear significant costs in connection with remediating and otherwise responding to any disruption, breach, or incident, 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 or incidents in the future. The costs to us to prevent, detect or alleviate cyber or other security problems, bugs, viruses, worms, malicious software programs and security vulnerabilities could be significant, and our efforts to address these problems may not be successful. All of these costs, expenses, liability and other matters may not be covered adequately by insurance, and may result in an increase in our costs for insurance or insurance not being available to us on economically feasible terms, or at all. Insurers may also deny us coverage as to any future claim. Any of these results could harm our financial condition, business and reputation.

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 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 our revenue mix 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. We attempt to identify changes in market conditions as soon as possible; however, the dynamics of the market in which we operate make prediction of and timely reaction to such events difficult. Due to these and other factors, 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, particularly in light of the impacts of COVID-19 and a potential global recession may lead to decreased demand for our products, revenue fluctuations, and 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. Further, supply chain disruptions may lead to increased costs or may harm our ability to meet customer demand, which would harm our ability to recognize revenue as well as our margins. 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. Protecting against the unauthorized use of our products, technology and other proprietary rights is difficult, time-consuming and expensive; therefore 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. Additionally, there may be existing patents that we are unaware of, which could be pertinent to our business. It is not possible for us to know whether there are patent applications pending that our products might infringe upon since these applications are often not made publicly available until a patent is issued or published. 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 and our exposure to these risks may increase as a result of acquisitions. 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 or restrictions on or changes to our business. 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, please refer to “Part I, Item 3. Legal Proceedings,” and “Note 18. Commitments and Contingencies” to the consolidated financial statements.

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.

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 time and operational 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 and customer perception of our business may suffer. 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.

Risks Related to Human Capital

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. Competition is particularly intense in certain jurisdictions where we have research and development centers, including Silicon Valley, and for engineering talent generally. Also, as a result of COVID-19, employees in our industries are increasingly able to work remotely, which has increased employee mobility and turnover, making it difficult for us to retain or hire employees. In addition, government requirements intended to mitigate the impact of the pandemic, including mandates that require employees to be vaccinated or be tested regularly, may lead to increased challenges in meeting labor needs, inefficiencies related to employee turnover, and costs associated with implementation and ongoing compliance. There can be no assurance that the programs, initiatives, rewards and recognition that are part of our people strategy will be successful in attracting and retaining the talent necessary to execute on our business plans. 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, particularly during the integration of NeoPhotonics and with respect to key employees of NeoPhotonics, 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. Similarly, the failure to properly manage the necessary knowledge transfer required for employee transitions could impact our ability to maintain industry and innovation leadership. The loss of members of our management team or other key personnel, including due to COVID-19 and related vaccine and testing mandates, could be disruptive to our business and, were it necessary, it could be difficult to replace such individuals. If we are unable to attract and retain qualified personnel, we may be unable to manage our business effectively, and our business, financial condition and results of operations 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 and global events such as COVID-19 may interfere with our ability to hire or retain workers who require visas or entry permits. For example, numerous U.S. Embassies suspended or delayed the processing of new visa applications for a period of time during the pandemic due to COVID-19 related concerns impacting embassy operations and staffing. Additional changes in immigration laws, regulations or procedures, including those that have been and may be enacted in the future by the U.S. government, including current U.S. presidential administration, and in the United Kingdom or the European Union in connection with Brexit or the war in Ukraine, 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.

Legal, Regulatory and Compliance Risks

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 Bureau of Industry and Security ("BIS"), 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. There is no assurance that we will be issued these licenses or be granted exceptions, and failure to obtain such licenses or exceptions could limit our ability to sell our products into certain countries and negatively impact our business, financial condition and/or operating results.

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, relationships with our customers 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, additional regulatory restrictions were imposed in May and August 2020 to the Foreign-Produced Direct Product Rule, which impose limitations on the supply of certain U.S. items and product support to Huawei, and FiberHome Technologies was added to the Entity List on May 22, 2020. These actions have resulted in escalating tensions between the U.S. and China and create the possibility that the Chinese government may take additional steps to retaliate against U.S. companies or industries. We cannot predict what additional actions the U.S. government may take with respect to Huawei beyond what is described above or to 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. Further, if we fail to comply with any of these export regulations, we could be subject to civil, criminal, monetary and non-monetary penalties and costly consent decrees, which would lead to disruptions to our business, restrictions on our ability to export products and technology, and adversely affect our business and results of operation.

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.

Social and environmental responsibility regulations, policies and provisions, as well as customer and investor demands, may make our supply chain more complex and may adversely affect our relationships with customers and investors.

There is an increasing focus on corporate social and environmental responsibility in the semiconductor industry, particularly with OEMs. A number of our customers have adopted, or may adopt, procurement policies that include social and environmental responsibility provisions or requirements that their suppliers should comply with, or they may seek to include such provisions or requirements in their procurement terms and conditions. An increasing number of investors are also requiring companies to disclose corporate social and environmental policies, practices and metrics. In addition, various jurisdictions are developing climate change-based laws or regulations that could cause us to incur additional direct costs for compliance, as well as indirect costs resulting from our customers, suppliers, or both, incurring additional compliance costs that are passed on to us. These legal and regulatory requirements, as well as investor expectations, on corporate environmental and social responsibility practices and disclosure, are subject to change, can be unpredictable, and may be difficult and expensive for us to comply with, given the complexity of our supply chain. If we are unable to comply with, or are unable to cause our suppliers or contract manufacturers to comply with such policies or provisions, or meet the requirements of our customers and investors, a customer may stop purchasing products from us or an investor may sell their shares, and may take legal action against us, which could harm our reputation, revenue and results of operations. We expect increased worldwide regulatory activity relating to climate change in the future. Future compliance with these laws and regulations, as well as meeting related customer and investor expectations, may adversely affect our business and results of operations.

We are subject to laws and 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. We may face challenges with government regulators and our customers and suppliers if we are unable to sufficiently make any required determination that the metals used in our products are conflict free. 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 all 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 went into effect on January 1, 2020 and which, among other things, requires covered companies to provide new disclosures to California consumers. In November 2020, California passed the California Privacy Rights Act ("CPRA"), which will go into effect on January 1, 2023. The CPRA amends and augments the CCPA by expanding individuals' rights and the obligations of businesses that handle personal data. Similar legislation has been proposed or adopted in other states, including Colorado, Virginia, Utah, and Connecticut. Aspects of the CCPA, CPRA and these other laws and regulations, as well as their enforcement, remain unclear. The U.S. federal government also is contemplating federal privacy legislation. The effects of the CCPA, CPRA and these other state laws and regulations 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, the United Kingdom left the European Union on January 31, 2020, with a transitional period that ended on December 31, 2020, commonly referred to as "Brexit." The United Kingdom has implemented legislation similar to the GDPR, including the UK Data Protection Act and legislation similar to the GDPR referred to as the UK GDPR, which provides for substantial penalties, similar to the GDPR. Additionally, the relationship between the United Kingdom in relation to certain aspects of data protection law remains unclear following the United Kingdom's exit from the European Union, including with respect to regulation of data transfers between European Union member states and the United Kingdom. On June 28, 2021, the European Commission announced a decision of "adequacy" concluding that the United Kingdom ensures an equivalent level of data protection to the GDPR, providing for the legality of continued personal data flows from the European Economic Area to the United Kingdom. Some uncertainty remains, however, as this adequacy determination must be renewed after four years and may be modified or revoked in the interim. We cannot fully predict how the Data Protection Act, the UK GDPR, and other United Kingdom data protection laws or regulations may develop in the medium to longer term nor the effects of divergent laws and guidance regarding how data transfers to and from the United Kingdom 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, damage to our reputation, government inquiries and investigations, legal claims, demands and litigation, and other liabilities. 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.

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 the Nasdaq Global Select Market ("NASDAQ") under the symbol "LITE". The market price of our common stock has fluctuated, and may fluctuate significantly due to a number of factors, some of which may be beyond our control, including:

- general economic and market conditions and other external factors, particularly in light of the market volatility driven by the impact and duration of COVID-19;
- 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;
- general market, economic and political conditions, including market conditions in the semiconductor industry;
- success or failure of our business strategy;
- credit market fluctuations which could negatively impact our ability to obtain financing as needed;
- changes in governmental regulation including taxation and tariff policies;
- changes in global political tensions that may affect business with our customers;
- announcements by us, competitors, customers, or our contract manufacturers of significant acquisitions or dispositions, or overall movement toward industry consolidations among our customers and competitors;
- investor perception of us and our industry;
- changes in recommendations by securities analysts;
- changes in accounting standards, policies, guidance, interpretations or principles;
- differences, whether actual or perceived, between our corporate social responsibility and ESG practices and disclosure and investor expectations;
- litigation or disputes in which we may become involved;
- overall market fluctuations;
- issuances of our shares upon conversion of some or all of the Notes;
- sales of our shares by our officers, directors, or significant stockholders; and
- the timing and amount of dividends and share repurchases, if any

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, 2026 Notes and 2028 Notes 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, 2026 Notes or 2028 Notes 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, 2026 Notes and 2028 Notes, or to make cash payments in connection with any conversion of the 2024 Notes, 2026 Notes, 2028 Notes or upon any fundamental change if holders of the applicable series of Notes 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, the 2026 Notes and the 2028 Notes;
- 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

The accounting method for our 2024 Notes, 2026 Notes and 2028 Notes could adversely affect our financial condition and operating results.

In August 2020, the FASB published an Accounting Standards Update, or ASU 2020-06, to reduce the number of accounting models for convertible debt instruments. Under ASU 2020-06, the embedded conversion features are no longer separated from the host contract for convertible instruments with conversion features that are not required to be accounted for as derivatives under Topic 815, or that do not result in substantial premiums accounted for as paid-in capital. Consequently, upon adoption, our 2026 Notes and 2028 Notes will be accounted for as a single liability measured at amortized cost. Further, ASU 2020-06 eliminates the use of the treasury stock method for convertible instruments that can be settled in whole or in part with equity, and instead requires application of the "if-converted" method. Under that method, diluted earnings per share will be generally calculated assuming that all our 2024 Notes, 2026 Notes or 2028 Notes were converted solely into shares of common stock at the beginning of the reporting period, unless the result would be antidilutive. ASU 2020-06 is effective for us in our first quarter of fiscal year 2023. Please refer to " Note 2. Recently Issued Accounting Pronouncements" to the consolidated financial statements.

Transactions relating to our 2024 Notes, 2026 Notes and 2028 Notes may dilute the ownership interest of existing stockholders, or may otherwise depress the price of our common stock.

If the 2024 Notes, 2026 Notes or the 2028 Notes are converted by holders of such series, we have the ability under the applicable indenture to deliver cash, common stock, or any combination of cash or common stock, at our election upon conversion of the applicable series of Notes. If we elect to deliver common stock upon conversion of the 2024 Notes, 2026 Notes or the 2028 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, 2026 Notes or the 2028 Notes, may engage in short selling to hedge their position in the Notes. Anticipated future conversions of the 2024 Notes, 2026 Notes or 2028 Notes into shares of our common stock could depress the price of our common stock.

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 Delaware General Corporate Law 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 different 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 eleven 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 238,000 square feet and located in San Jose, California which we own. As of July 2, 2022, our leased and owned properties in total are approximately 2.5 million square feet, of which we own approximately 1,447,000 square feet, including the 1,173,000 square feet manufacturing site in Thailand, the 238,000 square feet on the San Jose campus, and the 36,000 square feet manufacturing in Slovenia. Larger leased sites include properties located in Canada, China, Italy, Japan, Switzerland, Taiwan, the United Kingdom 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. As such, we regularly evaluate developments in legal matters that could affect the amount of the previously accrued liability and record adjustments as appropriate. 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. Please refer to "Note 18. Commitments and Contingencies" to the consolidated financial statements.

ITEM 4. MINE SAFETY DISCLOSURES

None.

PART II

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

Our common stock trades on the NASDAQ Stock Market under the symbol "LITE". According to records of our transfer agent, we had 2,389 stockholders of record as of August 17, 2022 and we believe there is a substantially greater number of beneficial holders.

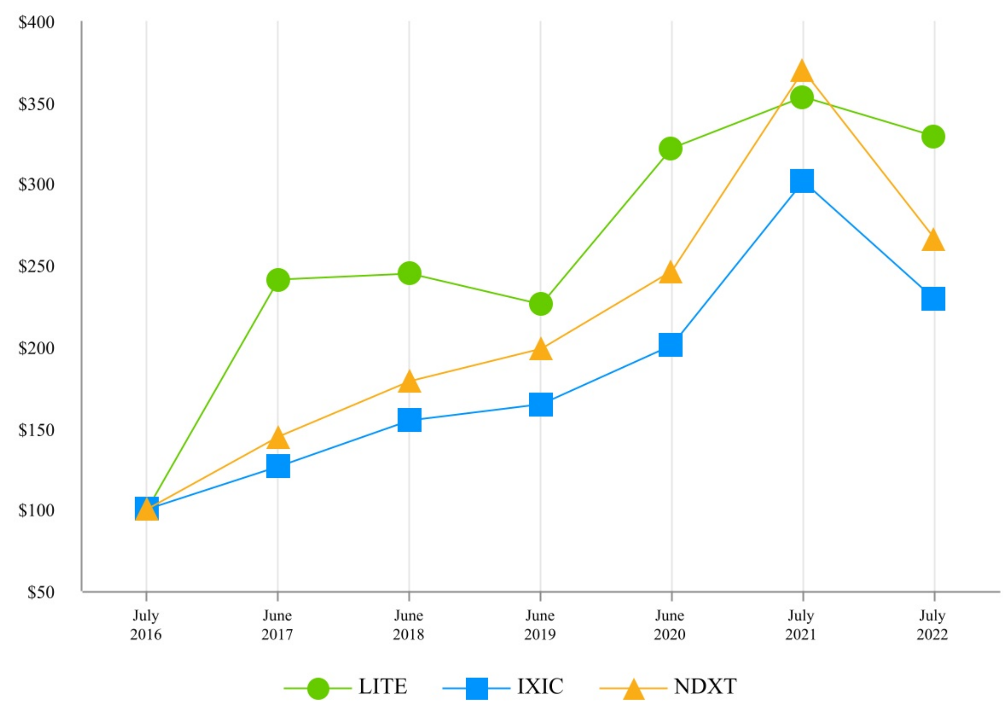
We do not expect to pay cash dividends on our common stock in the foreseeable future.

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 July 3, 2016 through July 2, 2022. The stock price performance on the following graph is not necessarily indicative of future stock price performance.

COMPARISON OF CUMULATIVE TOTAL RETURN
Among LITE, the NDXT, and the IXIC



Recent Sale of Unregistered Equity Securities

None.

Issuer Purchases of Equity Securities

The following table sets forth issuer purchases of equity securities for the fourth quarter of fiscal 2022 (*in millions, except share and per share amounts*):

Period	Total number of shares purchased (1)	Average price paid per share (2)	Total number of shares purchased as part of publicly announced plans or programs	Maximum number (or approximation dollar value) of shares that may yet be purchased under the plans or programs
April 3, 2022 to April 30, 2022	—	$ —	—	$ 513.5
May 1, 2022 to May 28, 2022	304,000	$ 86.34	304,000	$ 487.2
May 29, 2022 to July 2, 2022	961,200	$ 80.13	961,200	$ 410.2
Total	1,265,200	$ 81.62	1,265,200	$ 410.2

(1) On May 7, 2021, our board of directors approved the 2021 share buyback program, which authorizes us to use up to $700.0 million to purchase our own shares of common stock. The buyback program was authorized for 2 years. On March 3, 2022, our board of directors approved an increase in our share buyback program, which authorizes us to use up to an aggregate amount of $1.0 billion (an increase from $700.0 million) to purchase our own shares of common stock through May 2024. The share buyback program may be suspended or terminated by the board of directors at any time.

(2) Average price paid per share includes costs associated with the repurchases.

Separate from the 2021 share buyback program and concurrent with the issuance of the 2028 Notes, we repurchased 2.0 million shares of our common stock in privately negotiated transactions in the third quarter of fiscal 2022. The average price paid was $99.00 per share for an aggregate purchase price of $200.0 million. These shares were retired immediately.

ITEM 6. [RESERVED]

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 refer to "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 have two operating segments, OpComms and Lasers. The two operating segments were primarily determined based on how the Chief Operating Decision Maker ("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.

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. We believe the world is becoming more reliant on ever-increasing amounts of data flowing through optical networks and data centers. Lumentum's products and technology enable the scaling of these optical networks and data centers to higher capacities. We expect the accelerating shift to digital and virtual approaches to all aspects of work and life that is driving staggering amounts of data in the world's networks and cloud datacenters will continue into the future. Virtual meetings, video calls, and hybrid in-person and virtual environments for work and other aspects of life will continue to drive strong needs for bandwidth growth and present dynamic new challenges that our technology addresses. As manufacturers demand higher levels of precision, new materials, and factory and energy efficiency, suppliers of manufacturing tools globally are turning to laser-based approaches, including the types of lasers Lumentum supplies. Laser-based 3D sensing and LiDAR for security, industrial and automotive applications are rapidly developing markets. The technology enables computer vision applications that enhance security, safety, and new functionality in the electronic devices that people rely on every day. The use of LiDAR and in-cabin 3D sensing in automobile and delivery vehicles over time significantly adds to our long-term market opportunity. Frictionless and contactless biometric security and access control is of increasing focus globally given the world's experience with the COVID-19 pandemic. Additionally, we expect 3D-enabled machine vision solutions to expand significantly in industrial applications in the coming years.

<u>OpComms</u>

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 for 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 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 dense wavelength division multiplexing ("DWDM") pluggable transceivers, and tunable small form-factor pluggable transceivers. We also sell laser chips for use in manufacturing 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 Accelink, Alphabet, Amazon, Apple, Ciena, Cisco Systems (including Acacia Communications, which was acquired by Cisco), Comcast, Infinera, Nokia Networks (including Alcatel-Lucent International), and ZTE.

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, ASM Pacific Technology, DISCO, KLA-Tencor, Lasertec, Life Technologies, LPKF Laser & Electronics, Malvern Panalytical, and MKS Instruments.

Mergers and Acquisitions

NeoPhotonics

On August 3, 2022 (the “Closing Date”), we completed our acquisition of NeoPhotonics Corporation (“NeoPhotonics”). The addition of NeoPhotonics expands our opportunity in some of the fastest growing markets for optical components used in cloud and telecom network infrastructure. We expect the integrated company to be better positioned to serve the needs of a global customer base who are increasingly utilizing photonics to accelerate the shift to digital and virtual approaches to work and life, the proliferation of IoT, 5G, and next-generation mobile networks, and the transition to advanced cloud computing architectures.

Under the terms of the merger agreement, on Closing Date, NeoPhotonics stockholders received $16.00 per share in cash for each of their NeoPhotonics shares for a total cash consideration of $867.3 million.

Prior to the Closing Date, as contemplated by the merger agreement, on January 14, 2022, entered into a credit agreement with NeoPhotonics, pursuant to which we agreed to make term loans (“loans”) to NeoPhotonics in an aggregate principal amount not to exceed $50.0 million to help fund capital expenditures and increased working capital associated with NeoPhotonics’ growth plans. During fiscal 2022, we funded a $30.0 million loan request to NeoPhotonics. On August 1, 2022, we funded an additional $20.0 million loan request to NeoPhotonics. The interest is payable monthly in arrears on the first day of each month. The loans will mature on January 14, 2024 unless earlier repaid or accelerated. The $50.0 million loans in aggregate were not settled as of the Closing Date and therefore were considered part of the total purchase price in connection with the merger.

During the fiscal year ended July 2, 2022, we incurred $8.4 million of transaction costs related to our acquisition of NeoPhotonics, which are recorded under selling, general and administrative expenses in our consolidated statement of operations.

Please refer to “Note 4. Business Combination” to the consolidated financial statements.

Other Acquisition

On August 15, 2022, we completed a transaction to acquire a business that develops and markets products for use in telecommunications and datacenter infrastructure, including Digital Signal Processors (DSP’s), ASICs and optical transceivers. This acquisition will help us to expand our business in our OpComms segment. Please refer to “Note 21. Subsequent Events” to the consolidated financial statements.

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.

Impact of COVID-19 to Our Business

Since February 2020, the COVID-19 pandemic has caused public health officials to recommend, and governments to enact, precautions to mitigate the spread of the virus, including travel restrictions and bans, extensive social distancing guidelines, closure or restrictions on business and quarantine or other types of “shelter-in-place” orders in many regions of the world. The pandemic and these related responses continue to cause a global slowdown of economic activity (including a decrease in demand for a broad variety of goods and services), disruptions in global supply chains, labor shortages, and significant volatility and potential disruption of financial markets. The ultimate extent to which COVID-19 will impact our business depends on future developments, which are highly uncertain and very difficult to predict, including the effectiveness and utilization of vaccines for COVID-19 and its variants, the severity of COVID-19 and its variants, and the effectiveness of the actions to contain or limit their spread.

From the start of the COVID-19 pandemic, we proactively implemented preventative measures and protocols, which we continuously assess and update for changes in conditions and emerging trends. Some of these measures have included complying with local, state or federal orders that require employees to work from home, instructing employees to work from home in certain jurisdictions, limiting the number of employees onsite which slowed our manufacturing operations in certain countries, enhancing use of personal protective equipment and restricting non-critical business travel by our employees, enacting vaccine and testing mandates in certain jurisdictions, and implementing health and safety enhancements. These measures are intended to safeguard our team members, contractors, suppliers, customers, distributors, and communities, and to ensure business continuity. Currently, our major production facilities in Europe, Asia, and the United States remain open. At most of our locations, we have transitioned from business continuity plans to return-to-office plans while continuing to maintain high standards of employee safety and sanitization protocols.

In the geographies where we have operations, we have, in general and where applicable, been deemed an essential business and been permitted to continue manufacturing and conducting new product development operations in a more limited capacity during the pandemic. This stems from our critical role in global supply chains for the world's communications and health-care systems. However, the pandemic continues to affect our suppliers and manufacturers who are experiencing component materials and labor shortages. Given the continually evolving situation, particularly in light of the recent Delta and Omicron variants, it is difficult to predict the magnitude and duration of the impact of the COVID-19 pandemic to our markets, its effects, or precisely when our ability to supply our products will return to full capacity. We are continuing to actively monitor the situation and may take further actions altering our business operations that we determine are in the best interests of our employees, customers, communities, business partners, suppliers and stockholders, or as required by federal, state, or local authorities. It is not clear what the potential effects any such alterations or modifications may have on our business, including the effects on our customers, employees and prospects, or on our financial results for the future.

Our primary strategic focus for several years has been technology and product leadership combined with close customer relationships in long-term healthy and growing markets. We believe this strategy is even more apt, and our long-term opportunity is not diminished, with COVID-19. We believe there are long-term opportunities, as the world's experience with COVID-19 could drive an increasingly digital and virtual world, touching all aspects of life and work, that increasingly emphasizes the importance of communications systems, cloud services, augmented and virtual reality, and enhanced security. Additionally, ever advancing electronic devices are needed to consume, produce, and communicate digital and virtual content. All these trends could drive the need for higher volumes of higher performing optical devices that we could supply. As such, we expect to continue to invest strongly in new products, technology and customer programs.

For more information on risks associated with the COVID-19 outbreak and regulatory actions, please refer to the section titled "Risk Factors" in Item 1A of Part I of this report.

Supply Chain Constraints

COVID-19 has also created dynamics in the semiconductor component supply chains that have led to shortages of the types of components we and our customers require in our products. These shortages have impacted our ability to meet demand and generate revenue from certain products in fiscal 2022 and, if our ability to procure needed semiconductor components does not improve, this will impact our ability to supply our products to our customers and may reduce our revenue and profit margin. In addition, if our customers are unable to procure needed semiconductor components, this could reduce their demand for our products and reduce our revenue. The impact of semiconductor component shortages may continue in the near term as supplier and customer buffer inventories and safety stocks are exhausted. Due to the global supply chain constraint, we have had to incur incremental supply and procurement costs in order to increase our ability to fulfill demands from our customers. These costs have increased our inventory balances as of July 2, 2022 and may decrease our gross margin in the near term. We expect component supply to be a challenge at least through the second quarter of fiscal 2023. For more information on risks associated with supply chain constraints, please refer to the section titled "Risk Factors" in Item 1A of Part I of this report.

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
- Business Combinations
- Goodwill

As a result of our Merger Agreement with NeoPhotonics, we added Business Combinations and Goodwill to our critical accounting policies and estimates in fiscal 2022. Please refer to "Note 4. Business Combination" to the consolidated financial statements.

Inventory Valuation

Inventory is recorded 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 demand to the lower of their cost or estimated net realizable value. Our estimates of forecasted demand are based upon our analysis and assumptions including, but not limited to, expected product lifecycles, product development plans and historical usage by product. 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

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.

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 certain circumstances 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 July 2, 2022 (*in millions, except percentages*):

Contract balances	Balance sheet location	July 2, 2022	July 3, 2021	Change	Percentage Change
Accounts receivable, net	Accounts receivable, net	$ 262.0	$ 212.8	$ 49.2	23.1%
Deferred revenue and customer deposits	Other current liabilities	$ —	$ 0.6	$ (0.6)	(100.0)%

Disaggregation of Revenue

We disaggregate revenue by geography and by product. Please refer to “Note 20. Revenue Recognition” to the consolidated financial statements 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.

Business Combinations

In accordance with the guidance for business combinations, we determine whether a transaction or 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 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 using best information available. These assumptions are inherently uncertain and unpredictable and, as a result, actual results may differ materially from estimates. Certain 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 to 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.

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 goodwill impairment on an annual basis in the fiscal fourth quarter and at any other time when events occur or circumstances indicate that the carrying amount of goodwill may not be recoverable.

We have the option to first assess qualitative factors to determine whether it is necessary to perform the quantitative goodwill impairment test. The qualitative factors we assess include long-term prospects of our performance, share price trends and market capitalization, and Company specific events. 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 may reassess the value of our goodwill in the period such circumstances were identified.

If we determine that, as a result of the qualitative assessment, 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, we perform the quantitative test by estimating the fair value of our reporting units. If the carrying value of a reporting unit exceeds its fair value, we record goodwill impairment loss equal to the excess of the carrying value of the reporting unit's goodwill over its fair value, not to exceed the carrying amount of goodwill. The fair value of each of our goodwill reporting units is generally estimated using a combination of public company multiples and discounted cash flow methodologies.

Recently Issued Accounting Pronouncements

Please refer to "Note 2. Recently Issued Accounting Pronouncements" to the 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		
	July 2, 2022	**July 3, 2021**	**June 27, 2020**
Segment net revenue:			
OpComms	88.7 %	93.0 %	90.3 %
Lasers	11.3	7.0	9.7
Net revenue	100.0	100.0	100.0
Cost of sales	50.3	51.5	58.1
Amortization of acquired developed intangibles	3.7	3.5	3.2
Gross profit	46.0	44.9	38.7
Operating expenses:			
Research and development	12.9	12.3	11.8
Selling, general and administrative	15.5	13.9	14.0
Restructuring and related charges	(0.1)	0.4	0.5
Merger termination fee and related costs, net	—	(11.9)	—
Impairment charges	—	—	0.3
Total operating expenses	28.3	14.7	26.6
Income from operations	17.7	30.2	12.2
Interest expense	(4.7)	(3.8)	(3.6)
Other income (expense), net	0.7	0.2	1.9
Income before income taxes	13.7	26.6	10.4
Provision for income taxes	2.1	3.8	2.3
Net income	11.6 %	22.8 %	8.1 %

Financial Data for Fiscal 2022, 2021, and 2020

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

	2022	2021	Change	Percentage Change	2021	2020	Change	Percentage Change
Segment net revenue:								
OpComms	$ 1,518.5	$ 1,620.7	$ (102.2)	(6.3)%	$ 1,620.7	$ 1,515.1	$ 105.6	7.0 %
Lasers	194.1	122.1	72.0	59.0	122.1	163.5	(41.4)	(25.3)
Net revenue	$ 1,712.6	$ 1,742.8	$ (30.2)	(1.7)%	$ 1,742.8	$ 1,678.6	$ 64.2	3.8 %
Gross profit	$ 788.6	$ 783.1	$ 5.5	0.7 %	$ 783.1	$ 650.2	$ 132.9	20.4 %
Gross margin	46.0 %	44.9 %			44.9 %	38.7 %		
Research and development	$ 220.7	$ 214.5	$ 6.2	2.9 %	$ 214.5	$ 198.6	$ 15.9	8.0 %
Percentage of net revenue	12.9 %	12.3 %			12.3 %	11.8 %		
Selling, general and administrative	$ 265.7	$ 241.4	$ 24.3	10.1 %	$ 241.4	$ 235.2	$ 6.2	2.6 %
Percentage of net revenue	15.5 %	13.9 %			13.9 %	14.0 %		
Restructuring and related charges	$ (1.1)	$ 7.7	$ (8.8)	(114.3)%	$ 7.7	$ 8.0	$ (0.3)	(3.8)%
Percentage of net revenue	(0.1)%	0.4 %			0.4 %	0.5 %		
Merger termination fee and related costs, net	$ —	$ (207.5)	$ 207.5	(100.0)%	$ (207.5)	$ —	$ (207.5)	N/A
Percentage of net revenue	— %	(11.9)%			(11.9)%	— %		
Impairment charges	$ —	$ —	$ —	— %	$ —	$ 4.3	$ (4.3)	(100.0)%
Percentage of net revenue	— %	— %			— %	0.3 %		

Net Revenue

Net revenue decreased by $30.2 million, or 1.7%, during fiscal 2022 as compared to fiscal 2021, due to a $102.2 million decrease in OpComms revenue, partially offset by a $72.0 million increase in Lasers revenue.

OpComms net revenue decreased by $102.2 million, or 6.3%, during fiscal 2022 as compared to fiscal 2021. Within OpComms, Telecom and Datacom decreased by $51.0 million primarily a result of continued material and component shortages for our Telecom products, which impacted our ability to meet demand. Industrial and Consumer decreased by $51.2 million primarily due to a decrease in average selling price for our chips as a result of a smaller chips design.

Lasers net revenue increased by $72.0 million, or 59.0%, during fiscal 2022 as compared to fiscal 2021, primarily due to a return in customer demand for our kilowatt class fiber lasers following the recent recovery in industrial production.

Net revenue increased by $64.2 million, or 3.8%, during fiscal 2021 as compared to fiscal 2020. This increase was primarily due to a $105.6 million increase in OpComms revenue, partially offset by a $41.4 million decrease in Lasers revenue.

OpComms net revenue increased by $105.6 million, or 7.0%, during fiscal 2021 as compared to fiscal 2020. Within OpComms, sales of Industrial and Consumer increased $67.7 million and Telecom and Datacom products increased by $37.9 million. The Industrial and Consumer increase was primarily driven by an expansion of the available market due to an increased dollar content of 3D sensing lasers and higher adoption rates of 3D sensing in consumer electronic devices compared with the prior year. Telecom and Datacom increased by $37.9 million primarily due to market growth and recovery from the impact of COVID-19 supply constraints. Revenue from EML chips for datacenters increased by more than $40.0 million in fiscal 2021 compared to fiscal 2020. These increases, along with growth in Transport product lines more than offset the $57.2 million of lower sales from product lines we exited, such as Datacom transceiver modules and certain Lithium Niobate product lines. These results also include a deferral of $14.8 million of revenue due to delays in 5G deployments in China.

Lasers net revenue decreased by $41.4 million, or 25.3%, during fiscal 2021 as compared to fiscal 2020, primarily due to reduced customer demand for our kilowatt class fiber lasers as a result of COVID-19.

During our fiscal 2022, 2021 and 2020, net revenue generated from a single customer which represented 10% or greater of total net revenue is summarized as follows:

	Years Ended		
	July 2, 2022	July 3, 2021	June 27, 2020
Apple	28.7 %	30.2 %	26.0 %
Ciena	12.6 %	10.1 %	*
Huawei	*	10.8 %	13.2 %

*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 generally represented 10% or more of our total net revenue (*in millions, except for percentages*):

	Years Ended					
	July 2, 2022		July 3, 2021		June 27, 2020	
Net revenue:						
Americas:						
United States	$ 173.9	10.2 %	$ 133.4	7.7 %	$ 149.8	8.9 %
Other Americas	173.0	10.1	146.9	8.4	128.3	7.6
Total Americas	$ 346.9	20.3 %	$ 280.3	16.1 %	$ 278.1	16.5 %
Asia-Pacific:						
Hong Kong	$ 458.2	26.7 %	$ 546.3	31.3 %	$ 532.0	31.8 %
South Korea	265.2	15.5	240.0	13.8	260.9	15.5
Japan	181.2	10.6	114.7	6.6	137.9	8.2
Other Asia-Pacific	344.7	20.1	421.3	24.2	346.0	20.6
Total Asia-Pacific	$ 1,249.3	72.9 %	$ 1,322.3	75.9 %	$ 1,276.8	76.1 %
EMEA	$ 116.4	6.8 %	$ 140.2	8.0 %	$ 123.7	7.4 %
Total net revenue	$ 1,712.6		$ 1,742.8		$ 1,678.6	

During fiscal 2022, 2021 and 2020, net revenue from customers outside the United States, based on customer shipping location, represented 89.8%, 92.3% and 91.1% of net revenue, respectively.

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 the United States and other governmental agencies, as well as changes in tax and trade policies and tariffs, have impacted and may continue to adversely impact net revenue from customers outside the United States.

Gross Margin and Segment Gross Margin

The following table summarizes segment gross profit and gross margin for fiscal 2022, 2021 and 2020 (*in millions, except for percentages*):

	Gross Profit			Gross Margin		
	Years Ended			Years Ended		
	2022	2021	2020	2022	2021	2020
OpComms	$ 780.9	$ 830.2	$ 704.0	51.4 %	51.2 %	46.5 %
Lasers	102.1	57.3	76.2	52.6 %	46.9 %	46.6 %
Segment total	$ 883.0	$ 887.5	$ 780.2	51.6 %	50.9 %	46.5 %
Unallocated corporate items:						
Stock-based compensation	(20.8)	(19.2)	(16.1)			
Amortization of acquired intangibles	(62.9)	(61.7)	(53.8)			
Amortization of inventory fair value adjustments	—	—	(5.8)			
Inventory and fixed asset write down due to product line exits [(1)]	(0.1)	(0.4)	(7.0)			
Integration related costs	—	—	(4.9)			
Other charges [(2)]	(10.6)	(23.1)	(42.4)			
Total	$ 788.6	$ 783.1	$ 650.2	46.0 %	44.9 %	38.7 %

[(1)] In fiscal 2022, 2021 and 2020, we recorded inventory and fixed assets write down charges of $0.1 million, $0.4 million and $7.0 million, respectively, related to the decision to exit the Datacom module and Lithium Niobate product lines.

[(2)] Other (charges) gains of unallocated corporate items in fiscal 2022 primarily relate to $14.0 million of charges to acquire components from various brokers to satisfy customer demand, offset by a $5.9 million gain from selling equipment that was no longer needed after we transferred certain product lines to new production facilities in fiscal 2021.

Other (charges) gains of unallocated corporate items for fiscal 2021 relate to costs of transferring product lines to new production facilities, including Thailand, of $6.9 million, excess and obsolete inventory charges of $7.7 million driven by U.S. trade restrictions and the related decline in demand from Huawei, and fixed asset write-off of $5.0 million associated with excess capacity related to our Fiber laser business.

Other (charges) gains of unallocated corporate items for fiscal 2020 primarily include costs of transferring product lines to new production facilities, including Thailand, of $11.5 million, excess and obsolete inventory charges of $12.8 million driven by U.S. trade restrictions and the related decline in demand from Huawei, and fixed asset write-off of $6.2 million associated with excess capacity related to our Fiber laser business.

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.

Gross Margin

Gross margin in fiscal 2022 increased to 46.0% from 44.9% in fiscal 2021, driven by higher gross margin from the Lasers segment due to the higher manufacturing levels and improved factory utilization as a result of return in customer demand for our kilowatt class fiber products following the recent recovery in industrial production. However, these improvements in gross margin were partially offset by $14.0 million of charges to acquire components from various brokers to satisfy customer demand.

Gross margin in fiscal 2021 increased to 44.9% from 38.7% in fiscal 2020, due to both higher OpComms and Lasers segment gross margins. The increase was primarily driven by a higher mix of higher margin product lines, particularly due to increased revenue of 3D sensing, pump lasers and High-Reliability (“HiRel”) components products, which have higher than average margins.

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.

The magnitude of the impact of COVID-19 on our business operations remains uncertain and difficult to predict, and this remains a highly dynamic situation, we have experienced, and we expect that we may continue to experience disruptions to our and our customers' businesses that will adversely impact our business, financial condition and results of operations. Due to the global supply chain constraint, we have had to incur incremental supply and procurement costs in order to increase our ability to fulfill demands from our customers. These costs have increased our inventory balances by $16.8 million as of July 2, 2022 and will decrease our gross margin in the near term.

Segment Gross Margin

OpComms

OpComms gross margin in fiscal 2022 remained relatively flat at 51.4% as compared to 51.2% in fiscal 2021.

OpComms gross margin in fiscal 2021 increased to 51.2% from 46.5% in fiscal 2020. The increase was primarily due to higher manufacturing volumes, a more profitable mix of products, including higher sales of higher margin Datacom, pump lasers, and HiRel components products. We also benefited from exiting lower margin product lines, such as Datacom transceiver module and Lithium Niobate modulator products, as well as from ongoing operational improvements.

Lasers

Lasers gross margin in fiscal 2022 increased to 52.6% from 46.9% in fiscal 2021. The increase was primarily due to the higher manufacturing levels and improved factory utilization as a result of return in customer demand for our kilowatt class fiber products following the recent recovery in industrial production.

Lasers gross margin in fiscal 2021 increased to 46.9% from 46.6% in fiscal 2020. This increase was primarily driven by the streamlining of our manufacturing supply chain related to our kilowatt class fiber products over the past year, offset by the impact of lower manufacturing levels related to COVID-19 reducing customer demand for our kilowatt class fiber products.

Research and Development ("R&D")

R&D expense increased by $6.2 million, or 2.9%, in fiscal 2022 as compared to fiscal 2021. The increase in R&D expense was primarily driven by a $4.1 million increase in new product development activities in our factories, and a $2.6 million increase in share-based compensation.

R&D expense increased by $15.9 million, or 8.0%, in fiscal 2021 as compared to fiscal 2020. The increase in R&D expense was primarily due to an increase in payroll related expense and stock-based compensation partially due to the additional week in fiscal year 2021, partially offset by a decrease in R&D materials, as well as a reduction in discretionary travel, primarily due to COVID-19 restrictions.

We believe that continuing our investments in R&D is critical to attaining our strategic objectives. Despite the uncertainty related to COVID-19 and the global economic outlook, 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 $24.3 million, or 10.1%, in fiscal 2022 as compared to fiscal 2021. The increase in SG&A expense for fiscal 2022 was primarily due to a $13.9 million increase in outside services and professional fees related to the NeoPhotonics acquisition and increased investments in information technology and professional service fees for optimizing our international legal structure, as well as a $6.0 million increase in share-based compensation primarily due to increased employee headcount.

SG&A expense increased by $6.2 million, or 2.6%, in fiscal 2021 as compared to fiscal 2020. The increase in SG&A expense was primarily due to an increase in payroll related expense due to incremental headcount and additional week in fiscal year 2021, an increase in stock-based compensation, and an increase in legal expenses, offset by lower discretionary travel and trade shows, primarily due to COVID-19 restrictions. In addition, during the fourth quarter of fiscal 2021, we sold land and building located in San Jose, California for $23.0 million and recognized a $8.3 million gain in SG&A.

From time to time, we expect to incur non-recurring expenses, such as mergers and acquisition-related expenses, which will likely increase our SG&A expenses in the near term 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.

During fiscal 2022, we recorded a net reversal to our restructuring and related charges of $1.1 million, which was attributable to lower than anticipated employee severance charges primarily as a result of retaining and re-assigning certain employees.

During fiscal 2021, we recorded $7.7 million in restructuring and related charges in our consolidated statements of operations. The charges were mainly attributable to severance charges associated with the decision to move certain manufacturing from San Jose, California, as well as other cost reduction measures taken across the Company impacting all regions.

During fiscal 2020, we recorded $8.0 million in restructuring and related charges in our consolidated statements of operations. The charges were mainly attributable to severance charges associated with the decision to move certain manufacturing from San Jose, California to our facility in Thailand.

Please refer to "Note 13. Restructuring and Related Charges" to the consolidated financial statements.

Merger Termination Fee and Related Costs, Net

On January 18, 2021, we entered into a merger agreement with Coherent, under which we would acquire all outstanding shares of Coherent common stock. In March 2021, Coherent terminated the merger agreement and paid us a termination fee of $217.6 million in accordance with the merger agreement. For the year ended July 3, 2021, we recorded $217.6 million gain related to the receipt of a termination fee from Coherent in March 2021 as a result of the termination of our merger agreement. This gain was offset by $10.1 million of Coherent acquisition related charges and presented as "merger termination fee and related costs, net" in our consolidated statements of operations for the year ended July 3, 2021.

Impairment Charges

In the third quarter of fiscal 2019, we announced our plan to discontinue the development and manufacturing of future Datacom transceiver modules which impacted the California and China based Datacom module teams. As a result of these actions, we recorded impairment charges of $4.3 million in fiscal 2020 to our long-lived assets that were not deemed to be useful. While we expect strong growth in Datacom volumes in the future, gross margins at the transceiver market level are lower due to extreme competition.

We had no impairments in fiscal 2022 or fiscal 2021.

Interest Expense

The components of interest expense are as follows for the years presented (*in millions*):

	Years Ended		
	July 2, 2022	**July 3, 2021**	**June 27, 2020**
Interest expense	$ 80.2	$ 66.7	$ 61.2

For fiscal 2022, we recorded interest expense of $80.2 million, driven by the amortization of the debt discount and issuance costs of our Notes. The increase in interest expense is primarily a result of issuing $861.0 million in aggregate principal amount of 2028 Notes in March 2022.

For fiscal 2021, we recorded interest expense of $66.7 million related to the amortization of the debt discount and issuance costs of our Notes. The increase in interest expense during fiscal 2021 as compared to fiscal 2020 was mainly driven by the increase in amortization of the debt discount and contractual interest expense of our 2026 Notes issued in December 2019, partially offset by a loss and decreased interest expense due to the early extinguishment of our term loan facility in the second quarter of fiscal 2020.

Other Income (Expense), Net

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

	Years Ended		
	July 2, 2022	July 3, 2021	June 27, 2020
Foreign exchange gains (losses), net	$ 6.1	$ (4.4)	$ (1.4)
Interest and investment income	6.1	5.7	15.8
Other income (expense), net	(0.2)	1.5	17.0
Total other income (expense), net	$ 12.0	$ 2.8	$ 31.4

During fiscal 2022, other income (expense), net increased by $9.2 million as compared to fiscal 2021, primarily due to $10.5 million more in foreign exchange gains as a result of a strengthening U.S. dollar relative to other foreign currencies, offset by $1.7 million decrease in other income.

During fiscal 2021, other income (expense), net decreased by $28.6 million as compared to fiscal 2020, mainly driven by a gain on the sale of Lithium Niobate modulators business of $13.8 million completed in fiscal 2020 and $10.1 million decrease in interest and investment income due to lower returns from our short-term investments at lower interest rates.

Provision for Income Taxes*:*

	Years Ended		
(in millions)	July 2, 2022	July 3, 2021	June 27, 2020
Provision for income taxes	$ 36.2	$ 65.8	$ 38.8

Our tax provision for fiscal 2022 differs from the 21% U.S. statutory rate primarily due to the income tax benefit from earnings of our foreign subsidiaries being taxed at rates that differ from the U.S. statutory rate, offset by the tax expense from U.S. income inclusions from Subpart F and GILTI. Additionally, our provision for income taxes includes an income tax benefit from various tax credits, offset by an income tax expense from non-deductible stock-based compensation as well as change in valuation allowance because it is not more-likely-than-not that certain deferred tax assets will be realizable in the future.

Our provision for income taxes for fiscal 2021 differs from the 21% U.S. statutory rate primarily due to the income tax benefit from earnings of our foreign subsidiaries being taxed at rates that differ from the U.S. statutory rate, which is offset by the tax expense from U.S. income inclusions from Subpart F and GILTI. Further our provision for income taxes includes an income tax benefit from various tax credits and non-U.S. statutory rate changes enacted during the year, offset by an income tax expense from non-deductible stock-based compensation as well as change in valuation allowance because it is not more-likely-than-not that certain deferred tax assets will be realizable in the future.

Our provision for income taxes for fiscal 2020 differs from the 21% U.S. statutory rate primarily due to the income tax benefit of the earnings of our foreign subsidiaries being taxed at rates that differ from the U.S. statutory rate and certain tax credits, which is offset by the tax expense from U.S. income inclusions from Subpart F and GILTI. Further our provision for income taxes includes an income tax expense from changes in our valuation allowance because it is not more-likely-than-not that certain deferred tax assets will be realized in the future.

Subsequent to fiscal 2022, President Biden signed into law the CHIPS and Science Act and the Inflation Reduction Act. The new legislation provide tax incentives as well as impose a 15% minimum tax on certain corporation's book income and a 1% excise tax on certain stock buybacks. We are evaluating the effect, if any, of these new laws will have on our consolidated financial statements.

Defined Benefit Plans

The Company sponsors defined benefit pension plans covering employees in Japan, Switzerland, and Thailand. Pension plan benefits are based primarily on participants' compensation and years of service credited as specified under the terms of each country's plan. Employees are entitled to a lump sum benefit upon retirement or upon certain instances of termination. The funding policy is consistent with the local requirements of each country. As of July 2, 2022, a defined benefit plan in Switzerland was partially funded, while defined benefit plans in Japan and Thailand were unfunded. As of July 2, 2022, our projected benefit obligations, net, in Japan, Switzerland, and Thailand were $2.6 million, $1.7 million, and $3.4 million, respectively. They were recorded in our consolidated balance sheets as other non-current liabilities and represent the total projected benefit obligation ("PBO") less the fair value of plan assets.

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 100 basis point decrease or increase in the discount rate would cause a corresponding increase or decrease of $2.8 million or $2.4 million, respectively, in the PBO based upon data as of July 2, 2022.

We expect to contribute $1.4 million to our defined benefit pension plans in fiscal 2023.

Financial Condition

Liquidity and Capital Resources

As of July 2, 2022 and July 3, 2021, our cash and cash equivalents of $1,290.2 million and $774.3 million, respectively, were largely held in the United States. As of July 2, 2022 and July 3, 2021, our short-term investments of $1,258.8 million and $1,171.7 million, respectively, were all held in the United States. Cash equivalents and short-term investments are primarily comprised of money market funds, treasuries, agencies, high quality investment grade fixed income securities, certificates of deposit, and commercial paper. Our investment policy and strategy is focused on the preservation of capital and supporting our liquidity requirements.

The total amount of cash outside the United States held by the non-U.S. entities as of July 2, 2022 was $216.1 million, which was primarily held by entities incorporated in the United Kingdom, the British Virgin Islands, Japan, Hong Kong, China, Canada, and Thailand. 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, particularly in our Thailand facility, strategic transactions and partnerships, and future acquisitions.

Our intent is to indefinitely reinvest funds held outside the United States and, except for the funds held in the Cayman Islands, the British Virgin Islands, Japan and Hong Kong, 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 not significant from a tax perspective, we may determine that cash repatriations are necessary or desirable. Repatriation could result in additional material 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. Additionally, 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.

Beginning in fiscal 2023, the Tax Cuts and Jobs Act of 2017 requires taxpayers to capitalize research and development expenditures and amortize domestic expenditures over five years and foreign expenditures over fifteen years. This will delay deductibility of these expenses and potentially increase the amount of cash taxes we pay in the next several years.

Indebtedness

As of July 2, 2022, the debt component of our 2024 Notes of $409.9 million (principal balance of $450 million maturing in 2024) is presented in short-term liabilities since our stock price exceeded $78.80 for 20 of the last 30 trading days of the quarter ended July 2, 2022 and the 2024 Notes are convertible at the option of the holders. During the year ended July 2, 2022, we received conversion requests of $1.8 million principal amount of the 2024 Notes, which we settled with a combination of $1.8 million of cash and approximately 9 thousand shares of the Company's stock in accordance with the applicable indenture.

As of July 2, 2022, the debt component of our 2026 Notes of $831.4 million (principal balance of $1,050.0 million maturing in 2026) is presented in non-current liabilities. If the closing price of our stock exceeds $129.08 for 20 of the last 30 trading days of any future quarter, our 2026 Notes would also become convertible at the option of the holders and the debt component would be reclassified to current liabilities in our condensed consolidated balance sheet.

As of July 2, 2022, the debt component of our 2028 Notes of $634.7 million (principal balance of $861.0 million maturing in 2028) is presented in non-current liabilities. If the closing price of our stock exceeds $170.34 for 20 of the last 30 trading days in any fiscal quarter commencing after July 2, 2022, our 2028 Notes would also become convertible at the option of the holders and the debt component would be reclassified to current liabilities in our condensed consolidated balance sheet.

Share Repurchases

Repurchase Made in Connection with Convertible Note Offering

In fiscal 2022, concurrent with the issuance of the 2028 Notes, we repurchased 2.0 million shares of our common stock in privately negotiated transactions at an average price of $99.0 per share for an aggregate purchase price of $200.0 million. We recorded the $200.0 million aggregate purchase price as a reduction of retained earnings within our condensed consolidated balance sheet. These shares were retired immediately.

Share Buyback Program

On May 7, 2021, our board of directors approved the 2021 share buyback program, which authorizes us to use up to $700.0 million to purchase our own shares of common stock. The 2021 share buyback program was authorized for 2 years. On March 3, 2022, our board of directors approved an increase in our share buyback program, which authorizes us to use up to an aggregate amount of $1.0 billion to purchase our own shares of common stock.

During fiscal 2022, we repurchased 4.0 million shares of our common stock as part of the share buyback program at an average price of $87.21 per share for an aggregate purchase price of $348.9 million. During fiscal 2021, we repurchased 3.1 million shares of our common stock at an average price of $77.84 per share for an aggregate purchase price of $241.0 million. Since the share buyback program was approved by the board of directors, we have repurchased 7.1 million shares in aggregate at an average price of $83.12 per share for a total purchase price of $589.8 million. We recorded the $589.8 million aggregate purchase price as a reduction of retained earnings within our consolidated balance sheets. All repurchased shares were retired immediately.

The price, timing, amount, and method of such repurchases will be determined based on the valuation of market conditions and other factors, at prices determined to be attractive and in the best interests of both Lumentum and our stockholders.

Contractual Obligations

The following table summarizes our contractual obligations as of July 2, 2022, and the effect such obligations are expected to have on our liquidity and cash flow (*in millions*):

	Payments due		
	Total	**Less than 1 year**	**More than 1 year**
Contractual Obligations			
Asset retirement obligations	$ 4.6	$ 0.5	$ 4.1
Operating lease liabilities, including imputed interest [1]	66.5	12.9	53.6
Pension plan contributions [2]	1.4	1.4	—
Purchase obligations [3]	403.7	361.7	42.0
Convertible notes - principal [4]	2,359.1	—	2,359.1
Convertible notes - interest [4]	51.8	10.7	41.1
Total	$ 2,887.1	$ 387.2	$ 2,499.9

[1] The amounts of operating lease liabilities do not include any sublease income amounts nor do they include payments for short-term leases or variable lease payments. As of July 2, 2022, we expect to receive sublease income of approximately $2.4 million over the next year. Please refer to "Note 9. Leases" to the consolidated financial statements.

[2] The amount of pension plan contributions 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 one year in the table above. Please refer to "Note 17. Employee Retirement Plans" to the consolidated financial statements.

[3] Purchase obligations represent legally-binding commitments to purchase inventory and other commitments made in the normal course of business to meet operational requirements. Please refer to "Note 18. Commitments and Contingencies" to the consolidated financial statements.

[4] The amounts related to convertible notes include principal and interest on our 0.25% Convertible Senior Notes due in 2024 (the "2024 Notes"), principal and interest on our 0.50% Convertible Senior Notes due in 2026 (the "2026 Notes"), and principal and interest on our 0.50% Convertible Notes due in 2028 (the "2028 Notes", and together with the 2024 Notes and 2026 Notes, the "Notes"). The 2024 Notes have a maturity date of March 15, 2024, the 2026 Notes have a maturity date of December 15, 2026, and the 2028 Notes have a maturity date of June 15, 2028. The principal balances of our Notes are reflected in the payment periods in the table above based on their respective contractual maturities assuming no conversions. Please refer to "Note 11. Debt" to the consolidated financial statements.

Unrecognized Tax Benefits

As of July 2, 2022, our other non-current liabilities also include $30.5 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.

Liquidity and Capital Resources Requirements

We believe that our cash and cash equivalents as of July 2, 2022, 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. Following the end of fiscal year 2022, we used approximately $867.3 million in cash from our balance sheet for the acquisition of NeoPhotonics which closed on August 3, 2022. In addition, because the term loans we provided to NeoPhotonics were not settled as of the closing of the acquisition, the outstanding amounts of such loans were included as part of the purchase price in connection with the acquisition.

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, including the impact of COVID-19;

- fluctuations in demand for our products as a result of changes in regulations, tariffs or other trade barriers, and trade relations in general;
- 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, including increases in manufacturing capacity;
- 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;
- 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;
- other acquisitions or strategic transactions;
- the settlement of any conversion or redemption of the 2024 Notes, the 2026 Notes, and the 2028 Notes in cash, and
- common stock repurchases under 2021 share buyback program

Fiscal 2022

As of July 2, 2022, our consolidated balance of cash and cash equivalents increased by $515.9 million, to $1,290.2 million from $774.3 million as of July 3, 2021. The increase in cash and cash equivalents was mainly due to cash provided by operating activities of $459.3 million and financing activities of $282.9 million, partially offset by cash used in investing activities of $226.3 million during the year ended July 2, 2022.

Cash provided by operating activities was $459.3 million during the year ended July 2, 2022, which reflects net income of $198.9 million and non-cash items (such as depreciation, stock-based compensation, amortization of intangibles, amortization of debt discount and debt issuance costs on our Notes, and other non-cash charges) of $351.0 million, partially offset by $90.6 million of changes in our operating assets and liabilities.

Cash used in investing activities of $226.3 million during the year ended July 2, 2022 was attributable to purchases of short-term investments, net of sales and maturities of $111.5 million, capital expenditures of $91.2 million, and a $30.0 million term loan provided to NeoPhotonics to support their on-going growth plans through the anticipated merger completion, partially offset by proceeds from the sales of property, plant and equipment of $6.4 million. The term loan to NeoPhotonics is described in “Note 4. Business Combination” to the consolidated financial statements.

Cash provided by financing activities of $282.9 million during the year ended July 2, 2022, was primarily a result of proceeds from the issuance of the 2028 Notes, net of issuance costs of $854.1 million and proceeds from employee stock plans of $13.5 million, partially offset by the repurchase of shares of our common stock of $543.9 million, tax payments related to net share settlement of restricted stock of $39.0 million, and $1.8 million to settle conversion requests for the principal amount of the 2024 Notes.

Fiscal 2021

As of July 3, 2021, our consolidated balance of cash and cash equivalents increased by $476.3 million, to $774.3 million from $298.0 million as of June 27, 2020. The increase in cash and cash equivalents was mainly due to cash provided by operating activities of $738.7 million and investing activities of $1.0 million, offset by cash used in financing activities of $263.4 million during the year ended July 3, 2021.

Cash provided by operating activities was $738.7 million during the year ended July 3, 2021. Our net income was $397.3 million for the year ended July 3, 2021 and included the merger termination fee paid by Coherent, net of related costs of $207.5 million. Cash provided by operating activities was also generated from $339.9 million of non-cash items (such as depreciation, stock-based compensation, amortization of intangibles, amortization of debt discount and debt issuance costs on our Notes, and other non-cash charges), offset by $1.5 million of changes in our operating assets and liabilities.

Cash provided by investing activities of $1.0 million during the year ended July 3, 2021 was primarily attributable to proceeds from maturities and sales of short-term investment, net of purchases of $71.2 million and proceeds from sales of product lines of $1.3 million and sales of property and equipment of $23.3 million. However, we had capital expenditures of $84.8 million and a payment for an asset acquisition of $10.0 million.

Cash used in financing activities of $263.4 million during the year ended July 3, 2021, was primarily resulted from the repurchase of shares of our common stock of $236.0 million and tax payments related to restricted stock of $39.7 million, offset by the proceeds from employee stock plans of $12.6 million.

Fiscal 2020

As of June 27, 2020, our consolidated balance of cash and cash equivalents decreased by $134.6 million, to $298.0 million from $432.6 million as of June 29, 2019. The decrease in cash and cash equivalents was mainly due to cash used in investing activities of $987.7 million, offset by cash provided by operating activities of $524.3 million and cash provided by financing activities of $328.8 million during the year ended June 27, 2020.

Cash provided by operating activities of $524.3 million during the year ended June 27, 2020, primarily resulted from $323.4 million of non-cash items (such as depreciation, stock-based compensation, amortization of intangibles, amortization of debt discount and debt issuance costs on our term loan and the Notes, and other non-cash items), net income of $135.5 million, and $65.4 million of changes in our operating assets and liabilities.

Cash used in investing activities of $987.7 million during the year ended June 27, 2020, was primarily attributable to purchases of short-term investments, net of sales and maturities of $917.8 million. In addition, we had capital expenditures of $86.0 million, payment for asset acquisitions of $4.0 million, offset by proceeds from sales of product lines of $20.1 million.

Cash provided by financing activities of $328.8 million during the year ended June 27, 2020, primarily resulted from the proceeds of the issuance of the 2026 Notes of $1,042.2 million, net of issuance costs, offset by repayment of our term loan facility of $497.5 million and the repurchase of shares of our common stock of $200.0 million.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

COVID-19 Risk

There are a number of market risk factors related to the COVID-19 pandemic and associated global economic impacts. We continue to actively evaluate these risks, and have taken reserves and financial positions as of July 2, 2022 that we believe are reasonable based on the information currently available. However, the COVID-19 pandemic and related regional shelter-in-place orders are unprecedented events that are continually evolving, and there could be significant changes and/or charges resulting in the future. These market risks include, for example:

- Accounts receivable collectability - there could be significant bad debt expenses incurred if our customers experience financial difficulties.
- Accounts receivable collections timing - our working capital and cash flows could be impacted if we start to agree to longer payment terms for our customers. Although we have not done so, a broader market move to longer payment terms could delay our collection timing as well.
- Inventory (excess and obsolete) - our customers may not be able to purchase inventory that we have built for them, or their demand may slow down to a point where inventory becomes aged.
- Short-term investment values - as seen in past economic slowdowns, there may be credit losses and defaults or a withdrawal of government support programs which cause losses and/or liquidity issues in our investment portfolio.
- Long-term assets such as fixed assets, goodwill, and intangibles - a market slowdown could impair the value of these assets.
- Tax valuation - we have significant NOL's (Net Operating losses) in the United States which have associated deferred tax assets on our balance sheet, and these could be deemed unrecoverable in the future.

In addition, all of the below market risks are heightened in light of the current market situation. Foreign exchange markets could be impacted and cause significant fluctuations in our future expenses. The price of our common stock has fluctuated significantly in the past and global equity markets are experiencing significant volatility following the COVID-19 outbreak. Interest rates have already reduced dramatically since the onset of the outbreak, and our future income from these investments likely will be negatively impacted in the future.

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 July 2, 2022, July 3, 2021, and June 27, 2020, we recorded foreign exchange gains of $6.1 million, foreign exchange losses of $4.4 million, and foreign exchange losses of $1.4 million, respectively, in the 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 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 monetary assets and 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 as compared with the U.S. dollar.

Equity Price Risk

We are exposed to equity price risk related to the conversion options embedded in our 2028 Notes, 2026 Notes and 2024 Notes.

We issued the 2028 Notes in March 2022, the 2026 Notes in December 2019 and the 2024 Notes in March 2017 with an aggregate principal amount of $861.0 million, $1,050.0 million and $450.0 million, respectively. The 2028 Notes, 2026 Notes and the 2024 Notes are carried at face value less amortized discount on the condensed consolidated balance sheet. The 2028 Notes, 2026 Notes and the 2024 Notes bear interest at a rate of 0.50%, 0.50% and 0.25% per year, respectively. Since the Notes bear interest at fixed rates, we have no financial statement risk associated with changes in market interest rates. However, the potential value of the shares to be distributed to the holders of our Notes changes when the market price of our stock fluctuates. The 2028 Notes, the 2026 Notes and the 2024 Notes will mature on June 15, 2028, December 15, 2026 and March 15, 2024, respectively, unless earlier repurchased by us or converted pursuant to their terms, at a conversion price of approximately $131.03 per share for the 2028 Notes, approximately $99.29 per share for the 2026 Notes, and approximately $60.62 per share for the 2024 Notes.

Interest Rate Fluctuation Risk

As of July 2, 2022, we had cash, cash equivalents, and short-term investments of $2,549.0 million. Cash equivalents and short-term investments are primarily comprised of money market funds, treasuries, agencies, high quality investment grade fixed income securities, certificates of deposit, and commercial paper. 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 July 2, 2022, the weighted-average life of our investment portfolio was approximately four 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 July 2, 2022, 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 $6.3 million, and a hypothetical increase or decrease of 0.50% (50 basis points) would have resulted in a decrease or an increase in the fair value of our portfolio of approximately $3.1 million.

Bank Liquidity Risk

As of July 2, 2022, we had approximately $235.9 million of unrestricted cash (excluding cash equivalents) 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, we have not incurred any losses to date 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 SUPPLEMENTARY 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 July 2, 2022 and July 3, 2021, the related consolidated statements of operations, comprehensive income, cash flows, and stockholders’ equity for each of the three years in the period ended July 2, 2022, 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 July 2, 2022 and July 3, 2021, and the results of its operations and its cash flows for each of the three years in the period ended July 2, 2022, 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 July 2, 2022, 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 24, 2022, 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.

Critical Audit Matter

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

Inventories, Valuation of Inventory - Refer to Notes 1 and 8 to the Financial Statements

Critical Audit Matter Description

The Company assesses the value of inventory and writes down those inventories which are obsolete or in excess of forecasted demand to the lower of their cost or estimated net realizable value. The Company’s estimates of forecasted demand are based upon analysis and assumptions including, but not limited to, expected product lifecycles, product development plans and historical usage by product.

We identified the valuation of inventory as a critical audit matter because of the significant assumptions management makes with regards to estimating the excess and obsolete write downs. This required a high degree of auditor judgment and an increased extent of effort when performing audit procedures to evaluate the reasonableness of inputs used in management’s valuation of inventory excess and obsolete write downs including estimates of expected product lifecycles, product development plans and historical usage by product.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to management’s estimates of forecasted demand used in the valuation of inventory excess and obsolete write downs included the following, among others:

- We tested the effectiveness of controls over the review and approval of the valuation of inventory for excess and obsolete write downs, including controls designed to review the assumptions regarding expected product lifecycles, product development plans and historical usage by product.
- We selected a sample of inventory products and tested the forecasted demand by comparing internal and external information (e.g. historical usage, contracts, communications with customers, expected product lifecycles, product development plans, macroeconomic conditions, and inquiries with business unit managers, executives, sales, and operations personnel) with the Company’s forecasted demand.
- We selected a sample of inventory products and evaluated management's ability to accurately estimate forecasted demand by comparing current usage by product to estimates made in prior year.
- We considered the existence of contradictory evidence based on reading of internal communications to management and the board of directors, Company press releases, and analyst reports, as well as our observations and inquiries as to changes within the business.

/s/ DELOITTE & TOUCHE LLP

San Jose, California
August 24, 2022

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		
	July 2, 2022	July 3, 2021	June 27, 2020
Net revenue	$ 1,712.6	$ 1,742.8	$ 1,678.6
Cost of sales	861.1	898.0	974.6
Amortization of acquired developed intangibles	62.9	61.7	53.8
Gross profit	788.6	783.1	650.2
Operating expenses:			
Research and development	220.7	214.5	198.6
Selling, general and administrative	265.7	241.4	235.2
Restructuring and related charges	(1.1)	7.7	8.0
Merger termination fee and related costs, net	—	(207.5)	—
Impairment charges	—	—	4.3
Total operating expenses	485.3	256.1	446.1
Income from operations	303.3	527.0	204.1
Interest expense	(80.2)	(66.7)	(61.2)
Other income (expense), net	12.0	2.8	31.4
Income before income taxes	235.1	463.1	174.3
Provision for income taxes	36.2	65.8	38.8
Net income	$ 198.9	$ 397.3	$ 135.5
Net income per share:			
Basic	$ 2.79	$ 5.27	$ 1.79
Diluted	$ 2.68	$ 5.07	$ 1.75
Shares used to compute net income per share:			
Basic	71.2	75.4	75.9
Diluted	74.2	78.4	77.6

See accompanying Notes to Consolidated Financial Statements.

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

	Years Ended		
	July 2, 2022	July 3, 2021	June 27, 2020
Net income	$ 198.9	$ 397.3	$ 135.5
Other comprehensive income (loss), net of tax:			
Net change in unrealized gain (loss) on available-for-sale securities	(10.2)	(2.5)	1.5
Net change in defined benefit obligations	2.4	2.8	(0.7)
Other comprehensive income (loss), net of tax	(7.8)	0.3	0.8
Comprehensive income, net of tax	$ 191.1	$ 397.6	$ 136.3

See accompanying Notes to Consolidated Financial Statements.

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

	July 2, 2022	July 3, 2021
ASSETS		
Current assets:		
Cash and cash equivalents	$ 1,290.2	$ 774.3
Short-term investments	1,258.8	1,171.7
Accounts receivable, net	262.0	212.8
Inventories	250.1	196.4
Prepayments and other current assets	78.1	81.6
Total current assets	3,139.2	2,436.8
Property, plant and equipment, net	360.5	361.1
Operating lease right-of-use assets, net	73.6	67.4
Goodwill	368.9	368.9
Other intangible assets, net	155.7	241.2
Deferred tax asset	27.0	72.9
Other non-current assets	37.3	3.3
Total assets	$ 4,162.2	$ 3,551.6
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 156.7	$ 116.9
Accrued payroll and related expenses	54.6	54.3
Accrued expenses	44.7	33.1
Convertible notes, current	409.9	390.7
Operating lease liabilities, current	11.2	11.8
Other current liabilities	39.4	57.8
Total current liabilities	716.5	664.6
Convertible notes, non-current	1,466.1	789.8
Operating lease liabilities, non-current	48.8	47.6
Deferred tax liability	12.9	35.9
Other non-current liabilities	42.9	40.9
Total liabilities	2,287.2	1,578.8
Commitments and contingencies (Note 18)		
Stockholders' equity:		
Common stock, $0.001 par value, 990 authorized shares; 68.0 and 73.0 shares issued and outstanding as of July 2, 2022 and July 3, 2021, respectively	0.1	0.1
Additional paid-in capital	2,003.6	1,743.6
Retained earnings (accumulated deficit)	(129.1)	220.9
Accumulated other comprehensive income	0.4	8.2
Total stockholders' equity	1,875.0	1,972.8
Total liabilities and stockholders' equity	$ 4,162.2	$ 3,551.6

See accompanying Notes to Consolidated Financial Statements.

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

	Years Ended		
	July 2, 2022	July 3, 2021	June 27, 2020
OPERATING ACTIVITIES:			
Net income	$ 198.9	$ 397.3	$ 135.5
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation expense	81.6	91.4	113.3
Stock-based compensation	103.1	92.9	73.2
Loss on early extinguishment of debt	—	—	8.0
Gain on sale of product lines	—	(0.5)	(14.5)
Amortization of acquired intangibles	85.5	85.7	78.6
Impairment and (gain) losses on sale of property, plant and equipment	(3.0)	0.3	21.8
Amortization of debt discount and debt issuance costs	72.4	60.2	39.6
Amortization of inventory fair value adjustment in connection with acquisition	—	—	5.8
Other non-cash (income) expenses	11.4	9.9	(2.4)
Changes in operating assets and liabilities:			
Accounts receivable	(49.2)	20.2	5.0
Inventories	(51.8)	(6.6)	32.7
Operating lease right-of-use assets, net	(6.2)	11.3	11.6
Prepayments and other current and non-currents assets	(14.3)	(4.8)	17.3
Income taxes, net	(21.1)	16.0	31.3
Accounts payable	47.0	(34.0)	(11.7)
Accrued payroll and related expenses	0.3	0.9	11.1
Operating lease liabilities	0.6	(9.0)	(11.6)
Accrued expenses and other current and non-current liabilities	4.1	7.5	(20.3)
Net cash provided by operating activities	459.3	738.7	524.3
INVESTING ACTIVITIES:			
Payments for acquisition of property, plant and equipment	(91.2)	(84.8)	(86.0)
Payment for asset acquisition	—	(10.0)	(4.0)
Proceeds from sale of product lines	—	1.3	20.1
Purchases of short-term investments	(1,085.1)	(1,991.0)	(1,341.3)
Proceeds from maturities and sales of short-term investments	973.6	2,062.2	423.5
Term loan funding provided to NeoPhotonics	(30.0)	—	—
Proceeds from the sales of property and equipment	6.4	23.3	—
Net cash (used in) provided by investing activities	(226.3)	1.0	(987.7)
FINANCING ACTIVITIES:			
Repurchase of common stock	(543.9)	(236.0)	(200.0)
Proceeds from issuance of 2028 Notes, net of issuance costs	854.1	—	—
Proceeds from issuance of 2026 Notes, net of issuance costs	—	—	1,042.2
Tax payments related to restricted stock	(39.0)	(39.7)	(14.0)
Proceeds from employee stock plans	13.5	12.6	9.9
Payment for conversions of 2024 Notes	(1.8)	—	—
Principal payments on finance leases	—	(0.5)	(12.5)
Proceeds from the exercise of stock options	—	0.2	0.7
Repayment of term loan	—	—	(497.5)
Net cash provided by (used in) financing activities	282.9	(263.4)	328.8
Increase (decrease) in cash and cash equivalents	515.9	476.3	(134.6)
Cash and cash equivalents at beginning of period	774.3	298.0	432.6
Cash and cash equivalents at end of period	$ 1,290.2	$ 774.3	$ 298.0

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

Supplemental disclosure of cash flow information:			
Cash paid for taxes	$ 57.0	$ 50.0	$ 7.6
Cash paid for interest	7.5	6.4	13.4
Supplemental disclosure of non-cash transactions:			
Unpaid property, plant and equipment in accounts payable and accrued expenses	$ 3.4	$ 10.6	$ 12.3
Right-of-use assets obtained in exchange for new operating lease liabilities	14.8	1.4	2.2
Net transfer of assets from property plant and equipment to assets held-for-sale	—	—	3.1
Repurchase of common stock pending settlement	10.1	5.0	—

See accompanying Notes to Consolidated Financial Statements.

LUMENTUM HOLDINGS INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in millions)

	Common Stock		Additional Paid-In Capital	Retained Earnings (Accumulated Deficit)	Accumulated Other Comprehensive Income	Total Stockholders' Equity
	Shares	Amount				
Balance as of June 29, 2019	76.7	$ 0.1	$ 1,360.8	$ 129.1	$ 7.1	$ 1,497.1
Net income	—	—	—	135.5	—	135.5
Other comprehensive income	—	—	—	—	0.8	0.8
Issuance of shares in connection with vesting of restricted stock units and performance stock units	1.3	—	—	—	—	—
Withholding taxes related to net share settlement of restricted stock units	(0.2)	—	(14.0)	—	—	(14.0)
Exercise of stock options	—	—	0.7	—	—	0.7
Equity component of the 2026 Notes, net of tax of $67.0 million and issuance costs of $2.3 million	—	—	245.9	—	—	245.9
ESPP shares issued	0.2	—	9.9	—	—	9.9
Repurchases of common stock	(2.9)	—	—	(200.0)	—	(200.0)
Stock-based compensation	—	—	73.3	—	—	73.3
Balance as of June 27, 2020	75.1	$ 0.1	$ 1,676.6	$ 64.6	$ 7.9	$ 1,749.2
Net income	—	—	—	397.3	—	397.3
Other comprehensive income	—	—	—	—	0.3	0.3
Issuance of shares in connection with vesting of restricted stock units and performance stock units	1.3	—	—	—	—	—
Withholding taxes related to net share settlement of restricted stock units	(0.5)		(39.7)			(39.7)
Exercise of stock options	—	—	0.2	—	—	0.2
ESPP shares issued	0.2	—	12.6	—	—	12.6
Repurchases of common stock	(3.1)	—	—	(241.0)	—	(241.0)
Stock-based compensation	—	—	93.9	—	—	93.9
Balance as of July 3, 2021	73.0	$ 0.1	$ 1,743.6	$ 220.9	$ 8.2	$ 1,972.8
Net income	—	—	—	198.9	—	198.9
Other comprehensive loss	—	—	—	—	(7.8)	(7.8)
Issuance of shares in connection with vesting of restricted stock units and performance stock units	1.3	—	—	—	—	—
Withholding taxes related to net share settlement of restricted stock units	(0.5)	—	(39.0)	—	—	(39.0)
Equity component of the 2028 Notes, net of tax of $48.7 million and issuance costs of $1.9 million	—	—	180.6	—	—	180.6
Adjustment to equity component of the 2024 Notes in connection with cash settlement	—	—	(0.1)	—	—	(0.1)
ESPP shares issued	0.2	—	13.6	—	—	13.6
Repurchases of common stock	(6.0)	—	—	(548.9)	—	(548.9)
Stock-based compensation	—	—	104.9	—	—	104.9
Balance as of July 2, 2022	68.0	$ 0.1	$ 2,003.6	$ (129.1)	$ 0.4	$ 1,875.0

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 Holdings Inc. ("we," "us," "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 ("OpComms") and Commercial Lasers ("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 are currently as well as historically 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") assemble into communications networking systems, which they sell to communications service providers, hyperscale cloud operators, and enterprises with their own networks. Similarly, many of our Lasers products customers 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, gaming, and other applications, including to the automotive industry, 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, goodwill and business combinations.

We are now in the third year of the COVID-19 pandemic, and while the impact of the pandemic is lessening, new variants are causing continued concern. As these variants continue to emerge, efforts to mitigate or contain the impacts of the pandemic continue to evolve, and the duration and severity of the impact of the pandemic on our business and results of operations in future periods remain uncertain. The extent of the impact of COVID-19 on our operational and financial performance will depend on certain developments, including but not limited to the duration and spread of the pandemic and its variants, duration of local, state and federal issued public health orders in each jurisdiction where we operate or in which our customers and suppliers operate, impact on our customers and our sales cycles, impact on our supply chain and manufacturing partners, impact on our employees and impact on regional and worldwide economies and financial markets in general, all of which are uncertain and cannot be predicted. We assessed the potential impact that this pandemic has on our estimates as of July 2, 2022 and determined that there were no material impacts. However, due to the global supply chain constraint, we have had to incur incremental supply and procurement costs in order to fulfill demand from our customers. These higher costs have increased our inventory balances by $16.8 million as of July 2, 2022 and may decrease our gross margin in the near term.

We are also continuously monitoring developments in the ongoing conflict between Russia and Ukraine including the related export controls and resulting sanctions imposed on Russia by the U.S. and other countries. Additional factors such as increased inflation, escalating energy costs, constrained raw material availability, and thus increasing costs could impact the global economy. Although the global implications of the Russian/Ukraine conflict are difficult to predict at this time, we do not presently foresee direct material adverse effects upon our business.

Fiscal Years

We utilize a 52-53 week fiscal year ending on the Saturday closest to June 30th. Every fifth or sixth fiscal year will have a 53-week period. The additional week in a 53-week year is added to the third quarter, making such quarter consist of 14 weeks. Our fiscal 2022 and 2020 were 52-week years, ending on July 2, 2022 and June 27, 2020, respectively. Our fiscal 2021 was a 53-week year, ending on July 3, 2021.

Principles of Consolidation

The consolidated financial statements are prepared in accordance with GAAP and includes the accounts of Lumentum Holdings Inc. and its wholly-owned subsidiaries. Intercompany transactions and balances are fully eliminated in consolidation.

Certain prior period amounts have been reclassified to conform to the current period presentation. The reclassification of the prior period amounts did not impact previously reported consolidated financial statements.

Business Combination

On November 4, 2021, Lumentum and NeoPhotonics Corporation (“NeoPhotonics”) announced a merger agreement (the “Merger Agreement”) pursuant to which Lumentum will acquire all outstanding shares of NeoPhotonics stock. On August 3, 2022, we completed our merger with NeoPhotonics. Please refer to “Note 4. Business Combination”.

On August 15, 2022, we completed a transaction to acquire a business that develops and markets products for use in telecommunications and datacenter infrastructure, including ASICs and optical transceivers. This acquisition will enable us to expand our business in our OpComms segment. Please refer to “Note 21. Subsequent Events”.

Termination of Coherent Merger Agreement

On January 18, 2021, Lumentum and Coherent, Inc. (“Coherent”) entered into a merger agreement (the “merger agreement”), under which Lumentum would acquire all outstanding shares of Coherent common stock. As of the date of the merger agreement, the total transaction consideration was approximately $5.7 billion. In March 2021, Coherent terminated the merger agreement and paid Lumentum a termination fee of $217.6 million in accordance with the merger agreement. This gain was offset by $10.1 million of acquisition-related expenses and the net amount is presented as “merger termination fee and related costs, net” in our consolidated statement of operations for the year ended July 3, 2021.

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, 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 include inventory valuation, revenue recognition, income taxes, goodwill and business combinations. For a description of our critical accounting policies, please also refer to “Management’s Discussion and Analysis of Financial Condition and Results of Operations”*, Critical Accounting Policies and Estimates.*

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 July 2, 2022, our cash equivalents consist of money market funds, commercial paper, U.S. Agency securities and U.S. Treasury securities.

Short-Term Investments

We classify our investments in debt securities 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 income (loss). Realized gains and losses are determined based on the specific identification method, and are reflected as 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.

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, accounts receivable, accounts payable and accrued liabilities due to their short-term nature.

Basic and Diluted Net Income per Common Share

Basic income per share is computed by dividing net income 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.

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 $448.1 million in aggregate principal amount of 2024 Notes, $1,050.0 million in aggregate principal amount of 2026 Notes, and $861.0 million in aggregate principal amount of 2028 Notes, all using the treasury stock method as we have the ability and intent to settle the face value of the Notes in cash.

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 recorded 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 demand to the lower of their cost or estimated net realizable value. Our estimates of forecasted demand are based upon our analysis and assumptions including, but not limited to, expected product lifecycles, product development plans and historical usage by product. 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.

Leases

We adopted Topic 842 on June 30, 2019, the first day of fiscal year 2020, using the modified retrospective transition approach.

We determine if an arrangement is a lease at inception for arrangements with an initial term of more than 12 months, and classify it as either a finance or operating lease.

Finance leases are generally those that allow us to substantially utilize or pay for the entire asset over its estimated useful life. Finance leases are recorded in property, plant and equipment, net, and finance lease liabilities within other current and other non-current liabilities on our consolidated balance sheets. We have lease arrangements with lease and non-lease components, and the non-lease components for our finance leases are accounted for separately, based on estimated stand-alone values, and are not included in the initial measurement of our finance lease assets and corresponding liabilities. Finance lease assets are amortized in operating expenses on a straight-line basis over the shorter of the estimated useful lives of the assets or the lease term, with the interest component included in interest expense and recognized using the effective interest method over the lease term.

Operating leases are recorded in operating lease right-of-use assets, net, and operating lease liabilities, current and non-current on our consolidated balance sheets. For operating leases of buildings, we account for non-lease components, such as common area maintenance, as a component of the lease, and include it in the initial measurement of our operating lease assets and corresponding liabilities. Operating lease assets are amortized on a straight-line basis in operating expenses over the lease term.

Our lease liabilities are recognized based on the present value of the remaining fixed lease payments, over the lease term, using a discount rate of similarly secured borrowings available to us. For the purpose of lease liability measurement, we consider only payments that are fixed and determinable at the time of commencement. Any variable payments that depend on an index or rate are expensed as incurred. Our lease terms may include options to extend when it is reasonably certain that we will exercise that option. Our lease assets also include any lease payments made and exclude any lease incentives received prior to commencement. Our lease assets are tested for impairment in the same manner as long-lived assets used in operations. We generally recognize sublease income on a straight-line basis over the sublease term.

Revenue Recognition

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 of goods or rendering of services, 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.

Deferred revenue at July 2, 2022 and July 3, 2021 was nil and $0.6 million, respectively, which was recorded in other current liabilities within the consolidated balance sheets. During fiscal 2022 and 2021, we recognized $0.6 million and $1.7 million of revenue that was included in deferred revenue as of July 3, 2021 and June 27, 2020, respectively.

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 that we record as cost of sales 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 discrete 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. Please refer to “Note 20. Revenue Recognition” for a presentation of changes in contract balances.

Disaggregation of Revenue

We disaggregate revenue by geography and by product. Please refer to "Note 20. Revenue Recognition" 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 10 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, including the renewal option that we are reasonably certain to exercise.

Business Combination

In accordance with the guidance for business combinations, we determine whether a transaction or 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 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 using best information available. These assumptions are inherently uncertain and unpredictable and, as a result, actual results may differ materially from estimates. Certain 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 to 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.

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 goodwill impairment on an annual basis in the fiscal fourth quarter and at any other time when events occur or circumstances indicate that the carrying amount of goodwill may not be recoverable.

We have the option to first assess qualitative factors to determine whether it is necessary to perform the quantitative goodwill impairment test. The qualitative factors we assess include long-term prospects of our performance, share price trends and market capitalization, and Company specific events. 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 may reassess the value of our goodwill in the period such circumstances were identified.

If we determine that, as a result of the qualitative assessment, 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, we perform the quantitative test by estimating the fair value of our reporting units. If the carrying value of a reporting unit exceeds its fair value, we record goodwill impairment loss equal to the excess of the carrying value of the reporting unit’s goodwill over its fair value, not to exceed the carrying amount of goodwill. The fair value of each of our goodwill reporting units is generally estimated using a combination of public company multiples and discounted cash flow methodologies.

Based on the impairment analysis performed in the fourth quarter of each year presented, the fair value of each of our reporting units 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, 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 Company sponsors various employee retirement plans, including defined contribution, defined benefit and other post-retirement plans. Please refer to "Note 17. Employee Retirement Plans" for more information.

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. 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 or 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 or losses arise as a result of differences between actual experience and assumptions or as a result of changes in actuarial assumptions. Prior service cost or credits represent 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 or 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, short-term investments, and trade receivables.

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 by imposing credit rating minimums and limiting purchases of a single issuer, security type, geography and industry, except for Treasury securities. The Company believes no significant concentration risk exists with respect to these investments.

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.

We maintain an allowance for credit losses 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 expense.

During fiscal 2022, 2021, and 2020, a few customers generated more than 10% of total net revenue. Please refer to "Note 19. Operating Segments and Geographic Information" to the consolidated financial statements.

Our accounts receivable was concentrated with two customers as of July 2, 2022, which individually represented 10% and 10% of gross accounts receivable, respectively, and collectively accounted for 20% of the total gross accounts receivable, compared with two customers as of July 3, 2021, which individually represented 17% and 14% of gross accounts receivable, respectively, and collectively accounted for 31% of the total gross accounts receivable.

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

In fiscal 2019, we established the functional currency for our worldwide operations as the U.S. dollar. The change in our functional currency was made as a result of significant changes in economic facts and circumstances, primarily the acquisition of Oclaro, a U.S. dollar-denominated functional currency company, and the predominant use of the U.S. dollar, including when negotiating with customers and major suppliers.

Translation adjustments reported prior to fiscal 2019, 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 the date we established the U.S. dollar as the functional currency became 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 or losses are included in other income (expense), net in the consolidated statements of operations.

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.

Treasury Stock

Treasury stock is carried at cost. When we retire our treasury stock, any excess of the repurchase price paid over par value is allocated to retained earnings.

Restructuring and Related Charges

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. Please refer to “Note 13. Restructuring and Related Charges”.

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 December 2019, the Financial Accounting Standard Board (“FASB”) issued Accounting Standards Update (“ASU”) 2019-12, *Simplifying the Accounting for Income Taxes (Topic 740),* which is intended to simplify various aspects related to accounting for income taxes by removing certain exceptions to the general principles in Topic 740 and which also clarifies and amends existing guidance to improve consistent application. ASU 2019-12 was effective for us at the beginning of fiscal year 2022, including interim periods within that reporting period. We adopted ASU 2019-12 in our first quarter of fiscal year 2022 on a prospective basis with no material impact to our consolidated financial statements.

Accounting Pronouncements Not Yet Effective

In October 2021, the FASB issued ASU 2021-08, *Business Combinations (Topic 805)—Accounting for Contract Assets and Contract Liabilities from Contracts with Customers*. This ASU clarifies that an acquirer of a business should recognize and measure contract assets and contract liabilities in a business combination in accordance with Accounting Standards Codification (“ASC”) Topic 606, *Revenue from Contracts with Customers*. This ASU is expected to improve comparability for both the recognition and measurement of acquired revenue contracts with customers at the date of and after a business combination. The new guidance is effective for fiscal years beginning after December 15, 2022, with early adoption permitted. ASU 2021-08 is effective for us in our first quarter of fiscal year 2024. The impact of the adoption of ASU 2021-08 will depend on the contract assets and liabilities acquired in a business combination after that date, unless early adopted. We plan to early adopt the new standard in the first quarter of fiscal year 2023.

In August 2020, FASB issued ASU 2020-06, *Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity’s Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity’s Own Equity*, which simplifies the accounting for convertible instruments by removing the separation models for (i) convertible debt with a cash conversion feature and (ii) convertible instruments with a beneficial conversion feature. As a result, a convertible debt instrument will be accounted for as a single liability measured at its amortized cost. ASU 2020-06 also requires the application of the if-converted method for calculating diluted earnings per share and the treasury stock method will no longer be available. The new guidance is effective for fiscal years beginning after December 15, 2021, with early adoption permitted no earlier than fiscal years beginning after December 15, 2020. ASU 2020-06 is effective for us in the first quarter of fiscal year 2023. We plan to adopt ASU 2020-06 using the modified retrospective approach as of July 3, 2022. Upon adoption, our 2026 Note and 2028 Notes will be accounted for as a single liability measured at amortized cost, resulting in an increase to "Convertible notes, non-current" by approximately $436 million, to reflect the full principal amount of the Notes outstanding, net of issuance costs; a reduction to additional paid-in capital, net of estimated income tax effects, by approximately $426 million, to remove the equity component separately recorded for the conversion features associated with the Notes; an increase to deferred tax assets, net of approximately $92 million; and a cumulative-effect adjustment of approximately $82 million, net of estimated income tax effects. The adoption of this new guidance is anticipated to reduce interest expense by approximately $75 million during the fiscal year ended July 1, 2023. In addition, the adoption requires the use of the if-converted method for all convertible notes in the diluted net income (loss) per share calculation and the inclusion of the effect of potential share settlement of the convertible notes, if the effect is more dilutive.

Note 3. Earnings Per Share

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

	Years Ended		
	July 2, 2022	July 3, 2021	June 27, 2020
Numerator:			
Net income - basic and diluted	$ 198.9	$ 397.3	$ 135.5
Denominator:			
Weighted average common shares outstanding - basic	71.2	75.4	75.9
Effect of dilutive securities from 2015 Equity Incentive Plan	0.6	0.8	0.8
Shares issuable assuming conversion of the 2024 Notes	2.4	2.2	0.9
Weighted average common shares outstanding - diluted	74.2	78.4	77.6
Net income per share:			
Basic	$ 2.79	$ 5.27	$ 1.79
Diluted	$ 2.68	$ 5.07	$ 1.75

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 Notes, all using the treasury stock method.

We have the ability and intent to settle the face value of our Notes in cash. Therefore, we use the treasury stock method for calculating the dilutive impact of the Notes.

- The 2026 Notes and the 2028 Notes will have no impact on diluted earnings per share until the average price of our common stock exceeds the conversion price of $99.29 and $131.03, respectively.
- The potentially dilutive shares resulting from the 2024 Notes were included in the calculation of diluted income per share for the years ended July 2, 2022, July 3, 2021 and June 27, 2020 since the average price of our common stock exceeded the conversion price of $60.62. Please refer to "Note 11. Debt" for further discussion of convertible notes.

Anti-dilutive potential shares 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. Anti-dilutive shares excluded from the calculation of diluted earnings per share were 0.1 million, 0.5 million, and 0.4 million for the years ended July 2, 2022, July 3, 2021 and June 27, 2020, respectively.

Note 4. Business Combination

On November 4, 2021, Lumentum and NeoPhotonics Corporation (“NeoPhotonics”) announced a merger agreement (the “Merger Agreement”). On August 3, 2022 (the “Closing Date”), we completed the merger with NeoPhotonics, pursuant to which Lumentum acquired all of the outstanding shares of NeoPhotonics stock. The addition of NeoPhotonics expands Lumentum’s opportunity in some of the fastest growing markets for optical components used in cloud and telecom network infrastructure. We expect the integrated company to be better positioned to serve the needs of a global customer base who are increasingly utilizing photonics to accelerate the shift to digital and virtual approaches to work and life, the proliferation of IoT, 5G, and next-generation mobile networks, and the transition to advanced cloud computing architectures.

Under the terms of the Merger Agreement, NeoPhotonics stockholders received $16.00 per share in cash for each NeoPhotonics share they own. As a result, a total cash consideration of $867.3 million was paid to shareholders of NeoPhotonics on the Closing Date.

As contemplated by the Merger Agreement, on January 14, 2022, Lumentum and NeoPhotonics entered into a credit agreement where Lumentum agreed to make term loans (“loans”) to NeoPhotonics in an aggregate principal amount not to exceed $50.0 million to help fund capital expenditures and increased working capital associated with NeoPhotonics’ growth plans. During fiscal 2022, the Company funded a $30.0 million loan request to NeoPhotonics. On August 1, 2022, the Company funded an additional $20.0 million loan request to NeoPhotonics. The interest is payable monthly in arrears on the first day of each month. The loans will mature on January 14, 2024 unless earlier repaid or accelerated. The $50.0 million loans in aggregate were not settled as of the Closing Date and therefore were included as part of the total purchase price in connection with the acquisition.

During the fiscal year ended July 2, 2022, we incurred $8.4 million of transaction costs related to the merger, which are recorded under selling, general and administrative expenses in our consolidated statement of operations.

The acquisition will be accounted for as a business combination using the acquisition method of accounting, which requires, among other things, certain assets acquired and liabilities assumed to be recognized at their fair values as of the acquisition date. We are currently evaluating the purchase accounting for the acquisition.

Note 5. Sale of Assets and Dispositions

We continually evaluate our existing portfolio of businesses to maximize long-term stockholder value. We consider assets and liabilities as held-for-sale when management approves and commits to a plan to actively market assets or a group of assets for sale. Assets held-for-sale are recorded initially at the lower of its carrying value or its estimated fair value, less estimated costs to sell. Upon designation as an asset held-for-sale, we discontinue recording depreciation expense on such asset.

Sale of Land and Building

In fiscal 2021, we made a decision to cease manufacturing of certain products at a manufacturing facility that we owned in San Jose, California. During the fourth quarter of fiscal 2021, we shut down the manufacturing site and sold the related land and building for $23.0 million and recognized a gain of $8.3 million, which was recorded as an offset to selling, general and administrative expenses in our consolidated statement of operations as of July 3, 2021. As part of this transition, in fiscal 2022, we sold equipment that was no longer needed and recognized a gain of $5.9 million, which was recorded as an offset to cost of sales in our consolidated statement of operations for the year-ended July 2, 2022.

Sale of Lithium Niobate modulators

Following our acquisition of Oclaro, we announced our plan to discontinue development and manufacturing of Lithium Niobate modulators and wind down these operations in our San Donato, Italy site. In fiscal 2020, we sold our assets associated with certain Lithium Niobate product lines manufactured by our San Donato site for $17.0 million to Advanced Fiber Resources (Zhuhai) Ltd. (“AFR”) and recognized a gain of $13.8 million, which was recorded in other income (expense), net in the consolidated statements of operations.

In fiscal 2020, we also sold certain assets that did not have any carrying value, including licenses to manufacture specific Lithium Niobate products and recognized a gain of $0.7 million, which was recorded in our other income (expense), net in the consolidated statements of operations.

With the close of these transactions, our telecom transmission product strategy is now focused on Indium Phosphide photonic integrated circuits, as well as components and modules that incorporate these Indium Phosphide photonic integrated circuits.

Datacom transceiver modules

In fiscal 2019, we announced our plan to discontinue the development of future Datacom transceiver modules. As a result of this strategic change, we sold $3.0 million of the related Datacom assets held-for-sale and recorded an impairment charge of $1.6 million related to these assets held-for-sale in fiscal 2020. In fiscal 2020, we recorded $4.3 million of total impairment charges related to our long-lived assets that were not deemed to be useful.

Other assets held-for-sale

In fiscal 2021, we recorded $0.4 million of land, building, and improvements as assets held-for-sale for one of our manufacturing sites in Slovenia. In fiscal 2022, we sold these assets at their book value.

Note 6. 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
July 2, 2022:				
Cash	$ 235.9	$ —	$ —	$ 235.9
Cash equivalents:				
Commercial paper	23.6	—	—	23.6
Money market funds	1,000.2	—	—	1,000.2
U.S. Agency securities	8.0	—	—	8.0
U.S. Treasury securities	22.5	—	—	22.5
Total cash and cash equivalents	$ 1,290.2	$ —	$ —	$ 1,290.2
Short-term investments:				
Certificates of deposit	$ 28.3	$ —	$ —	$ 28.3
Commercial paper	107.4	—	(0.4)	107.0
Corporate debt securities	539.9	—	(7.4)	532.5
Municipal bonds	1.0	—	—	1.0
U.S. Agency securities	67.1	—	(1.4)	65.7
U.S. Treasury securities	528.2	0.3	(4.2)	524.3
Total short-term investments	$ 1,271.9	$ 0.3	$ (13.4)	$ 1,258.8
July 3, 2021:				
Cash	$ 128.3	$ —	$ —	$ 128.3
Cash equivalents:				
Commercial paper	7.5	—	—	7.5
Corporate debt securities	7.0	—	—	7.0
Money market funds	631.5	—	—	631.5
Total cash and cash equivalents	$ 774.3	$ —	$ —	$ 774.3
Short-term investments:				
Certificates of deposit	$ 28.5	$ —	$ —	$ 28.5
Commercial paper	136.7	—	—	136.7
Corporate debt securities	626.0	0.3	(0.4)	625.9
Municipal bonds	1.0	—	—	1.0
U.S. Agency securities	29.3	—	—	29.3
U.S. Treasury securities	350.3	—	—	350.3
Total short-term investments	$ 1,171.8	$ 0.3	$ (0.4)	$ 1,171.7

We 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 whether it is more likely than not that we will be required to sell the security before recovery of its cost basis. We have not recorded our unrealized losses on our short-term investments into income because we do not intend to sell nor is it more likely than not that we will be required to sell these investments prior to recovery of their amortized cost basis.

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 2022, 2021 and 2020, 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.

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

	Years Ended		
	July 2, 2022	July 3, 2021	June 27, 2020
Foreign exchange gains (losses), net	$ 6.1	$ (4.4)	$ (1.4)
Interest and investment income	6.1	5.7	15.8
Other income (losses), net	(0.2)	1.5	17.0
Total other income (expense), net	$ 12.0	$ 2.8	$ 31.4

Other income (expense), net in fiscal 2020 includes a gain on the sale of Lithium Niobate modulators business of $13.8 million and a gain on the sale of certain assets used to manufacture specific Lithium Niobate products of $0.7 million. Please refer to “Note 5. Sale of Assets and Dispositions.”

Included in the interest and investment income are $3.9 million, $4.1 million and $4.3 million of interest receivable as of July 2, 2022, July 3, 2021 and June 27, 2020, respectively, recorded in prepayments and other current assets within the consolidated balance sheets. We did not recognize an allowance for credit losses against the interest receivable in any of the periods presented as there were no such losses.

As of July 2, 2022, the Company had $57.4 million of corporate debt securities that have been in a continuous unrealized loss position for more than 12 months with an unrealized loss position of $0.9 million. As of July 3, 2021, the Company did not have any cash equivalents and short-term investments that have been in a continuous unrealized gain or loss position for more than 12 months as of the periods presented.

The following table summarizes unrealized losses on our cash equivalents and short-term investments by category that have been in a continuous unrealized loss position for less than 12 months as of the periods presented *(in millions)*:

	Fair Value	Unrealized Losses
July 2, 2022		
U.S. Agency securities	$ 73.7	$ (1.4)
Certificates of deposit	16.2	—
Commercial paper	130.7	(0.4)
Corporate debt securities	473.2	(6.5)
Municipal bonds	1.0	—
U.S. government bonds	366.0	(4.2)
Total	$ 1,060.8	$ (12.5)
July 3, 2021		
U.S. Agency securities	$ 28.3	$ —
Certificates of deposit	6.0	
Commercial paper	43.0	—
Corporate debt securities	432.3	(0.4)
Municipal bonds	1.0	—
U.S. government bonds	106.9	—
Total	$ 617.5	$ (0.4)

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

	July 2, 2022		July 3, 2021	
	Amortized Cost	Fair Value	Amortized Cost	Fair Value
Due within 1 year	$ 1,010.9	$ 1,002.2	$ 587.0	$ 587.1
Due between 1 year to 5 years	261.0	256.6	584.8	584.6
	$ 1,271.9	$ 1,258.8	$ 1,171.8	$ 1,171.7

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 7. 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 and U.S. Treasury securities, 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.

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. Please refer to "Note 17. Employee Retirement Plans."

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

	Level 1	Level 2	Level 3	Total
July 2, 2022 [1]				
Assets:				
Cash equivalents:				
Commercial paper	$ —	$ 23.6	$ —	$ 23.6
Money market funds	1,000.2	—	—	1,000.2
U.S. Agency securities	—	8.0	—	8.0
U.S. Treasury securities	22.5	—	—	22.5
Short-term investments:				
Certificates of deposit	—	28.3	—	28.3
Commercial paper	—	107.0	—	107.0
Corporate debt securities	—	532.5	—	532.5
Municipal bonds	—	1.0	—	1.0
U.S. Agency securities	—	65.7	—	65.7
U.S. Treasury securities	524.3	—	—	524.3
Total assets	$ 1,547.0	$ 766.1	$ —	$ 2,313.1

[1] Excludes $235.9 million in cash held in our bank accounts as of July 2, 2022.

	Level 1	Level 2	Level 3	Total
July 3, 2021: [1]				
Assets:				
Cash equivalents:				
Commercial paper	$ —	$ 7.5	$ —	$ 7.5
Corporate debt securities	—	7.0	—	7.0
Money market funds	631.5	—	—	631.5
Short-term investments:				
Certificates of deposit	—	28.5	—	28.5
Commercial paper	—	136.7	—	136.7
Corporate debt securities	—	625.9	—	625.9
Municipal bonds	—	1.0	—	1.0
U.S. Agency securities	—	29.3	—	29.3
U.S. Treasury securities	350.3	—	—	350.3
Total assets	$ 981.8	$ 835.9	$ —	$ 1,817.7

[1] Excludes $128.3 million in cash held in our bank accounts as of July 3, 2021.

Financial Instruments Not Recorded at Fair Value on a Recurring Basis

We report our financial instruments at fair value with the exception of the 2028 Notes, 2026 Notes, and the 2024 Notes ("Note 11. Debt"). The estimated fair value of the Notes was determined based on the trading price of the notes as of the last day of trading for the period. We consider the fair value of the Notes to be a Level 2 measurement as they are not actively traded in markets.

The carrying amounts and estimated fair values of the 2028 Notes, 2026 Notes, and 2024 Notes are as follows for the periods presented (*in millions*):

	July 2, 2022		July 3, 2021	
	Carrying Amount	Estimated Fair Value	Carrying Amount	Estimated Fair Value
2024 Notes	$ 409.9	$ 614.2	$ 390.7	$ 669.3
2026 Notes	831.4	1,065.0	789.8	1,146.1
2028 Notes	634.7	735.7	N/A	N/A
	$ 1,876.0	$ 2,414.9	$ 1,180.5	$ 1,815.4

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.

Management utilizes various valuation methods, including an income approach, a market approach and a cost approach, to estimate the fair value of intangibles and other long-lived assets. During the annual impairment testing performed in the fourth quarter of fiscal 2022, we concluded that our intangible and other long-lived assets were not impaired. We review our intangible and other long-lived assets for impairment at least annually in the fourth quarter of each fiscal year, absent any interim indicators of impairment.

Note 8. Balance Sheet Details

Allowance for current expected credit losses

We did not have any allowance for credit losses other than our allowance for uncollectible accounts receivable. As of July 2, 2022 and July 3, 2021, the allowance for credit losses on our trade receivables was less than $0.1 million and $0.4 million, respectively.

Inventories

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

	July 2, 2022	July 3, 2021
Raw materials and purchased parts	$ 98.9	$ 64.4
Work in process	92.2	79.0
Finished goods	59.0	53.0
Inventories	$ 250.1	$ 196.4

Operating lease right-of-use assets, net

Operating lease right-of-use assets, net were as follows (*in millions*):

	July 2, 2022	July 3, 2021
Operating lease right-of-use assets	$ 102.1	$ 87.3
Less: accumulated amortization	(28.5)	(19.9)
Operating lease right-of-use assets, net	$ 73.6	$ 67.4

Property, plant and equipment, net

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

	July 2, 2022	July 3, 2021
Land	$ 49.7	$ 38.2
Buildings and improvement	105.3	92.7
Machinery and equipment	548.8	498.3
Computer equipment and software	31.3	28.6
Furniture and fixtures	8.9	8.8
Leasehold improvements	35.7	33.9
Finance lease right-of-use assets	—	28.1
Construction in progress	47.0	43.4
	826.7	772.0
Less: Accumulated depreciation	(466.2)	(410.9)
Property, plant and equipment, net	$ 360.5	$ 361.1

During fiscal 2022, we purchased land and buildings in Thailand and Slovenia with a fair value of $15.1 million in order to expand our manufacturing capacity. Please refer to Note 19 Operating Segments and Geographic Information for property, plant and equipment by geographic areas based on the physical location of the assets.

During fiscal 2021, we sold land and building located in San Jose, California for $23.0 million and recognized a gain of $8.3 million, which was recorded as an offset to selling, general and administrative expenses in our consolidated statement of operations for the year ended July 3, 2021. As part of this transition, in fiscal 2022, we sold equipment that was no longer needed and recognized a gain of $5.9 million, which we recorded as an offset to cost of sales in our consolidated statement of operations for the year ended July 2, 2022.

As of July 2, 2022, finance lease assets are fully amortized and there are no outstanding finance lease liabilities.

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

During fiscal 2022, 2021 and 2020, we recorded depreciation expense of $81.6 million, $91.4 million, and $113.3 million, respectively.

Other current liabilities

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

	July 2, 2022	July 3, 2021
Restructuring accrual and related charges (1)	$ —	$ 5.7
Warranty accrual (2)	10.0	5.0
Deferred revenue and customer deposits	—	0.6
Income tax payable (3)	26.0	43.5
Other current liabilities	3.4	3.0
Other current liabilities	$ 39.4	$ 57.8

(1) Please refer to “Note 13. Restructuring and Related Charges.”

(2) Please refer to “Note 18. Commitments and Contingencies.”

(3) Please refer to “Note 15. Income Taxes.”

Other non-current liabilities

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

	July 2, 2022	July 3, 2021
Asset retirement obligation	$ 4.6	$ 4.7
Pension and related accrual [(1)]	7.7	10.8
Unrecognized tax benefit	30.5	23.0
Other non-current liabilities	0.1	2.4
Other non-current liabilities	$ 42.9	$ 40.9

[(1)] We have defined benefit pension plans in Japan, Switzerland, and Thailand. As of July 2, 2022, the projected benefit obligations, net of plan assets, in Japan, Switzerland, and Thailand were $2.6 million, $1.7 million, and $3.4 million, respectively. As of July 3, 2021, the projected benefit obligations, net of plan assets, in Japan, Switzerland and Thailand were $2.9 million, $4.8 million and $3.1 million, respectively.

Note 9. 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. These operating leases are mainly for administrative offices, research-and-development and manufacturing facilities, as well as sales offices in various countries around the world. Certain leases require us to pay property taxes, insurance and routine maintenance, and include escalation clauses. Many leases include one or more options to renew. We do not assume renewals in our determination of the lease term unless the renewals are deemed to be reasonably assured at lease commencement.

As of July 2, 2022, we sublease a portion of our offices in the United Kingdom, the United States and Canada. These subleases will expire at various dates through fiscal year 2028. We anticipate receiving approximately $2.4 million in sublease income over the next year.

The components of lease costs, lease term, and discount rate are as follows (*in millions, except for weighted average data*):

	July 2, 2022	July 3, 2021	June 27, 2020
Finance lease cost:			
Amortization of right-of-use assets	$ —	$ 0.5	$ 16.3
Interest	—	—	0.1
Operating lease cost	13.0	14.1	15.5
Short-term and variable lease cost	2.0	4.3	4.4
Sublease income	(3.0)	(2.8)	(2.6)
Total lease cost	$ 12.0	$ 16.1	$ 33.7
Weighted average remaining lease term (*in years*):			
Operating leases	6.9	7.5	8.6
Finance leases	—	—	1.0
Weighted average discount rate (*in percentages*):			
Operating leases	3.0 %	3.5 %	3.5 %
Finance leases	— %	— %	4.4 %

As of July 2, 2022, finance lease assets are fully amortized and there are no outstanding finance lease liabilities.

As of July 2, 2022, maturities of our operating lease liabilities, which do not include short-term leases and variable lease payments, were as follows (*in millions*):

Fiscal Years	Operating Leases (1)
2023	$ 12.9
2024	12.5
2025	9.3
2026	7.9
2027	6.3
Thereafter	17.6
Total minimum lease payments	$ 66.5
Less: amount representing interest	(6.5)
Present value of total lease liabilities	$ 60.0

(1) Non-cancellable sublease proceeds for fiscal 2023 of $2.4 million are not included in the table above.

Note 10. Goodwill and Other Intangible Assets

Goodwill

The following table presents our goodwill balance by the reportable segments as of July 2, 2022 and July 3, 2021 (*in millions)*:

	Optical Communications	Commercial Lasers	Total
Balance as of July 2, 2022 and July 3, 2021	$ 363.5	$ 5.4	$ 368.9

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 each of our reporting units substantially exceeded the carrying value; as such, our annual qualitative assessment did not indicate that a more detailed quantitative analysis was necessary.

Other Intangibles

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.

In-process research and development (“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.

The following tables present details of our other intangibles as of the periods presented (*in millions, except for weighted average remaining amortization period*):

July 2, 2022	Gross Carrying Amounts	Accumulated Amortization	Net Carrying Amounts	Weighted average remaining amortization period (years)
Acquired developed technologies	$ 390.3	$ (303.6)	$ 86.7	2.5
Customer relationships	145.0	(76.0)	69.0	4.4
Total intangible assets	$ 535.3	$ (379.6)	$ 155.7	

July 3, 2021	Gross Carrying Amounts	Accumulated Amortization	Net Carrying Amounts	Weighted average remaining amortization period (years)
Acquired developed technologies	$ 390.3	$ (238.6)	$ 151.7	3.0
Customer relationships	145.0	(55.5)	89.5	5.4
Order backlog	22.0	(22.0)	—	—
Other intangibles	2.7	(2.7)	—	—
Total intangible assets	$ 560.0	$ (318.8)	$ 241.2	

During the year ended July 3, 2021, we purchased intellectual property from a third party for total consideration of $10.0 million. These intangible assets have an estimated useful life of 5 years.

The tables above exclude fully amortized intangibles that were written off against accumulated amortization of $24.7 million and $5.5 million during the years ended July 2, 2022 and July 3, 2021, respectively.

During fiscal 2022, 2021 and 2020, we recorded $85.5 million, $85.7 million, and $78.6 million, respectively, of amortization related to intangibles assets.

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

	Years ended		
	July 2, 2022	July 3, 2021	June 27, 2020
Cost of sales	$ 62.9	$ 61.7	$ 53.8
Selling, general and administrative	22.6	24.0	24.8
Total amortization of intangibles	$ 85.5	$ 85.7	$ 78.6

Based on the carrying amount of our acquired developed technologies and other intangibles as of July 2, 2022, and assuming no future impairment of the underlying assets, the estimated future amortization is as follows *(in millions):*

Fiscal Years	
2023	$ 61.9
2024	40.5
2025	27.7
2026	18.1
2027	7.5
Total	$ 155.7

Note 11. Debt

Convertible Notes

2028 Notes

In March 2022, we issued $861.0 million in aggregate principal amount of 2028 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 2028 Notes are governed by an indenture between the Company and U.S. Bank Trust Company National Association (as successor in interest to U.S. Bank National Association), as a trustee (the "2028 Indenture"). The 2028 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 net proceeds from the sale of the 2028 Notes was $854.8 million, after deducting $6.2 million in issuance costs. In addition, we incurred $0.7 million in professional fees in connection with this transaction. Concurrent with the issuance of the 2028 Notes, we used $200.0 million of the net proceeds to repurchase our common stock in privately negotiated transactions. We intend to use the remaining net proceeds for general corporate purposes, which may include capital expenditures and working capital.

The 2028 Notes bear interest at a rate of 0.50% per year, payable semi-annually in arrears on June 15 and December 15 of each year, beginning on June 15, 2022. The 2028 Notes will mature on June 15, 2028, unless earlier redeemed, repurchased by us, or converted pursuant to their terms.

The initial conversion rate is 7.6319 shares of common stock per $1,000 principal amount of the 2028 Notes (which is equivalent to an initial conversion price of approximately $131.03 per share). The conversion rate is subject to adjustment upon the occurrence of certain events specified in the 2028 Indenture, but will not be adjusted for accrued and unpaid interest. In addition, upon the occurrence of a make-whole fundamental change or our issuance of a notice of redemption, we will, in certain circumstances, increase the conversion rate by a number of additional shares for a holder that elects to convert the 2028 Notes in connection with such make-whole fundamental change or notice of redemption.

Prior to the close of business on the business day immediately preceding March 15, 2028, holders of the 2028 Notes may convert their 2028 Notes only under the following circumstances:

- during any fiscal quarter commencing after July 2, 2022 (and only during such fiscal quarter), if the last reported sale price of the common stock for at least 20 trading days (whether or not consecutive) during the 30 consecutive trading days ending on the last trading day of the immediately preceding fiscal quarter is greater than or equal to 130% if the applicable conversion price, or $170.34 on each applicable trading day;
- during the five consecutive business day period after any five consecutive trading day period (the "2028 measurement period") in which the trading price per $1,000 principal amount of the 2028 Notes for each trading day of the 2028 measurement period was less than 98% of the product of the last reported sale price of the Company's common stock and the applicable conversion rate on each such trading day;
- if we call any or all of the 2028 Notes for redemption, at any time prior to the close of business on the second business day immediately preceding the redemption date; or
- upon the occurrence of specified corporate events.

On or after March 15, 2028 until the close of business on the second scheduled trading day immediately preceding the maturity date, holders may convert their 2028 Notes at any time. Upon conversion, we may satisfy our conversion obligation in cash, shares of common stock or a combination of cash and shares of common stock, at our election.

We may redeem for cash all or any of the 2028 Notes, at our option (subject to the partial redemption limitation set forth in the 2028 Indenture), on or after June 20, 2025, if the last reported sale price of its common stock has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading-day period (including the last trading day of such period) ending on, and including, the trading day immediately preceding the date on which we provide notice of redemption at a redemption price equal to 100% of the principal amount of the 2028 Notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date. No sinking fund is provided for the 2028 Notes. If we elect to redeem fewer than all of the outstanding 2028 Notes, at least $100.0 million aggregate principal amount of the 2028 Notes must be outstanding and not subject to redemption as of the redemption notice date. Upon the occurrence of a fundamental change (as defined in the 2028 Indenture), holders may require us to repurchase all or a portion of their 2028 Notes for cash at a price equal to 100% of the principal amount of the 2028 Notes to be repurchased, plus any accrued and unpaid interest to, but excluding, the fundamental change repurchase date.

We bifurcated the principal amount of the 2028 Notes into liability and equity components. The liability component of the 2028 Notes was valued at $629.8 million based on the contractual cash flow discounted at an appropriate comparable market on non-convertible debt borrowing rate at the date of issuance, which was 5.7%, with the equity component representing the residual amount of the proceeds of $231.2 million, which was recorded as a debt discount. The issuance and other related costs of $6.9 million were allocated pro rata based on the relative carrying amounts of the liability and equity components.

The debt discount and debt issuance costs attributable to the liability component will be amortized to interest expense using an effective interest rate of 5.7% over the expected life of the 2028 Notes. Debt issuance costs attributable to the equity component are netted against the equity component in stockholders' equity, and the equity component is not remeasured as long as it continues to meet the conditions for equity classification.

2026 Notes

In December 2019, we issued $1,050.0 million in aggregate principal amount of the 2026 Notes in a private placement to qualified institutional buyers pursuant to Rule 144A under the Securities Act. The 2026 Notes are governed by an indenture between the Company and U.S. Bank Trust Company, National Association (as successor in interest to U.S. Bank National Association), as trustee (the "2026 Indenture"). We used approximately $196.0 million of the net proceeds of the offering to repay in full all amounts outstanding under our term loan facility, and a portion of the net proceeds of the offering to purchase approximately $200.0 million of our common stock concurrently with the pricing of the offering in privately negotiated transactions. The 2026 Notes are unsecured and do not contain any financial covenants, restrictions on dividends, the incurrence of senior debt or other indebtedness, or the issuance or repurchase of securities by us.

The 2026 Notes bear interest at a rate of 0.50% per year, payable semi-annually in arrears on June 15 and December 15 of each year, beginning on June 15, 2020. The 2026 Notes will mature on December 15, 2026, unless earlier redeemed, repurchased by us, or converted pursuant to their terms.

The initial conversion rate is 10.0711 shares of common stock per $1,000 principal amount of the 2026 Notes (which is equivalent to an initial conversion price of approximately $99.29 per share). The conversion rate is subject to adjustment upon the occurrence of certain events specified in the 2026 Indenture, but will not be adjusted for accrued and unpaid interest. In addition, upon the occurrence of a make-whole fundamental change or our issuance of a notice of redemption, we will, in certain circumstances, increase the conversion rate by a number of additional shares set forth in the 2026 Indenture or a holder that elects to convert the 2026 Notes in connection with such make-whole fundamental change or notice of redemption.

Prior to the close of business on the business day immediately preceding September 15, 2026, holders of the 2026 Notes may convert their 2026 Notes only under the following circumstances:

- during any fiscal quarter (and only during such fiscal quarter), if the last reported sale price of the common stock for at least 20 trading days (whether or not consecutive) during a 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 conversion price of the 2026 Notes, or $129.08 on each applicable trading day;
- during the five business day period after any five consecutive trading day period (the "2026 measurement period") in which the trading price per $1,000 principal amount of the 2026 Notes for each trading day of the 2026 measurement period was less than 98% of the product of the last reported sale price of our common stock and the conversion rate for the 2026 Notes on each such trading day;
- if we call any or all of the 2026 Notes for redemption, at any time prior to the close of business on the second business day immediately preceding the relevant redemption date; or

- upon the occurrence of specified corporate events.

On or after September 15, 2026 until the close of business on the second scheduled trading day immediately preceding the maturity date, holders may convert the 2026 Notes at any time. Upon conversion, we may satisfy our conversion obligation in cash, shares of common stock or a combination of cash and shares of common stock, at our election.

We may redeem for cash, for all or any portion of the 2026 Notes, at our option, on or after December 20, 2023, if the last reported sale price of its common stock has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading-day period (including the last trading day of such period) ending on, and including, the trading day immediately preceding the date on which we provide a notice of redemption at a redemption price equal to 100% of the principal amount of the 2026 Notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date. No sinking fund is provided for the 2026 Notes. Upon the occurrence of a fundamental change (as defined in the 2026 Indenture), holders may require us to repurchase all or a portion of the 2026 Notes for cash at a price equal to 100% of the principal amount of the 2026 Notes to be repurchased, plus any accrued and unpaid interest to, but excluding, the fundamental change repurchase date.

In accordance with accounting for debt with conversions and other options, we bifurcated the principal amount of the 2026 Notes into liability and equity components. The liability component of the 2026 Notes was valued at $734.8 million based on the contractual cash flows discounted at an appropriate comparable market non-convertible debt borrowing rate at the date of issuance of 5.8% with the equity component representing the residual amount of the proceeds of $315.2 million, which was recorded as a debt discount.

We incurred approximately $7.8 million in transaction costs in connection with the issuance of the 2026 Notes and these costs were allocated pro rata based on the relative carrying amounts of the liability and equity components. The debt discount and debt issuance costs attributable to the liability component will be amortized to interest expense using an effective interest rate of 5.8% over the expected life of the 2026 Notes. Debt issuance costs attributable to the equity component are netted with the equity component in stockholders' equity, and the equity component is not remeasured as long as it continues to meet the conditions for equity classification.

2024 Notes

In March 2017, we issued $450.0 million in aggregate principal amount of the 2024 Notes in a private placement to qualified institutional buyers pursuant to Rule 144A under the Securities Act. The 2024 Notes are governed by an indenture between the Company, and U.S. Bank Trust Company National Association (as successor in interest to U.S. Bank National Association), as trustee (the "2024 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, each holder of the 2024 Notes may convert their 2024 Notes only under the following circumstances:

- 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;
- during the five consecutive business day period after any five consecutive trading day period (the "2024 measurement period") in which the trading price per $1,000 principal amount of 2024 Notes for each trading day of such 2024 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;
- 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 2024 Notes at any time. In addition, upon the occurrence of a make-whole fundamental change (as defined in the 2024 Indenture), we will, in certain circumstances, increase the conversion rate by a number of additional shares set forth in the 2024 Indenture 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.

During the year ended July 2, 2022, we received conversion requests of $1.8 million principal amount of the 2024 Notes, which we settled with a combination of $1.8 million of cash and approximately 9 thousand shares of common stock in accordance with the 2024 Indenture.

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.

During fiscal 2017, we satisfied the TMA settlement condition. As such, the value of the conversion option is no longer 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 2024 Notes. The debt component will accrete up to the principal amount over the expected term of the debt.

Convertible Notes

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

Liability component:	**July 2, 2022**			**July 3, 2021**	
	2024 Notes [1]	**2026 Notes [2]**	**2028 Notes [3]**	**2024 Notes [1]**	**2026 Notes [2]**
Principal	$ 448.1	$ 1,050.0	$ 861.0	$ 450.0	$ 1,050.0
Unamortized debt discount and debt issuance costs	(38.2)	(218.6)	(226.3)	(59.3)	(260.2)
Net carrying amount of the liability component	$ 409.9	$ 831.4	$ 634.7	$ 390.7	$ 789.8

[1] Since the closing price of our stock exceeded $78.80 (or 130% of the conversion price of $60.62) for 20 of the last 30 trading days of the fourth quarters of fiscal 2021 and 2022, the 2024 Notes have become convertible at the option of the holders. Therefore, the debt component of our 2024 Notes as of July 3, 2021 and July 2, 2022 has been classified as current liabilities in our consolidated balance sheets. Principal amount of $448.1 million reflects $1.8 million converted during the fiscal year 2022 and less than $0.1 million converted previously.

[2] If the closing price of our stock exceeds $129.08 (or 130% of the conversion price of $99.29 for 20 of the last 30 trading days of any future quarter, our 2026 Notes would also become convertible at the option of the holders and the debt component would be reclassified to current liabilities in our consolidated balance sheets.

[3] During any fiscal quarter commencing after July 2, 2022, if the closing price of our stock exceeds $170.34 (or 130% of the conversion price of $131.03) for 20 of the last 30 trading days of such quarter, our 2028 Notes would become convertible at the option of the holders and the debt component would be reclassified to current liabilities in our condensed consolidated balance sheet.

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

	July 2, 2022	July 3, 2021	June 27, 2020
Contractual interest expense	$ 7.8	$ 6.5	$ 3.9
Amortization of the debt discount and debt issuance costs	72.4	60.2	39.1
Total interest expense	$ 80.2	$ 66.7	$ 43.0

The future interest and principal payments related to our Notes are as follows as of July 2, 2022 *(in millions)*:

Fiscal Years	2024 Notes	2026 Notes	2028 Notes	Total
2023	$ 1.1	$ 5.3	$ 4.3	$ 10.7
2024	449.4	5.3	4.3	459.0
2025	—	5.3	4.3	9.6
2026	—	5.3	4.3	9.6
2027	—	1,052.4	869.6	1,922.0
Total Notes payments	$ 450.5	$ 1,073.6	$ 886.8	$ 2,410.9

The principal balances of our Notes are reflected in the payment periods in the table above based on their respective contractual maturities.

Term Loan Facility

In December 2018, concurrent with the closing of the Oclaro merger, we entered into a credit agreement providing for a term loan facility (the "Term Loan Facility") in an aggregate principal amount of $500.0 million. and we drew in full the term loans available under the Term Loan Facility on the closing date of the Oclaro merger. In fiscal 2020, we repaid, in full, all amounts outstanding under our Term Loan Facility. During the year ended June 27, 2020, we incurred $18.1 million of interest expense on this Term Loan Facility, which includes an $8.0 million loss on the early extinguishment of debt.

Note 12. Accumulated Other Comprehensive Income

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

The changes in accumulated other comprehensive income, net of tax were as follows for the periods as presented (*in millions*):

	Foreign currency translation adjustments, net of tax [(1)]	Defined benefit obligations, net of tax [(2)]	Unrealized gain (loss) on available-for-sale securities, net of tax [(3)]	Total
Ending balance as of June 29, 2019	$ 9.7	$ (3.5)	$ 0.9	$ 7.1
Other comprehensive income (loss)	—	(0.7)	1.5	0.8
Ending balance as of June 27, 2020	9.7	(4.2)	2.4	7.9
Other comprehensive income (loss)	—	2.8	(2.5)	0.3
Ending balance as of July 3, 2021	9.7	(1.4)	(0.1)	8.2
Other comprehensive income (loss)	—	2.4	(10.2)	(7.8)
Ending balance as of July 2, 2022	$ 9.7	$ 1.0	$ (10.3)	$ 0.4

[(1)] In fiscal 2019, as a result of significant changes in economic facts and circumstances, primarily due to the acquisition of Oclaro, we established the functional currency for our worldwide operations as the U.S. dollar. Translation adjustments reported prior to fiscal 2019, remain as a component of accumulated other comprehensive income in our consolidated balance sheets, until all or a part of the investment in the subsidiaries is sold or liquidated.

(2) We evaluate the assumptions over the fair value of our defined benefit obligations annually and make changes as necessary. During each of fiscal 2022, 2021 and 2020, our income (loss) on defined benefit obligations is presented net of tax of $1.5 million, nil, and $0.2 million, respectively.

(3) In fiscal 2022, 2021 and 2020, our unrealized gain (loss) on available-for-sale securities is presented net of tax of $2.8 million, $(0.5) million and $0.3 million, respectively.

Note 13. 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.

The following table summarizes the activity of restructuring and related charges during the periods presented (*in millions*):

	Years Ended		
	July 2, 2022	July 3, 2021	June 27, 2020
Balance as of beginning of period	$ 5.7	$ 5.2	$ 14.6
Charges (benefits)	(1.1)	7.7	8.0
Payments	(4.6)	(7.2)	(17.4)
Balance as of end of period	$ —	$ 5.7	$ 5.2

During fiscal 2022, we recorded a net reversal to our restructuring and related charges of $1.1 million in our consolidated statements of operations, which was primarily attributable to lower than anticipated employee severance charges due to retaining and re-assigning certain employees.

During fiscal 2021, we recorded restructuring and related charges of $7.7 million in our consolidated statements of operations. The charges were mainly attributable to severance charges associated with the decision to cease manufacturing of certain products in San Jose, California, as well as other cost reduction measures taken across the Company impacting all regions.

During fiscal 2020, we recorded $8.0 million in restructuring and related charges in our consolidated statements of operations. The charges were primarily attributable to severance charges associated with the decision to move certain manufacturing from San Jose, California to our facility in Thailand and other third-party vendors.

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

Note 14. Impairment and Other Charges

Impairment Charges Associated with Exist of Product Lines

The following table summarizes the activity of impairment charges during the periods presented (*in millions*):

	Years Ended		
	July 2, 2022	July 3, 2021	June 27, 2020
Impairment charges	$ —	$ —	$ 4.3

In fiscal 2019, we announced our plan to discontinue the development and manufacturing of Datacom transceiver modules which impacted the California and China-based Datacom module teams. As a result of these actions, we recorded impairment charges of $4.3 million in fiscal 2020 related to our long-lived assets that were not deemed to be useful.

In fiscal 2020, we also recorded inventory and fixed asset write-down charges of $7.0 million, related to the decision to exit the Datacom module and Lithium Niobate product lines in our cost of goods sold in our consolidated statements of operations. Please refer to “Note 5. Sale of Assets and Dispositions” for details on the exit from these product lines.

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.

Other Losses on Property, Plant and Equipment

We record fixed assets losses, mainly attributable to the retirement and disposal of fixed assets, net of proceeds received, and not associated with the exit from product lines. The impact of such losses on our results of operations by function during the periods presented was as follows *(in millions)*:

	Years Ended		
	July 2, 2022	July 3, 2021	June 27, 2020
Cost of sales [1]	$ 2.5	$ 9.3	$ 16.1
Research and development	0.4	0.3	0.8
Selling, general and administrative [2]	0.1	(7.2)	0.6
	$ 3.0	$ 2.4	$ 17.5

[1] In fiscal 2021, we made a decision to cease manufacturing of certain products at a manufacturing facility that we owned in San Jose, California. As part of this transition, in fiscal 2022, we sold equipment that was no longer needed and recognized a gain of $5.9 million, which was recorded as an offset to cost of sales in our consolidated statement of operations for the year ended July 2, 2022.

[2] In fiscal year 2021, we made a decision to cease manufacturing of certain products at a manufacturing facility that we owned in San Jose, California. During the fourth quarter of fiscal 2021, we shut down the manufacturing site and sold the related land and building for $23.0 million and recognized a gain of $8.3 million, which was recorded as an offset to operating expenses.

Note 15. Income Taxes

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

	Years Ended		
	July 2, 2022	July 3, 2021	June 27, 2020
Domestic	$ 77.5	$ 314.9	$ (33.1)
Foreign	157.6	148.2	207.4
Income before income taxes	$ 235.1	$ 463.1	$ 174.3

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

	Years Ended		
	July 2, 2022	July 3, 2021	June 27, 2020
Federal:			
Current	$ 13.7	$ 30.5	$ 2.9
Deferred	1.0	9.2	19.3
	14.7	39.7	22.2
State:			
Current	(0.1)	1.7	0.1
Deferred	0.3	(0.3)	(0.4)
	0.2	1.4	(0.3)
Foreign:			
Current	46.8	36.5	23.4
Deferred	(25.5)	(11.8)	(6.5)
	21.3	24.7	16.9
Total income tax provision	$ 36.2	$ 65.8	$ 38.8

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		
	July 2, 2022	July 3, 2021	June 27, 2020
Income tax provision computed at federal statutory rate	$ 49.4	$ 97.3	$ 36.6
Foreign rate differential	(50.4)	(50.4)	(24.6)
Change in valuation allowance	10.5	45.4	13.4
Tax credits	(23.1)	(31.8)	(10.2)
Stock-based compensation	9.6	5.6	4.8
Subpart F and GILTI	28.2	42.1	22.9
Unrecognized tax benefits	4.1	(3.7)	(1.7)
Change in Non-US Statutory Tax Rates	(1.2)	(35.8)	(2.8)
Base Erosion Anti-Abuse Tax (BEAT)	8.0	—	2.8
Other	1.1	(2.9)	(2.4)
Total income tax provision	$ 36.2	$ 65.8	$ 38.8
Effective tax rate	15.40 %	14.22 %	22.26 %

Our provision for income taxes for fiscal 2022 differs from the 21% U.S. statutory rate primarily due to the income tax benefit from earnings of our foreign subsidiaries being taxed at rates that differ from the U.S. statutory rate, offset by the tax expense from U.S. income inclusions from Subpart F and GILTI. Additionally, our provision for income taxes includes an income tax benefit from various tax credits and non-U.S. statutory rate changes enacted during the year, offset by an income tax expense from non-deductible stock-based compensation as well as change in valuation allowance because it is not more-likely-than-not that certain deferred tax assets will be realizable in the future.

Our provision for income taxes for fiscal 2021 differs from the 21% U.S. statutory rate primarily due to the income tax benefit from earnings of our foreign subsidiaries being taxed at rates that differ from the U.S. statutory rate, which is offset by the tax expense from U.S. income inclusions from Subpart F and GILTI. Further our provision for income taxes includes an income tax benefit from various tax credits and non-U.S. statutory rate changes enacted during the year, offset by an income tax expense from non-deductible stock-based compensation as well as change in valuation allowance because it is not more-likely-than-not that certain deferred tax assets will be realizable in the future.

Our provision for income taxes for fiscal 2020 differs from the 21% U.S. statutory rate primarily due to the income tax benefit of the earnings of our foreign subsidiaries being taxed at rates that differ from the U.S. statutory rate and certain tax credits, which is offset by the tax expense from U.S. income inclusions from Subpart F and GILTI. Further our provision for income taxes includes an income tax expense from changes in our valuation allowance because it is not more-likely-than-not that certain deferred tax assets will be realized in the future.

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

	Years Ended	
	July 2, 2022	**July 3, 2021**
Gross deferred tax assets:		
Intangibles	$ 81.2	$ 92.0
Tax credit carryforwards	75.3	75.3
Net operating loss carryforwards	151.0	172.7
Inventories	6.3	6.8
Accruals and reserves	14.2	10.6
Fixed assets	25.5	23.9
Capital loss carryforwards	12.0	12.6
Unclaimed research and experimental development expenditure	40.5	42.1
Stock-based compensation	5.6	5.1
Lease liabilities	15.9	16.3
Other	4.7	0.3
Gross deferred tax assets	432.2	457.7
Valuation allowance	(263.2)	(272.4)
Deferred tax assets	169.0	185.3
Gross deferred tax liabilities:		
Intangible amortization	(33.7)	(59.6)
Convertible notes	(100.6)	(68.0)
Right-of-use assets	(18.2)	(19.6)
Other	(2.4)	(1.1)
Deferred tax liabilities	(154.9)	(148.3)
Total net deferred tax assets	$ 14.1	$ 37.0

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. In fiscal 2022, after considering both positive and negative evidence, we have determined that we will be able to realize all of our deferred tax assets in Thailand and have therefore reversed the related valuation allowance. We continue to maintain our valuation allowance on our California, Canada, and UK deferred tax assets, and a partial valuation allowance on our federal deferred tax asset related to foreign tax credits. In the event the Company determines that it will be able to realize all or part of the 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.S., California, Canada, and UK 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 of July 2, 2022, the Company had federal and foreign net operating loss carryforwards of $88.9 million and $497.3 million, respectively. These carryforwards will begin to expire in the fiscal year ending 2027. 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 $5.7 million, $51.4 million, and $43.5 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 2023.

Current U.S. tax law 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 in our foreign subsidiaries. As a result, U.S. income and foreign withholding taxes associated with the repatriation of $27.0 million of earnings from our foreign subsidiaries, other than the Cayman Islands, Japan, and Hong Kong subsidiaries, have not been provided for. We estimate that an additional $1.5 million of foreign withholding taxes would have to be provided if these earnings were repatriated back to the U.S. and such withholding taxes may be available as foreign tax credit or deduction to reduce U.S. tax liability.

The aggregate changes in the balance of our unrecognized tax benefits between July 3, 2021 and July 2, 2022 are as follows *(in millions)*:

Balance at June 29, 2019	$	58.0
Decreases based on the tax positions related to the prior year		(8.2)
Decreases related to settlement with Tax Authorities		(2.0)
Additions based on tax positions related to current year		7.7
Balance at June 27, 2020	$	55.5
Increases based on tax positions related to prior year		6.8
Decreases based on tax positions related to prior year		(1.6)
Decreases related to Statute of Limitations		(5.1)
Additions based on tax positions related to current year		6.5
Balance at July 3, 2021	$	62.1
Increases based on tax positions related to prior year		5.2
Decreases based on tax positions related to prior year		(2.1)
Decreases related to Statute of Limitations		(9.8)
Additions based on tax positions related to current year		6.5
Decreases related to audit settlements		(0.2)
Balance at July 2, 2022	$	61.7

As of July 2, 2022, we had $30.5 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 none of unrecognized tax benefit that would become recognized due to expiration of the statute of limitations and affect the effective tax rate over the next 12 months.

The Company has obtained the tax holiday related to certain business activities but to date, has not met the requirements to obtain the benefits of the tax holiday. Accordingly, the earned income is subject to normal Thailand statutory tax rates.

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 July 2, 2022 and July 3, 2021 were $1.6 million and $1.4 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 July 2, 2022, our fiscal 2011 to 2021 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.

Note 16. Equity

Description of Lumentum Stock-Based Benefit Plans

Equity Incentive Plan

On November 19, 2021, our stockholders approved amendments to the Amended and Restated 2015 Equity Incentive Plan (the "2015 Plan") to (i) increase the number of shares reserved for issuance under the 2015 Plan by an additional 3.0 million shares and (ii) make certain other changes to reflect changes in the law and/or good corporate governance practices.

As of July 2, 2022, we had 2.4 million shares subject to 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 grant.

As of July 2, 2022, 3.8 million shares of common stock under the 2015 Plan were available for grant.

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 are 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.

During fiscal 2022, our board of directors approved grants of 1.5 million shares which primarily vest over three years.

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.

During fiscal 2022, our board of directors approved a grant of 0.2 million PSUs with an aggregate grant date fair value of $16.7 million to certain executive officers and senior management. These PSUs will vest subject to the achievement of 3-year revenue targets and certain non-financial performance measurement, as well as service conditions.

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 6-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, as amended. 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, 1.4 million shares remained available for issuance as of July 2, 2022.

Stock-Based Compensation

The impact on our results of operations of recording stock-based compensation by function during the periods presented was as follows *(in millions)*:

	Years Ended		
	July 2, 2022	July 3, 2021	June 27, 2020
Cost of sales	$ 20.8	$ 19.2	$ 16.1
Research and development	22.1	19.5	15.9
Selling, general and administrative	60.2	54.2	41.2
Total stock-based compensation	$ 103.1	$ 92.9	$ 73.2

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Stock-based compensation for fiscal 2022, 2021 and 2020 includes $16.8 million, $16.8 million and $9.4 million, respectively, of stock-based compensation costs related to PSUs. The amount of stock-based compensation expense recognized in any one period related to PSUs can vary based on the achievement or anticipated achievement of the performance conditions. If the performance conditions are not met or not expected to be met, no compensation cost would be recognized on the underlying PSUs, and any previously recognized compensation expense related to those PSUs would be reversed.

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		
	July 2, 2022	July 3, 2021	June 27, 2020
Income tax benefit associated with stock-based compensation	$ 12.5	$ 14.6	$ 10.6

Approximately $6.4 million and $4.6 million of stock-based compensation was capitalized to inventory as of July 2, 2022 and July 3, 2021, respectively.

As of July 2, 2022, $133.0 million of stock-based compensation cost related to RSU awards granted to our employees remains to be amortized. This cost is expected to be recognized over an estimated amortization period of 1.9 years.

Stock Award Activity

The following table summarizes our awards activity in fiscal 2022, 2021 and 2020 *(in millions, except per share amounts)*:

	Restricted Stock Units		Restricted Stock Awards		Performance Stock Units	
	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	Weighted-Average Grant Date Fair Value per Share
Balance as of June 29, 2019	2.2	$ 52.4	—	$ 32.5	0.2	$ 56.0
Granted	1.1	60.3	—	—	0.2	61.9
Vested/Exercised	(1.2)	52.1	—	32.4	(0.1)	54.7
Canceled	(0.2)	52.3	—	—	—	57.3
Balance as of June 27, 2020	1.9	$ 56.6	—	$ —	0.3	$ 60.6
Granted	1.2	86.6	—	—	0.2	86.7
Vested/Exercised	(1.1)	56.5	—	—	(0.2)	57.8
Canceled	(0.2)	67.1	—	—	—	70.0
Balance as of July 3, 2021	1.8	$ 76.0	—	$ —	0.3	$ 75.7
Granted	1.5	87.8	—	—	0.2	85.7
Vested/Exercised	(1.1)	73.4	—	—	(0.2)	76.1
Canceled	(0.2)	79.9	—	—	—	58.7
Balance as of July 2, 2022	2.0	$ 85.9	—	$ —	0.3	$ 81.9

A summary of awards available for grant for fiscal 2022, 2021 and 2020 is as follows *(in millions)*:

	Awards Available for Grant
Balance as of June 29, 2019	4.7
Granted	(1.3)
Canceled	0.1
Balance as of June 27, 2020	3.5
Granted	(1.4)
Canceled	0.2
Balance as of July 3, 2021	2.3
Authorized	3.0
Granted	(1.7)
Canceled	0.2
Balance as of July 2, 2022	3.8

Employee Stock Purchase Plan Activity

The 2015 Purchase Plan expense for fiscal 2022, 2021 and 2020 was $4.6 million, $4.6 million, and $3.5 million, respectively. The expense related to the 2015 Purchase Plan is recorded on a straight-line basis over the relevant subscription period. There were 0.2 million, 0.2 million, and 0.2 million shares issued to employees through the 2015 Purchase Plan during fiscal 2022, 2021 and 2020, respectively.

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 during the periods presented were as follows:

	July 2, 2022	July 3, 2021
Expected term (years)	0.5	0.5
Expected volatility	45.4 %	46.6 %
Risk-free interest rate	1.49 %	0.07 %
Dividend yield	— %	— %

Repurchase and Retirement of Common Stock

Repurchase Made in Connection with Convertible Note Offering

In fiscal 2022, concurrent with the issuance of the 2028 Notes, we repurchased 2.0 million shares of our common stock in privately negotiated transactions at an average price of $99.0 per share for an aggregate purchase price of $200.0 million. We recorded the $200.0 million aggregate purchase price as a reduction of retained earnings within our consolidated balance sheet. These shares were retired immediately.

In fiscal 2020, concurrent with the issuance of the 2026 Notes, we repurchased 2.9 million shares of our common stock in privately negotiated transactions at an average price of $69.68 per share for an aggregate purchase price of $200.0 million. These shares were retired immediately.

Share Buyback Program

On May 7, 2021, our board of directors approved the 2021 share buyback program, which authorizes us to use up to $700.0 million to purchase our own shares of common stock. The buyback program was authorized for 2 years. On March 3, 2022, our board of directors approved an increase in our share buyback program, which authorizes us to use up to an aggregate amount of $1.0 billion (an increase from $700.0 million) to purchase our own shares of common stock through May 2024, but may be suspended or terminated by the board of directors at any time.

During fiscal 2022, we repurchased 4.0 million shares of our common stock as part of the share buyback program at an average price of $87.21 per share for an aggregate purchase price of $348.9 million. During fiscal 2021, we repurchased 3.1 million shares of our common stock at an average price of $77.84 per share for an aggregate purchase price of $241.0 million. Since the share buyback program was approved by the board of directors, we have repurchased 7.1 million shares in aggregate at an average price of $83.12 per share for a total purchase price of $589.8 million. We recorded the $589.8 million aggregate purchase price as a reduction of retained earnings within our consolidated balance sheets. All repurchased shares were retired immediately.

Note 17. Employee Retirement Plans

Defined Contribution Plans

In the United States, the Company sponsors the Lumentum 401(k) Retirement Plan (the “401(k) Plan”), a defined contribution plan under the Employee Retirement Income Security Act of 1974 (“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 $20,500 (or $27,000 for employees over 50 years of age) in calendar year 2022 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 2022, 2021 and 2020, our contribution expense to the 401(k) Plan was $3.7 million, $3.5 million, and $3.8 million, respectively.

We also have defined contribution plans in most of the other countries in which we operate, either as required by statutory law or as provided by the Company’s supplemental offering. Our contribution expense to all defined contribution plans outside the United States were $7.7 million, $8.3 million, and $6.7 million for fiscal 2022, 2021 and 2020, respectively.

Defined Benefit Plans

The Company sponsors defined benefit pension plans covering employees in Japan, Switzerland and Thailand. Pension plan benefits are based primarily on participants' compensation and years of service credited as specified under the terms of each country's plan. Employees are entitled to a lump sum benefit upon retirement or upon certain instances of termination. The funding policy is consistent with the local requirements of each country.

We account for our defined benefit obligations 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. As of July 2, 2022, our projected benefit obligations, net, in Japan, Switzerland and Thailand were $2.6 million, $1.7 million and $3.4 million, respectively. They were recorded in our consolidated balance sheets as other non-current liabilities and represent the total projected benefit obligation ("PBO") less the fair value of plan assets.

As of July 2, 2022, the defined benefit plan in Switzerland was partially funded, while the defined benefit plans in Japan and Thailand were unfunded.

The change in the benefit obligations of pension plans in Japan, Switzerland, and Thailand, and the change in plan assets in Switzerland were as follows *(in millions):*

	July 2, 2022	July 3, 2021
Change in projected benefit obligation:		
Benefit obligation at beginning of year	$ 20.6	$ 20.9
Service cost	1.8	2.0
Interest cost	0.1	0.1
Plan participants' contributions	0.5	0.5
Actuarial gains [(1)]	(3.9)	(1.2)
Benefits paid	(0.2)	(1.7)
Plan amendments	(0.2)	—
Foreign exchange impact	(1.2)	—
Benefit obligation at end of year	$ 17.5	$ 20.6
Change in plan assets:		
Fair value of plan assets at beginning of year	$ 9.8	$ 9.1
Actual return on plan assets	(0.2)	1.2
Employer contribution	0.6	0.5
Plan participants' contribution	0.5	0.5
Benefits paid	(0.2)	(1.5)
Foreign exchange impact	(0.7)	—
Fair value of plan assets at end of year	$ 9.8	$ 9.8
Funded status [(2)]	$ (7.7)	$ (10.8)
Changes in benefit obligations and plan assets recognized in other comprehensive income:		
Prior service cost	$ (0.1)	$ 0.1
Amortization of accumulated net actuarial loss	(0.1)	(0.4)
Net actuarial gain	(3.6)	(2.2)
Loss recognized due to settlement	—	(0.3)
	$ (3.8)	$ (2.8)
Accumulated benefit obligation	$ 14.0	$ 16.5

(1) Actuarial gains are primarily driven by changes in discount rates.

(2) As of July 2, 2022 and July 3, 2021, $7.7 million and $10.8 million were recorded in other non-current liabilities on our consolidated balance sheets, respectively, to account for the PBO. Please refer to “Note 8. Balance Sheet Details”.

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Net periodic pension costs in Japan, Switzerland and Thailand include the following components for the periods presented (*in millions*):

	Years Ended		
	July 2, 2022	July 3, 2021	June 27, 2020
Service cost	$ 1.8	$ 2.0	$ 3.5
Interest cost	0.1	0.1	0.2
Amortization of prior service cost	(0.1)	(0.1)	—
Expected return on plan assets	(0.2)	(0.3)	(0.3)
Amortization of net loss	0.2	0.3	0.3
Settlement losses	—	0.3	—
Net periodic pension cost	$ 1.8	$ 2.3	$ 3.7

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 weighted-average assumptions used to determine net periodic cost and benefit obligation for our defined benefit plans in Japan, Switzerland and Thailand:

	Years Ended	
	July 2, 2022	July 3, 2021
Assumptions used to determine net periodic cost:		
Discount rate	1.1 %	0.6 %
Expected long-term return on plan assets	2.0 %	2.7 %
Salary increase rate	3.7 %	3.4 %
Assumptions used to determine benefit obligation at end of year:		
Discount rate	1.9 %	0.7 %
Salary increase rate	3.1 %	2.9 %

Fair Value Measurement of Plan Assets

The following table sets forth the plan assets of our defined benefit plan in Switzerland at fair value and the percentage of assets allocations as of July 2, 2022 and July 3, 2021 *(in millions, except percentage data)*:

				Fair Value Measurement as of July 2, 2022	
	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	33 %	$ 3.2	33 %	$ —	$ 3.2
Fixed income	32 %	3.1	30 %	—	3.1
Alternative investment	12 %	1.2	13 %	—	1.2
Cash	1 %	0.1	1 %	0.1	—
Other assets	22 %	2.2	23 %	—	2.2
Total Assets	100 %	$ 9.8	100 %	$ 0.1	$ 9.7

				Fair Value Measurement as of July 3, 2021	
	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	31 %	$ 3.0	30 %	$ —	$ 3.0
Fixed income	31 %	3.0	29 %	—	3.0
Alternative investment	15 %	1.5	18 %	—	1.5
Cash	1 %	0.1	1 %	0.1	—
Other assets	22 %	2.2	22 %	—	2.2
Total Assets	100 %	$ 9.8	100 %	$ 0.1	$ 9.7

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 assets consist 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 participants in the defined benefit pension plans based on the same assumptions used to measure our PBO at year-end which includes benefits attributable to estimated future compensation increases.

The following benefit payments are estimated to be paid from our defined benefit pension plans (*in millions*):

Fiscal Years	Total
2023	$ 1.5
2024	0.8
2025	1.2
2026	1.0
2027	1.1
Next five years	8.8
Total expected benefit payments	14.4

We expect to contribute $1.4 million to our defined benefit pension plans in fiscal 2023.

Note 18. Commitments and Contingencies

Purchase Obligations

Purchase obligations of $403.7 million as of July 2, 2022, 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 components 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 the periods presented (*in millions*):

	Years Ended	
	July 2, 2022	July 3, 2021
Balance as of beginning of period	$ 5.0	$ 5.0
Provision for warranty	9.4	7.1
Utilization of reserve	(4.4)	(7.1)
Balance as of end of period	$ 10.0	$ 5.0

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.

Oclaro Merger Litigation

In connection with our acquisition of Oclaro, seven lawsuits were filed by purported stockholders of Oclaro challenging the merger (the "Oclaro 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 Neinstat 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 "Oclaro 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 Oclaro Lawsuits named Oclaro and its directors as defendants, but 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 Oclaro 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 Oclaro Lawsuit (the Karri Lawsuit) currently purports to seek, among other things, damages to be awarded to the plaintiff and any class, if a class is certified, and litigation costs, including attorneys' fees. Karri has been appointed as lead plaintiff and his counsel as lead counsel, and a first amended complaint ("FAC") was filed on April 15, 2019, which also named Lumentum as a defendant. A motion to dismiss the FAC was granted in part and denied in part by the court on October 8, 2020. On December 1, 2020, defendants answered the FAC. On December 23, 2020, defendants filed a motion for leave to file a motion for reconsideration of the Court's October 8th order on the motion to dismiss, which was denied on January 29, 2021. On June 22, 2021, the Court granted the parties' stipulation to dismiss Lumentum as a defendant from the action. On September 17, 2021, lead plaintiff filed a second amended complaint ("SAC"). Defendants moved to stay discovery in light of the SAC, and on January 11, 2022 the Court struck the SAC as untimely, terminated defendants' motions to dismiss as moot, and lifted the stay. The Karri Lawsuit remains pending. The parties have completed fact discovery. Expert discovery is ongoing. Defendants intend to defend the Karri Lawsuit vigorously.

NeoPhotonics Merger Litigation

In connection with our acquisition of NeoPhotonics Corporation ("NeoPhotonics") announced in November 2021, ten lawsuits (the "NeoPhotonics Lawsuits") were filed by purported stockholders of NeoPhotonics challenging the merger (the "NeoPhotonics Merger"). Four of the NeoPhotonics Lawsuits, styled as Elaine Wang v. NeoPhotonics Corporation, et al., No. 1:21-cv-10338, Heather Smith v. NeoPhotonics Corporation, et al., No. 1:21-cv-10698, Matthew Hopkins v. NeoPhotonics Corporation, et al., No. 1:21-cv-10725, and John Ryan v. NeoPhotonics Corporation, et al., No. 1:22-cv-00046, were filed in the United States District Court for the Southern District of New York on December 3, 2021, December 14, 2021, December 15, 2021, and January 4, 2022, respectively. Three of the NeoPhotonics Lawsuits, styled as Mengsheng Ku v. NeoPhotonics Corporation, et al., No. 5:21-cv-09479, Stephen Bushansky v. NeoPhotonics Corporation, et al., No. 5:21-cv-09825, and James Parshall v. NeoPhotonics Corporation, et al., No. 5:22-cv-00055, were filed in the United States District Court for the Northern District of New York on December 8, 2021, December 20, 2021, and January 5, 2022, respectively. One NeoPhotonics Lawsuit, styled as James Hendrickson v. NeoPhotonics Corporation, et al., No. 1:21-cv-06919, was filed in the United States District Court for the Eastern District of New York on December 15, 2021. One NeoPhotonics Lawsuit, styled as Alex Ciccotelli v. NeoPhotonics Corporation, et al., No. 2:21-cv-05611, was filed in the United States District Court for the Eastern District of Pennsylvania on December 23, 2021. One NeoPhotonics Lawsuit, styled as Christopher Taylor v. NeoPhotonics Corporation, et al., No. 1:22-cv-00002, was filed in the United States District Court for the District of Delaware on January 3, 2022.

These ten NeoPhotonics Lawsuits name NeoPhotonics and its directors as defendants and do not name Lumentum.

The NeoPhotonics Lawsuits generally allege, among other things, that NeoPhotonics and its directors violated Section 14(a) of the Exchange Act, Rule 14a-9 promulgated thereunder, and 17 C.F.R. § 244.100 by disseminating an incomplete and misleading Preliminary Proxy Statement on Schedule 14A, filed with the SEC on December 1, 2021 regarding the NeoPhotonics Merger. The NeoPhotonics Lawsuits further allege that NeoPhotonics' 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 complaints seek injunctive relief, rescission or rescissory damages, dissemination of a proxy statement that discloses certain information requested by the plaintiffs, and an award of plaintiffs' costs, including attorneys' fees and expenses.

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 July 2, 2022, 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 result in a further charge to expense.

Note 19. Operating Segments and Geographic Information

Our chief executive officer is our Chief Operating Decision Maker (“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 and data communications (“Telecom and Datacom”), and consumer and industrial (“Consumer and Industrial”). The two operating segments were primarily determined based on how the CODM views and evaluates our operations. The CODM regularly reviews operating results 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 include a wide range of components, modules and subsystems to support customers including carrier networks for 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 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 dense wavelength division multiplexing (“DWDM”) pluggable transceivers, and tunable small form-factor pluggable transceivers. We also sell laser chips for use in manufacturing of high-speed Datacom transceivers.

In the Consumer and Industrial market, our OpComms diode laser products include vertical cavity surface emitting lasers (“VCSELs”) and edge emitting lasers. In the Consumer end-market, our laser light sources are integrated into 3D sensing cameras which are used in applications in mobile devices, gaming, payment kiosks, computers, and other consumer electronics devices. Applications include biometric identification, computational photography, virtual and augmented reality, and natural user interfaces. Emerging applications for our lasers include automotive safety systems, LiDAR for advanced driver assistance systems in automobiles and autonomous vehicles, self-navigating robotics and drones in industrial applications, and 3D capture of objects coupled with 3D imaging or printing. In the industrial end-market, our 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.

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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.

Information on reportable segments utilized by our CODM is as follows (*in millions)*:

	Years Ended		
	July 2, 2022	July 3, 2021	June 27, 2020
Net revenue:			
OpComms	$ 1,518.5	$ 1,620.7	$ 1,515.1
Lasers	194.1	122.1	163.5
Net revenue	$ 1,712.6	$ 1,742.8	$ 1,678.6
Gross profit:			
OpComms	$ 780.9	$ 830.2	$ 704.0
Lasers	102.1	57.3	76.2
Total segment gross profit	883.0	887.5	780.2
Unallocated corporate items:			
Stock-based compensation	(20.8)	(19.2)	(16.1)
Amortization of acquired intangibles	(62.9)	(61.7)	(53.8)
Amortization of inventory fair value adjustments	—	—	(5.8)
Inventory and fixed asset write down due to product line exits [(1)]	(0.1)	(0.4)	(7.0)
Integration related costs	—	—	(4.9)
Other (charges) gains [(2)]	(10.6)	(23.1)	(42.4)
Gross profit	$ 788.6	$ 783.1	$ 650.2

[(1)] In fiscal 2022, 2021 and 2020, we recorded inventory and fixed assets write down charges of $0.1 million, $0.4 million and $7.0 million, respectively, related to the decision to exit the Datacom module and Lithium Niobate product lines.

[(2)] Other (charges) gains of unallocated corporate items in fiscal 2022 primarily relate to $14.0 million of charges to acquire components from various brokers to satisfy customer demand, offset by a $5.9 million gain from selling equipment that was no longer needed after we transferred certain product lines to new production facilities in fiscal 2021.

Other (charges) gains of unallocated corporate items for fiscal 2021 relate to costs of transferring product lines to new production facilities, including Thailand, of $6.9 million, excess and obsolete inventory charges of $7.7 million driven by U.S. trade restrictions and the related decline in demand from Huawei, and fixed asset write-off of $5.0 million associated with excess capacity related to our Fiber laser business.

Other (charges) gains of unallocated corporate items for fiscal 2020 primarily include costs of transferring product lines to new production facilities, including Thailand of $11.5 million, excess and obsolete inventory charges of $12.8 million driven by U.S. trade restrictions and the related decline in demand from Huawei, and fixed asset write-off of $6.2 million associated with excess capacity related to our Fiber laser business.

LUMENTUM HOLDINGS INC.
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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):*

	Years Ended					
	July 2, 2022		July 3, 2021		June 27, 2020	
Net revenue:						
Americas:						
United States	$ 173.9	10.2 %	$ 133.4	7.7 %	$ 149.8	8.9 %
Other Americas	173.0	10.1	146.9	8.4	128.3	7.6
Total Americas	$ 346.9	20.3 %	$ 280.3	16.1 %	$ 278.1	16.5 %
Asia-Pacific:						
Hong Kong	$ 458.2	26.7 %	$ 546.3	31.3 %	$ 532.0	31.8 %
South Korea	265.2	15.5	240.0	13.8	260.9	15.5
Japan	181.2	10.6	114.7	6.6	137.9	8.2
Other Asia-Pacific	344.7	20.1	421.3	24.2	346.0	20.6
Total Asia-Pacific	$ 1,249.3	72.9 %	$ 1,322.3	75.9 %	$ 1,276.8	76.1 %
EMEA	$ 116.4	6.8 %	$ 140.2	8.0 %	$ 123.7	7.4 %
Total net revenue	$ 1,712.6		$ 1,742.8		$ 1,678.6	

During the years ended July 2, 2022, July 3, 2021, and June 27, 2020, net revenue generated from a single customer which represented 10% or greater of total net revenue is summarized as follows:

	Years Ended		
	July 2, 2022	July 3, 2021	June 27, 2020
Customer A	28.7 %	30.2 %	26.0 %
Customer B	12.6 %	10.1 %	*
Customer C	*	10.8 %	13.2 %

*Represents less than 10% of total net revenue.

Our accounts receivable was concentrated with two customers as of July 2, 2022, which individually represented 10% and 10% of gross accounts receivable, respectively, and collectively accounted for 20% of the total gross accounts receivable, as compared with two customers as of July 3, 2021, which individually represented 17% and 14% of gross accounts receivable, respectively, and collectively accounted for 31% of the total gross accounts receivable.

Long-lived assets, namely 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)*:

	July 2, 2022	July 3, 2021
United States	$ 107.8	$ 116.7
Thailand	107.6	103.9
Japan	38.9	36.4
China	32.7	41.3
Other countries	73.5	62.8
Total long-lived assets	$ 360.5	$ 361.1

We purchase a portion of our inventory from contract manufacturers and vendors located primarily in Taiwan, Thailand, and Malaysia. During fiscal 2022, 2021 and 2020, our net inventory purchases from a single contract manufacturer, which represented 10% or greater of total net purchases, were concentrated with two contract manufacturers in each fiscal year, who collectively accounted for 55%, 40%, and 39% of total net inventory purchases, respectively.

Note 20. Revenue Recognition

Disaggregation of Revenue

We disaggregate revenue by product and by geography. 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.

The table below discloses our total net revenue attributable to each of our two reportable segments. In addition, the table sets forth the percentage of our total net revenue attributable to our product offerings which serve Telecom and 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					
	July 2, 2022		July 3, 2021		June 27, 2020	
OpComms:						
Telecom and Datacom	$ 1,008.7	58.9 %	$ 1,059.7	60.8 %	$ 1,021.8	60.9 %
Consumer and Industrial	509.8	29.8 %	561.0	32.2 %	493.3	29.4 %
Total OpComms	$ 1,518.5	88.7 %	$ 1,620.7	93.0 %	$ 1,515.1	90.3 %
Lasers	194.1	11.3 %	122.1	7.0 %	163.5	9.7 %
Net Revenue	$ 1,712.6		$ 1,742.8		$ 1,678.6	

Contract Balances

The following table reflects the changes in contract balances for the periods presented (*in millions, except percentages*):

Contract balances	Balance sheet location	July 2, 2022	July 3, 2021	Change	Percentage Change
Accounts receivable, net	Accounts receivable, net	$ 262.0	$ 212.8	$ 49.2	23.1%
Deferred revenue and customer deposits	Other current liabilities	$ —	$ 0.6	$ (0.6)	(100.0)%

Note 21. Subsequent Events

On August 3, 2022, we completed the acquisition of NeoPhotonics, which was announced on November 2, 2021. The acquisition is accounted for as a business combination using the acquisition method of accounting. Please refer to Note 4. Business Combination.

On August 15, 2022, we completed a transaction to acquire a business that develops and markets products for use in telecommunications and datacenter infrastructure, including Digital Signal Processors (DSP's), ASICs and optical transceivers. This acquisition will enable us to expand our business in our OpComms segment.

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 July 2, 2022. 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 July 2, 2022, 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 July 2, 2022 to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with U.S. GAAP.

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 July 2, 2022.

(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 July 2, 2022, 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 July 2, 2022, 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 July 2, 2022, of the Company and our report dated August 24, 2022, expressed an unqualified opinion on those financial statements.

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 24, 2022

ITEM 9B. OTHER INFORMATION

None.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

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 2022 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 7 of this report.

	Page
Report of Independent Registered Public Accounting Firm (PCAOB ID No. 34)	66
Consolidated Statements of Operations—Years Ended July 2, 2022, July 3, 2021, and June 27, 2020	68
Consolidated Statements of Comprehensive Income —Years Ended July 2, 2022, July 3, 2021 and June 27, 2020	69
Consolidated Balance Sheets—July 2, 2022 and July 3, 2021	70
Consolidated Statements of Cash Flows—Years Ended July 2, 2022, July 3, 2021, and June 27, 2020	71
Consolidated Statements of Stockholders' Equity—Years Ended July 2, 2022, July 3, 2021, and June 27, 2020	73
Notes to Consolidated Financial Statements	74

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	**Increase (decrease) in Consolidated Statements of Operations**	**Write offs and other adjustments**	**Balance at end of period**
Allowance for credit losses:				
Fiscal year ended July 2, 2022	$ 0.4	$ (0.1)	$ (0.3)	$ —
Fiscal year ended July 3, 2021	$ 1.8	$ 0.2	$ (1.6)	$ 0.4
Fiscal year ended June 27, 2020	$ 4.5	$ 0.1	$ (2.8)	$ 1.8

	(in millions)			
	Balance at beginning of period	**Additions charged to costs/expenses (1)**	**Deductions credited to costs/expenses (2)**	**Balance at end of period**
Deferred tax valuation allowance:				
Fiscal year ended July 2, 2022	$ 269.5	$ 5.7	$ (12.1)	$ 263.1
Fiscal year ended July 3, 2021	$ 200.8	$ 68.7	$ —	$ 269.5
Fiscal year ended June 27, 2020 (3)	$ 190.3	$ 12.7	$ (2.2)	$ 200.8

(1) 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.

(2) Net 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) Certain prior period amounts have been reclassified to conform to current year presentation on a jurisdiction by jurisdiction basis.

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			
Exhibit No.	Exhibit Description	Form	Exhibit	Filing Date	Filed Herewith
2.1	Contribution Agreement	8-K	2.1	8/6/2015	
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	Indenture, dated March 8, 2017, between Lumentum Holdings Inc. and U.S. Bank Trust Company, National Association	8-K	4.1	3/9/2017	
4.2	Form of 0.250% Convertible Senior Notes due 2024 (included in Exhibit 4.2)	8-K	4.2	3/9/2017	
4.3	Description of Capital Stock	10-K	4.4	8/27/2019	
4.4	Indenture, dated December 12, 2019, between Lumentum Holdings Inc. and U.S. Bank National Association.	8-K	4.1	12/12/2019	
4.5	Form of 0.50% Convertible Senior Note due 2026 (included in Exhibit 4.4).	8-K	4.2	12/12/2019	

4.6	Indenture dated March 8, 2022, between Lumentum Holdings Inc. and U.S. Bank Trust Company, National Association	8-K	4.1	3/8/2022	
4.7	Form of 0.50% Convertible Senior Note due 2028 (included in Exhibit 4.6)	8-K	4.2	3/8/2022	
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*	Offer Letter, by and between the Registrant and Wajid Ali, dated as of January 11, 2019	10-Q	10.1	5/7/2019	
10.11	Real Estate Purchase and Sale Agreement between MNCVAD-Graymark Ridder Park LLC and Lumentum Operations LLC, dated May 7, 2019	10-K	10.15	8/27/2019	
10.12	Commitment Letter, dated as of January 18, 2021, by and among Lumentum Holdings Inc., Deutsche Bank Securities Inc. and Deutsche Bank AG New York Branch.	8-K	10.1	1/19/2021	
10.13	Amended and Restated Commitment Letter, dated as of March 9, 2021, by and among Lumentum Holdings Inc., Deutsche Bank Securities Inc. and Deutsche Bank AG New York Branch.	8-K	10.1	3/10/2021	
10.14	Purchase Agreement, dated as of March 3, 2022, between Lumentum Holdings Inc. and Goldman Sachs & Co. LLC and BofA Securities, Inc.	8-K	10.1	3/8/2022	
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 July 2, 2022 formatted in Inline XBRL (eXtensible Business Reporting Language): (i) Consolidated Statements of Operations for the fiscal years ended July 2, 2022, July 3, 2021, and June 27, 2020; (ii) Consolidated Statements of Comprehensive Income for the fiscal years ended July 2, 2022, July 3, 2021, and June 27, 2020; (iii) Consolidated Balance Sheets as of July 2, 2022 and July 3, 2021; (iv) Consolidated Statements of Cash Flows for the fiscal years ended July 2, 2022, July 3, 2021, and June 27, 2020; (v) Consolidated Statements of Stockholders' Equity for the fiscal years ended July 2, 2022, July 3, 2021, and June 27, 2020; and (vi) Notes to the Consolidated Financial Statements	X
104	The cover page from Lumentum Holdings Inc.'s Annual Report on Form 10-K for the fiscal year ended July 2, 2022, 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 24, 2022	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 24, 2022
/s/ WAJID ALI Wajid Ali	Executive Vice President, Chief Financial Officer (principal financial officer)	August 24, 2022
/s/ MATTHEW SEPE Matthew Sepe	Chief Accounting Officer (principal accounting officer)	August 24, 2022
/s/ HAROLD COVERT Harold Covert	Director	August 24, 2022
/s/ JULIE JOHNSON Julie Johnson	Director	August 24, 2022
/s/ PENELOPE HERSCHER Penelope Herscher	Director	August 24, 2022
/s/ BRIAN LILLIE Brian Lillie	Director	August 24, 2022
/s/ IAN SMALL Ian Small	Director	August 24, 2022
/s/ JANET WONG Janet Wong	Director	August 24, 2022
/s/ ISAAC HARRIS Isaac Harris	Director	August 24, 2022

Exhibit 21.1

LIST OF SUBSIDIARIES
LUMENTUM HOLDINGS INC.
AS OF JULY 2, 2022

Name of Entity	State or Other Jurisdiction of Incorporation or Organization
DOMESTIC	
CCOP International Holdings Inc.	Delaware
LumentumRadiant GmbH - U.S. Branch	California
Lumentum Inc.	Delaware
Lumentum Designs LLC	Delaware
Lumentum Operations LLC	Delaware
Lumentum Italy Inc.	Delaware
Lumentum Fiber Optics, Inc.	Delaware
Lumentum Optics Inc.	Delaware
Lumentum Systems LP	Delaware
Neptune Merger Sub., Inc.	Delaware
INTERNATIONAL	
Bookham International Ltd.	Cayman Islands
Bookham Nominees Ltd.	United Kingdom
LumentumEdge GmbH	Switzerland
LumentumRadiant GmbH	Switzerland
Lumentum Asia Limited	Hong Kong
Lumentum (BVI) Ltd	British Virgin Islands
Lumentum Canada Ltd.	Canada
Lumentum Cayman Limited	Cayman Islands
Lumentum Communication Technology (Shenzhen) Co., Ltd.	China
Lumentum d.o.o. Optična vlakna	Slovenia
Lumentum HoldCo Limited	Hong Kong
Lumentum HoldCo Limited, Philippine Branch	Philippines
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 Italy Inc. - Branch	Italy
Lumentum Japan Inc.	Japan
Lumentum G.K.	Japan
Lumentum Netherlands B.V.	Netherlands
Lumentum Netherlands B.V. - France Branch	France
Lumentum Netherlands B.V. - Germany Branch	Germany
Lumentum Ottawa Inc.	Canada
Lumentum SK Limited	South Korea
Lumentum Switzerland AG	Switzerland
Lumentum Taiwan Co., Ltd.	Taiwan

Lumentum Technologies Limited		Canada
Lumentum Technology UK Limited		United Kingdom
Oclaro Germany GmbH		Germany
Oclaro Innovations LLP		United Kingdom
Oclaro Malaysia Sdn Bhd		Malaysia
Oclaro Technology (Shenzhen) Co. Ltd.		China

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-266543, 333-264779, 333-228905, 333-215937, and 333-205918 on Form S-8 of our reports dated August 24, 2022, relating to the financial statements of Lumentum Holdings Inc., and the effectiveness of Lumentum Holdings Inc.'s internal control over financial reporting appearing in this Annual Report on Form 10-K for the year ended July 2, 2022.

/s/ DELOITTE & TOUCHE LLP

San Jose, California
August 24, 2022

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 24, 2022

/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 24, 2022

/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 July 2, 2022 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 24, 2022

/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 July 2, 2022 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 24, 2022

/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.