UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

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

For the fiscal year ended October, 30, 2016

OR

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

For the transition period from ___ to ___

Commission file number 0-15451

PHOTRONICS

PHOTRONICS, INC.

(Exact name of registrant as specified in its charter)

Connecticut	**06-0854886**
(State or other jurisdiction of incorporation or organization)	*(IRS Employer Identification No.)*

15 Secor Road, Brookfield, Connecticut 06804
(Address of principal executive offices)(Zip Code)
(203) 775-9000
(Registrant's telephone number, including area code)

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

Title of each class	**Name of each exchange on which registered**
Common Stock, $.01 par value	NASDAQ Global Select Market

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

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

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

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

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definition of "accelerated filer," "large accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.
Large Accelerated Filer ☐ Accelerated Filer ☒ Non-Accelerated Filer ☐ Smaller Reporting Company ☐

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 May 1, 2016, which was the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the shares of the registrant's common stock held by non-affiliates was approximately $616,765,723 (based upon the closing price of $10.58 per share as reported by the NASDAQ Global Select Market on that date).

As of December 28, 2016, 68,325,098 shares of the registrant's common stock were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Proxy Statement for the 2017 Annual Meeting of Shareholders to be held in March 2017	Incorporated into Part III of this Form 10-K

Forward-Looking Statements

The Private Securities Litigation Reform Act of 1995 provides a "safe harbor" for forward-looking statements made by or on behalf of Photronics, Inc. ("Photronics”, the "Company”, “we”, or “us”). These statements are based on management's beliefs, as well as assumptions made by, and information currently available to, management. Forward-looking statements may be identified by words like "expect," "anticipate," "believe," "plan," "project," “could,” “estimate,” “intend,” “may,” “will” and similar expressions, or the negative of such terms, or other comparable terminology. All forward-looking statements involve risks and uncertainties that are difficult to predict. In particular, any statement contained in this annual report on Form 10-K or in other documents filed with the Securities and Exchange Commission in press releases or in the Company's communications and discussions with investors and analysts in the normal course of business through meetings, phone calls, or conference calls regarding, among other things, the consummation and benefits of transactions, joint ventures, business combinations, divestitures and acquisitions, expectations with respect to future sales, financial performance, operating efficiencies, or product expansion, are subject to known and unknown risks, uncertainties, and contingencies, many of which are beyond the control of the Company. Various factors may cause actual results, performance, or achievements to differ materially from anticipated results, performance, or achievements expressed or implied by forward-looking statements. Factors that might affect forward-looking statements include, but are not limited to, overall economic and business conditions; economic and political conditions in international markets; the demand for the Company's products; competitive factors in the industries and geographic markets in which the Company competes; the timing of orders received from customers; the gain or loss of significant customers; competition from other manufacturers; changes in accounting standards; federal, state and international tax requirements (including tax rate changes, new tax laws and revised tax law interpretations); changes in the jurisdictional mix of our earnings and changes in tax laws and rates; interest rate and other capital market conditions, including changes in the market price of the Company's securities; foreign currency exchange rate fluctuations; changes in technology; technology or intellectual property infringement, including cyber-security breaches, and other innovation risks; unsuccessful or unproductive research and development or capital expenditures; the timing, impact, and other uncertainties related to transactions and acquisitions, divestitures, business combinations, and joint ventures as well as decisions the Company may make in the future regarding the Company’s business, capital and organizational structures and other matters; the seasonal and cyclical nature of the semiconductor and flat panel display industries; management changes; changes in laws and government regulation impacting our operations or our products; the occurrence of regulatory proceedings, claims or litigation; damage or destruction to the Company's facilities, or the facilities of its customers or suppliers, by natural disasters, labor strikes, political unrest, or terrorist activity; the ability of the Company to (i) place new equipment in service on a timely basis; (ii) obtain additional financing; (iii) achieve anticipated synergies and cost savings; (iv) fully utilize its tools; (v) achieve desired yields, pricing, product mix, and market acceptance of its products and (vi) obtain necessary export licenses. Any forward-looking statements should be considered in light of these factors. Accordingly, there is no assurance that the Company's expectations will be realized. The Company does not assume responsibility for the accuracy and completeness of the forward-looking statements and does not assume an obligation to provide revisions to any forward-looking statements, except as otherwise required by securities and other applicable laws.

PART I

ITEM 1. BUSINESS

General

Photronics, Inc. (and its subsidiaries, collectively referred to herein as "Photronics", the "Company", “we”, or “us”) is one of the world's leading manufacturers of photomasks, which are high precision photographic quartz plates containing microscopic images of electronic circuits. Photomasks are a key element in the manufacture of semiconductors and flat panel displays ("FPDs"), and are used as masters to transfer circuit patterns onto semiconductor wafers and flat panel substrates during the fabrication of integrated circuits ("ICs") and a variety of FPDs and, to a lesser extent, other types of electrical and optical components. The Company currently operates principally from nine manufacturing facilities; two of which are located in Europe, three in Taiwan, one in Korea and three in the United States. In August 2016 the Company announced its plans to build a research and development and manufacturing facility in Xiamen, China, with construction commencing in 2017 and production estimated to start in late 2018. See Note 21 for additional information.

Photronics is a Connecticut corporation, organized in 1969. Its principal executive offices are located at 15 Secor Road, Brookfield, Connecticut 06804, telephone (203) 775-9000. The Company's website is located at http://www.photronics.com. We make available, through our website, our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and any amendments to these reports as soon as reasonably practicable after such materials are electronically filed with, or furnished to, the Securities and Exchange Commission (“SEC”). The information found on or incorporated into the Company's website is not part of this or any other report the Company files with or furnishes to the SEC. These reports may also be obtained at the SEC’s Public Reference Room at 100 F Street, N.E., Washington, DC 20549. Investors may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains a website at http://www.sec.gov that contains reports, proxy statements and other information regarding SEC registrants, including Photronics.

Products and Manufacturing Technology

The Company manufactures photomasks, which are used as masters to transfer circuit patterns onto semiconductor wafers and flat panel substrates. Photomasks are manufactured in accordance with circuit designs provided to us on a confidential basis by our customers. IC and FPD photomask sets are manufactured in layers, each having a distinct pattern which is etched onto a different photomask. The resulting series of photomasks is then used to image the circuit patterns onto each successive layer of a semiconductor wafer or flat panel substrate. The typical manufacturing process for a photomask involves the receipt and conversion of circuit design data to manufacturing pattern data. A lithography system then exposes the circuit pattern onto the photomask blank. The exposed areas are developed and etched to produce that pattern on the photomask. The photomask is then inspected for defects and conformity to the customer's design data. After any defects are repaired, the photomask is cleaned using a proprietary process, any required pellicles (protective translucent cellulose membranes) are applied and, after final inspection, the photomask is shipped to the customer.

The Company currently supports customers across the full spectrum of IC production and FPD technologies by manufacturing photomasks using electron beam or optical (laser-based) systems, which are the predominant technologies used for photomask manufacturing, and are capable of producing the finer line resolution, tighter overlay and larger die size for the larger and more complex circuits currently being designed. Electron beam and laser generated photomasks can be used to produce the most advanced semiconductors and FPDs for use in an array of products. However, in the case of IC production, electron beam technologies fabricate the large majority of higher cost critical layer photomasks, while photomasks produced using laser-based systems are less expensive and less precise. End markets served with IC photomasks include devices used for microprocessors, memory, telecommunications and related applications. The Company currently owns a number of high-end and mature electron beam and laser-based systems.

The first several layers of photomasks are sometimes required to be delivered by the Company within 24 hours from the time it receives customers' design data. The ability to manufacture high quality photomasks within short time periods is dependent upon robust processes, efficient manufacturing methods, high production yield, available manufacturing capacity and high equipment reliability. We work to meet these requirements by making significant investments in research and development, capital equipment, manufacturing, and data processing systems, and by utilizing statistical process control methods to optimize the manufacturing process and reduce cycle times.

Quality control is an integral part of the photomask manufacturing process. Photomasks are manufactured in temperature, humidity, and particulate controlled clean rooms because of the high level of precision, quality and manufacturing yield required. Each photomask is inspected several times during the manufacturing process to ensure compliance with customer specifications. The Company continues to make substantial investments in equipment to inspect and repair photomasks to ensure that customer specifications are met.

The majority of IC photomasks produced for the semiconductor industry employ geometries of larger than 45 nanometers. At these geometries, the Company can produce full lines of photomasks and there is no significant technology employed by our competitors that is not also available to the Company. We are also capable of producing full lines of photomasks for high-end IC and FPD applications. In the case of ICs, this includes photomasks at and below the 45 nanometer technology node and, for FPDs, at and above the Generation 8 technology node and active-matrix organic light-emitting diode (AMOLED) display screens. The Company holds customer qualified manufacturing capability and owns, or has access to, technology that enables it to compete in the high-end markets that serve IC and FPD applications.

Sales and Marketing

The market for photomasks primarily consists of domestic and international semiconductor and FPD manufacturers and designers. Photomasks are manufactured by independent merchant manufacturers like Photronics, and by semiconductor and FPD manufacturers that produce photomasks for their own use (captive manufacturers). In some instances, captive manufacturers also sell to other semiconductor or FPD manufacturers. Previously there was a trend towards the divesture or closing of captive photomask operations by semiconductor manufacturers and an increase in the share of the market served by independent manufacturers. This trend was driven by the increased complexity and cost of capital equipment used in manufacturing photomasks and the lack of economy of scale for many semiconductor and FPD manufacturers to effectively utilize the equipment. However, more recently the remaining and largest captive mask facilities have started investing at faster rates than independent manufacturers to reach certain roadmap milestones, particularly in the foundry logic and memory spaces. Nevertheless, most captive manufacturers maintain business and technology relationships with independent photomask manufacturers for ongoing support.

Generally, the Company and each of its customers engage in a qualification and correlation process before the Company becomes an approved supplier. Thereafter, the Company typically negotiates pricing parameters for a customer's orders based on the customer's specifications. Some prices may remain in effect for an extended period of time. In some instances, the Company enters into sales arrangements with an understanding that, as long as our performance is competitive, we will receive a specified percentage of that customer's photomask requirements. However, none of our customers have entered into significant long-term agreements with us that require them to purchase our products.

We conduct our sales and marketing activities primarily through a staff of full-time sales personnel and customer service representatives who work closely with the Company's management and technical personnel. The Company supports international customers through both its domestic and international facilities. We consider our presence in international markets to be an important factor in attracting new customers, as it provides global solutions to our customers, minimizes delivery time, and allows us to serve customers that utilize manufacturing foundries outside of the United States, principally in Asia. See Note 15 to the Company's consolidated financial statements for the amount of net sales and long-lived assets attributable to each of the Company's geographic areas of operations.

Customers

The Company primarily sells its products to leading semiconductor and FPD manufacturers. The Company's largest customers (listed alphabetically) during the fiscal year ended October 30, 2016, ("fiscal 2016") included the following:

AU Optronics Corp.	MagnaChip Semiconductor Corporation
Dongbu HiTek Co., Ltd.	Micron Technology, Inc.
Epcos AG	Nanya Technology Corporation
Global Foundries, Inc.	ON Semiconductor Corporation
Himax Display, Inc.	Powerchip Technology Corporation
Infineon Technologies AG	Samsung Electronics Co., Ltd.
Innolux Corporation	STMicroelectronics N.V.
Inotera Memories, Inc.	Texas Instruments, Incorporated
Intel Corporation	Tower Semiconductor, Ltd.
LG Display Co., Ltd	United Microelectronics Corp.

During fiscal 2016, the Company sold its products and services to approximately 600 customers. Sales to one customer accounted for approximately 19%, 18% and 16% of the Company’s total net sales in fiscal 2016, 2015 and 2014, respectively, and sales to another customer accounted for approximately 17%, 15% and 11% of the Company’s total net sales in fiscal 2016, 2015 and 2014, respectively. Our five largest customers, in the aggregate, accounted for approximately 50%, 52% and 44% of net sales in fiscal 2016, 2015 and 2014, respectively. A significant decrease in the amount of sales to any of these customers could have a material adverse effect on the financial performance and business prospects of the Company.

Seasonality

The Company's quarterly revenues can be affected by the seasonal purchasing of its customers. We are typically impacted during our first quarter by the North American and European holiday periods, as some customers reduce their effective workdays and orders during this period. Additionally, the Company can be impacted during its first or second fiscal quarter by the Asian New Year holiday period, which also may reduce customer orders.

Research and Development

The Company conducts research and development activities for IC photomasks at its U.S. nanoFab, which is located in Boise, Idaho, as well as at PK, Ltd. (“PKL”), its subsidiary in Korea and Photronics DNP Mask Corporation (“PDMC”), one of its subsidiaries in Taiwan. Research and development for FPD photomasks is conducted at PKL. Additionally, the Company conducts site-specific research and development programs to support strategic customers. These research and development programs and activities are undertaken to advance the Company's competitiveness in technology and manufacturing efficiency. We also conduct application oriented research and development activities to support the early adoption of new photomask or supporting data and services technology into our customers' applications. Currently, research and development photomask activities for ICs are focused on 20 nanometer node and below and, for FPDs, on Generation 8 resolution enhancement, substrates larger than Generation 8 and more complex masks for AMOLED type displays. The Company believes these core competencies will continue to be a critical part of semiconductor and FPD manufacturing, as optical lithography continues to scale capabilities on high-end devices. We incurred research and development expenses of $21.7 million in fiscal year 2016, and $21.9 million in fiscal years 2015 and 2014. The Company believes that it owns, controls, or licenses valuable proprietary information that is necessary for its business as it is presently conducted. This includes trade secrets as well as patents. We also believe that our intellectual property and trade secret know-how will continue to be important to our maintaining technical leadership in the field of photomasks.

On May 5, 2016, the Company sold its investment in MP Mask to Micron for $93.1 million and recorded a gain on the sale of $0.1 million, which is included in the Company’s 2016 condensed consolidated statements of income in Interest and other income (expense), net. On that same date, a supply agreement commenced between the Company and Micron, which provides that the Company will be the majority outsourced supplier of Micron’s photomasks and related services. The supply agreement has a one year term, subject to mutually agreeable renewals. In addition, the Company forevermore has the rights to use the technology it acquired under its prior technology license agreement.

Patents and Trademarks

The Company has ownership interests in approximately 40 issued U.S. patents. The subject matter of these patents, which are registered in various countries, generally relates to the manufacture of IC photomasks or the use of photomasks to manufacture other products. The expiration dates of these patents range from 2018 to 2034. The Company also has a number of trademarks and trademark registrations in the United States and in other countries.

While the Company believes that its intellectual property is, and will continue to be, important to its technical leadership in the field of photomasks, its operations are not dependent on any one individual patent. The Company protects its intellectual property rights and proprietary processes by utilizing patents and non-disclosure agreements with employees, customers and vendors.

Materials, Supplies and Equipment

Raw materials used by the Company generally include: high precision quartz plates (including large area plates), which are used as photomask blanks and are primarily obtained from Japanese and Korean suppliers; pellicles and electronic grade chemicals, which are used in the manufacturing process; and compacts, which are durable plastic containers in which photomasks are shipped. These materials are generally sourced from several suppliers. The Company believes that its utilization of a select group of strategic suppliers enables it to access the most technologically advanced materials available. On an ongoing basis, the Company continues to consider additional supply sources.

The Company relies on a limited number of equipment suppliers to develop and supply the equipment used in the photomask manufacturing process. Although the Company has been able to obtain equipment on a timely basis, an inability to obtain equipment when required could adversely affect the Company's business and results of operations.

Backlog

The first several layers of a set of photomasks for a circuit pattern are often required to be shipped within 24 hours of receiving a customer's designs. Because of the short period between order and shipment dates (typically from 1 day to 2 weeks) for a significant amount of the Company's sales, the dollar amount of our current backlog is not considered to be a reliable indicator of future sales volume.

International Operations

Sales from the Company’s non-U.S. operations were approximately 76%, 75% and 77% of the Company's net sales in fiscal 2016, 2015 and 2014, respectively. We believe that our ability to serve international markets is enhanced by our having, among other things, a local presence in the markets that we serve. This requires significant investments in financial, managerial, operational, and other resources.

Operations outside of the United States are subject to inherent risks, including fluctuations in exchange rates, political and economic conditions in various countries, unexpected changes in regulatory requirements, tariffs and other trade barriers, difficulties in staffing and managing international operations, longer accounts receivable collection cycles, potential restrictions on transfers of funds and potentially adverse tax consequences. These factors may have a material adverse effect on the Company's ability to generate sales outside of the United States and to deploy resources where they could otherwise be used to their greatest advantage and, consequently, may adversely affect its financial condition and results of operations. Note 15 of the notes to the Company's consolidated financial statements present net sales and long-lived assets by geographic area.

Competition

The photomask industry is highly competitive and most of the Company's customers utilize multiple photomask suppliers. The Company's ability to compete depends primarily upon the consistency of its products’ quality, timeliness of delivery, as well as pricing, technical capability and service, which we believe are the principal factors considered by customers in selecting their photomask suppliers. An inability to meet these requirements could adversely affect the Company's financial condition, results of operations and cash flows. The Company also believes that proximity to customers is an important factor in certain markets where cycle time from order to delivery is critical. While some of our competitors have greater financial, technical, sales, marketing or other resources than the Company, we believe that we are able to compete effectively because of our dedication to customer service, investments in state-of-the-art photomask equipment and facilities, and experienced technical employees.

The Company estimates that, for the types of photomasks it manufactures (IC and FPD), the size of the total market (captive and merchant) is approximately $4.0 billion. Its competitors include Compugraphics International, Ltd., Dai Nippon Printing Co., Ltd (outside of Taiwan), Hoya Corporation, SK-Electronics Co. Ltd., Taiwan Mask Corporation and Toppan Printing Co., Ltd. The Company also competes with semiconductor manufacturers' captive photomask manufacturing operations that supply photomasks for internal use and, in some instances, also for external customers and foundries. The Company expects to face continued competition which, in the past, has led to pressure to reduce prices. The Company believes the pressure to reduce prices, coupled with the significant investment required in capital equipment to manufacture high-end photomasks, has contributed to the decrease in the number of independent manufacturers, and we expect such pressure to continue in the future.

Employees

As of October 30, 2016, the Company had 1,530 employees. The Company believes it offers competitive compensation and other benefits and that its employee relations are good.

ITEM 1A. RISK FACTORS

Technology failures or cyber security breaches could have a material adverse effect on the Company’s operations.

The Company relies on information technology systems to process, transmit, store, and protect electronic information. For example, a significant portion of the communications between the Company’s personnel, customers, and suppliers depends on information technology. Our information technology systems may be vulnerable to a variety of interruptions due to events beyond our control including, but not limited to, natural disasters, terrorist attacks, telecommunications failures, computer viruses, hackers, and other security issues. We have technology and information security processes and disaster recovery plans in place to mitigate our risk to these vulnerabilities. However, these measures may not be adequate to ensure that our operations will not be disrupted, should such an event occur.

The Company's dependency on the microelectronics industry, which as a whole is volatile, could have a negative material impact on its business.

The Company sells substantially all of its photomasks to semiconductor or flat panel display designers, manufacturers and foundries, as well as to other high performance electronics manufacturers. We believe that the demand for photomasks depends primarily on design activity rather than sales volume from products using photomask technologies. Consequently, an increase in semiconductor or FPD sales does not necessarily result in a corresponding increase in photomask sales. In addition, the reduced use of customized ICs, a reduction in design complexity, other changes in the technology or methods of manufacturing or designing semiconductors or FPDs, or a slowdown in the introduction of new semiconductor or FPD designs could reduce demand for photomasks – even if the demand for semiconductors and FPDs increases. Historically, the semiconductor industry has been volatile, with sharp periodic downturns and slowdowns. These downturns have been characterized by, among other things, diminished product demand, excess production capacity and accelerated erosion of selling prices.

The Company's results may suffer if the IC or FPD photomask market does not grow or if the Company is unable to serve these markets successfully. We believe that the demand for photomasks for both ICs and FPDs depends primarily on design activity and, to a lesser extent, upon an increase in the number of production facilities used to manufacture ICs or FPDs. As a result, an increase in IC or FPD sales will not necessarily lead to a corresponding increase in photomask sales. However, a slowdown in the development of new technologies for fabricating ICs or FPDs could reduce the demand for related photomasks.

The Company may incur future net losses.

Although the Company has been profitable since fiscal 2010, it has, in the past, incurred net losses. The net losses experienced in prior years were due, in part, to macroeconomic factors, which resulted in the Company incurring significant charges for restructurings and impairments of long-lived assets. The Company cannot provide assurance that it will not incur net losses in the future.

The Company's quarterly operating results fluctuate significantly and may continue to do so in the future.

The Company has experienced fluctuations in its quarterly operating results and anticipates that such fluctuations will continue and could intensify in the future. Fluctuations in operating results may result in volatility in the prices of the Company's common stock and financial instruments linked to the value of the Company's common stock. Operating results may fluctuate as a result of many factors, including the size and timing of orders and shipments, the loss of significant customers, changes in product mix, the flow of customer design releases, technological change, fluctuations in manufacturing yields, competition and general economic conditions. We operate in a high fixed cost environment and, should our revenues and asset utilization decrease, our operating margins could be negatively impacted.

The Company's customers generally order photomasks on an as-needed basis, and our net sales in any quarter are dependent on orders received during that quarter. Since we operate with little backlog and the rate of new orders may vary significantly from quarter to quarter, our capital expenditures and, to some extent, expense levels are based primarily on sales forecasts and technological advancements in photomask manufacturing equipment. Consequently, if anticipated sales in any quarter do not occur when expected, capital expenditures could be higher than needed, resulting in underutilized capacity and disproportionately high expense levels, causing operating results to be adversely affected. Due to the foregoing factors, we believe that quarter-to-quarter comparisons of our operating results cannot be relied upon as indicators of future performance. In addition, in future quarters, our operating results could be below guidance provided by the Company and the expectations of public market analysts and investors which, in turn, could have a material adverse effect on the market price of the Company's common stock.

The photomask industry is subject to rapid technological change and the Company might fail to remain competitive, which could have a material adverse effect on the Company's business and results of operations.

The photomask industry has been, and is expected to continue to be, characterized by technological change and evolving industry standards. In order to remain competitive, the Company will be required to continually anticipate, respond to and utilize changing technologies of increasing complexity in both traditional and emerging markets that it serves. In particular, we believe that, as semiconductor geometries continue to become smaller and FPDs become larger with improved performance, we will be required to manufacture increasingly complex photomasks. Additionally, the demand for photomasks has been, and could in the future be, adversely affected by changes in semiconductor and high performance electronics fabrication methods that affect the type or quantity of photomasks utilized, such as changes in semiconductor demand that favor field programmable gate arrays and other semiconductor designs that replace application-specific ICs. Furthermore, evidence of the viability and the corresponding market acceptance of alternative methods of transferring IC designs onto semiconductor wafers could reduce or eliminate the need for photomasks in the production of semiconductors. As of the end of fiscal 2016, one alternative method, direct-write lithography, has not been proven to be a commercially viable alternative to photomasks, as it is considered to be too slow for high volume semiconductor wafer production. However, should direct-write or any other alternative method of transferring IC or FPD designs without the use of photomasks achieve market acceptance, and if the Company is unable to anticipate, respond to or utilize these or other technological changes, due to resource, technological or other constraints, its business and results of operations could be materially adversely affected.

The Company's operations will continue to require substantial capital expenditures, for which it may be unable to obtain funding.

The manufacture of photomasks requires substantial investments by the Company in high-end manufacturing capability. We expect that we will be required to continue to make substantial capital expenditures to meet the technological demands of our customers and to position us for future growth. The Company's capital expenditure payments for fiscal 2017 are expected to be approximately $100 million, of which $9 million was included in accounts payable on its October 30, 2016, Consolidated Balance Sheet. We cannot provide assurance that we will be able to obtain the additional capital required to fund our operations on reasonable terms, if at all, or that any such inability will not have a material adverse effect on our business and results of operations.

The Company has been dependent on sales to a limited number of large customers; the loss of any of these customers or a significant reduction in orders from these customers could have a material adverse effect on its sales and results of operations.

Historically, the Company has sold a significant proportion of photomasks to a limited number of IC and FPD manufacturers. During fiscal years 2016 and 2015 our two largest customers accounted for 36% and 33%, respectively, of our net sales. The Company's five largest customers accounted for 50%, 52% and 44% of net sales in fiscal 2016, 2015 and 2014, respectively. None of the Company's customers have entered into significant long-term agreements with the Company requiring them to purchase the Company's products. The loss of a significant customer or a significant reduction or delay in orders from any significant customer, (including reductions or delays due to customer departures from recent buying patterns), or an unfavorable change in competitive conditions in the semiconductor or FPD industries, could have a material adverse effect on the Company's financial performance and business prospects. The consolidation of semiconductor manufacturers or an economic downturn in the semiconductor industry may increase the likelihood of losing a significant customer and could also have an adverse effect on the Company's financial performance and business prospects.

The Company depends on a limited number of suppliers for equipment and raw materials and, if those suppliers do not deliver their products to the Company, it may be unable to fulfill orders from its customers, which could adversely affect its business and results of operations.

The Company relies on a limited number of photomask equipment manufacturers to develop and supply the equipment it uses. These equipment manufacturers currently require lead times of up to twelve months or longer between the order and the delivery of certain photomask imaging and inspection equipment. The failure of such manufacturers to develop or deliver such equipment on a timely basis could have a material adverse effect on the Company's business and results of operations. In addition, the manufacturing equipment necessary to produce advanced photomasks could become prohibitively expensive, which could similarly affect the Company.

The Company uses high precision quartz photomask blanks, pellicles, and electronic grade chemicals in its manufacturing processes. There are a limited number of suppliers of these raw materials and the Company has no long-term contracts with these suppliers. Any delays or quality problems in connection with significant raw materials, particularly photomask blanks, could cause delays in the shipments of photomasks, which could have a material adverse effect on our business and results of operations. The fluctuation of foreign currency exchange rates, with respect to prices of equipment and raw materials used in manufacturing, could also have a material adverse effect on the Company's business and results of operations.

The Company faces risks associated with the use of sophisticated equipment and complex manufacturing processes and technologies. Our inability to effectively utilize such equipment and technologies and perform such processes could have a material adverse effect on our business and results of operations.

The Company's complex manufacturing processes require the use of expensive and technologically sophisticated equipment and materials, and are continually modified in an effort to improve manufacturing yields and product quality. Minute impurities, defects or other difficulties in the manufacturing process can lower manufacturing yields and make products unmarketable. Moreover, manufacturing leading-edge photomasks is more complex and time consuming than manufacturing less advanced photomasks, and may lead to delays in the manufacturing of all levels of photomasks. The Company has, on occasion, experienced manufacturing difficulties and capacity limitations that have delayed its ability to deliver products within the time frames contracted for by its customers. The Company cannot provide assurance that, under such circumstances, it will not experience these or other manufacturing difficulties, or be subject to increased costs or production capacity constraints in the future, any of which could result in a loss of customers or could otherwise have a material adverse effect on its business and results of operations.

We could be subject to damages based on claims brought against us by our customers or lose customers as a result of the failure of our products to meet certain quality specifications.

Our products provide important performance attributes to our customers' products. If a product fails to perform in a manner consistent with quality specifications or has a shorter useful life than guaranteed, a customer could seek replacement of the product or damages for costs incurred as a result of the product failing to perform, particularly if such products are sold under agreements that contain limited performance and life cycle guarantees. Our customers often require us to represent that our products conform to certain product specifications provided by our customers. Any failure to comply with such specifications could result in claims or legal action. A successful claim or series of claims against us could have a material adverse effect on our financial condition and results of operations and could result in a loss of one or more customers.

The Company's debt agreements limit its ability to obtain additional financing and may obligate it to repay debt before its maturity.

Financial covenants related to the Company’s credit facility, which was last amended in August 2014, include Total Leverage Ratio, a Minimum Interest Coverage Ratio, and Minimum Unrestricted Cash Balances. Existing covenant restrictions limit the Company's ability to obtain additional debt financing and, should Photronics be unable to meet one or more of these covenants, its lenders may require it to repay any outstanding balance prior to the expiration date of the agreements. Our ability to comply with the financial and other covenants in our debt agreements may be affected by worsening economic or business conditions, or other events. The Company cannot assure that, under such circumstances, additional sources of financing would be available to pay off any long-term borrowings, so as to avoid default. Should we default on certain of our long-term borrowings, a cross default would occur on other long-term borrowings, unless amended or waived.

Acquisitions, divestitures, mergers, business combinations or joint ventures by the Company may entail certain operational and financial risks.

The Company has made significant acquisitions throughout its history and it may make other acquisitions or participate in other divestitures, joint ventures, business combinations or mergers in the future. On April 4, 2014, DNP Photomask Technology Taiwan Co., Ltd. (“DPTT”), a wholly owned subsidiary of Dai Nippon Printing Co., Ltd. (“DNP”), merged into Photronics Semiconductor Mask Corporation (“PSMC”), a wholly owned subsidiary of Photronics, to form PDMC. As a result of the acquisition of DPTT, Photronics and DNP own 50.01 percent and 49.99 percent of PDMC, respectively. After the completion of such an acquisition the Company may be subject to various risks which could adversely affect its future earnings and cash flows. These may include risks such as: the cost of combining the operations of the acquired company with the Company’s operations may exceed our estimates; goodwill, if any, or other intangible assets recognized may be subject to impairment charges; the lives of intangible assets acquired may be reduced; contingent liabilities are identified or change; the unanticipated loss of sales due to an overlap of customers served by the Company and the acquiree occurs; and that greater than anticipated charges to maintain duplicate pre-merger activities and eliminate duplicative activities are experienced. Furthermore, the Company may need to utilize its cash reserves and/or issue new securities to fund future acquisitions, which could have a dilutive effect on its earnings per share. In cases of acquisitions that require the Company to estimate the fair values of assets acquired and liabilities assumed, such estimates, though based upon assumptions that we believe to be reasonable, are subject to uncertainty.

Joint ventures may not operate according to their business plans if our partners fail to fulfill their obligations, which may adversely affect our results of operations and may force us to dedicate additional resources to these joint ventures.

The nature of a joint venture requires us to share control with unaffiliated third parties. If our joint venture partners do not fulfill their obligations, the affected joint venture may not be able to operate according to its business plan. In that case, our results of operations may be adversely affected and we may be required to increase the level of our commitment to the joint venture. Also, differences in views among joint venture participants may result in delayed decisions or failures to agree on major issues. If these differences cause the joint ventures to deviate from their business plans, our results of operations could be adversely affected.

We may not be able to consummate future acquisitions or integrate acquisitions into our business, which could result in unanticipated expenses and losses.

As part of our business growth strategy, we have acquired businesses, assets from businesses and entered into joint ventures in the past and intend to pursue acquisitions and joint venture opportunities in the future. Our ability to implement this component of our growth strategy will be limited by our ability to identify appropriate acquisition or joint venture candidates and our financial resources, including available cash and borrowing capacity. The expense incurred in consummating acquisitions or entering into joint ventures, the time it takes to integrate an acquisition or our failure to integrate businesses successfully, could result in unanticipated expenses and losses. Furthermore, we may not be able to realize any of the anticipated benefits from acquisitions or joint ventures.

The process of integrating acquired operations into our existing operations may result in unforeseen operating difficulties and may require significant financial resources that would otherwise be available for the ongoing development or expansion of existing operations. Some of the risks associated with the integration of acquisitions include: potential disruption of our ongoing business and distraction of management; unforeseen claims and liabilities, including unexpected environmental exposures; unforeseen adjustments, taxes, charges and write-offs; problems enforcing the indemnification obligations of sellers of businesses or joint venture partners for claims and liabilities; unexpected losses of customers of, or suppliers to, the acquired business; difficulty in conforming the acquired businesses' standards, processes, procedures and controls with our operations; variability in financial information arising from the implementation of purchase price accounting; inability to coordinate new product and process development; loss of senior managers and other critical personnel and problems with new labor unions; and challenges arising from the increased scope, geographic diversity and complexity of our operations.

The Company's announced expansion into China entails substantial risks.

In August 2016 the Company announced that it would invest $160 million, in the form of a combination of cash and transferred capital, over the next five years to construct an IC research and development and manufacturing facility in Xiamen, China. This investment is subject to substantial risks which may include, but are not limited to: delays in or the inability to obtain necessary permits that are needed to enable us to construct our facility or conduct our ongoing business; the inability to protect our intellectual property rights under Chinese law, which may not offer as high of a level of protection as U.S. law; unexpectedly long negotiation periods with Chinese suppliers and customers; quality issues related to materials sourced from local vendors; unexpectedly high labor costs due to a tight labor supply; and difficulty in repatriating funds and selling or transferring assets. Our investment in China also exposes us to a significant additional foreign currency exchange risk, which we have not been subject to in recent years. These and other risks may result in our not realizing a return on, or losing some of or all of our planned investment in China, which would have a material adverse effect on our financial condition and financial performance.

The Company's cash flows from operations and current holdings of cash may not be adequate for its current and long-term needs.

The Company's liquidity, as it operates in a high fixed cost environment, is highly dependent on its sales volume and the timing of its capital expenditures, which can vary significantly from period to period. Depending on conditions in the semiconductor and FPD markets, the Company's cash flows from operations and current holdings of cash may not be adequate to meet its current and long-term needs for capital expenditures, operations and debt repayments. Historically, in certain years, the Company has used external financing to fund these needs. Due to conditions in the credit markets and covenant restrictions on its existing debt, some financing instruments used by the Company in the past may not be available to it. Therefore, the Company cannot provide assurance that additional sources of financing would be available to it on commercially favorable terms, if at all, should its cash requirements exceed its cash available from operations, existing cash, and cash available under its credit facility.

The Company may incur unforeseen charges related to possible future facility closures or restructurings.

The Company cannot provide assurance that there will not be facility closures or restructurings in the near or long-term, nor can it assure that it will not incur significant charges should there be any future facility closures or restructurings.

The Company operates in a highly competitive environment and, should it be unable to meet its customers’ requirements for product quality, timeliness of delivery or technical capabilities, its sales could be adversely affected.

The photomask industry is highly competitive, and most of the Company's customers utilize more than one photomask supplier. The Company's competitors include Compugraphics International, Ltd., DNP (outside of Taiwan), Hoya Corporation, SK-Electronics Co., Ltd., Taiwan Mask Corporation and Toppan Printing Co., Ltd. The Company also competes with semiconductor manufacturers' captive photomask manufacturing operations, some of which market their photomask manufacturing services to outside customers. We expect to face continued competition from these and other suppliers in the future. Some of the Company's competitors have substantially greater financial, technical, sales, marketing or other resources than it has. Also, when producing smaller geometry photomasks, some of our competitors may be able to more rapidly develop, produce, and achieve higher manufacturing yields than us. The Company believes that consistency of product quality and timeliness of delivery, as well as price, technical capability, and service are the principal factors considered by customers in selecting their photomask suppliers. Our inability to meet these competitive requirements could have a material adverse effect on our business and results of operations. In the past, competition has led to pressure to reduce prices and the need to invest in advanced manufacturing technology which, the Company believes, contributed to the decrease in the number of independent photomask suppliers. These pressures may continue in the future.

The Company's substantial international operations are subject to additional risks.

Sales from the Company’s non-U.S. operations were approximately 76%, 75% and 77% of the Company's net sales in fiscal 2016, 2015 and 2014, respectively. We believe that maintaining significant international operations requires us to have, among other things, a local presence in the geographic markets that we supply. This requires significant investments in financial, managerial, operational, and other resources. Since 1996, the Company has significantly expanded its operations in international markets by acquiring existing businesses in Europe, acquiring majority equity interests in photomask manufacturing operations in Korea and Taiwan and building a manufacturing facility for FPD photomasks in Taiwan. In August 2016 we announced that we will invest $160 million, in the form of a combination of cash and transferred capital, over the next five years to construct an IC research and development and manufacturing plant in Xiamen, China. The Company, in order to enable it to optimize its investments and other resources, closely monitors the semiconductor and FPD manufacturing markets for indications of geographic movement and, in conjunction with these efforts, continues to assess the locations of its manufacturing facilities. These assessments may result in the opening or closing of facilities.

Operations outside of the United States are subject to inherent risks, including fluctuations in exchange rates, unstable political and economic conditions in various countries, changes in economic alliances (such as the United Kingdom’s decision to leave the European Union), unexpected changes in regulatory requirements, tariffs and other trade barriers, difficulties in staffing and managing international operations, longer accounts receivable payment cycles and potentially adverse tax consequences. These factors may have a material adverse effect on the Company's ability to generate sales outside of the United States and, consequently, on its business and results of operations.

Changes in foreign currency exchange rates could have a material adverse effect on the Company's results of operations, financial condition or cash flows.

The Company's consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP) and are reported in U.S. dollars. The Company's operations have transactions and balances denominated in currencies other than the U.S. dollar, primarily the Korean won, New Taiwan dollar, Japanese yen, euro, Singapore dollar, and the pound sterling. In fiscal 2017, as a result of our commencing construction of a new facility in China, we will have transactions and balances denominated in the Chinese renminbi. In fiscal 2016 the Company recorded a net loss from changes in foreign currency exchange rates of $0.3 million in its statement of income, while its net assets were increased by $6.3 million as a result of the translation of foreign currency financial statements to U.S. dollars. In the event of significant foreign currency fluctuations, the Company's results of operations, financial condition or cash flows may be adversely affected.

The Company's business depends on managerial and technical personnel, who are in great demand, and its inability to attract and retain qualified employees could adversely affect the Company's business and results of operations.

The Company's success depends, in part, upon key managerial and technical personnel, as well as its ability to continue to attract and retain additional qualified personnel. The loss of certain key personnel could have a material adverse effect on our business and results of operations. There can be no assurance that the Company can retain its key managerial, and technical employees, or that it can attract similar additional employees in the future.

The Company may be unable to enforce or defend its ownership and use of proprietary technology, and the utilization of unprotected Company developed technology by its competitors could adversely affect its business, results of operations and financial position.

The Company believes that the success of its business depends more on its proprietary technology, information and processes, and know-how than on its patents or trademarks. Much of its proprietary information and technology related to manufacturing processes is not patented and may not be patentable. The Company cannot offer assurance that:

- it will be able to adequately protect its technology;
- competitors will not independently develop similar technology; or
- international intellectual property laws will adequately protect its intellectual property rights.

The Company may become the subject of infringement claims or legal proceedings by third parties with respect to current or future products or processes. Any such claims, with or without merit, or litigation to enforce or protect its intellectual property rights that require the Company to defend itself against claimed infringements of the rights of others, could result in substantial costs, diversion of resources, and product shipment delays or could force the Company to enter into royalty or license agreements, rather than dispute the merits of these claims. Any of the foregoing could have a material adverse effect on the Company's business, results of operations and financial position.

The Company may be unprepared for changes to environmental laws and regulations and may incur liabilities arising from environmental matters.

The Company is subject to numerous environmental laws and regulations that impose various environmental controls on, among other things, the discharge of pollutants into the air and water and the handling, use, storage, disposal and clean-up of solid and hazardous wastes. Changes in these laws and regulations may have a material adverse effect on our financial position and results of operations. Any failure by the Company to adequately comply with these laws and regulations could subject it to significant future liabilities.

If we violate environmental, health and safety laws or regulations, in addition to being required to correct such violations, we can be held liable in administrative, civil or criminal proceedings for substantial fines and other sanctions could be imposed that could disrupt or limit our operations. Liabilities associated with the investigation and cleanup of hazardous substances, as well as personal injury, property damages or natural resource damages arising from the release of, or exposure to, such hazardous substances, may be imposed in many situations without regard to violations of laws or regulations or other fault, and may also be imposed jointly and severally (so that a responsible party may be held liable for more than its share of the losses involved, or even the entire loss). Such liabilities may also be imposed on many different entities with a relationship to the hazardous substances at issue, including, for example, entities that formerly owned or operated the property affected by the hazardous substances and entities that arranged for the disposal of the hazardous substances at the affected property, as well as entities that currently own or operate such property. The nature of our business, including historical operations at our current and former facilities, exposes us to risks of liability under these laws and regulations due to the production, storage, use, transportation and sale of materials that can cause contamination or personal injury if released into the environment. Additional information may arise in the future concerning the nature or extent of our liability with respect to identified sites, and additional sites may be identified for which we are alleged to be liable, that could cause us to materially increase our environmental accrual or the upper range of the costs we believe we
could reasonably incur for such matters

The Company's production facilities could be damaged or disrupted by natural disasters or labor strikes, either of which could adversely affect its financial position, results of operations and cash flows.

A major catastrophe, such as an earthquake or other natural disaster, labor strike, or work stoppage at any manufacturing facility of the Company, its suppliers, or its customers, could result in a prolonged interruption of the Company’s business. A disruption resulting from any one of these events could cause significant delays in shipments of our products and the loss of sales and customers, which could have a material adverse effect on our financial position, results of operations, and cash flows. The Company's facilities in Taiwan are located in a seismically active area.

The Company's sales can be impacted by the health and stability of the general economy, which could adversely affect its results of operations and cash flows.

Unfavorable general economic conditions in the U.S. or other countries in which the Company or its customers conduct business may have the effect of reducing the demand for photomasks. Economic downturns may lead to a decrease in demand for end products whose manufacturing processes involve the use of photomasks, which may result in a reduction in new product design and development by semiconductor or FPD manufacturers, and adversely affect the Company's results of operations and cash flows.

Additional taxes could adversely affect the Company's financial results.

The Company's tax filings are subjected to audits by tax authorities in the various jurisdictions in which it does business. These audits may result in assessments of additional taxes that are subsequently resolved with the authorities or through the courts. Currently, we believe there are no outstanding assessments whose resolution would result in a material adverse financial result. However, the Company cannot offer assurances that unasserted or potential future assessments would not have a material adverse effect on its financial condition or results of operations.

The Company's business could be adversely impacted by global or regional catastrophic events.

The Company's business could be adversely affected by terrorist acts, major natural disasters, widespread outbreaks of infectious diseases, or the outbreak or escalation of wars, especially in the Asian markets, where the Company generates a significant portion of its sales, and in Japan where it purchases raw materials and capital equipment. Such events in the geographic regions in which the Company does business, including escalations of political tensions and military operations within the Korean Peninsula, where a major portion of the Company's foreign operations are located, could have material adverse impacts on its sales volume, cost and availability of raw materials, results of operations, cash flows and financial condition.

Servicing the Company's debt requires a significant amount of cash, and we may not generate sufficient cash flows from our operations to pay our indebtedness.

The Company's ability to make scheduled payments of debt principal and interest or to refinance its indebtedness depends on its future performance, which is subject to economic, financial, competitive and other factors beyond the Company's control. Our business may not continue to generate sufficient cash flows from operations in the future to both service our debt and make necessary capital expenditures. If we are unable to generate such cash flows, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt or obtaining additional equity capital on terms that may be onerous or highly dilutive. The Company's ability to refinance its indebtedness would depend upon the conditions in the capital markets and its 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.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

The following table presents certain information about the Company's photomask manufacturing facilities:

Location	Type of Interest	
Allen, Texas	Owned	
Boise, Idaho	Owned	
Brookfield, Connecticut	Owned	
Bridgend, Wales	Leased	
Cheonan, Korea	Owned	
Dresden, Germany	Leased	
Hsinchu, Taiwan	Owned	(1)
Hsinchu, Taiwan	Leased	
Taichung, Taiwan	Owned	(1)

(1) The Company owns its manufacturing facility in Taichung and one of its manufacturing facilities in Hsinchu. However, it leases the related land.

ITEM 3. LEGAL PROCEEDINGS

The Company is subject to various claims that arise in the ordinary course of business. We believe such claims, individually or in the aggregate, will not have a material adverse effect on our business.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

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

The Common Stock of the Company is traded on the NASDAQ Global Select Market ("NASDAQ") under the symbol PLAB. The table below shows the range of high and low sale prices per share of each quarter for fiscal years 2016 and 2015, as reported by the NASDAQ Global Select Market.

	High	Low
Fiscal Year Ended October 30, 2016:		
Quarter Ended January 31, 2016	$ 13.05	$ 9.57
Quarter Ended May 1, 2016	12.39	9.30
Quarter Ended July 31, 2016	10.69	8.56
Quarter Ended October 30, 2016	10.90	8.81
Fiscal Year Ended November 1, 2015:		
Quarter Ended February 1, 2015	$ 9.18	$ 7.88
Quarter Ended May 3, 2015	9.13	8.14
Quarter Ended August 2, 2015	10.55	8.13
Quarter Ended November 1, 2015	9.89	7.68

On December 30, 2016, the closing sale price of our Common Stock, per the NASDAQ Global Select Market, was $11.30. Based on information available to the Company, we believe we have approximately 9,000 shareholders.

The Company, to date, has not paid any cash dividends on PLAB shares and, for the foreseeable future, anticipates that earnings will continue to be retained for use in its business. Further, our credit facility precludes us from paying cash dividends.

Securities authorized for issuance under equity compensation plans

The information regarding the Company's equity compensation required to be disclosed by Item 201(d) of Regulation S-K is incorporated by reference from Photronics’ 2017 definitive Proxy Statement in Item 12 of Part III of this report. The 2017 Proxy Statement will be filed within 120 days after our fiscal year ended October 30, 2016.

ITEM 6. SELECTED FINANCIAL DATA

The following selected financial data is derived from the Company's audited consolidated financial statements. The data should be read in conjunction with the audited consolidated financial statements and notes thereto and other financial information included elsewhere in this Annual Report on Form 10-K (in thousands, except per share amounts).

	Year Ended				
	October 30, 2016	November 1, 2015	November 2, 2014	November 3, 2013	October 28, 2012
OPERATING DATA:					
Net sales	$ 483,456	$ 524,206	$ 455,527	$ 422,180	$ 450,439
Cost and expenses:					
Cost of sales	(364,750)	(381,070)	(355,181)	(322,540)	(338,519)
Selling, general and administrative	(44,577)	(48,983)	(49,638)(d)	(48,213)(f)	(46,706)
Research and development	(21,654)	(21,920)	(21,913)	(20,758)	(19,371)
Consolidation, restructuring and related charges	-	-	-	-	(1,428)(g)
Operating income	52,475	72,233	28,795	30,669	44,415
Other income (expense):					
Gains on sales of investments	8,940(a)	-	-	-	-
Gain on acquisition	-	-	16,372(e)	-	-
Interest expense	(3,365)	(4,990)	(7,247)	(7,756)	(7,488)
Interest and other income (expense), net	2,424	2,797(c)	3,410	3,892	3,721(h)
Income before income tax provision	60,474	70,040	41,330	26,805	40,648
Income tax provision	(4,798)(b)	(13,181)	(9,295)	(7,229)	(10,793)
Net income	55,676	56,859(c)	32,035(d)(e)	19,576(f)	29,855(g) (h)
Net income attributable to noncontrolling interests	(9,476)	(12,234)	(6,039)	(1,610)	(1,987)
Net income attributable to Photronics, Inc. shareholders	$ 46,200(a)(b)	$ 44,625(c)	$ 25,996(d)(e)	$ 17,966(f)	$ 27,868(g) (h)
Earnings per share:					
Basic	$ 0.68(a)(b)	$ 0.67(c)	$ 0.42(d)(e)	$ 0.30(f)	$ 0.46(g) (h)
Diluted	$ 0.64(a)(b)	$ 0.63(c)	$ 0.41(d)(e)	$ 0.29(f)	$ 0.44(g) (h)
Weighted-average number of common shares outstanding:					
Basic	67,539	66,331	61,779	60,644	60,055
Diluted	76,354	78,383	66,679	61,599	76,464

BALANCE SHEET DATA

	As of				
	October 30, 2016	November 1, 2015	November 2, 2014	November 3, 2013	October 28, 2012
Working capital	$ 360,269	$ 168,068	$ 190,152	$ 212,797	$ 233,082
Property, plant and equipment, net	506,434	547,284	550,069	422,740	380,808
Total assets	988,267	1,043,376	1,026,739	885,505	849,094
Long-term debt	62,139	67,120	131,805	182,203	168,956
Total Photronics, Inc. shareholders' equity	710,363	646,555	628,050	585,314	551,386

	FY 2015	FY 2014	FY 2013	FY 2012
Working Capital (i):				
Previously reported	$ 171,422	$ 197,375	$ 213,879	$ 234,281
ASU 2015-17 adjustment	(3,354)	(7,223)	(1,082)	(1,199)
Retrospectively adjusted	$ 168,068	$ 190,152	$ 212,797	$ 233,082
Total Assets (i):				
Previously reported	$ 1,045,555	$ 1,029,183	$ 885,929	$ 849,234
ASU 2015-17 adjustment	(2,179)	(2,444)	(424)	(140)
Retrospectively adjusted	$ 1,043,376	$ 1,026,739	$ 885,505	$ 849,094

(a) Includes $8.8 million gain on sale of investment in a foreign entity and $0.2 million gain on the sale of the Company's 49.99% interest in the MP Mask joint venture
(b) Includes tax benefits in Taiwan of $4.8 million primarily related to the recognition of prior period tax benefits and other tax positions no longer deemed necessary.
(c) Includes $0.9 million of financing expenses related to the exchange of $57.5 million of 3.25% convertible senior notes.
(d) Includes $2.5 million, net of tax, of expenses related to the acquisition of DPTT.
(e) Includes non-cash gain of $16.4 million, net of tax, on acquisition of DPTT.
(f) Includes $0.8 million, net of tax, of expenses related to the acquisition of DPTT.
(g) Includes consolidation and restructuring charges of $1.4 million in connection with the discontinuance of manufacturing operations at the Company's Singapore facility.
(h) Includes non-cash gain of $0.1 million in connection with subsequent measurement at fair value of warrants issued to purchase the Company's common stock.
(i) Balances reflect the impact of the adoption of a new accounting standard in fiscal year 2016 (ASU 2015-17) related to the balance sheet classification of deferred taxes. See Note 11 for additional information.

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

Results of Operations for the Years Ended October 30, 2016, November 1, 2015 and November 2, 2014

Overview

The Company sells substantially all of its photomasks to semiconductor designers and manufacturers, and manufacturers of FPDs. Photomask technology is also being applied to the fabrication of other higher performance electronic products such as photonics, micro-electronic mechanical systems and certain nanotechnology applications. Our selling cycle is tightly interwoven with the development and release of new semiconductor designs and flat panel applications, particularly as they relate to the semiconductor industry's migration to more advanced product innovation, design methodologies and fabrication processes. We believe that the demand for photomasks primarily depends on design activity rather than sales volumes from products manufactured using photomask technologies. Consequently, an increase in semiconductor or FPD sales does not necessarily result in a corresponding increase in photomask sales. However, the reduced use of customized ICs, reductions in design complexity, other changes in the technology or methods of manufacturing or designing semiconductors, or a slowdown in the introduction of new semiconductor or FPD designs could reduce demand for photomasks – even if demand for semiconductors and FPDs increases. Advances in semiconductor, FPD and photomask design and semiconductor and FPD production methods that shift the burden of achieving device performance away from lithography could also reduce the demand for photomasks. Historically, the microelectronic industry has been volatile, experiencing periodic downturns and slowdowns in design activity. These downturns have been characterized by, among other things, diminished product demand, excess production capacity and accelerated erosion of selling prices.

We are typically required to fulfill customer orders within a short period of time, sometimes within 24 hours. This results in our having a minimal level of backlog orders, typically one to two weeks for IC photomasks and two to three weeks for FPD photomasks.

The global semiconductor industry is driven by end markets which have been closely tied to consumer driven applications of high performance semiconductor devices including, but not limited to, mobile display devices, mobile communications, and computing solutions. While we cannot predict the timing of the industry's transition to volume production of next-generation technology nodes, or the timing of up and down cycles with precise accuracy, we believe that such transitions and cycles will continue into the future, beneficially and adversely affecting our business, financial condition and operating results as they occur. We believe our ability to remain successful in these environments is dependent upon the achievement of our goals of being a service and technology leader and efficient solutions supplier, which we believe should enable us to continually reinvest in our global infrastructure.

The Company is focused on improving its competitiveness by advancing its technology and reducing costs and, in connection therewith, has invested and plans to continue to invest in manufacturing equipment to serve the high-end markets. As the Company continues to face challenges in the current and near term that require it to continue to make significant improvements in its competitiveness, it continues to evaluate further cost reduction initiatives.

As of December 2016 state-of-the-art production for semiconductor masks is considered to be 45 nanometer and lower for ICs and Generation 8 and above and AMOLED display based process technologies for FPDs. However, 65 nanometer and above geometries for semiconductors and Generation 7 and below, excluding AMOLED, process technologies for FPDs constitute the majority of designs currently being fabricated in volume. At these geometries, the Company can produce full lines of photomasks and there is no significant technology employed by the Company's competitors that is not available to the Company. The Company expects 45 nanometer and below designs to continue to move to wafer fabrication throughout fiscal 2017, and believes it is well positioned to service an increasing volume of this business as a result of its investments in manufacturing processes and technology in the global regions where its customers are located.

The photomask industry has been, and is expected to continue to be, characterized by technological change and evolving industry standards. In order to remain competitive, we will be required to continually anticipate, respond to, and utilize changing technologies. In particular, the Company believes that, as semiconductor geometries continue to become smaller, it will be required to manufacture even more complex optically-enhanced reticles, including optical proximity correction and phase-shift photomasks. Additionally, demand for photomasks has been, and could in the future be, adversely affected by changes in semiconductor and high performance electronics fabrication methods that affect the type or quantity of photomasks used, such as changes in semiconductor demand that favor field-programmable gate arrays and other semiconductor designs that replace application-specific ICs or the use of certain chip stacking methodologies that lessen the emphasis on conventional lithography technology. Furthermore, increased market acceptance of alternative methods of transferring circuit designs onto semiconductor wafers could reduce or eliminate the need for photomasks in the production of semiconductors. As of the end of fiscal 2016, one alternative method, direct-write lithography, has not been proven to be a commercially viable alternative to photomasks, as it is considered to be too slow for high volume semiconductor wafer production, and we have not experienced a significant loss of revenue as a result of this or other alternative semiconductor design methodologies. However, should direct-write or any other alternative method of transferring IC designs to semiconductor wafers without the use of photomasks achieve market acceptance, and we do not anticipate, respond to, or utilize these or other changing technologies due to resource, technological or other constraints, our business and results of operations could be materially adversely affected.

Both our revenues and costs have been affected by the increased demand for high-end technology photomasks that require more advanced manufacturing capabilities, but generally command higher average selling prices ("ASPs"). The Company's capital expenditure payments aggregated approximately $245 million for the three fiscal years ended October 30, 2016, which has significantly contributed to the Company’s operating expenses. We intend to continue to make the required investments to support the technological demands of our customers that we believe will position us for future growth. In support of this effort, we expect capital expenditure payments to be approximately $100 million in fiscal year 2017.

The manufacture of photomasks for use in fabricating ICs and other related products built using comparable photomask-based process technologies has been, and continues to be, capital intensive. The Company's integrated global manufacturing network, which consists of nine manufacturing sites, and its employees represent a significant portion of its fixed operating cost base. Should sales volumes decrease as a result of a decrease in design releases from our customers, we may have excess or underutilized production capacity, which could significantly impact operating margins or result in write-offs from asset impairments.

In the fourth quarter of fiscal 2016 the Company announced that it had signed an investment agreement with the Xiamen Torch Hi-Tech Industrial Development Zone (Xiamen Torch) to establish an IC manufacturing facility in Xiamen, China. Under the terms of the agreement the Company will build and operate a state-of-the-art IC manufacturing and research and development facility, in return for which Xiamen Torch will provide certain investment incentives and support.

In the third quarter of fiscal 2016, the Company’s majority owned IC facility in Taiwan paid a dividend of $11.9 million to its noncontrolling interests.

In the third quarter of fiscal 2016, the Company sold its investment in MP Mask to Micron for $93.1 million and recorded a gain of $0.1 million on the sale. On that same date a supply agreement commenced between the Company and Micron, which provides that we will be the majority outsourced supplier of Micron’s photomasks and related services. The supply agreement has a one year term, subject to mutually agreeable renewals. In addition, the Company forevermore has the rights to use technology under its prior technology license agreement.

In the second quarter of fiscal 2016, $57.5 million of the Company’s senior convertible notes matured. The Company repaid $50.1 million to noteholders, and issued approximately 0.7 million shares to noteholders that elected to convert their notes to common stock. The notes were exchanged at the rate of approximately 96 shares per $1,000 note principle, equivalent to a conversion rate of $10.37 per share.

In the first quarter of fiscal 2015 the Company privately exchanged $57.5 million in aggregate principal amount of its 3.25% convertible senior notes with a maturity date of April 1, 2016, for new 3.25% convertible senior notes with an aggregate principal amount of $57.5 million with a maturity date of April 1, 2019. The conversion rate of the new notes is the same as that of the exchanged notes, which were issued in March 2011 with a conversion rate of approximately 96 shares of common stock per $1,000 note principal, equivalent to a conversion price of $10.37 per share of common stock, and is subject to adjustment upon the occurrence of certain events which are described in the indenture dated January 22, 2015. Note holders may convert each $1,000 principal amount of notes at any time prior to the close of business on the second scheduled trading day immediately preceding April 1, 2019, and the Company is not required to redeem the notes prior to their maturity date. Interest on the notes accrues in arrears, and is paid semiannually through the notes’ maturity date.

In the fourth quarter of fiscal 2014 the Company amended its credit facility. The credit facility, which expires in December 2018, has a $50 million limit with an expansion capacity to $75 million, and is secured by substantially all of our assets located in the United States and common stock we own in certain of our foreign subsidiaries. The credit facility is subject to a minimum interest coverage ratio, total leverage ratio and minimum unrestricted cash balance financial covenants, all of which we were in compliance with at October 30, 2016. The Company had no outstanding borrowings against the credit facility at October 30, 2016, and $50 million was available for borrowing. The interest rate on the credit facility (1.78% at October 30, 2016) is based on our total leverage ratio at LIBOR plus a spread, as defined in the credit facility.

In the second quarter of fiscal 2014 the Company acquired DPTT in a non-cash transaction that resulted in the Company owning 50.01% and DNP owning 49.99% of PDMC, whose financial results are included in the Company's consolidated financial statements. Since its formation, PDMC has generated sufficient cash flows to fund its operating and capital requirements. See Note 2 of the consolidated financial statements for more information.

Results of Operations

The following table presents selected operating information expressed as a percentage of net sales:

	Year Ended		
	October 30, 2016	**November 1, 2015**	**November 2, 2014**
Net sales	100.0%	100.0%	100.0%
Cost of sales	(75.4)	(72.7)	(78.0)
Gross margin	24.6	27.3	22.0
Selling, general and administrative expenses	(9.2)	(9.3)	(10.9)
Research and development expenses	(4.5)	(4.2)	(4.8)
Operating income	10.9	13.8	6.3
Gains on sales of investments	1.8	-	-
Gain on acquisition	-	-	3.6
Interest expense	(0.7)	(1.0)	(1.6)
Interest and other income (expense), net	0.5	0.5	0.8
Income before income tax provision	12.5	13.3	9.1
Income tax provision	(1.0)	(2.5)	(2.1)
Net income	11.5	10.8	7.0
Net income attributable to noncontrolling interests	(1.9)	(2.3)	(1.3)
Net income attributable to Photronics, Inc. shareholders	9.6%	8.5%	5.7%

Note: All the following tabular comparisons, unless otherwise indicated, are for the fiscal years ended October 30, 2016 (2016), November 1, 2015 (2015) and November 2, 2014 (2014), in millions of dollars.

Net Sales

	2016	2015	2014	Percent Change 2015 to 2016	Percent Change 2014 to 2015
IC	$ 364.6	$ 420.8	$ 352.7	(13.4)%	19.3%
FPD	118.9	103.4	102.8	15.0	0.5
Total net sales	$ 483.5	$ 524.2	$ 455.5	(7.8)%	15.1%

Net sales decreased 7.8% in 2016, as compared with 2015. IC photomask sales decreased $56 million as a result of reduced demand for both high-end and mainstream products. Sales of high-end IC products, which we define as photomasks of 45nm and smaller, decreased $36.5 million from last year to $130.4 million. Reduced sales of both memory and logic masks contributed to the decrease. IC Mainstream sales decreased year-over-year by $19 million. FPD sales increased from 2015 primarily due to increased high-end demand. Sales of high-end FPD Masks, or those greater than or equal to G8 and AMOLED products, increased by $15.7 million to $86.6 million in 2016. High-end photomasks typically have higher ASPs than mainstream photomasks. By geographic area, net sales in 2016 as compared with 2015 decreased by $11.9 million or 5.8% in Taiwan, $6.9 million or 4.7% in Korea, $19.1 million or 14.4% in the United States, $2.4 million or 6.7% in Europe, and by $0.4 million or 15.3% at other locations. As a percent of total sales in 2016, sales were 40% in Taiwan, 29% in Korea, 24% in the United States, and 7% in Europe.

Net sales in 2015 increased 15.1% as compared with 2014. The increase was primarily the result of the full year impact of the acquisition of DPTT and increased high-end IC sales. High-end IC sales increased by $62.9 million to $166.9 million in 2015 as a result of increased high-end memory and logic demand, and high-end FPD sales increased by $4.5 million to $70.9 million in 2015. By geographic area, net sales in 2015 as compared with 2014 increased (decreased) by $38.1 million or 22.8% in Taiwan, $7.5 million or 5.4% in Korea, $26.1 million or 24.4% in the United States, and by $(2.9) million or (7.6)% in Europe. As a percent of total sales in 2015, sales were 39% in Taiwan, 28% in Korea, 25% in the United States, 7% in Europe, and 1% at other international locations.

Gross Margin

	2016	2015	2014	Percent Change 2015 to 2016	Percent Change 2014 to 2015
Gross profit	$ 118.7	$ 143.1	$ 100.3	(17.1)%	42.6%
Gross margin %	24.6%	27.3%	22.0%		

Gross profit and gross margin percentage decreased in 2016, as compared with 2015, primarily as a result of decreased sales of high-end IC and, to a lesser extent, mainstream IC photomasks. Gross profit and gross margin increased in 2015, compared with 2014, primarily due to increased high-end IC sales and reduced manufacturing costs. The Company operates in a high fixed cost environment and, to the extent that the Company's revenues and utilization increase or decrease, gross margin will generally be positively or negatively impacted.

Selling, General and Administrative Expenses

	2016	2015	2014	Percent Change 2015 to 2016	Percent Change 2014 to 2015
S,G&A expenses	$ 44.6	$ 49.0	$ 49.6	(9.0)%	(1.3)%
% of net sales	9.2%	9.3%	10.9%		

Selling, general and administrative expenses decreased by $4.4 million in 2016, as compared with 2015, primarily due to reduced compensation, freight and other expenses. Selling, general and administrative expenses decreased $0.6 million in 2015, as compared with 2014, primarily due to expenses incurred in 2014 related to the acquisition of DPTT, offset in part by increased compensation and benefits expenses.

Research and Development

	2016	2015	2014	Percent Change 2015 to 2016	Percent Change 2014 to 2015
R&D expense	$ 21.7	$ 21.9	$ 21.9	(1.2)%	0.0%
% of net sales	4.5%	4.2%	4.8%		

Research and development expenses, which did not significantly change over the periods presented, consist primarily of global development efforts related to high-end process technologies.

Other Income (Expense)

	2016	2015	2014
Gains on sales of investments	$ 8.9	$ -	$ -
Gain on acquisition	-	-	16.4
Interest expense	(3.3)	(5.0)	(7.2)
Interest and other income (expense), net	2.4	2.8	3.3
Total other income (expense), net	$ 8.0	$ (2.2)	$ 12.5

In January 2016 the Company sold a minority interest investment in a foreign entity and recognized a gain of $8.8 million. In May 2016 the Company sold its 49.99% interest in the MP Mask joint venture and recognized a gain of $0.1 million.

Interest expense decreased in 2016 as compared with 2015 primarily as a result of the maturity of our 3.25% convertible senior notes in April 2016. Interest and other income (expense), net decreased in 2016, as compared with 2015, primarily as a result of our realizing unfavorable foreign currency results in 2016, as compared to favorable results in 2015. The negative impact of the change in foreign currency results was somewhat mitigated by the favorable settlement of a liability related to our 2014 DPTT acquisition, as well as the favorable effect of our not incurring financing fees (which were related to the exchange of senior convertible notes) in 2016 that we had incurred in 2015.

Interest expense decreased in 2015 as compared with 2014, primarily as a result of reduced average outstanding borrowings during the year. Interest and other income (expense), net decreased in 2015 as compared with 2014, primarily as a result of financing expenses incurred related to the exchange of convertible notes and reduced interest income, which were offset in part by increased foreign currency gains.

In April 2014 DNP Photomask Technology Taiwan Co., Ltd., a wholly owned subsidiary of DNP, merged into PSMC and operates under the name of Photronics DNP Mask Corporation. The acquisition resulted in the Company recording a gain of $16.4 million in the second quarter of fiscal 2014. See Note 2 of the consolidated financial statements for more information.

Income Tax Provision

	2016	2015	2014
Income tax provision	$ 4.8	$ 13.2	$ 9.3
Effective income tax rate	7.9%	18.8%	22.5%

The effective tax rate differs from the U.S. statutory rate of 35% in fiscal years 2016, 2015 and 2014 primarily due to earnings, including the fiscal year 2014 DPTT Acquisition gain, being taxed at lower statutory rates in foreign jurisdictions, the benefit of various investment credits claimed in a foreign jurisdiction as well as valuation allowances in jurisdictions with historic and continuing losses. The effective income tax rate decreased in 2016, as compared with 2015, as a result of the following major factors: the recognition in 2016 of $4.3 million, compared with $1.5 million in 2015, of previously unrecognized deferred tax assets which primarily resulted from the improved performance of the Company's FPD operations; the reversal of previously recognized tax expense of $2.4 million that was eliminated by a distribution of the 2015 earnings of a foreign subsidiary to its foreign parent; and a higher percentage of income before income taxes, including an $8.8 million gain on the sale of an investment in 2016, generated in jurisdictions where the company previously incurred losses that, due to valuation allowances, did not result in the Company recognizing tax benefits.

The Company considers all available evidence when evaluating the potential future realization of its deferred tax assets and when, based on the weight of all available evidence, it determines that it is more likely than not that some portion or all of its deferred tax assets will not be realized, it reduces its deferred tax assets by a valuation allowance. The Company also regularly assesses the potential outcomes of ongoing and future tax examinations and, accordingly, has recorded accruals for such contingencies. Included in the balance of unrecognized tax benefits as of October 30, 2016, November 1, 2015 and November 2, 2014, are $4.6 million, $4.1 million and $5.0 million recorded in other liabilities in the consolidated balance sheets that, if recognized, would impact the effective tax rate.

Net Income Attributable to Noncontrolling Interests

Net income attributable to noncontrolling interests decreased $2.7 million to $9.5 million in 2016, as compared with $12.2 million in 2015, due to decreased net income at the Company's IC manufacturing facility in Taiwan, and increased $6.2 million to $12.2 million in 2015, as compared with $6.0 million in 2014, primarily as a result of changes in the ownership structure of that same facility. During 2014 the Company exchanged a 49.99% noncontrolling interest in this subsidiary in return for the net assets of an acquiree. See Notes 2 and 13 of the consolidated financial statements for further information.

Liquidity and Capital Resources

	October 30, 2016	November 1, 2015	November 2, 2014
	(in millions)	*(in millions)*	*(in millions)*
Cash and cash equivalents	$ 314.1	$ 205.9	$ 192.9
Net cash provided by operating activities	$ 122.1	$ 133.2	$ 96.4
Net cash provided by(used in) investing activities	$ 52.3	$ (104.3)	$ (87.5)
Net cash used in financing activities	$ (67.0)	$ (7.1)	$ (29.5)

As of October 30, 2016, the Company had cash and cash equivalents of $314.1 million as compared with $205.9 million as of November 1, 2015. The Company's working capital increased $192.2 million to $360.3 million at October 30, 2016, as compared with $168.1 million (as retrospectively adjusted to reflect our adoption of ASU 2015-17 in the fourth quarter of fiscal year 2016) at November 1, 2015. The increase in cash and cash equivalents in 2016 was primarily attributable to the sale of the Company's 49.99% interest in the MP Mask joint venture for $93.1 million and proceeds from the sale of an investment in a foreign entity of $8.8 million. The increase in working capital was the result of these same factors, as well as the conversion of $7.4 million of debt to common stock, reduced accounts payable and accrued expense balances as of the end of 2016, as compared with the end of 2015, which were caused, in significant part, by lower accruals for capital expenditures and employee compensation. The Company may use its available cash on hand for operations, capital expenditures, debt repayments, strategic opportunities, stock repurchases or other corporate uses, any of which may be material.

As of November 1, 2015, the Company had cash and cash equivalents of $205.9 million compared with $192.9 million as of November 2, 2014. The Company's working capital decreased $26.0 million to $171.4 million at November 1, 2015, as compared with $197.4 million at November 2, 2014. The increase in cash and cash equivalents in 2015 was primarily related to increased cash generated from operating activities, while the decrease in working capital was the result of $57.5 million 3.25% convertible senior notes due in April 2016 classified as a current liability at November 1, 2015, and as a long-term liability at November 2, 2014.

As of October 30, 2016 and November 1, 2015, the Company's total cash and cash equivalents include $141.4 million and $102.9 million, respectively, held by its foreign subsidiaries. The majority of earnings of the Company's foreign subsidiaries are considered to be indefinitely reinvested. The repatriation of these funds to the U.S. may subject these funds to U.S. federal income taxes and local country withholding taxes in certain jurisdictions. The Company's foreign subsidiaries continue to grow through the reinvestment of earnings in additional manufacturing capacity and capability, particularly in the high-end IC and FPD areas.

Net cash provided by operating activities decreased to $122.1 million in fiscal 2016, as compared with $133.2 million in fiscal 2015, primarily due to reduced year-over-year operating income, partially offset by net cash favorable changes in accrual accounts. Net cash provided by operating activities increased to $133.2 million in fiscal 2015, as compared with $96.4 million in fiscal 2014, primarily due to increased net income in 2015, excluding the 2014 noncash gain on the acquisition of DPTT. Net cash provided by operating activities decreased to $96.4 million in fiscal 2014, as compared with $99.4 million in fiscal 2013, primarily due to reduced net income in 2014, less the noncash gain on the acquisition of DPTT discussed in Note 2 to the consolidated financial statements.

Cash flows from investing activities increased to $52.3 million provided in fiscal year 2016 from $104.3 used in fiscal year 2015, with the change being primarily due to proceeds of $101.9 million received from the sale of our investments in the MP Mask joint venture and an interest we held in a foreign entity, as well as decreased expenditures for capital equipment. Net cash used in investing activities in fiscal 2015 increased to $104.3 million, as compared with $87.5 million in 2014, and in fiscal 2014 increased to $87.5 million, as compared with $66.2 million in 2013, primarily due to increased capital expenditure payments. Capital expenditure payments for the 2016, 2015, and 2014 fiscal years were $50.1, $104.0 million, and $91.1 million, respectively. The Company expects capital expenditure payments in fiscal 2017 to be approximately $100 million.

Net cash used in financing activities was $67.0 million in fiscal 2016 which was primarily comprised of repayments of long-term borrowings (including $50.1 million to retire our 3.25% convertible senior notes which matured in April 2016) and a dividend paid to the noncontrolling interest in a subsidiary, which were partially offset by proceeds received from employee share-based arrangements. Net cash used in financing activities was $7.1 million in fiscal 2015, which was primarily comprised of repayments of borrowings offset, in part, by proceeds from share-based arrangements. Net cash used in financing activities was $29.5 million in fiscal 2014, primarily comprised of repayments of borrowings. In fiscal 2014 the Company repaid a term loan with an outstanding balance of $21.3 million.

In August 2016 the Company announced that it had signed an investment agreement with the Xiamen Torch Hi-Tech Industrial Development Zone (Xiamen Torch) to establish an IC research and development and manufacturing facility in Xiamen, China. The Company plans to invest $160 million, in the form of a combination of cash and transferred capital, over the next five years, with construction commencing in 2017 and production estimated to start in late 2018. Under the terms of the agreement the Company will build and operate a state-of-the-art IC manufacturing and research and development facility, in return for which Xiamen Torch will provide certain investment incentives and support.

In June 2016 PDMC, the Company's majority owned IC facility in Taiwan, paid a dividend of $11.9 million to its noncontrolling interests.

In May 2016 the Company sold its investment in MP Mask to Micron for $93.1 million. On that same date a supply agreement commenced between the Company and Micron, which provides that we will be the majority outsourced supplier of Micron's photomasks and related services. The supply agreement has a one year term, subject to mutually agreeable renewals. In addition, the Company forevermore has the right to use the technology it obtained under the prior technology license agreement.

In April 2016 $57.5 million of the Company's senior convertible notes matured. The Company repaid $50.1 million to noteholders, and issued approximately 0.7 million shares to noteholders that elected to convert their notes to common stock. The notes were exchanged at the rate of approximately 96 shares per $1,000 note principle, equivalent to a conversion rate of $10.37 per share.

In January 2015 the Company privately exchanged $57.5 million in aggregate principal amount of its 3.25% convertible senior notes with a maturity date of April 1, 2016, for new 3.25% convertible senior notes with an aggregate principal amount of $57.5 million with a maturity date of April 1, 2019. The conversion rate of the new notes is the same as that of the exchanged notes, which were issued in March 2011 with a conversion rate of approximately 96 shares of common stock per $1,000 note principal, equivalent to a conversion price of $10.37 per share of common stock, and is subject to adjustment upon the occurrence of certain events, which are described in the indenture dated January 22, 2015. Note holders may convert each $1,000 principal amount of notes at any time prior to the close of business on the second scheduled trading day immediately preceding April 1, 2019, and the Company is not required to redeem the notes prior to their maturity date. Interest on the notes accrues in arrears, and is paid semiannually through the notes' maturity date.

In October 2014, in a non-cash transaction, the Company issued 4.3 million shares of its common stock in exchange for the fully matured, remaining outstanding $22.1 million principal amount of its 5.5% convertible senior notes, which were issued in September 2009.

In April 2014 the Company acquired DPTT in a non-cash transaction that resulted in the Company owning 50.01% and DNP owning 49.99% of PDMC, whose financial results are included in the Company's consolidated financial statements. PDMC has generated sufficient cash flows to fund its operating and capital requirements. See Note 2 of the consolidated financial statements for more information.

In August 2014 the Company amended its credit facility. The credit facility, which expires in December 2018, has a $50 million limit with an expansion capacity to $75 million, and is secured by substantially all of the Company's assets located in the United States and common stock the Company owns in certain of its foreign subsidiaries. The credit facility is subject to minimum interest coverage, total leverage ratio and minimum unrestricted cash balance financial covenants, all of which the Company was in compliance with at October 30, 2016. The Company had no outstanding borrowings against the credit facility at October 30, 2016, and $50 million was available for borrowing. The interest rate on the credit facility (1.78% at October 30, 2016) is based on the Company's total leverage ratio at LIBOR plus a spread, as defined in the credit facility.

In December 2013 the Company repaid the $21.3 million outstanding balance of a term loan that it entered into in February 2012 to partially fund its purchase from Micron of the US nanoFab facility in Boise, Idaho, which it previously held under an operating lease. As a result of this purchase, the Company's operating lease commitments were reduced by a combined total of $15 million in fiscal years 2013 and 2014.

The Company's liquidity, as it operates in a high fixed cost environment, is highly dependent on its sales volume, cash conversion cycle, and the timing of its capital expenditures (which can vary significantly from period to period). Depending on conditions in the semiconductor and FPD markets, the Company's cash flows from operations and current holdings of cash may not be adequate to meet its current and long-term needs for capital expenditures, operations and debt repayments. Historically, in certain years, the Company has used external financing to fund these needs. Due to conditions in the credit markets and covenant restrictions on its existing debt, some financing instruments used by the Company in the past may not be currently available to it. The Company continues to evaluate further cost reduction initiatives. However, the Company cannot assure that additional sources of financing would be available to it on commercially favorable terms, should its cash requirements exceed cash available from operations, existing cash, and cash available under its credit facility.

At October 30, 2016, the Company had outstanding purchase commitments of $60 million, which included $51 million related to capital expenditures. The Company intends to finance its capital expenditures with its working capital, cash generated from operations, and, if necessary, with additional borrowings. As previously discussed, the Company has also entered into an agreement to construct a facility in China in which it estimates it will invest $160 million in the form of a combination of cash and transferred capital.

Cash Requirements

The Company's cash requirements in fiscal 2017 will be primarily to fund its operations, including capital spending, service its debt, and finance the construction of its IC research and development and manufacturing facility in Xiamen, China. We believe that our cash on hand, cash generated from operations and amounts available under our credit facility will be sufficient to meet our cash requirements for the next twelve months. The Company regularly reviews the availability and terms on which it might issue additional equity or debt securities in the public or private markets. However, we cannot assure that additional sources of financing would be available to us on commercially favorable terms, should our cash requirements exceed our cash available from operations, existing cash, and cash available under our credit facility.

Contractual Obligations

The following table presents the Company's contractual obligations as of October 30, 2016:

	Payment due by period				
Contractual Obligations	**Total**	**Less Than 1 Year**	**1 - 3 Years**	**3 - 5 Years**	**More Than 5 Years**
Long-term borrowings	$ 57,500	$ -	$ 57,500	$ -	$ -
Operating leases	6,015	2,148	1,689	774	1,404
Capital leases	10,067	5,428	4,639	-	-
Unconditional purchase obligations	59,927	57,087	2,840	-	-
Interest	5,191	2,204	2,987	-	-
Other noncurrent liabilities	13,208	80	2,479	2,585	8,064
Total	$ 151,908	$ 66,947	$ 72,134	$ 3,359	$ 9,468

As of October 30, 2016, the Company had recorded accruals for uncertain tax positions of $4.6 million which were not included in the above table due to the high degree of uncertainty regarding the timing of future payments related to such liabilities.

Off-Balance Sheet Arrangements

In April 2014 the Company acquired a 50.01% (controlling interest) of PDMC, its IC manufacturing facility located in Taiwan. Under the PDMC operating agreement the shareholders of PDMC may be requested to make additional contributions to PDMC. In the event that PDMC requests additional capital from its shareholders, the Company may, in order to maintain its 50.01% ownership interest, be required to make such contributions to PDMC. The PDMC operating agreement limits the amount of contributions that may be requested during both the first four years of PDMC and during any individual year within those first four years. As of October 30, 2016, the Company had not been requested to make any additional capital contribution to PDMC.

The Company leases certain office facilities and equipment under operating leases that may require it to pay taxes, insurance and maintenance expenses related to the properties. Certain of these leases contain renewal or purchase options exercisable at the end of the lease terms. See Note 8 to the consolidated financial statements for additional information on these operating leases.

Business Outlook

A majority of the Company's revenue growth is expected to continue to come from the Asian region, predominantly in China. In response to this expectation, the Company will commence construction of an IC research and development and manufacturing facility in Xiamen, China, in 2017. Production is anticipated to begin at this facility in 2018.

The Company continues to assess its global manufacturing strategy and monitor its sales volume and related cash flows from operations. This ongoing assessment could result in future facility closures, asset redeployments, additional impairments of intangible or long-lived assets, workforce reductions, or the addition of increased manufacturing facilities, all of which would be based on market conditions and customer requirements.

The Company's future results of operations and the other forward-looking statements contained in this filing involve a number of risks and uncertainties. While various risks and uncertainties have been discussed, a number of other unforeseen factors could cause actual results to differ materially from the Company's expectations.

Critical Accounting Estimates

The Company's consolidated financial statements are based on the selection and application of accounting policies, which require management to make significant estimates and assumptions. The Company believes that the following are some of the more critical judgment areas in the application of the Company's accounting policies that affect its financial condition and results of operations.

Estimates and Assumptions

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect amounts reported in them. Management bases its estimates on historical experience and on various assumptions that are believed to be reasonable under the circumstances. The Company's estimates are based on the facts and circumstances available at the time they are made. Changes in accounting estimates used are likely to occur from period to period, which may have a material impact on the presentation of the Company's financial condition and results of operations. Actual results reported by the Company may differ from such estimates. The Company reviews these estimates periodically and reflects the effect of revisions in the period in which they are determined.

Fair Value of Financial Instruments

The fair value of the Company's 3.25% convertible senior notes is estimated by management based upon reference to quoted market prices and other available market information. The fair values of the Company's cash and cash equivalents, accounts receivable, accounts payable, certain other current assets and current liabilities, and variable rate borrowings approximate their carrying value due to their short-term maturities.

Property, Plant and Equipment

Property, plant and equipment, except as explained below under "Impairment of Long-Lived Assets," are stated at cost less accumulated depreciation and amortization. Repairs and maintenance, as well as renewals and replacements of a routine nature, are charged to operations as incurred, while those that improve or extend the lives of existing assets are capitalized. Upon sale or other disposition, the cost of the asset and accumulated depreciation are removed from the accounts, and any resulting gain or loss is reflected in earnings.

Depreciation and amortization are computed using the straight-line method over the estimated useful lives of the related assets. Buildings and improvements are depreciated over 15 to 40 years, machinery and equipment over 3 to 10 years, and furniture, fixtures and office equipment over 3 to 5 years. Leasehold improvements are amortized over the life of the lease or the estimated useful life of the improvement, whichever is less. Judgment and assumptions are used in establishing estimated useful lives and depreciation periods. The Company also uses judgment and assumptions as it periodically reviews property, plant and equipment for any potential impairment in carrying values whenever events such as a significant industry downturn, plant closures, technological obsolescence or other changes in circumstances indicate that their carrying amounts may not be recoverable.

Intangible Assets

Intangible assets consist primarily of a technology license agreement and acquisition-related intangibles. These assets, except as explained below, are stated at fair value as of the date acquired less accumulated amortization. Amortization is calculated based on the estimated useful lives of the assets, which range from 3 to 15 years, using the straight-line method or another method that more fairly represents the utilization of the assets.

The Company periodically evaluates the remaining useful lives of its intangible assets to determine whether events or circumstances warrant a revision to the remaining periods of amortization. In the event that the estimate of an intangible asset's remaining useful life has changed, the remaining carrying amount of the intangible asset is amortized prospectively over that revised remaining useful life. If it is determined that an intangible asset has an indefinite useful life, that intangible asset would be subject to impairment testing annually or whenever events or circumstances indicate that the carrying value may not, based on future undiscounted cash flows or market factors, be recoverable, and an impairment loss would be recorded in the period so determined. The measurement of the impairment loss would be based on the fair value of the intangible asset.

Impairment of Long-Lived Assets

Long-lived assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Determination of recoverability is based on the Company's judgment and estimates of undiscounted future cash flows resulting from the use of the assets and their eventual disposition. Measurement of an impairment loss for long-lived assets that management expects to hold and use is based on the fair value of the assets. The carrying values of assets determined to be impaired are reduced to their estimated fair values. Fair values of the impaired assets would generally be determined using a market or income approach.

Business Combinations

When acquiring other businesses or participating in mergers or joint ventures in which the Company is deemed to be the acquirer, the Company generally recognizes identifiable assets acquired, liabilities assumed and any noncontrolling interests at their acquisition date fair values, and separately from any goodwill that may be required to be recognized. Goodwill, when recognizable, would be measured as the excess amount of any consideration transferred, which is generally measured at fair value, over the acquisition date fair values of the identifiable assets acquired and liabilities assumed.

Accounting for such transactions requires the Company's management to make significant assumptions and estimates. These include, among others, any estimates or assumptions that may be made for the amounts of future cash flows that will result from any identified intangible assets, the useful lives of such intangible assets, the amount of any contingent liabilities to record at the time of the acquisition, the extent of any restructuring charges expected to be incurred as a result of the business combination, and the fair values of any tangible assets acquired. Although the Company believes any estimates and assumptions it makes to be reasonable and appropriate at the time they are made, unanticipated events and circumstances may arise that affect their accuracy, causing actual results to differ from those estimated by the Company.

Investments in Joint Ventures

The financial results of investments in joint ventures of which the Company has a controlling financial interest are included in the Company's consolidated financial statements. In the case of any investment in a joint venture that gave rise to goodwill, such goodwill would be tested for impairment annually or when an event occurred or circumstances changed that would more likely than not have reduced the fair value of the joint venture below its carry value. Goodwill would be tested for impairment using a two-step process. The Company might, at its option, assess qualitative factors to determine whether it was necessary to perform the two-step impairment test. If it was determined that the two-step test was necessary, the Company would use the test to identify potential goodwill impairment and to measure the amount of a goodwill impairment loss to be recognized (if any).

Investments in joint ventures over which the Company has the ability to exercise significant influence and that, in general, are at least 20 percent owned are accounted for under the equity method. An impairment loss would be recognized whenever a decrease in the value of such an investment below its carrying amount is determined to be other than temporary. In judging "other than temporary," the Company would consider the length of time and the extent to which the fair value of the investment has been less than the carrying amount of the investment, the near-term and longer-term operating and financial prospects of the investee, and the Company's longer-term intent of retaining its investment in the investee.

Variable Interest Entities

The Company accounts for the investments it makes in certain legal entities in which equity investors do not have 1) sufficient equity at risk for the legal entity to finance its activities without additional subordinated financial support or, 2) as a group, the holders of the equity investment at risk do not have either the power, through voting or similar rights, to direct the activities of the legal entity that most significantly impact the entity's economic performance or, 3) the obligation to absorb the expected losses of the legal entity or the right to receive expected residual returns of the legal entity as "variable interest entities", or "VIEs".

The Company would consolidate the results of any such entity in which it determined that it has a controlling financial interest. The Company would have a "controlling financial interest" in such an entity if the Company had both the power to direct the activities that most significantly affect the VIE's economic performance and the obligation to absorb the losses of, or right to receive the benefits from, the VIE that could be potentially significant to the VIE. On a quarterly basis, the Company reassesses whether it has a controlling financial interest in any investments it has in these certain legal entities.

The Company accounts for investments it makes in VIEs in which it has determined that it does not have a controlling financial interest but has significant influence over and holds at least a 20 percent ownership interest using the equity method. Any such investment not meeting the parameters to be accounted under the equity method would be accounted for using the cost method, unless the investment had a readily determinable fair value, at which it would then be reported.

Income Taxes

The income tax provision is computed on the basis of the various tax jurisdictions' income or loss before income taxes. Deferred income taxes reflect the tax effects of differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes, as well as the tax effects of net operating losses and tax credit carryforwards. The Company uses judgment and assumptions to determine if valuation allowances for deferred income tax assets are required, if their realization is not more likely than not, by considering future market growth, forecasted operations, future taxable income, and the amounts of earnings in the tax jurisdictions in which it operates.

The Company considers income taxes in each of the tax jurisdictions in which it operates in order to determine its effective income tax rate. Current income tax exposure is identified and temporary differences resulting from differing treatments of items for tax and financial reporting purposes are assessed. These differences result in deferred tax assets and liabilities, which are included in the Company's consolidated balance sheets. Additionally, we evaluate the potential realization of deferred income tax assets from future taxable income and establish valuation allowances if their realization is deemed not more likely than not. Accordingly, income taxes charged against earnings may have been impacted by changes in the valuation allowances. Significant management estimates and judgment are required in determining any valuation allowances recorded against net deferred tax assets.

The Company accounts for uncertain tax positions by recording a liability for unrecognized tax benefits resulting from uncertain tax positions taken, or expected to be taken, in its tax returns. We include any applicable interest and penalties related to uncertain tax positions in our income tax provision.

Revenue Recognition

The Company recognizes revenue when there is persuasive evidence that an arrangement exists, delivery has occurred, the sales price is fixed or determinable, and collectability is reasonably assured. "Delivery" is determined by the shipping terms of the individual sales transactions. For sales with FOB destination or similar shipping terms, delivery occurs when the Company's product reaches its destination and is received by the customer. For sales with FOB shipping point terms, delivery occurs when the Company's product is received by the common carrier. The Company uses judgment when estimating the effect on revenue of discounts and sales incentives, both of which are accrued when the related revenue is recognized.

Share-based Compensation

The Company recognizes share-based compensation expense over the service period that the awards are expected to vest. Share-based compensation expense includes the estimated effects of forfeitures, which are adjusted over the requisite service period to the extent actual forfeitures differ, or are expected to differ, from such estimates. Changes in estimated forfeitures are recognized in the period of change and will also impact the amount of expense to be recognized in future periods. Determining the appropriate option pricing model, calculating the grant date fair value of share-based awards and estimating forfeiture rates requires considerable judgment, including the estimations of stock price volatility and the expected term of options granted.

The Company uses the Black-Scholes option pricing model to value employee stock options. We estimate stock price volatility based on daily averages of our common stock’s historical volatility over a term approximately equal to the estimated time period the grant will remain outstanding. The expected term of options and forfeiture rate assumptions are derived from historical data.

Recent Accounting Pronouncements

See “Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Note 23 – Recent Accounting Pronouncements” for recent accounting pronouncements that may affect the Company’s financial reporting.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign Currency Exchange Rate Risk

The Company conducts business in several major international currencies throughout its worldwide operations and its financial performance may be affected by fluctuations in the exchange rates of these currencies. Changes in exchange rates can positively or negatively affect the Company's sales, operating margins, assets, liabilities, and equity. The functional currencies of the Company's Asian subsidiaries are the South Korean won, the New Taiwan dollar and the Singapore dollar. The functional currencies of the Company's European subsidiaries are the British pound and the euro. In addition, the Company has transactions and balances in Japanese yen and, as a result of its investment in a facility in Xiamen, China, the construction of which will commence in 2017, the Company will have significant transactions in the Chinese renminbi.

The Company attempts to minimize its risk of foreign currency transaction losses by producing its products in the same country in which the products are sold (thereby generating revenues and incurring expenses in the same currency), and by managing its working capital. There can be no assurance that this approach will continue to be successful, especially in the event of a significant adverse movement in the value of any foreign currency against the U.S. dollar, the New Taiwan dollar, the South Korean won, or the Chinese renminbi. However, in some instances, the Company sells products in a currency other than the functional currency of the country where it was produced or purchases products in a currency that differs from the functional currency of the purchasing manufacturing facility.

The Company's primary net foreign currency exposures as of October 30, 2016, included the South Korean won, the Japanese yen, the New Taiwan dollar, the Singapore dollar, the British pound, and the euro. As of October 30, 2016, a 10% adverse movement in the value of these currencies against the functional currencies of our subsidiaries would have resulted in a net unrealized pre-tax loss of $9.1 million. The Company does not believe that a 10% change in the exchange rates of other non-US dollar currencies would have had a material effect on its October 30, 2016 consolidated financial statements.

Interest Rate Risk

At October 30, 2016, the Company did not have any variable rate borrowings. Therefore, a 10% change in interest rates would not have had a material effect on the Company's consolidated financial position, results of operations, or cash flows in the year ended October 30, 2016.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Shareholders
Photronics, Inc.
Brookfield, Connecticut

We have audited the accompanying consolidated balance sheets of Photronics, Inc. and subsidiaries (the "Company") as of October 30, 2016 and November 1, 2015, and the related consolidated statements of income, consolidated statements of comprehensive income, consolidated statements of equity, and consolidated statements of cash flows for each of the three fiscal years ended October 30, 2016, November 1, 2015, and November 2, 2014. We also have audited the Company's internal control over financial reporting as of October 30, 2016, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. The Company's management is responsible for these financial statements, 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 in Item 9A. Our responsibility is to express an opinion on these financial statements and an opinion on the Company's internal control over financial reporting based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed by, or under the supervision of, the company's principal executive and principal financial officers, or persons performing similar functions, and effected by the company's board of directors, management, and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. 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 the inherent limitations of internal control over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may not be prevented or detected on a timely basis. Also, projections of any evaluation of the effectiveness of the internal control over financial reporting to future periods are subject to the risk that the controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Photronics, Inc. and subsidiaries as of October 30, 2016 and November 1, 2015, and the results of their operations and their cash flows for each of the three fiscal years ended October 30, 2016, November 1, 2015, and November 2, 2014, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of October 30, 2016, based on the criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

/s/ Deloitte & Touche LLP
Hartford, Connecticut
January 6, 2017

PHOTRONICS, INC. AND SUBSIDIARIES
Consolidated Balance Sheets
(in thousands, except per share amounts)

	October 30, 2016	November 1, 2015
ASSETS		
Current assets:		
Cash and cash equivalents	$ 314,074	$ 205,867
Accounts receivable, net of allowance of $3,901 in 2016 and $3,301 in 2015	92,636	110,056
Inventories	22,081	24,157
Other current assets	12,795	20,680
Total current assets	441,586	360,760
Property, plant and equipment, net	506,434	547,284
Investment in joint venture	-	93,021
Intangible assets, net	19,854	24,616
Deferred income taxes	16,322	13,083
Other assets	4,071	4,612
Total assets	$ 988,267	$ 1,043,376
LIABILITIES AND EQUITY		
Current liabilities:		
Current portion of long-term borrowings	$ 5,428	$ 65,495
Accounts payable	48,906	79,143
Payables – related parties	2,743	8,840
Accrued liabilities	24,240	39,214
Total current liabilities	81,317	192,692
Long-term borrowings	62,139	67,120
Deferred income taxes	1,491	2,209
Other liabilities	17,846	19,289
Total liabilities	162,793	281,310
Commitments and contingencies		
Equity:		
Preferred stock, $0.01 par value, 2,000 shares authorized, none issued and outstanding	-	-
Common stock, $0.01 par value, 150,000 shares authorized, 68,080 shares issued and outstanding at October 30, 2016, 66,602 shares issued and outstanding at November 1, 2015	681	666
Additional paid-in capital	541,093	526,402
Retained earnings	176,260	130,060
Accumulated other comprehensive loss	(7,671)	(10,573)
Total Photronics, Inc. shareholders' equity	710,363	646,555
Noncontrolling interests	115,111	115,511
Total equity	825,474	762,066
Total liabilities and equity	$ 988,267	$ 1,043,376

See accompanying notes to consolidated financial statements.

PHOTRONICS, INC. AND SUBSIDIARIES
Consolidated Statements of Income
(in thousands, except per share amounts)

	Year Ended		
	October 30, 2016	November 1, 2015	November 2, 2014
Net sales	$ 483,456	$ 524,206	$ 455,527
Cost and expenses:			
Cost of sales	(364,750)	(381,070)	(355,181)
Selling, general and administrative	(44,577)	(48,983)	(49,638)
Research and development	(21,654)	(21,920)	(21,913)
Operating income	52,475	72,233	28,795
Other income (expense):			
Gains on sales of investments	8,940	-	-
Gain on acquisition	-	-	16,372
Interest expense	(3,365)	(4,990)	(7,247)
Interest and other income (expense), net	2,424	2,797	3,410
Income before income tax provision	60,474	70,040	41,330
Income tax provision	(4,798)	(13,181)	(9,295)
Net income	55,676	56,859	32,035
Net income attributable to noncontrolling interests	(9,476)	(12,234)	(6,039)
Net income attributable to Photronics, Inc. shareholders	$ 46,200	$ 44,625	$ 25,996
Earnings per share:			
Basic	$ 0.68	$ 0.67	$ 0.42
Diluted	$ 0.64	$ 0.63	$ 0.41
Weighted-average number of common shares outstanding:			
Basic	67,539	66,331	61,779
Diluted	76,354	78,383	66,679

See accompanying notes to consolidated financial statements.

PHOTRONICS, INC. AND SUBSIDIARIES
Consolidated Statements of Comprehensive Income
(in thousands)

	Year Ended		
	October 30, 2016	November 1, 2015	November 2, 2014
Net income	$ 55,676	$ 56,859	$ 32,035
Other comprehensive income (loss), net of tax of $0:			
Foreign currency translation adjustments	6,334	(40,154)	(5,916)
Amortization of cash flow hedge	129	128	128
Other	(589)	(381)	(41)
Net other comprehensive income (loss)	5,874	(40,407)	(5,829)
Comprehensive income	61,550	16,452	26,206
Less: comprehensive income attributable to noncontrolling interests	12,448	4,174	5,238
Comprehensive income attributable to Photronics, Inc. shareholders	$ 49,102	$ 12,278	$ 20,968

See accompanying notes to consolidated financial statements.

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PHOTRONICS, INC. AND SUBSIDIARIES
Consolidated Statements of Equity
Years Ended October 30, 2016, November 1, 2015 and November 2, 2014
(in thousands)

	Common Stock		Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Non-Controlling Interests	Total Equity
	Shares	Amount					
Balance at November 3, 2013	61,083	$ 611	$ 498,861	$ 59,439	$ 26,403	$ 2,517	$ 587,831
Net income	-	-	-	25,996	-	6,039	32,035
Other comprehensive loss	-	-	-	-	(5,028)	(801)	(5,829)
Sale of common stock through employee stock option and purchase plan	337	3	1,424	-	-	-	1,427
Restricted stock awards vestings and expense	172	2	1,295	-	-	-	1,297
Share-based compensation expense	-	-	2,774	-	-	-	2,774
Acquisition of DPTT	-	-	(6,291)	-	410	105,403	99,522
Conversion of debt to common stock	4,338	43	22,011	-	-	-	22,054
Repurchase of common stock by subsidiary	-	-	108	-	(11)	(1,714)	(1,617)
Balance at November 2, 2014	65,930	659	520,182	85,435	21,774	111,444	739,494
Net income	-	-	-	44,625	-	12,234	56,859
Other comprehensive loss	-	-	-	-	(32,347)	(8,060)	(40,407)
Sale of common stock through employee stock option and purchase plan	513	5	2,505	-	-	-	2,510
Restricted stock awards vestings and expense	159	2	1,064	-	-	-	1,066
Share-based compensation expense	-	-	2,623	-	-	-	2,623
Repurchase of common stock by subsidiary	-	-	28	-	-	(107)	(79)
Balance at November 1, 2015	66,602	666	526,402	130,060	(10,573)	115,511	762,066
Net income	-	-	-	46,200	-	9,476	55,676
Other comprehensive income	-	-	-	-	2,902	2,972	5,874
Sale of common stock through employee stock option and purchase plan	618	6	3,441	-	-	-	3,447
Restricted stock awards vestings and expense	143	2	1,190	-	-	-	1,192
Share-based compensation expense	-	-	2,637	-	-	-	2,637
Conversion of debt to common stock	717	7	7,431	-	-	-	7,438
Dividends to noncontrolling interests	-	-	-	-	-	(11,901)	(11,901)
Return of capital to noncontrolling interest	-	-	-	-	-	(955)	(955)
Repurchase of common stock by subsidiary	-	-	(8)	-	-	8	-
Balance at October 30, 2016	68,080	$ 681	$ 541,093	$ 176,260	$ (7,671)	$ 115,111	$ 825,474

See accompanying notes to consolidated financial statements.

PHOTRONICS, INC. AND SUBSIDIARIES
Consolidated Statements of Cash Flows
(in thousands)

	Year Ended		
	October 30, 2016	November 1, 2015	November 2, 2014
Cash flows from operating activities:			
Net income	$ 55,676	$ 56,859	$ 32,035
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization of property, plant and equipment	77,613	75,684	72,859
Amortization of deferred financing costs and intangible assets	5,228	6,729	7,277
Gains on sales of investments	(8,940)	-	-
Gain on acquisition	-	-	(16,372)
Share-based compensation	3,827	3,689	4,071
Deferred income taxes	(3,816)	3,401	4,215
Changes in assets and liabilities:			
Accounts receivable	18,807	(21,815)	5,271
Inventories	2,268	(2,893)	(2,552)
Other current assets	7,936	(2,557)	1,781
Accounts payable, accrued liabilities and other	(36,462)	14,098	(12,224)
Net cash provided by operating activities	122,137	133,195	96,361
Cash flows from investing activities:			
Purchases of property, plant and equipment	(50,147)	(104,033)	(91,085)
Proceeds from sales of investments	101,853	-	-
Cash from acquisition	-	-	4,508
Purchases of intangible assets	(13)	(771)	(364)
Other	597	499	(544)
Net cash provided by (used in) investing activities	52,290	(104,305)	(87,485)
Cash flows from financing activities:			
Repayments of long-term borrowings	(57,609)	(9,571)	(29,782)
Dividends paid to noncontrolling interests	(11,890)	-	-
Return of capital to noncontrolling interests	(966)	-	-
Proceeds from share-based arrangements	3,463	2,651	1,298
Payments of deferred financing fees	-	-	(346)
Other	(20)	(179)	(711)
Net cash used in financing activities	(67,022)	(7,099)	(29,541)
Effects of exchange rate changes on cash and cash equivalents	802	(8,853)	(2,021)
Net increase (decrease) in cash and cash equivalents	108,207	12,938	(22,686)
Cash and cash equivalents at beginning of year	205,867	192,929	215,615
Cash and cash equivalents at end of year	$ 314,074	$ 205,867	$ 192,929
Supplemental disclosure of non-cash information:			
Accrual for property, plant and equipment purchased during year	$ 7,866	$ 25,858	$ 28,672
Conversion of debt to common stock	7,439	-	22,054
Noncash net assets from acquisition	-	-	110,211

See accompanying notes to consolidated financial statements.

PHOTRONICS, INC. AND SUBSIDIARIES
Notes to Consolidated Financial Statements
Years Ended October 30, 2016, November 1, 2015 and November 2, 2014
(in thousands, except share amounts)

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Business

Photronics, Inc. and its subsidiaries ("Photronics", the "Company", “we”, or “us”) is one of the world's leading manufacturers of photomasks, which are high precision photographic quartz plates containing microscopic images of electronic circuits. Photomasks are a key element in the manufacture of semiconductors and flat panel displays ("FPDs"), and are used as masters to transfer circuit patterns onto semiconductor wafers and flat panel substrates during the fabrication of integrated circuits ("ICs") and a variety of FPDs and, to a lesser extent, other types of electrical and optical components. The Company currently operates principally from nine manufacturing facilities; two of which are located in Europe, three in Taiwan, one in Korea, and three in the United States. In August 2016 the Company announced its plans to build a research and development and manufacturing facility in Xiamen, China, with construction commencing in 2017 and production estimated to start in late 2018. See Note 21 for additional information.

Consolidation

The accompanying consolidated financial statements include the accounts of Photronics, Inc. and its majority-owned subsidiaries that the Company controls. All intercompany balances and transactions have been eliminated in consolidation.

Estimates and Assumptions

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect amounts reported in them. Estimates are based on historical experience and on various assumptions that are believed to be reasonable under the circumstances. The Company's estimates are based on the facts and circumstances available at the time they are made. Actual results reported by the Company may differ from such estimates. The Company reviews these estimates periodically and reflects the effect of revisions in the period in which they are determined.

Fiscal Year

The Company's fiscal year ends on the Sunday closest to October thirty-first, and, as a result, a 53-week year occurs every 5 to 6 years. Fiscal years 2016, 2015 and 2014 each included 52 weeks.

Cash and Cash Equivalents

Cash and cash equivalents include cash and highly liquid investments purchased with an original maturity of 3 months or less. The carrying values of cash equivalents approximate their fair values due to the short-term maturities of these instruments.

Inventories

Inventories are stated at the lower of cost, determined under the first-in, first-out ("FIFO") method, or market. Presented below are the components of inventory at the balance sheet dates:

	October 30, 2016	November 1, 2015
Finished goods	$ 142	$ 861
Work in process	2,987	4,177
Raw materials	18,952	19,119
	$ 22,081	$ 24,157

Property, Plant and Equipment

Property, plant and equipment, except as explained below under "Impairment of Long-Lived Assets," are stated at cost less accumulated depreciation and amortization. Repairs and maintenance, as well as renewals and replacements of a routine nature, are charged to operations as incurred, while those that improve or extend the lives of existing assets are capitalized. Upon sale or other disposition, the cost of the asset and its related accumulated depreciation are removed from the accounts, and any resulting gain or loss is reflected in earnings.

Depreciation and amortization, substantially all of which are included in cost of sales, are computed using the straight-line method over the estimated useful lives of the related assets. Buildings and improvements are depreciated over 15 to 40 years, machinery and equipment over 3 to 10 years and, furniture, fixtures and office equipment over 3 to 5 years. Leasehold improvements are amortized over the life of the lease or the estimated useful life of the improvement, whichever is less. Judgment and assumptions are used in establishing estimated useful lives and depreciation periods. The Company also uses judgment and assumptions as it periodically reviews property, plant and equipment for any potential impairment in carrying values whenever events such as a significant industry downturn, plant closures, technological obsolescence, or other change in circumstances indicate that their carrying amounts may not be recoverable.

Intangible Assets

Intangible assets consist primarily of a technology license agreement and acquisition-related intangibles. These assets, except as explained below, are stated at fair value as of the date acquired less accumulated amortization. Amortization is calculated based on the estimated useful lives of the assets, which range from 3 to 15 years, using the straight-line method or another method that more fairly represents the utilization of the assets.

The Company periodically evaluates the remaining useful lives of its intangible assets to determine whether events or circumstances warrant a revision to the remaining periods of amortization. In the event that the estimate of an intangible asset’s remaining useful life has changed, the remaining carrying amount of the intangible asset is amortized prospectively over that revised remaining useful life. If it is determined that an intangible asset has an indefinite useful life, that intangible asset would be subject to impairment testing annually or whenever events or circumstances indicate that the carrying value may not, based on future undiscounted cash flows or market factors, be recoverable, and an impairment loss would be recorded in the period so determined. The measurement of the impairment loss would be based on the fair value of the intangible asset.

Impairment of Long-Lived Assets

Long-lived assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Determination of recoverability is based on the Company's judgment and estimates of undiscounted future cash flows resulting from the use of the assets and their eventual disposition. Measurement of an impairment loss for long-lived assets that management expects to hold and use is based on the fair value of the assets. The carrying values of assets determined to be impaired are reduced to their estimated fair values. Fair values of any impaired assets would generally be determined using a market or income approach.

Business Combinations

When acquiring other businesses or participating in mergers or joint ventures in which the Company is deemed to be the acquirer, the Company generally recognizes identifiable assets acquired, liabilities assumed and any noncontrolling interests at their acquisition date fair values, and separately from any goodwill that may be required to be recognized. Goodwill, when recognizable, would be measured as the excess amount of any consideration transferred, which is generally measured at fair value, over the acquisition date fair values of the identifiable assets acquired and liabilities assumed.

Accounting for such transactions requires the Company’s management to make significant assumptions and estimates and, although the Company believes any estimates and assumptions it makes to be reasonable and appropriate at the time they are made, unanticipated events and circumstances may arise that affect their accuracy, which may cause actual results to differ from those estimated by the Company. When required, the Company will adjust the values of the assets acquired and liabilities assumed against the acquisition gain or goodwill, as initially recorded, for a period of up to one year after the transaction.

Costs incurred to effect a merger or acquisition, such as legal, accounting, valuation and other third party costs, as well as internal general and administrative costs incurred are charged to expense in the periods incurred. Costs incurred to issue any debt and equity securities are recognized in accordance with other applicable generally accepted accounting principles.

Investments in Joint Ventures

The financial results of investments in joint ventures of which the Company has a controlling financial interest are included in the Company’s consolidated financial statements. Investments in joint ventures over which the Company has the ability to exercise significant influence and that, in general, are at least 20 percent owned are accounted for under the equity method. An impairment loss would be recognized whenever a decrease in the fair value of such an investment below its carrying amount is determined to be other than temporary. In judging "other than temporary," the Company would consider the length of time and the extent to which the fair value of the investment has been less than the carrying amount of the investment, the near-term and longer-term operating and financial prospects of the investee, and the Company's longer-term intent of retaining its investment in the investee.

Variable Interest Entities

The Company accounts for the investments it makes in certain legal entities in which equity investors do not have 1) sufficient equity at risk for the legal entity to finance its activities without additional subordinated financial support or, 2) as a group, the holders of the equity investment at risk do not have either the power, through voting or similar rights, to direct the activities of the legal entity that most significantly impact the entity’s economic performance or, 3) the obligation to absorb the expected losses of the legal entity or the right to receive expected residual returns of the legal entity as “variable interest entities”, or “VIEs”.

The Company would consolidate the results of any such entity in which it determined that it has a controlling financial interest. The Company would have a “controlling financial interest” in such an entity when the Company has both the power to direct the activities that most significantly affect the VIE’s economic performance and the obligation to absorb the losses of, or right to receive the benefits from, the VIE that could be potentially significant to the VIE. On a quarterly basis, the Company reassesses whether it has a controlling financial interest in any investments it has in these certain legal entities.

The Company accounts for investments it makes in VIEs in which it has determined that it does not have a controlling financial interest but has significant influence over and holds at least a 20 percent ownership interest using the equity method. Any such investment not meeting the parameters to be accounted under the equity method would be accounted for using the cost method unless the investment had a readily determinable fair value, at which it would then be reported.

Income Taxes

The income tax provision is computed on the basis of the various tax jurisdictions' income or loss before income taxes. Deferred income taxes reflect the tax effects of differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes, as well as the tax effects of net operating losses and tax credit carryforwards. The Company uses judgment and assumptions to determine if valuation allowances for deferred income tax assets are required, if their realization is not more likely than not, by considering future market growth, forecasted operations, future taxable income, and the amount of earnings in the tax jurisdictions in which it operates.

The Company considers income taxes in each of the tax jurisdictions in which it operates in order to determine its effective income tax rate. Current income tax exposure is identified and temporary differences resulting from differing treatments of items for tax and financial reporting purposes are assessed. These differences result in deferred tax assets and liabilities, which are included in the Company's consolidated balance sheets. Additionally, we evaluate the potential realization of deferred income tax assets from future taxable income and establish valuation allowances if their realization is deemed not more likely than not. Accordingly, income taxes charged against earnings may have been impacted by changes in the valuation allowance. Significant management estimates and judgment are required in determining any valuation allowances recorded against net deferred tax assets.

The Company accounts for uncertain tax positions by recording a liability for unrecognized tax benefits resulting from uncertain tax positions taken, or expected to be taken, in its tax returns. We include any applicable interest and penalties related to uncertain tax positions in our income tax provision.

Earnings Per Share

Basic earnings per share ("EPS") is based on the weighted-average number of common shares outstanding for the period, excluding any dilutive common share equivalents. Diluted EPS reflects the potential dilution that could occur if certain share-based payment awards or financial instruments were exercised, earned or converted.

Share-Based Compensation

The Company recognizes share-based compensation expense over the service period that the awards are expected to vest. Share-based compensation expense includes the estimated effects of forfeitures, which are adjusted over the requisite service period to the extent actual forfeitures differ, or are expected to differ, from such estimates. Changes in estimated forfeitures are recognized in the period of change and will also impact the amount of expense to be recognized in future periods. Determining the appropriate option pricing model, calculating the grant date fair value of share-based awards and estimating forfeiture rates requires considerable judgment, including the estimations of stock price volatility and the expected term of options granted.

The Company uses the Black-Scholes option pricing model to value employee stock options. We estimate stock price volatility based on daily averages of our common stock’s historical volatility over a term approximately equal to the estimated time period the grant will remain outstanding. The expected term of options and forfeiture rate assumptions are derived from historical data.

Research and Development

Research and development costs are expensed as incurred, and consist primarily of global development efforts related to high-end process technologies for advanced sub-wavelength reticle solutions for IC photomask technologies. Research and development expenses also include the amortization of the estimated remaining value of a technology license agreement that the Company was a party to with Micron Technology, Inc. (“Micron”). Under this technology license agreement, the Company had access to certain photomask technology developed by Micron, which it retains the right to use in perpetuity.

Foreign Currency Translation

The Company's international subsidiaries maintain their accounts in their respective local currencies. Assets and liabilities of such subsidiaries are translated to U.S. dollars at year-end exchange rates. Income and expenses are translated at average rates of exchange prevailing during the year. Foreign currency translation adjustments are accumulated and reported in accumulated other comprehensive income, a component of equity. The effects of changes in exchange rates on foreign currency transactions, which are included in interest and other income (expense), net were a net gain/(loss) of $(0.3) million, $2.5 million and $1.4 million in fiscal years 2016, 2015 and 2014, respectively.

Noncontrolling Interests

Noncontrolling interests represents the minority shareholders' proportionate share in the equity of the Company's two majority-owned subsidiaries, Photronics DNP Mask Corporation ("PDMC") in Taiwan, of which noncontrolling interests owned 49.99% as of October 30, 2016 and November 1, 2015 and PK Ltd. ("PKL") in Korea of which noncontrolling shareholders owned approximately 0.3% and 0.2% as of October 30, 2016 and November 1, 2015, respectively.

Revenue Recognition

The Company recognizes revenue when there is persuasive evidence that an arrangement exists, delivery has occurred, the sales price is fixed or determinable, and collectability is reasonably assured. Delivery is determined by the shipping terms of the individual sales transactions. For sales with FOB destination or similar shipping terms, delivery occurs when the Company's product reaches its destination and is received by the customer. For sales with FOB shipping point terms, delivery occurs when the Company's product is received by the common carrier. The Company uses judgment when estimating the effect on revenue of discounts and sales incentives, both of which are accrued when the related revenue is recognized. The Company reports its revenues net of any sales taxes billed to its customers.

Product Warranty

For a 30-day period, the Company warrants that items sold will conform to customer specifications. However, the Company's liability is limited to the repair or replacement of the photomasks at its sole option. We inspect photomasks for conformity to customer specifications prior to shipment. Accordingly, customer claims related to items under warranty have historically been insignificant. The Company's warranty policy includes accepting returns of products with defects, or products that have not been produced to precise customer specifications.

NOTE 2 – ACQUISITION OF DNP PHOTOMASK TECHNOLOGY TAIWAN CO., LTD.

On April 4, 2014, DPTT merged into PSMC, the Company's IC manufacturing subsidiary located in Taiwan, to form PDMC. Throughout this report the merger of DPTT into PSMC is referred to as the "DPTT Acquisition." In connection with the DPTT Acquisition, the Company transferred consideration with a fair value of $98.3 million. The Company owns 50.01 percent of PDMC and includes its financial results in its consolidated financial statements, while DNP owns the remaining 49.99 percent of PDMC. The Company also has the ability to appoint the majority of the directors of PDMC, including the chairman of its board of directors, select its management responsible for implementing its policies and procedures, and establish its operating and capital decisions and policies. Photronics determined it has control of PDMC by virtue of its tie-breaking voting rights within PDMC's Board of Directors, thereby giving it the power to direct the activities of PDMC that most significantly impact its economic performance, including its decision making authority in the ordinary course of business. The DPTT Acquisition was the result of the Company's desire to combine the strengths in logic and memory photomask technologies of PSMC and DPTT in order to enhance its capability with customers in the region.

The DPTT Acquisition met the conditions of a business combination as defined by Accounting Standards Codification ("ASC") 805 and, as such, was accounted for under ASC 805 using the acquisition method of accounting. ASC 805 defines the three elements of a business as Input, Process and Output. As a result of the DPTT Acquisition, Photronics acquired the machinery and equipment utilized in the processes to manufacture product, the building that houses the entire operation and the processes needed to manufacture the product, all previously owned by DPTT. The former DPTT employees hired by Photronics in connection with the acquisition brought with them the skills, experience and know-how necessary to provide the operational processes that, when applied to the acquired assets, represent processes being applied to inputs to create outputs. Having met all three elements of a business as defined in ASC 805, the Company determined that the DPTT Acquisition should be accounted for as a business combination.

The following table summarizes the fair values of assets acquired and liabilities assumed of DPTT, the fair value of the noncontrolling interests and consideration given for DPTT at the acquisition date.

Cash and cash equivalents	$	4,508
Accounts receivable (gross amount of $28,560, of which $500 was estimated to be uncollectable)		28,060
Inventory		1,279
Deferred tax asset		9,787
Other current assets		11,517
Property, plant and equipment		95,431
Identifiable intangible assets		1,552
Other long-term assets		1,328
Accounts payable and accrued expenses		(32,410)
Deferred tax liability		(3,042)
Other long-term liabilities		(3,291)
Total net assets acquired		114,719
Noncontrolling interests retained by DNP		57,348
		57,371
Consideration – 49.99% of fair value of PSMC		40,999
Gain on acquisition	$	16,372

In addition to recording the fair values of the net assets acquired, the Company also recorded a gain on acquisition of $16.4 million in the three month period ended May 4, 2014, in accordance with ASC 805 using the acquisition method of accounting. The gain on acquisition was primarily due to the difference between the market values of the acquired real estate and personal property exceeding the fair value of the consideration transferred. In addition, a deferred tax liability of $3.0 million was recorded in the opening balance sheet, which had the effect of reducing the gain on acquisition to $16.4 million. Prior to recording the gain, the Company reassessed whether it had correctly identified all of the assets acquired and all of the liabilities assumed. Additionally, the Company also reviewed the procedures used to measure the amounts of the identifiable assets acquired, liabilities assumed and consideration transferred.

The fair value of the first component of consideration represented 49.99 percent of the fair value of PSMC, and was based on recent prices paid by the Company to acquire outstanding shares of PSMC (prior to the acquisition). As a result of the merger, the Company acquired the net assets of DPTT having a fair value of $114.7 million, less noncontrolling interests of $57.3 million retained by DNP, and transferred consideration with a fair value of $41.0 million, which resulted in a gain of $16.4 million. The fair value of the total consideration transferred as of the acquisition date was $98.3 million, comprised of the 49.99% noncontrolling interest in DPTT of $57.3 million, and 49.99% of the fair value of PSMC of $41.0 million (112.9 million shares, or 49.99% of the outstanding common stock of PSMC).

We estimated the $114.7 million fair value of DPTT as of the acquisition date by applying an income approach as our valuation technique. Our income approach followed a discounted cash flow method, which applied our best estimates of future cash flows and an estimated terminal value discounted to present value at a rate of return taking into account the relative risk of the cash flows. To confirm the reasonableness of the value derived from the income approach, we also analyzed the values of comparable companies which are publicly traded. The acquisition date fair value of the property, plant and equipment of DPTT was $95.4 million, which was determined by utilizing the cost and, to a lesser extent, the market approach, based on an in-use premise of value. Inputs utilized by the Company to determine fair values of DPTT’s property, plant and equipment included a cost approach, which was adjusted for depreciation and condition for equipment, and adjusted for depreciation and local market conditions for real property. The noncontrolling interest of DPTT was calculated using the 49.99% of its total fair value of $114.7 million. The Company also used a market approach to corroborate the enterprise value of DPTT. This fair value measurement was based on significant inputs that are not observable in the market and thus represented a fair value measurement categorized within Level 3 of the fair value hierarchy. Key assumptions included local and current construction replacement cost multipliers, amounts of ancillary replacement costs, physical deterioration, and economic and functional obsolescence to adjust the current replacement costs by, as well as the estimated economic lives of the assets.

Identifiable intangible assets acquired were primarily customer relationships, which represented the fair value of relationships and agreements DPTT had in place at the date of the merger. The customer relationships had a fair value of $1.5 million at the acquisition date, determined by using the multi-period excess earnings method, and are being amortized over a twelve year estimated useful life. The acquisition date fair value of the remainder of the identifiable assets acquired and liabilities assumed were equivalent to, or did not materially differ from, their carrying values.

Revenues and net income of PDMC included in the Company's financial results from the April 4, 2014, acquisition date through November 2, 2014, were $101.8 million and $6.0 million, respectively. Acquisition costs related to the merger were $2.5 million in fiscal year 2014, and are included in selling, general, and administrative expenses in the consolidated statement of income.

Unaudited Pro Forma Financial Information

The following unaudited pro forma financial information presents financial information as if the DPTT acquisition had occurred as of the beginning of fiscal year 2014. The pro forma earnings for fiscal year 2014 were adjusted to exclude the above mentioned $2.5 million non-recurring acquisition related costs and the gain on acquisition of $16.4 million. Other material non-recurring pro forma adjustments made to arrive at the below earnings amounts included the add back of additional depreciation recorded against DPTT long-lived assets of $6.6 million. The pro forma information presented does not purport to represent results that would have been achieved had the merger occurred as of the beginning of the earliest period presented, or to have been indicative of the Company's future financial performance.

	Year Ended November 2, 2014
Revenues	$ 499,968
Net income	23,969
Net income attributable to Photronics, Inc. shareholders	12,169
Diluted earnings per share	0.19

NOTE 3 - PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment consists of the following:

	October 30, 2016	November 1, 2015
Land	$ 8,036	$ 8,172
Buildings and improvements	121,873	121,472
Machinery and equipment	1,475,755	1,458,623
Leasehold improvements	19,224	18,856
Furniture, fixtures and office equipment	12,700	12,700
Construction in progress	23,961	6,657
	1,661,549	1,626,480
Less: Accumulated depreciation and amortization	1,155,115	1,079,196
	$ 506,434	$ 547,284

Property under capital leases are included in above property, plant and equipment as follows:

	October 30, 2016	November 1, 2015
Machinery and equipment	$ 34,917	$ 56,245
Less accumulated amortization	10,352	16,054
	$ 24,565	$ 40,191

NOTE 4 - INTANGIBLE ASSETS

Amortization expense of the Company's finite lived intangible assets was $4.8 million, $6.0 million and $5.8 million in fiscal years 2016, 2015 and 2014, respectively.

Intangible assets consist of:

As of October 30, 2016	Gross Amount	Accumulated Amortization	Net Amount
Technology license agreement	$ 59,616	$ (41,400)	$ 18,216
Customer relationships	8,657	(7,522)	1,135
Software and other	6,444	(5,941)	503
	$ 74,717	$ (54,863)	$ 19,854
As of November 1, 2015			
Technology license agreement	$ 59,616	$ (37,426)	$ 22,190
Customer relationships	8,616	(7,229)	1,387
Supply agreements	6,959	(6,828)	131
Software and other	6,577	(5,669)	908
	$ 81,768	$ (57,152)	$ 24,616

The weighted-average amortization period for intangible assets acquired in fiscal years 2016 and 2015 is three years, which is comprised of software and other intangible assets that have weighted-average amortization periods of three years.

Intangible asset amortization over the next five years is estimated to be as follows:

Fiscal Years:

2017	$ 4,557
2018	4,130
2019	4,092
2020	4,092
2021	2,436

NOTE 5 - JOINT VENTURE, TECHNOLOGY LICENSE AND OTHER AGREEMENTS WITH MICRON TECHNOLOGY, INC.

In May 2006, Photronics and Micron Technology, Inc. ("Micron") entered into the MP Mask joint venture (“MP Mask”), which developed and produced photomasks for leading-edge and advanced next generation semiconductors. At the time of the formation of the joint venture, the Company also entered into an agreement to license photomask technology developed by Micron and certain supply agreements. In May 2016 the Company sold its investment in MP Mask to Micron for $93.1 million and recorded a gain on the sale of $0.1 million, which is included in the Company’s 2016 consolidated statement of income in Interest and other income (expense), net. On that same date a supply agreement commenced between the Company and Micron, which provides that we will be the majority outsourced supplier of Micron’s photomasks and related services. The supply agreement has a one year term, subject to mutually agreeable renewals. In addition, the Company forevermore has the rights to use technology under the prior technology license agreement.

This joint venture was a variable interest entity ("VIE") (as that term is defined in ASC 810) because all costs of the joint venture were passed on to the Company and Micron through purchase agreements they had entered into with the joint venture, and it was dependent upon the Company and Micron for any additional cash requirements. On a quarterly basis the Company reassessed whether its interest in MP Mask gave it a controlling financial interest in this VIE. The purpose of this quarterly reassessment was to identify the primary beneficiary (which is defined in ASC 810 as the entity that consolidates a VIE) of the VIE. As a result of the reassessments in fiscal year 2016, the Company determined that Micron remained the primary beneficiary of the VIE, by virtue of its tie-breaking voting rights within MP Mask’s Board of Managers, thereby having given it the power to direct the activities of MP Mask that most significantly impacted its economic performance, including its decision making authority in the ordinary course of business and its purchasing the majority of products produced by the VIE.

The Company utilized MP Mask for both high-end IC photomask production and research and development purposes. MP Mask charged its variable interest holders based on their actual usage of its facility and charged separately for any research and development activities it engaged in at the requests of its owners.

MP Mask was governed by a Board of Managers appointed by Micron and the Company. Since MP Mask's inception, Micron, as a result of its majority ownership, had held majority voting power on the Board of Managers. The voting power held by each party was subject to change as ownership interests changed. Under the MP Mask joint venture operating agreement, the Company may have been required to make additional capital contributions to MP Mask up to the maximum amount defined in the operating agreement. However, had the Board of Managers determined that further additional funding was required, MP Mask would have pursued its own financing. If MP Mask was unable to obtain its own financing, it may have requested additional capital contributions from the Company. Had the Company chosen not to make a requested contribution to MP Mask, its ownership percentage may have been reduced. MP Mask did not request, and the Company did not make, any contributions to MP Mask in fiscal years 2016 or 2015 and it did not receive any distributions (other than upon its sale of its investment to Micron in fiscal year 2016) from MP Mask during those fiscal years.

The Company's investment in the VIE, which represented its maximum exposure to loss, was $93.0 million at November 1, 2015. This amount is reported in the Company's fiscal year 2015 consolidated balance sheet as Investment in joint venture. The Company recorded losses from operations from its investment in MP Mask of $0.1 million in fiscal years 2016 and 2015 and recorded no income or loss from the investment in fiscal year 2014. Income (loss) from MP Mask is included in Interest and other income, net, in the consolidated statements of income.

The Company, in 2016, recorded $0.4 million of commission revenue earned under the supply agreements it had with Micron and MP Mask, and amortization of $0.1 million of the related supply agreement intangible asset. In 2016 the Company also recorded cost of sales in the amount of $5.7 million for photomasks produced by MP Mask for the Company's customers, and incurred expenses of $0.5 million for research and development activities and other goods and services purchased from MP Mask by the Company.

As of November 1, 2015, the Company owed MP Mask $4.3 million and had a receivable from Micron of $6.4 million, both primarily related to the aforementioned supply agreements. The Company, in 2015, recorded $0.8 million of commission revenue earned under the supply agreements it had with Micron and MP Mask, and amortization of $0.2 million of the related supply agreement intangible asset. In 2015 the Company also recorded cost of sales in the amount of $4.8 million for photomasks produced by MP Mask for the Company's customers, and incurred expenses of $3.1 million for research and development activities and other goods and services purchased from MP Mask by the Company.

As of November 2, 2014, the Company owed MP Mask $4.2 million and had a receivable from Micron of $6.8 million, both primarily related to the aforementioned supply agreements. The Company, in 2014, recorded $1.2 million of commission revenue earned under the supply agreements it had with Micron and MP Mask, and amortization of $0.2 million of the related supply agreement intangible asset. In 2014 the Company also recorded cost of sales in the amount of $3.2 million for photomasks produced by MP Mask for the Company's customers, and incurred expenses of $1.6 million for research and development activities and other goods and services purchased from MP Mask by the Company. In 2014 the Company purchased equipment from MP Mask for $1.3 million.

Summarized financial information of MP Mask is presented below. The financial results of 2016 are through May 5, 2016, the date of the sale of the Joint Venture.

	As of Fiscal Year End	
	2016	2015
Current assets	$ -	$ 30,567
Noncurrent assets	-	173,840
Current liabilities	-	18,234
Noncurrent liabilities	-	-

	Fiscal Year		
	2016	2015	2014
Net sales	$ 49,626	$ 96,068	$ 81,399
Gross profit	2,736	1,215	3,427
Net income (loss)	-	(151)	1,259

NOTE 6 - ACCRUED LIABILITIES

Accrued liabilities include salaries, wages and related benefits of $8.2 million, income taxes of $6.2 million and other accruals totaling $9.8 million at October 30, 2016, and salaries, wages and related benefits of $14.3 million, an acquisition liability of $7.1 million and other accruals totaling $17.8 million at November 1, 2015.

NOTE 7 - LONG-TERM BORROWINGS

Long-term borrowings consist of the following:

	October 30, 2016	November 1, 2015
3.25% convertible senior notes due in April 2019	$ 57,500	$ 57,500
3.25% convertible senior notes due in April 2016	-	57,500
2.77% capital lease obligation payable through July 2018	10,067	15,346
3.09% capital lease obligation payable through March 2016	-	2,269
	67,567	132,615
Less current portion	5,428	65,495
	$ 62,139	$ 67,120

In April 2016 $57.5 million of the Company's senior convertible notes matured. The Company repaid $50.1 million to noteholders and issued approximately 0.7 million shares to noteholders that elected to convert their notes to common stock. The notes were exchanged at the rate of approximately 96 shares per $1,000 note principle, equivalent to a conversion rate of $10.37 per share.

In January 2015 the Company privately exchanged $57.5 million in aggregate principal amount of its 3.25% convertible senior notes with a maturity date of April 1, 2016, for new 3.25% convertible senior notes with an aggregate principal amount of $57.5 million with a maturity date of April 1, 2019. The conversion rate of the new notes is the same as that of the exchanged notes, which were issued in March 2011 with a conversion rate of approximately 96 shares of common stock per $1,000 note principal, equivalent to a conversion price of $10.37 per share of common stock, and is subject to adjustment upon the occurrence of certain events, which are described in the indenture dated January 22, 2015. Note holders may convert each $1,000 principal amount of notes at any time prior to the close of business on the second scheduled trading day immediately preceding April 1, 2019, and the Company is not required to redeem the notes prior to their maturity date. Interest on the notes accrues in arrears, and is paid semiannually through the notes' maturity date.

The Company's credit facility, which expires in December 2018, has a $50 million limit with an expansion capacity to $75 million, and is secured by substantially all of the Company's assets located in the United States and common stock the Company owns in certain of its foreign subsidiaries. The credit facility precludes the Company from paying cash dividends, and is subject to a minimum interest coverage ratio, total leverage ratio and minimum unrestricted cash balance financial covenants, all of which the Company was in compliance with at October 30, 2016. The Company had no outstanding borrowings against the credit facility at October 30, 2016, and $50 million was available for borrowing. The interest rate on the credit facility (1.78% at October 30, 2016) is based on the Company's total leverage ratio at LIBOR plus a spread, as defined in the credit facility.

In August 2013 a $26.4 million principal amount, five year capital lease commenced to fund the purchase of a high-end lithography tool. Payments under the capital lease, which bears interest at 2.77%, are $0.5 million per month through July 2018. The lease is subject to a cross default with cross acceleration provision related to certain nonfinancial covenants incorporated in the Company's credit facility. As of October 30, 2016, the total amount payable through the end of the lease term was $10.3 million, of which $10.1 million represented principal and $0.2 million represented interest.

In April 2011 the Company entered into a five year, $21.2 million capital lease for manufacturing equipment. Payments under the lease, which bore interest at 3.09%, were $0.4 million per month through March 2016. The lease included a cross default with cross acceleration provision related to certain non-financial covenants incorporated in the Company's credit facility. In March 2016 the Company paid the final installment on this lease and assumed ownership of the related equipment.

As of October 30, 2016, minimum lease payments under the Company's capital lease obligation was as follows:

Fiscal Years:

2017	$	5,638
2018		4,698
		10,336
Less interest		269
Net minimum lease payments under capital lease		10,067
Less current portion of net minimum lease payments		5,428
Long-term portion of minimum lease payments	$	4,639

Interest payments were $3.2 million, $4.4 million, and $6.3 million in fiscal years 2016, 2015 and 2014, respectively, and included deferred financing cost payments of $0.3 million in fiscal year 2014.

NOTE 8 - OPERATING LEASES

The Company leases various real estate and equipment under non-cancelable operating leases, for which rent expense was $2.8 million in each of fiscal years 2016, 2015 and 2014.

At October 30, 2016, future minimum lease payments under non-cancelable operating leases with initial terms in excess of one year were as follows:

2017	$ 2,108
2018	1,059
2019	630
2020	394
2021	380
Thereafter	1,404
	$ 5,975

See Note 7 for disclosures related to the Company's capital lease obligations.

NOTE 9 – SHARE-BASED COMPENSATION

In March 2016 shareholders approved a new equity incentive compensation plan (“the Plan”), under which incentive stock options, non-qualified stock options, stock grants, stock-based awards, restricted stock, restricted stock units, stock appreciation rights, performance units, performance stock, and other stock or cash awards may be granted. Shares to be issued under the Plan may be authorized and unissued shares, issued shares that have been reacquired by the Company (in the open-market or in private transactions), shares that are being held in the treasury, or a combination thereof. The maximum number of shares of common stock approved that may be issued under the Plan is four million shares. Awards may be granted to officers, employees, directors, consultants, advisors, and independent contractors of the Company or its subsidiaries. In the event of a change in control (as defined in the Plan), the vesting of awards may be accelerated. The Plan, aspects of which are more fully described below, prohibits further awards from being issued under prior plans. The Company incurred total share-based compensation expenses of $3.8 million, $3.7 million, and $4.1 million in fiscal years 2016, 2015, and 2014, respectively. No share-based compensation cost was capitalized as part of an asset and no related income tax benefits were recorded during the fiscal years presented.

Stock Options

Option awards generally vest in one to four years, and have a ten year contractual term. All incentive and non-qualified stock option grants must have an exercise price no less than the market value of the underlying common stock on the date of grant. The grant date fair values of options are based on the closing price of the Company’s common stock on the date of grant using the Black-Scholes option pricing model. Expected volatility is based on the historical volatility of the Company's stock. The Company uses historical option exercise behavior and employee termination data to estimate expected term, which represents the period of time that the options granted are expected to remain outstanding. The risk-free rate of return for the estimated term of the option is based on the U.S. Treasury yield curve in effect at the date of grant.

The weighted-average inputs and risk-free rate of return ranges used to calculate the grant date fair values of stock options issued during fiscal years 2016, 2015 and 2014 are presented in the following table:

	Year Ended		
	October 30, 2016	November 1, 2015	November 2, 2014
Expected volatility	48.4%	53.7%	61.0%
Risk-free rate of return	1.2 – 1.7%	1.3 – 1.6%	1.4%
Dividend yield	0.0%	0.0%	0.0%
Expected term	5.1 years	4.7 years	4.6 years

The table below presents a summary of stock options activity during fiscal year 2016 and information on stock options outstanding at October 30, 2016.

Options	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life	Aggregate Intrinsic Value
Outstanding at November 1, 2015	3,803,168	$ 7.29		
Granted	667,250	11.83		
Exercised	(572,033)	5.37		
Cancelled and forfeited	(363,050)	15.68		
Outstanding at October 30, 2016	3,535,335	$ 7.59	6.4 years	$ 9,413
Exercisable at October 30, 2016	1,973,635	$ 5.93	4.8 years	$ 7,837
Vested and expected to vest as of October 30, 2016	3,438,261	$ 7.53	6.3 years	$ 9,309

The weighted-average grant date fair value of options granted during fiscal years 2016, 2015 and 2014 were $4.51, $3.81and $4.44, respectively. The total intrinsic value of options exercised during fiscal years 2016, 2015 and 2014 was $3.5 million, $2.0 million and $1.4 million, respectively.

The Company received cash from option exercises of $3.1 million, $2.2 million and $1.1 million in fiscal years 2016, 2015 and 2014, respectively. As of October 30, 2016, the total unrecognized compensation cost of unvested option awards was approximately $4.3 million. That cost is expected to be recognized over a weighted-average amortization period of 2.5 years.

Restricted Stock

The Company periodically grants restricted stock awards. The restrictions on these awards typically lapse over a service period of one to four years. The fair value of restricted stock is determined and fixed on the grant date based on the company's stock price. The weighted-average grant date fair values of restricted stock awards issued during fiscal years 2016, 2015 and 2014 were $12.13, $8.28 and $8.86, respectively. The total fair value of awards for which restrictions lapsed was $1.7 million, $1.4 million and $1.5 million during fiscal years 2016, 2015 and 2014, respectively. As of October 30, 2016, the total compensation cost for restricted stock awards not yet recognized was approximately $1.0 million. That cost is expected to be recognized over a weighted-average amortization period of 2.2 years.

A summary of restricted stock award activity during fiscal year 2016 and the status of the Company's outstanding restricted stock awards as of October 30, 2016, is presented below:

Restricted Stock	Shares	Weighted-Average Fair Value at Grant Date
Outstanding at November 1, 2015	189,588	$ 7.34
Granted	115,225	12.13
Vested	(142,438)	8.62
Cancelled	-	-
Outstanding at October 30, 2016	162,375	$ 9.61
Vested and expected to vest as of October 30, 2016	154,245	$ 9.64

Employee Stock Purchase Plan

The Company's Employee Stock Purchase Plan ("ESPP") permits employees to purchase shares at 85% of the lower of the closing market price at the commencement or ending date of the Plan year (approximately one year). The Company recognizes the ESPP expense during that same period. As of October 30, 2016, the maximum number of shares of common stock approved by the Company's shareholders to be purchased under the ESPP was 1.5 million shares. Under the ESPP, approximately 1.3 million shares had been issued through October 30, 2016, and approximately 67,000 shares are subject to outstanding subscriptions. As of October 30, 2016, the total compensation cost related to the ESPP not yet recognized was $0.1 million, which is expected to be recognized in fiscal 2017.

NOTE 10 - EMPLOYEE RETIREMENT PLANS

The Company maintains a 401(k) Savings and Profit Sharing Plan ("401(k) Plan") which covers all full and certain part time U.S. employees who have completed three months of service and are 18 years of age or older. Under the terms of the 401(k) Plan, employees may contribute up to 50% of their salary, subject to certain maximum amounts, which will be matched by the Company at 50% of the employee's contributions that are not in excess of 4% of the employee's compensation. Employee and employer contributions vest upon contribution. Annual employer contributions for all of the Company’s defined contribution plans were $0.6 million in fiscal year 2016 and $0.7 million in fiscal years 2015 and 2014.

NOTE 11 - INCOME TAXES

Income before the income tax provisions consist of the following:

	Year Ended		
	October 30, 2016	November 1, 2015	November 2, 2014
United States	$ 6,270	$ 6,646	$ (23,083)
Foreign	54,204	63,394	64,413
	$ 60,474	$ 70,040	$ 41,330

The income tax provisions consist of the following:

	Year Ended		
	October 30, 2016	November 1, 2015	November 2, 2014
Current:			
Federal	$ 492	$ 160	$ 354
State	(2)	(109)	-
Foreign	8,115	9,729	4,726
Deferred:			
Federal	-	-	-
State	10	7	(5)
Foreign	(3,817)	3,394	4,220
Total	$ 4,798	$ 13,181	$ 9,295

The income tax provisions differ from the amount computed by applying the statutory U.S. federal income tax rate to income before income taxes as a result of the following:

	Year Ended		
	October 30, 2016	November 1, 2015	November 2, 2014
U.S. federal income tax at statutory rate	$ 21,166	$ 24,514	$ 14,465
Changes in valuation allowances	(9,516)	(11,471)	(7,575)
Distributions from foreign subsidiaries	3,438	448	12,674
Foreign tax rate differentials	(9,620)	(4,356)	(4,864)
Tax credits	(944)	(2,729)	(2,847)
Uncertain tax positions, including reserves, settlements and resolutions	134	(175)	(2,255)
Gain on acquisition of DPTT	-	-	(5,748)
Intercompany gain elimination	-	-	4,759
Tax on foreign subsidiary earnings	225	6,589	-
Other, net	(85)	361	686
	$ 4,798	$ 13,181	$ 9,295

The effective tax rates differ from the U.S. statutory rate of 35% in fiscal years 2016, 2015 and 2014 primarily due to earnings, including the fiscal year 2014 gain on acquisition of DPTT, being taxed at lower statutory rates in foreign jurisdictions, changes in deferred tax asset valuation allowances, including the reversals noted below, combined with the benefit of various investment credits in a foreign jurisdiction. In addition, the lower rate in fiscal year 2016 was partially driven by a benefit that resulted from the reversal of a previously recorded undistributed earnings tax liability in a foreign jurisdiction for which the Company is no longer liable. Five year tax holidays in Taiwan, that expire in 2017 and 2019, decreased foreign taxes by $0.5 million and $0.2 million in the years ended October 30, 2016 and November 1, 2015, respectively, and had no dollar benefit for the year ended November 2, 2014. The tax holidays had no per share effect on the Company’s financial results of the years ended October 30, 2016, November 1, 2015 and November 2, 2014.

The net deferred income tax assets consist of the following:

	As of	
	October 30, 2016	November 1, 2015
Deferred income tax assets:		
Net operating losses	$ 46,158	$ 56,582
Reserves not currently deductible	7,876	8,158
Alternative minimum tax credits	3,772	3,281
Tax credit carryforwards	8,814	8,809
Other	1,719	1,782
	68,339	78,612
Valuation allowances	(29,315)	(38,763)
	39,024	39,849
Deferred income tax liabilities:		
Undistributed earnings of foreign subsidiaries	(3,962)	(5,953)
Property, plant and equipment	(19,977)	(17,874)
Investments	74	(4,596)
Other	(328)	(552)
	(24,193)	(28,975)
Net deferred income tax assets	$ 14,831	$ 10,874
Reported per adoption of new accounting standard (see below):		
Deferred income tax assets	$ 16,322	$ 13,083
Deferred income tax liabilities	(1,491)	(2,209)
	$ 14,831	$ 10,874

The Company has established a valuation allowance for a portion of its deferred tax assets because it believes, based on the weight of all available evidence, that it is more likely than not that a portion of its net operating loss carryforwards will expire prior to utilization. During fiscal years 2016 and 2015 the Company determined that sufficient positive evidence existed in certain foreign jurisdictions that it was more likely than not that additional deferred tax assets were realizable and, therefore, reduced the valuation allowance $4.3 million and $1.5 million respectively. In addition, the valuation allowance decreased in fiscal years 2016, 2015 and 2014 as a result of loss utilizations and deferred tax liability changes of $5.2 million, $9.3 million and $7.1 million respectively.

As of October 30, 2016, the undistributed earnings of foreign subsidiaries included in consolidated retained earnings amounted to $176.6 million, of which $11.3 million is not considered to be permanently invested. No provision has been made for future U.S. taxes payable on the remaining undistributed earnings of $165.3 million, as they are expected to be indefinitely invested in foreign jurisdictions and, therefore, are not anticipated to be subject to U.S. tax. Should the Company elect in the future to repatriate the foreign earnings so invested, it may incur additional income tax expense on those foreign earnings, the amount of which is not practicable to compute.

The following tables present the Company's available operating loss and credit carryforwards at October 30, 2016, and their related expiration periods:

Operating Loss Carryforwards	**Amount**	**Expiration Periods**
Federal	$ 98,525	2025-2033
State	211,665	2017-2036
Foreign	27,403	2018-2023

Tax Credit Carryforwards	**Amount**	**Expiration Period**
Federal research and development	$ 5,121	2019-2036
Federal alternative minimum tax	3,772	Indefinite
State tax	5,681	2017-2030

A reconciliation of the beginning and ending amounts of unrecognized tax benefits, excluding interest and penalties, is as follows:

	Year Ended		
	October 30, 2016	**November 1, 2015**	**November 2, 2014**
Balance at beginning of year	$ 4,029	$ 4,993	$ 4,757
Additions (reductions) for tax positions in prior years	744	(212)	3,437
Additions based on current year tax positions	268	318	272
Settlements	(378)	(720)	(3,155)
Lapses of statutes of limitations	(57)	(350)	(318)
Balance at end of year	$ 4,606	$ 4,029	$ 4,993

Included in the balance of unrecognized tax benefits as of October 30, 2016, November 1, 2015 and November 2, 2014, are $4.6 million, $4.1 million and $5.0 million recorded in other liabilities in the consolidated balance sheets that, if recognized, would impact the effective tax rate. Also included in the balance as of November 2, 2014, is $0.1 million of tax benefit that, if recognized, would result in adjustment to deferred tax accounts. Included in these amounts in fiscal years 2016, 2015 and 2014 were $0.1 million of interest and penalties. The Company includes any applicable interest and penalties related to uncertain tax positions in its income tax provision. The fiscal years 2016 and 2015 tables include the settlement of non-US audits. The fiscal year 2014 table includes the recognition of previously unrecognized tax benefits that resulted from the lapse of their assessment periods, the increase for uncertain tax positions related to the acquisition of DPTT (as discussed in Note 2) and the settlement of an Internal Revenue Service (“IRS”) income tax examination of the Company’s 2012 and 2011 federal income tax returns. The IRS income tax settlement had limited impact on fiscal year 2014 income tax expense, as the changes that resulted from the examination were offset by loss carryforwards for which the related deferred tax assets were subject to valuation allowances. As of October 30, 2016, the Company does not believe it is reasonably possible that the total amounts of unrecognized tax benefits will significantly increase or decrease in the next twelve months. The Company is no longer subject to examination by the U.S. for years prior to and including fiscal year 2012. With respect to major foreign and state tax jurisdictions, the Company is no longer subject to tax authority examinations for years prior to and including fiscal year 2011.

Income tax payments were $11.4 million, $4.9 million and $5.2 million in fiscal years 2016, 2015 and 2014, respectively. Cash received for refunds of income taxes paid in prior years amounted to $0.2 million, $0.1 million and $1.4 million in fiscal years 2016, 2015 and 2014, respectively.

Adoption of New Accounting Standard

The Company adopted Accounting Standards Update (“ASU”) 2015-17 – “Balance Sheet Classification of Deferred Taxes” in the fourth quarter of its 2016 fiscal year. This ASU requires that deferred tax assets and liabilities be classified as noncurrent on a classified balance sheet. The Company adopted this ASU on a retrospective basis, as a result of which our prior year financial statements and related notes have been adjusted, as necessary, to show its effects on those periods. The effect on our fiscal year 2015 financial statement deferred income taxes line items of adopting ASU 2015-17 is presented below.

Classification	Previously Reported	Change Due to Adoption	Retrospectively Adjusted
Current assets	$ 3,354	$ (3,354)	$ -
Noncurrent assets	11,908	1,175	13,083
Noncurrent liabilities	4,388	(2,179)	2,209

NOTE 12 - EARNINGS PER SHARE

The calculation of basic and diluted earnings per share is presented as follows:

	Year Ended		
	October 30, 2016	November 1, 2015	November 2, 2014
Net income attributable to Photronics, Inc. shareholders	$ 46,200	$ 44,625	$ 25,996
Effect of dilutive securities:			
Interest expense on convertible notes, net of related tax effects	2,938	4,363	1,426
Earnings for diluted earnings per share	$ 49,138	$ 48,988	$ 27,422
Weighted-average common shares computations:			
Weighted-average common shares used for basic earnings per share	67,539	66,331	61,779
Effect of dilutive securities:			
Convertible notes	7,841	11,085	3,945
Share-based payment awards	974	967	955
Dilutive common shares	8,815	12,052	4,900
Weighted-average common shares used for diluted earnings per share	76,354	78,383	66,679
Basic earnings per share	$ 0.68	$ 0.67	$ 0.42
Diluted earnings per share	$ 0.64	$ 0.63	$ 0.41

The table below shows the outstanding weighted-average share-based payment awards that were excluded from the calculation of diluted earnings per share because their exercise price exceeded the average market value of the common shares for the period or, under application of the treasury stock method, they were otherwise determined to be antidilutive. The table also shows convertible notes that, if converted, would have been antidilutive.

	Year Ended		
	October 30, 2016	November 1, 2015	November 2, 2014
Share based payment awards	1,635	1,641	1,911
Convertible notes	-	-	11,085
Total potentially dilutive shares excluded	1,635	1,641	12,996

In the first quarter of fiscal year 2017, the Company awarded approximately 0.6 million share-based payment awards to its employees and directors.

NOTE 13 – SUBSIDIARY SHARE REPURCHASE

In January 2014 the Company increased its ownership percentage in PSMC (in 2014 PSMC's name was changed to PDMC, see Note 2) to 100% at a cost of $1.7 million by purchasing the remaining shares that were not owned by the Company.

The table below presents the effect of the change in the Company's ownership interest in PSMC on the Company's equity for fiscal year 2014, in which shares of PSMC common stock were issued in connection with the DPTT Acquisition.

	Year Ended November 2, 2014
Net income attributable to Photronics, Inc. shareholders	$ 25,996
Decrease in Photronics, Inc.'s additional paid-in capital	(6,183)
Increase in Photronics, Inc.'s accumulated other comprehensive income	399
Change from net income attributable to Photronics, Inc. shareholders due to issuance of shares of PDMC and transfers to or from noncontrolling interests	$ 20,212

NOTE 14 - COMMITMENTS AND CONTINGENCIES

At October 30, 2016, the Company had outstanding purchase commitments of $60 million, which included $51 million related to capital expenditures, and had recorded liabilities for the purchase of equipment of $9 million. See Notes 8 and 21, respectively, for information on the Company's operating lease commitments and its plan to construct a facility in China.

The Company is subject to various claims that arise in the ordinary course of business. The Company believes such claims, individually and in the aggregate, will not have a material effect on its consolidated financial statements.

NOTE 15 - GEOGRAPHIC AND SIGNIFICANT CUSTOMER INFORMATION

The Company operates as a single operating segment as a manufacturer of photomasks, which are high precision quartz plates containing microscopic images of electronic circuits for use in the fabrication of IC's and FPDs. Geographic net sales are based primarily on where the Company's manufacturing facility is located.

The Company's 2016, 2015 and 2014 net sales by geographic area and of ICs and FPDs, and long-lived assets by geographic area were as follows:

	Year Ended		
	October 30, 2016	November 1, 2015	November 2, 2014
Net sales			
Taiwan	$ 193,216	$ 205,141	$ 167,075
Korea	141,017	147,921	140,386
United States	113,670	132,792	106,740
Europe	33,384	35,792	38,726
All other Asia	2,169	2,560	2,600
	$ 483,456	$ 524,206	$ 455,527
IC	$ 364,531	$ 420,833	$ 352,679
FPD	118,925	103,373	102,848
	$ 483,456	$ 524,206	$ 455,527

	As of		
	October 30, 2016	November 1, 2015	November 2, 2014
Long-lived assets			
Taiwan	$ 176,644	$ 185,087	$ 207,324
United States	173,658	184,282	158,325
Korea	146,515	167,618	176,141
Europe	9,617	10,287	8,259
All other Asia	-	10	20
	$ 506,434	$ 547,284	$ 550,069

One customer accounted for 19%, 18% and 16% of the Company's net sales in fiscal years 2016, 2015 and 2014, respectively, and another customer accounted for 17%, 15%, and 11% of the Company’s net sales in fiscal 2016, 2015 and 2014, respectively.

NOTE 16 - CHANGES IN ACCUMULATED OTHER COMPREHENSIVE INCOME BY COMPONENT

The following tables set forth the changes in the Company's accumulated other comprehensive income by component (net of tax of $0) for the years ended October 30, 2016 and November 1, 2015:

	Year Ended October 30, 2016			
	Foreign Currency Translation Adjustments	Amortization of Cash Flow Hedge	Other	Total
Balance at November 1, 2015	$ (9,634)	$ (306)	$ (633)	$ (10,573)
Other comprehensive income (loss) before reclassifications	6,334	-	(589)	5,745
Amounts reclassified from other accumulated comprehensive income	-	129	-	129
Net current period other comprehensive income (loss)	6,334	129	(589)	5,874
Less: other comprehensive (income) loss attributable to noncontrolling interests	(3,267)	-	295	(2,972)
Balance at October 30, 2016	$ (6,567)	$ (177)	$ (927)	$ (7,671)

	Year Ended November 1, 2015			
	Foreign Currency Translation Adjustments	Amortization of Cash Flow Hedge	Other	Total
Balance at November 2, 2014	$ 22,651	$ (434)	$ (443)	$ 21,774
Other comprehensive loss before reclassifications	(40,154)	-	(381)	(40,535)
Amounts reclassified from other accumulated comprehensive income	-	128	-	128
Net current period other comprehensive income (loss)	(40,154)	128	(381)	(40,407)
Less: other comprehensive loss attributable to noncontrolling interests	7,869	-	191	8,060
Balance at November 1, 2015	$ (9,634)	$ (306)	$ (633)	$ (10,573)

The amortization of the cash flow hedge is included in Cost of sales in the consolidated statements of income in all periods presented.

NOTE 17 – CONCENTRATIONS OF CREDIT RISK

Financial instruments that potentially subject the Company to credit risk principally consist of trade accounts receivables and short-term cash investments. The Company sells its products primarily to semiconductor and FPD manufacturers in North America, Europe and Asia. The Company believes that the concentration of credit risk in its trade receivables is substantially mitigated by the Company's ongoing credit evaluation process and relatively short collection terms. The Company does not generally require collateral from customers. The Company establishes an allowance for doubtful accounts based upon factors surrounding the credit risk of specific customers, historical trends and other information.

The Company's cash and cash equivalents are deposited in several financial institutions, including institutions located within all of the countries in which it manufactures photomasks. Portions of deposits in some of these institutions may exceed the amount of insurance available for such deposits at these institutions. As these deposits are generally redeemable upon demand and are held by high quality, reputable institutions, the Company considers them to bear minimal credit risk. The Company further mitigates credit risks related to its cash and cash equivalents by spreading such risk among a number of institutions.

NOTE 18 - OTHER RELATED PARTY TRANSACTIONS

The executive chairman of the board of the Company is also a director of an entity that provided secure managed information technology services to Photronics. Another director of the Company is the chief executive officer and chairman of the board of this entity. Since 2002 the Company has contracted with this entity for services it has provided to all of the Company's facilities. The Company incurred expenses for services provided by this entity of $0.2 million, $1.0 million, and $1.2 million in fiscal years 2016, 2015 and 2014, respectively, and had an outstanding balance of less than $0.1 million as of November 1, 2015.

Commencing in July of 2016 the Company entered into a contract for information technology services with a parent entity for which a member of our board of directors serves as the chief executive officer and chairman of the board of a wholly owned subsidiary of that entity. The executive chairman of the Company is also a director on the subsidiary company as well. During 2016 we incurred expenses of $0.3 million from the parent entity and had payables outstanding to the parent entity of $0.2 million at October 30, 2016.

The Company purchases photomask blanks from an entity of which an officer of the Company is a significant shareholder. The Company purchased $16.3 million, $20.2 million and $20.1 million of photomask blanks from this entity in 2016, 2015 and 2014, respectively, for which the amount owed to this entity was $2.7 million at October 30, 2016, and $4.5 million at November 1, 2015.

The Company believes that the terms of its transactions with the related parties described above were negotiated at arm's length and were no less favorable to the Company than terms it could have obtained from unrelated third parties. See Note 5 for additional related party transactions.

NOTE 19 - FAIR VALUE MEASUREMENTS

The accounting framework for determining fair value includes a hierarchy for ranking the quality and reliability of the information used to measure fair value, which enables the reader of the financial statements to assess the inputs used to develop those measurements. The fair value hierarchy consists of three tiers as follows: Level 1, defined as quoted market prices (unadjusted) in active markets for identical securities; Level 2, defined as inputs other than Level 1 that are observable, either directly or indirectly; and Level 3, defined as unobservable inputs that are not corroborated by market data.

The Company did not have any assets or liabilities measured at fair value, on a recurring or a nonrecurring basis, at October 30, 2016 or November 1, 2015.

Fair Value of Other Financial Instruments

The fair values of the Company's cash and cash equivalents (Level 1 measurements), accounts receivable, accounts payable, and certain other current assets and current liabilities (Level 2 measurements) approximate their carrying value due to their short-term maturities. The fair values of the Company’s convertible senior notes is a Level 2 measurement, as they were determined using inputs that were either observable market data, or could be derived from or corroborated with observable market data. These inputs included the Company’s stock price and interest rates offered on debt issued by entities with credit ratings similar to that of the Company’s.

The table below presents the fair and carrying values of the Company's convertible senior notes at October 30, 2016 and November 1, 2015.

	October 30, 2016		November 1, 2015	
	Fair Value	Carrying Value	Fair Value	Carrying Value
3.25% convertible senior notes due 2019	$ 68,230	$ 57,500	$ 64,550	$ 57,500
3.25% convertible senior notes due 2016	$ -	$ -	$ 60,375	$ 57,500

NOTE 20 – GAINS ON SALE OF INVESTMENTS

The Company had a minority interest in a foreign entity. In fiscal year 2016, the Company sold this investment and recognized a gain of $8.8 million. In addition, as discussed in Note 5, we sold our investment in the MP Mask joint venture in fiscal year 2016.

NOTE 21 – EXPANSION INTO CHINA

In August 2016 the Company announced that it had signed an investment agreement with the Xiamen Torch Hi-Tech Industrial Development Zone (Xiamen Torch) to establish an IC manufacturing facility in Xiamen, China. Under the terms of the agreement the Company will build and operate a state-of-the-art IC manufacturing and research and development facility, in return for which Xiamen Torch will provide certain investment incentives and support.

The Company plans to invest $160 million in cash and equipment over the next five years, with construction commencing in 2017 and production estimated to start in late 2018. The investment will be financed with a mix of cash, transferred capital equipment and, possibly, local financing. Support for the project has been obtained from an existing customer.

NOTE 22 - QUARTERLY RESULTS OF OPERATIONS (UNAUDITED)

The following table sets forth certain unaudited quarterly financial data:

	First	Second	Third	Fourth	Year
Fiscal 2016:					
	(a)	**(b)**		**(c)**	**(a)(d)**
Net sales	$ 129,956	$ 122,923	$ 123,209	$ 107,368	$ 483,456
Gross profit	35,436	31,287	31,450	20,533	118,706
Net income	23,501	14,153	11,453	6,569	55,676
Net income attributable to Photronics, Inc. shareholders	21,002	11,854	8,088	5,256	46,200
Earnings per share:					
Basic	$ 0.31	$ 0.18	$ 0.12	$ 0.08	$ 0.68
Diluted	$ 0.28	$ 0.16	$ 0.12	$ 0.08	$ 0.64
Fiscal 2015:					
	(e)				**(e)**
Net sales	$ 123,505	$ 127,309	$ 131,699	$ 141,693	$ 524,206
Gross profit	28,184	33,095	37,243	44,614	143,136
Net income	7,142	12,156	15,410	22,151	56,859
Net income attributable to Photronics, Inc. shareholders	3,837	10,060	12,106	18,622	44,625
Earnings per share:					
Basic	$ 0.06	$ 0.15	$ 0.18	$ 0.28	$ 0.67
Diluted	$ 0.06	$ 0.14	$ 0.17	$ 0.25	$ 0.63

(a) Includes $8.8 million gain on sale of investment in a foreign entity.

(b) Includes a tax benefit in Taiwan of $1.8 million related to prior years.

(c) Includes a tax benefit in Taiwan of $3.0 million related to the recognition of prior period tax benefits and other tax positions no longer deemed necessary.

(d) Includes tax benefits in Taiwan of $4.8 million primarily related to the recognition of prior period tax benefits and other tax positions no longer deemed necessary.

(e) Includes expenses of $0.9 million of financing expenses related to the exchange of $57.5 million 3.25% convertible senior notes.

NOTE 23 - RECENT ACCOUNTING PRONOUNCEMENTS

In November 2016 the FASB issued ASU 2016-18 “Restricted Cash”, which requires that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Therefore, amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. This Update is effective for the Company in its first quarter of fiscal year 2019 and should be applied on a retrospective transition basis. Early adoption is permitted, including adoption in an interim period as of the beginning of an annual reporting period for which interim or annual financial statements have not been issued or made available for issuance. The Company is currently evaluating the effect this ASU will have on its consolidated financial statements.

In October 2016 the FASB issued ASU 2016-16 “Intra-Entity Transfers of Assets Other Than Inventory”, which eliminates the exception of recognizing, at the time of transfer, current and deferred income taxes for intra-entity asset transfers other than inventory. This Update is effective for the Company in its first quarter of fiscal year 2019 and should be applied on a modified retrospective transition basis. Early adoption is permitted as of the beginning of an annual reporting period for which interim or annual financial statements have not been issued or made available for issuance. The Company is currently evaluating the effect this ASU will have on its consolidated financial statements.

In August 2016 the FASB issued ASU 2016-15 “Classification of Certain Cash Receipts and Cash Payments”, which addresses eight specific cash flow issues with the objective of reducing diversity in practice. This Update is effective for

the Company in its first quarter of fiscal year 2019 and should be applied using a retrospective transition approach. The Company is currently evaluating the effect this ASU will have on its consolidated financial statements.

In June 2016 the FASB issued ASU 2016-13 “Measurement of Credit Losses”, the main objective of which is to provide more useful information about expected credit losses on financial instruments and other commitments of an entity to extend credit. In support of this objective, the ASU replaces the incurred loss impairment methodology found in current GAAP with a methodology that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. This ASU requires a cumulative-effect adjustment as of the beginning of the first reporting period in which the guidance is adopted. This Update is effective for the Company in its first quarter of fiscal year 2021, with early adoption permitted beginning in the first quarter of fiscal year 2019. The Company is currently evaluating the effect this ASU will have on its consolidated financial statements.

In March 2016 the FASB issued ASU 2016 – 09 “Improvements to Employee Share-Based Payment Accounting”, which simplifies the accounting for share-based payment transactions including their income tax consequences, classification as either equity or liability awards, classification on the statement of cash flows, and other areas. The method of adoption varies with the different aspects of the Update. The Update is effective for the Company in its first quarter of fiscal year 2018, with early application permitted. The Company is currently evaluating the effect this ASU will have on its consolidated financial statements.

In February 2016 the FASB issued ASU 2016 – 02 “Leases (Topic 842)”, which requires lessees to recognize right-of-use assets and corresponding liabilities for all leases with an initial term in excess of twelve months. The Update is to be adopted using a modified retrospective approach, which includes a number of practical expedients, that requires leases to be measured and recognized under the new guidance at the beginning of the earliest period presented. The ASU is effective for the Company in its first quarter of fiscal year 2020, with early application permitted, and the Company is currently evaluating the effect this ASU will have on its consolidated financial statements.

In January 2016 the FASB issued ASU 2016-01 “Recognition and Measurement of Financial Assets and Financial Liabilities”, which provides targeted improvements to the recognition, measurement, presentation and disclosure of financial assets and financial liabilities. Specific accounting areas addressed include, equity investments, financial liabilities reported under the fair value option and valuation allowance assessment resulting from unrealized losses on available-for-sale securities. The ASU also changes certain presentation and disclosure requirements for financial instruments. The Update is to be applied by means of a cumulative effect adjustment to the balance sheet as of the beginning of the fiscal year of adoption. This ASU is effective for the Company in its first quarter of fiscal year 2019. Early adoption, with certain exceptions, is not permitted. The Company is currently evaluating the effect this ASU will have on its consolidated financial statements.

In November 2015 the FASB issued ASU 2015-17 “Balance Sheet Classification of Deferred Taxes”, which requires that deferred tax liabilities and assets be classified as noncurrent in a classified statement of financial position. The Company adopted this ASU, and applied it on a retrospective basis, in the fourth quarter of fiscal year 2016. See Note 11 for the effects of its adoption on the Company’s consolidated financials statements.

In April 2015 the FASB issued ASU 2015-03 “Simplifying the Presentation of Debt Issuance Costs”, which requires debt issuance costs related to recognized debt liability to be presented in the balance sheet as a direct deduction from that debt liability, consistent with the presentation of a debt discount. This ASU is effective for the Company in its first quarter of fiscal year 2017 and, upon adoption, should be applied retrospectively. Early adoption is permitted. The Company does not anticipate that the adoption of this ASU will have a material effect on its consolidated financial statements.

In May 2014 the FASB issued ASU 2014-09 “Revenue from Contracts with Customers”, which will supersede nearly all existing revenue recognition guidance under accounting principles generally accepted in the United States. The core principle of this ASU is that revenue should be recognized for the amount of consideration expected to be received for promised goods or services transferred to customers. This ASU also requires additional disclosure about the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts, including significant judgments, and assets recognized for costs incurred to obtain or fulfill a contract. In August 2015 the FASB issued ASU 2015-14 which defers the effective date of ASU 2014-09 by one year and allows entities to early adopt, but no earlier than the original effective date. ASU 2014-09 will now be effective for the Company in its first quarter of fiscal year 2019. ASU 2014-09 allows for either full retrospective or modified retrospective adoption. In April 2016 the FASB issued ASU 2016-10 “Identifying Performance Obligations and Licensing” which amends guidance previously issued on these matters in ASU 2014-09. The effective date and transition requirements of ASU 2016-10 are the same as those for ASU 2014-09. The Company is determining the transition method to elect and the potential effects of the adoption of these Updates on its consolidated financial statements.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

The Company has established and currently maintains disclosure controls and procedures, as such term is defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), designed to provide reasonable assurance that information required to be disclosed in its reports filed under the Exchange Act, is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms, and that such information is accumulated and communicated to management, including the Company's chief executive officer and chief financial officer, as appropriate, to allow for timely decisions regarding required disclosure. In designing and evaluating disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

The Company's management, under the supervision and with the participation of the Company’s chief executive officer and chief financial officer, evaluated the effectiveness of the design and operation of the Company’s disclosure controls and procedures as of the end of the period covered by this report. Based upon that evaluation the Company’s chief executive officer and chief financial officer concluded that the Company’s disclosure controls and procedures were effective at a reasonable assurance level as of the end of the period covered by this report.

Changes in Internal Control over Financial Reporting

There was no change in the Company's internal control over financial reporting during the fourth fiscal quarter that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

Management's Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act. 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.

Management assessed the effectiveness of the Company's internal control over financial reporting as of October 30, 2016, based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in its "Internal Control - Integrated Framework" (2013). Management, under the supervision and with the participation of the Company's chief executive officer and chief financial officer, concluded that the Company's internal control over financial reporting was effective as of October 30, 2016.

The Company's independent registered public accounting firm, Deloitte & Touche LLP, has audited the effectiveness of the Company's internal control over financial reporting as of October 30, 2016, as stated in their report on page 33 of this Form 10-K.

January 6, 2017

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information as to Directors required by Item 401, 405 and 407(c)(3)(d)(4) and (d)(5) of Regulation S-K is set forth in the Company's 2017 definitive Proxy Statement which will be filed with the Securities and Exchange Commission pursuant to Regulation 14A of the Exchange Act within 120 days after the end of the fiscal year covered by this Form 10-K under the caption "PROPOSAL 1 - ELECTION OF DIRECTORS," "SECTION 16(A) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE" and in the third paragraph under the caption "MEETINGS AND COMMITTEES OF THE BOARD," and is incorporated in this report by reference. The information as to Executive Officers is included in the Company's 2017 definitive Proxy Statement under the caption "EXECUTIVE OFFICERS" and is incorporated in this report by reference.

The Company has adopted a code of ethics that applies to its principal executive officer, principal financial officer and principal accounting officer or chief financial officer. A copy of the code of ethics may be obtained, free of charge, by writing to the vice president, general counsel of Photronics, Inc. at 15 Secor Road, Brookfield, Connecticut 06804.

ITEM 11. EXECUTIVE COMPENSATION

The information required by Item 402 of Regulation S-K and paragraph (e)(4) and (e)(5) of Item 407 is set forth in the Company's 2017 definitive Proxy Statement under the captions "EXECUTIVE COMPENSATION," "CERTAIN AGREEMENTS", "DIRECTORS' COMPENSATION", "COMPENSATION COMMITTEE INTERLOCKS AND INSIDER PARTICIPATION" and "COMPENSATION COMMITTEE REPORT ON EXECUTIVE COMPENSATION," respectively, and is incorporated in this report by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by Item 201(d) of Regulation S-K is set forth in the Company’s 2017 definitive Proxy Statement under the caption “EQUITY COMPENSATION PLAN INFORMATION”, and is incorporated in this report by reference. The information required by Item 403 of Regulation S-K is set forth in the Company's 2017 definitive Proxy Statement under the caption "OWNERSHIP OF COMMON STOCK BY DIRECTORS, OFFICERS AND CERTAIN BENEFICIAL OWNERS", and is incorporated in this report by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by Items 404 and Item 407(a) of Regulation S-K is set forth in the Company's 2017 definitive Proxy Statement under the captions "MEETINGS AND COMMITTEES OF THE BOARD" and "CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS", respectively, and is incorporated in this report by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by Item 9(e) of Rule 14a-101 of the Exchange Act is set forth in the Company's 2017 definitive Proxy Statement under the captions "Fees Paid to the Independent Registered Public Accounting Firm" and "AUDIT COMMITTEE REPORT," and is incorporated in this report by reference.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

The following documents are filed as part of this report:

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM ON FINANCIAL STATEMENT SCHEDULE

Board of Directors and Shareholders
Photronics, Inc.
Brookfield, Connecticut

We have audited the consolidated financial statements of Photronics, Inc. and subsidiaries (the "Company") as of October 30, 2016 and November 1, 2015 and for each of the three fiscal years ended October 30, 2016, November 1, 2015, and November 2, 2014, and have issued our report thereon dated January 6, 2017, which contained an unqualified opinion on those consolidated financial statements. The financial statement schedule in Item 15 has been subjected to audit procedures performed in conjunction with the audit of the Company’s consolidated financial statements. The financial statement schedule is the responsibility of the Company's management. Our audit procedures included determining whether the financial statement schedule reconciles to the consolidated financial statements or the underlying accounting and other records, as applicable, and performing procedures to test the completeness and accuracy of the information presented in the financial statement schedule. In our opinion, such schedule is fairly stated, in all material respects, in relation to the consolidated financial statements as a whole.

/s/ Deloitte & Touche LLP
Hartford, Connecticut
January 6, 2017

Schedule II

Valuation and Qualifying Accounts
for the Years Ended October 30, 2016, November 1, 2015
and November 2, 2014
(in thousands)

	Balance at Beginning of Year	Charged to Costs and Expenses	Deductions	Balance at End of Year
Allowance for Doubtful Accounts				
Year ended October 30, 2016	$ 3,301	$ 642	$ (42) (a)	$ 3,901
Year ended November 1, 2015	$ 3,078	$ 730	$ (507) (a)	$ 3,301
Year ended November 2, 2014	$ 3,541	$ (740)	$ 277 (a)	$ 3,078
Deferred Tax Asset Valuation Allowance				
Year ended October 30, 2016	$ 38,763	$ (4,262) (b)	$ (5,186) (c)	$ 29,315
Year ended November 1, 2015	$ 49,548	$ (2,364) (b)	$ (8,421) (c)	$ 38,763
Year ended November 2, 2014	$ 56,661	$ -	$ (7,113) (c)	$ 49,548

(a) Uncollectible accounts written off, net, and impact of foreign currency translation.
(b) Reversal of valuation allowance.
(c) Increase in deferred tax liability and utilization of net operating losses.

EXHIBITS INDEX

Exhibit Number	Description
3.1	Certificate of Incorporation as amended July 9, 1986, April 9, 1990, March 16, 1995, November 13, 1997, April 15, 2002 and June 20, 2005 (incorporated by reference to Exhibit 3.1 to the Company's Annual Report on Form 10-K filed January 3, 2014).
3.2	Amended and Restated By-laws of the Company dated as of September 7, 2016 (incorporated by reference to the Company's Current Report on Form 8-K filed on September 13, 2016).
4.4	Indenture dated January 22, 2015, by and between the Company and the Bank of New York Mellon Trust Company, N.A., as trustee (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed on January 28, 2015).
10.1	The Company's 1992 Employee Stock Purchase Plan (incorporated by reference to Exhibit 10.24 to the Company's Registration Statement on Form S-8, File Number 33-47446 which was filed April 24, 1994).+
10.2	Amendment to the Employee Stock Purchase Plan as of March 24, 2004*+
10.3	Amendment to the Employee Stock Purchase Plan as of April 8, 2010 (incorporated by reference to Exhibit 10.4 to the Company's Annual Report on Form 10-K filed on January 7, 2016).+
10.4	Amendment to the Employee Stock Purchase Plan as of March 28, 2012 (incorporated by reference to Exhibit 10.9 of the Company's Quarterly Report on Form 10-Q filed September 5, 2012).+
10.5	2016 Equity Incentive Compensation Plan (incorporated by reference to the Company's Definitive Proxy Statement filed on February 26, 2016)+
10.6	The Company's 2007 Long-Term Equity Incentive Plan (incorporated by reference to the Company's Definitive Proxy Statement filed on March 3, 2014).+
10.7	Amendment to the 2007 Long Term Equity Incentive Plan as of April 8, 2010. (incorporated by reference to Exhibit 10.7 of the Company's Annual Report on Form 10-K filed January 7, 2016).+
10.8	Amendment to the 2007 Long Term Equity Incentive Plan as of April 11, 2014 (incorporated by reference to Exhibit 10.8 of the Company's Annual Report on Form 10-K filed January 6, 2015). +
10.9	2011 Executive Incentive Compensation Plan effective as of November 1, 2010 (incorporated by reference to Exhibit 10.9 of the Company's Annual Report on Form 10-K filed January 6, 2015).+
10.10	Executive Employment Agreement between the Company and Constantine Macricostas dated May 4, 2015 (incorporated by reference to Exhibit 10.31 to the Company's Quarterly Report on Form 10-Q filed on September 9, 2015). +

10.11	Executive Employment Agreement between the Company and Sean T. Smith dated February 20, 2003 (incorporated by reference to Exhibit 10.12 of the Company's Annual Report on Form 10-K filed January 6, 2015). +
10.12	Limited Liability Company Operating Agreement of MP Mask Technology Center, LLC (MP Mask) between Micron Technology, Inc. ("Micron") and Photronics, Inc. ("Photronics") dated May 5, 2006 (incorporated by reference to Exhibit 10.14 to the Company's Annual Report on Form 10-K filed on January 13, 2012). #
10.13	Contribution and Units Purchase Agreement between Micron, Photronics and MP Mask dated May 5, 2006 (incorporated by reference to Exhibit 10.15 to the Company's Annual Report on Form 10-K filed on January 13, 2012). #
10.14	Technology License Agreement among Micron, Photronics and MP Mask dated May 5, 2006 (incorporated by reference to Exhibit 10.16 to the Company's Annual Report on Form 10-K filed on January 13, 2012). #
10.15	Photronics to Micron Supply Agreement between Micron and Photronics dated May 5, 2006 (incorporated by reference to Exhibit 10.17 to the Company's Annual Report on Form 10-K filed on January 13, 2012). #
10.16	MP Mask to Photronics Supply Agreement between MP Mask and Photronics dated May 5, 2006 (incorporated by reference to Exhibit 10.18 to the Company's Annual Report on Form 10-K filed on January 13, 2012). #
10.17	Special Warranty Deed dated as of February 29, 2012 (incorporated by reference to Exhibit 99.2 to the Company's Current Report on Form 8-K filed on March 6, 2012).
10.18	Outsource Supply Agreement between Micron and Photronics dated March 24, 2015 (incorporated by reference to Exhibit 10.18 to the Company's Quarterly Report on Form 10-Q filed on June 4, 2015). #
10.19	Bridge License Agreement between Micron and Photronics dated March 24, 2015 (incorporated by reference to Exhibit 10.16 to the Company's Quarterly Report on Form 10-Q filed on June 4, 2015). #
10.20	Joint Venture Framework Agreement dated November 20, 2013, between the Company and Dai Nippon Printing Co., Ltd (incorporated by reference to Exhibit 10.19 of the Company's Annual Report on Form 10-K/A filed July 8, 2015). #
10.21	Joint Venture Operating Agreement dated November 20, 2013, between the Company and Dai Nippon Printing Co., Ltd. (incorporated by reference to Exhibit 10.20 of the Company's Annual Report on Form 10-K/A filed July 8, 2015).#
10.22	Outsourcing Agreement dated November 20, 2013, among the Company, Dai Nippon Printing Co., Ltd and Photronics Semiconductor Mask Corporation (incorporated by reference to Exhibit 10.21 of the Company's Annual Report on Form 10-K/A filed July 8, 2015).#
10.23	License Agreement dated November 20, 2013, between the Company and Photronics Semiconductor Mask Corporation (incorporated by reference to Exhibit 10.22 of the Company's Annual Report on Form 10-K/A filed July 8, 2015).#
10.24	License Agreement dated November 20, 2013, between Dai Nippon Printing Co., Ltd and Photronics Semiconductor Mask Corporation (incorporated by reference to Exhibit 10.23 of the Company's Annual Report on Form 10-K/A filed July 8, 2015). #
10.25	Margin Agreement dated November 20, 2013, among the Company, Dai Nippon Printing Co., Ltd and Photronics Semiconductor Mask Corporation (incorporated by reference to Exhibit 10.24 of the Company's Annual Report on Form 10-K/A filed July 8, 2015).#
10.26	Merger Agreement dated January 16, 2014, between Photronics Semiconductor Mask Corporation and DNP Photomask Technology Taiwan Co., Ltd. (incorporated by reference to Exhibit 10.25 of the Company's Annual Report on Form 10-K/A filed July 8, 2015).#
10.27	Executive Employment Agreement between the Company and Soo Hong Jeong dated May 31, 2011 * +
10.28	Executive Employment Agreement between the Company and Christopher J. Progler, Vice President, Chief Technology Officer dated September 10, 2007 (incorporated by reference to Exhibit 10.22 to the Company's Annual Report on Form 10-K filed on January 9, 2013).+
10.29	Executive Employment Agreement between the Company and Peter S. Kirlin dated May 4, 2015 (incorporated by reference to Exhibit 10.28 of the Company's Quarterly Report on Form 10-Q filed on September 9, 2015).+
10.30	Executive Employment Agreement between the Company and Richelle E. Burr dated May 21, 2010 (incorporated by reference to Exhibit 10.30 of the Company's Annual Report on Form 10-K filed on January 7, 2016).+
10.31	Form of Amendment to Executive Employment Agreement dated March 16, 2012 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on March 16, 2012). +
10.32	Third Amended and Restated Credit Agreement Dated as of December 5, 2013 (incorporated by reference to Exhibit 10.24 to the Company's Annual Report on Form 10-K filed on January 3, 2014).
10.33	Amendment No. 1 Dated as of August 22, 2014 to the Third Amended and Restated Credit Agreement Dated as of December 5, 2013 (incorporated by reference to Exhibit 10.32 of the Company's Annual Report on Form 10-K filed on January 6, 2015).
10.34	Second Amended and Restated Security Agreement (incorporated by reference to Exhibit 10.33 of the Company's Annual Report on Form 10-K filed on January 6, 2015).

10.35	Investment Agreement between Xiamen Torch Hi-Tech Industrial Development Zone Management Committee and Photronics Singapore Pte. Ltd. dated August 18, 2016 (incorporated by reference to Exhibit 10.35 to the Company's Quarterly Report on Form 10-Q filed on September 2, 2016).
21	List of Subsidiaries of the Company.*
23	Consent of Deloitte & Touche LLP.*
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.*
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.*
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.*
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.*
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document
+	Represents a management contract or compensatory plan or arrangement.
#	Portions of this exhibit have been omitted pursuant to a request for confidential treatment filed with the Securities and Exchange Commission.
*	Represents an exhibit that is filed with this Annual Report on Form 10-K.
	The Company will provide a copy of any exhibit upon receipt of a written request for the particular exhibit or exhibits desired. All requests should be addressed to the Company's general counsel at the address of the Company's principal executive offices.

SIGNATURES

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

PHOTRONICS, INC.
(Registrant)

By	/s/ SEAN T. SMITH Sean T. Smith Senior Vice President Chief Financial Officer (Principal Accounting Officer/ Principal Financial Officer)	January 6, 2017

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

By	/s/ PETER S. KIRLIN Peter S. Kirlin Chief Executive Officer Director (Principal Executive Officer)	January 6, 2017
By	/s/ SEAN T. SMITH Sean T. Smith Senior Vice President Chief Financial Officer (Principal Accounting Officer/ Principal Financial Officer)	January 6, 2017
By	/s/ CONSTANTINE S. MACRICOSTAS Constantine S. Macricostas Executive Chairman of the Board	January 6, 2017
By	/s/ WALTER M. FIEDEROWICZ Walter M. Fiederowicz Director	January 6, 2017
By	/s/ JOSEPH A. FIORITA, JR. Joseph A. Fiorita, Jr. Director	January 6, 2017
By	/s/ LIANG-CHOO HSIA Liang-Choo Hsia Director	January 6, 2017
By	/s/ GEORGE MACRICOSTAS George Macricostas Director	January 6, 2017
By	/s/ MITCHELL G. TYSON Mitchell G. Tyson Director	January 6, 2017

Exhibit 10.2

EMPLOYEE STOCK PURCHASE PLAN
(Amended and Current as of March 24, 2004)

ARTICLE I - *General*

1.1 The purpose of Photronics, Inc. Employee Stock Purchase Plan is to provide eligible employees of the Company and its designated subsidiaries (if any) with an opportunity to acquire a proprietary interest in the Company by the purchase of shares of the Common Stock of the Company directly from the Company through payroll deductions. It is felt that employee participation in the ownership of the Company will be to the mutual benefit of both the employees and the Company.

1.2 The Plan is intended to qualify as an "employee stock purchase plan" within the meaning of Section 423 of the Internal Revenue Code of 1986, as amended (the "Code"). The provisions of the Plan shall, accordingly, be construed so as to extend and/or limit eligibility and participation in a manner consistent, and so as to otherwise comply, with the requirements of the Code.

1.3 Eligibility and participation in the Plan shall give any Employee only such rights as are set forth in the Plan and any amendments hereto and shall in no way affect or in any manner limit the Company's right to discharge the Employee, which right is expressly reserved by the Company, or impair the authority of the Plan Committee to limit the Employee's rights, claims or causes, as provided in the Plan.

ARTICLE II - *Definitions*

2.1 The following words and phrases, when used in the Plan, shall have the following respective meanings, unless the context clearly indicates otherwise:

"Authorized Leave of Absence"
Any leave of absence authorized under the Company's standard personnel practices, provided that all persons under similar circumstances must be treated equally in the granting of such Authorized Leave of Absence and provided further that the person returns to the employ of the Company upon the expiration of an Authorized Leave of Absence.

"Board of Directors"
The Board of Directors of Photronics, Inc.

"Code"
The Internal Revenue Code of 1986, as amended from time to time, and applicable Treasury Department regulations issued thereunder.

"Common Stock"
The Common Stock, par value $0.01 per share, of the Company, or the securities adjusted or substituted therefor pursuant to Article XIV.

"Company"
Photronics, Inc., a Connecticut corporation, or its successor or successors or any present or future subsidiary of Photronics, Inc., which may be designated to participate in the Plan by the Board of Directors.

"Compensation"
The Compensation of an Eligible Employee shall be determined in accordance with procedures approved by the Plan Committee or the Board of Directors. In the absence of the adoption of specific procedures, Compensation of an Eligible Employee shall be the annualized salary or wages of such Employee based on such Employee's current rate of pay and work schedule, but excluding any discretionary overtime, sick pay, vacation pay or other benefits.

"Disability"
Disability shall have the same meaning set forth in Section 22(e)(3) of the Code or any successor provision thereto. At present, a disability is defined as a physical or mental impairment or incapacity which, in the opinion of a physician selected by the Plan Committee, can be expected to result in death or has lasted or can be expected to last for a continuous period of at least twelve (12) months and renders the Participant unable to engage in any substantial, gainful activity.

"Effective Date of the Plan"
The date on which the Plan shall have become effective pursuant to Article XVII, provided, however, that if the Plan shall not be approved by the stockholders of the Company as provided in Article XVII, the Plan and all rights granted hereunder shall be, and be deemed to have been, null and void.

"Eligible Employee"
An Employee who is eligible to participate in the Plan in accordance with provisions of Articles IV and V.

"Employee"
Any person who, on an Offering Date, is a common law employee of the Company and whose customary employment is for more than twenty (20) hours per week and for more than five (5) months per calendar year, other than any highly compensated employees (within the meaning of Section 414[q] of the Code or any successor provision thereto) of the Company who are excluded from participation hereunder by action of the Board of Directors. A person who is or has been on an Authorized Leave of Absence, and who in the absence of such Authorized Leave of Absence would have been classified as an Employee, shall in the discretion of the Plan Committee be considered to be an Employee, except to the extent that such determination is inconsistent with Section 423 of the Code. Such determination by the Plan Committee shall be final and conclusive.

"Offering"
An Offering in accordance with the provisions of Article V.

"Offering Date"
The date of an Offering as established by the Plan Committee pursuant to Section 5.1 hereof.

"Participant"
An Eligible Employee who subscribes for Shares pursuant to Article VI.

"Plan"
The Photronics, Inc. Employee Stock Purchase Plan set forth herein, as amended from time to time in accordance with the provisions of Article XV.

"Plan Committee"
The committee provided for in Article XII to administer the Plan.

"Purchase Date"
A Purchase Date as provided in Sections 8.1 or 10.3, as appropriate.

"Shares"
Shares of Common Stock offered under the Plan.

The masculine gender, whenever used in the Plan, shall be deemed to include the feminine gender, and whenever the plural is used it shall include the singular, if the context so requires.

ARTICLE III - *Shares Subject to the Plan*

3.1 Subject to the provisions of Article XIV hereof, the aggregate number of shares of Common Stock which may be issued under the Plan shall not exceed 900,000. The aggregate number of such shares which may be issued with respect to any Offering shall be determined by the Plan Committee with respect to such Offering. Such shares may be authorized but unissued shares of Common Stock or issued shares of Common Stock which are held by the Company. Any shares subscribed for under the Plan and not purchased as a result of the cancellation in whole or in part of such subscription shall (unless the Plan shall have terminated) be again available for issuance under the Plan.

ARTICLE IV - *Eligibility*

4.1 Each Employee who has been continuously employed by the Company for the one complete calendar month (or such longer period as may be determined by the Plan Committee) ending immediately prior to an Offering Date shall be eligible to participate in the Offering under the Plan made on such Offering Date.

4.2 Notwithstanding the provisions of Section 4.1, no Employee shall be offered Shares if, immediately after he would subscribe for such Shares, such Employee would own capital stock (including shares of Common Stock which may be purchased under such subscription and under any other outstanding subscriptions under the Plan or options to purchase shares of Common Stock of the Company held by such Employee, as computed in accordance with Section 423[b][3] of the Code or any successor provision thereto) possessing 5% or more of the total combined voting power or value of all classes of stock of the Company. For purposes of determining the stock ownership of any Employee, the provisions of Section 424[d] of the Code shall apply.

ARTICLE V - *Offering Under the Plan*

5.1 Offerings under the Plan shall be made on such Offering Dates as shall be determined by the Plan Committee. Notwithstanding anything to the contrary, no Offering shall be made on any date prior to the date that a required registration statement with respect to such Offering filed under the Securities Act of 1933, as amended, has become effective. Nothing contained herein shall be deemed to require that an Offering be made in any year.

5.2 [a] Subject to the limitations set forth in Sections 5.2[b] and 6.3, and to the other terms and conditions of the Plan, in each offering under the Plan, each Eligible Employee on an Offering Date shall be offered the right during the Subscription Period as provided in Section 6.2, to subscribe to purchase such number of Shares as the percentage designated by the Plan Committee for such offering (not to exceed 5%) of his Compensation would buy, at a price equal to the product of (i) the fair market value of a Share on the Offering Date, multiplied by (ii) the Purchase Price percentage utilized under Section 5.3 hereof.

[b] Notwithstanding anything to the contrary contained in Sub-Section [a] of this Section 5.2, no Eligible Employee shall be eligible to subscribe for Shares in an Offering if, immediately after he would subscribe for such Shares, such subscription would permit his rights to purchase shares of Common Stock under all employee stock purchase plans of the Company to accrue at a rate which exceeds $25,000 (or such other maximum amounts as may be prescribed from time to time under the Code) of the fair market value of such shares (determined as of the Offering Date for such Offering) for each calendar year in which such subscription would be outstanding at any time. For purposes of this limitation the provisions of Section 423[b][8] of the Code shall be applicable.

5.3 The Purchase Price per share subscribed for all Shares in a particular Offering shall be an amount equal to such percentages, not greater than 100% nor less than 85%, as shall be determined by the Plan Committee on or prior to the Offering Date, of the fair market value of a share of Common Stock (determined in accordance with the provisions of Article XIII) on one of the following dates with respect to such Offering, with such date to be determined by the Plan Committee on or prior to the Offering Date: (i) the Offering Date, (ii) the Purchase Date, or (iii) the Offering Date or the Purchase Date (whichever would result in a lower Purchase Price for the Common Stock).

5.4 In order to participate in any Offering, an Eligible Employee entitled to subscribe for Shares in such Offering shall comply with the subscription procedures set forth in Article VI.

ARTICLE VI - *Subscriptions for Shares*

6.1 As soon as practicable after an Offering Date, the Company shall furnish to each Eligible Employee a Subscription Agreement setting forth the maximum number of Shares to which such Eligible Employee may subscribe in such Offering, the fair market value per share of Common Stock on the Offering Date, the Purchase Price for Shares in such Offering and such other terms and conditions consistent with the Plan as shall be determined by the Plan Committee.

6.2 Within fifteen (15) days after receipt of such Subscription Agreement, an Eligible Employee desiring to participate in the Offering shall notify the Plan Committee of the number of Shares for which he desires to subscribe. Such notification shall be effected by the Eligible Employee's completing, executing and returning to the Secretary of the Company the Subscription Agreement. All such subscriptions shall be deemed to have been made as of the Offering Date. No subscription shall be accepted from any person who is not an Eligible Employee on the date his subscription is received by the Company.

6.3 The minimum number of Shares for which an Eligible Employee will be permitted to subscribe in any Offering is ten (10) (or the number of Shares offered to him if fewer than ten). If at any time the Shares available for an Offering are oversubscribed, the Number of Shares for which each Eligible Employee is entitled to subscribe pursuant to Section 5.2 shall be reduced, pro rata, to such lower number as may be necessary to eliminate such over-subscription.

6.4 If an Eligible Employee fails to subscribe to the Shares within the period and in the manner prescribed in Section 6.2, he shall waive all rights to purchase Shares in that Offering.

ARTICLE VII - *Payment for Shares*

7.1 The aggregate Purchase Price for the Shares for which a Participant subscribes in any Offering in accordance with the provisions of Article VI of the Plan shall be paid by means of payroll deductions.

7.2 [a] The aggregate Purchase Price for Shares shall be paid by payroll deductions in equal amounts over a period of 24 months (or such shorter period as shall be determined by the Plan Committee in accordance with the Plan) from the Offering Date. The period over which such payroll deductions are to be made in hereinafter referred to as the "Payment Period".

[b] Such payroll deductions with respect to an Offering shall commence as soon as practicable after the receipt of the Company of the executed Subscription Agreement authorizing such payroll deductions, and shall cease upon the earlier of the termination of the Payment Period or payment in full of the Purchase Price for such Shares. A Participant may cancel his subscription to the extent provided for in Article X, but no other change in terms of his Subscription Agreement may be made during the Payment Period and, in particular, in no event may a Participant change the amount of his payroll deductions under such Subscription Agreement. All payroll deductions withheld from a Participant under a Subscription Agreement shall be credited to his account under the Plan. In the event that payroll deductions are simultaneously being made with respect to more than one Subscription Agreement, the aggregate amount of such payroll deductions at any payday shall be credited first toward the payment for Shares subscribed for in the earliest Offering. A Participant may not make any separate cash payment into his account, provided, however, that a Participant who has been deemed to be in the employ of the Company while on an Authorized Leave of Absence without pay during the Payment Period, may upon his return to the actual employ of the Company, make a cash payment into his account in an amount not exceeding the aggregate of the payroll deductions which would have been made during such Authorized Leave of Absence.

[c] All funds representing payroll deductions for the accounts of Participants will, except as provided in Section 7.3, be paid into the general funds of the Company. No interest will be paid or accrued under any circumstances on any funds withheld by the Company as payroll deductions pursuant to this Section 7.2 or on any other funds paid to the Company for purchases of Shares under the Plan.

7.3 Notwithstanding anything in this Article VII to the contrary, with respect to any Offering which is made prior to the approval of the Plan by the stockholders of the Company, all payroll deductions withheld for the accounts of Participants shall, until the Plan is approved by the stockholders, be held by the Company in a special escrow account for the benefit of such Participants. No interest will be paid or accrued under any circumstances on such funds. No Shares will be issued to such Participants until after approval of the Plan by the stockholders. In the event that the Plan is not approved by the stockholders within the period specified in Article XVII, all such funds will thereupon be promptly refunded to the respective Participants.

7.4 Failure to pay for subscribed Shares as provided in this Article VII shall constitute the cancellation of such subscription to the extent that any such Shares shall not have been so paid for.

ARTICLE VIII - *Issuance of Shares*

8.1 At the end of the Payment Period for an Offering, (each of which dates is referred to as a "Purchase Date"), the balance of all amounts then held in the account of a Participant representing payroll deductions pursuant to a Subscription Agreement shall be applied to the purchase by the Participant from the Company of the number of Shares equal to the amount of such balance divided by the Purchase Price per share for such Shares applicable on such Purchase Date up to the number of Shares provided for in the respective Subscription Agreement. Any amount remaining in the Participant's account in excess of the sum required to purchase whole Shares on a Purchase Date shall be promptly refunded to the Participant. As soon as practicable after a Purchase Date, the Company will issue and deliver to the Participant a certificate representing the Shares purchased by him from the Company on such Purchase Date. No fractional shares will be issued at any time.

8.2 A Participant who disposes (whether by sale, exchange, gift or otherwise) of any of the Shares acquired by him pursuant to the Plan within two (2) years after the Offering Date for such Shares or within one (1) year after the issuance of Shares to him shall notify the Company in writing of such disposition within thirty (30) days after such disposition.

ARTICLE IX - *Rights of Stockholders*

9.1 A Participant shall not have any rights to dividends or any other rights as a stockholder of the Company with respect to any Shares until such Shares shall have been issued to him as reflected by the books and records maintained by the Company's transfer agent relating to stockholders of the Company.

ARTICLE X - *Voluntary Withdrawal/Termination of Employment*

10.1 A Participant may discontinue his payroll deductions under a Subscription Agreement at any time by giving written notice thereof to the Plan Committee, effective for all payroll periods commencing five (5) days after receipt of such notice by the Plan Committee. The balance in the account of such Participant following such discontinuance shall be promptly refunded to the Participant. Withdrawal from an Offering pursuant to this Section 10.1 shall not affect an Eligible Employee's eligibility to participate in any other Offering under the Plan.

10.2 If the Participant's employment with the Company is terminated for any reason other than death while still an Employee, such Participant's rights to purchase Shares under any Subscription Agreement shall immediately terminate. Any balance remaining in his account as of the date of such termination of employment shall be promptly refunded to the Participant.

10.3 In the event of the death of an Employee who was a Participant prior to the purchase of the Shares for which he subscribed pursuant to Article VI hereof, the person or persons who acquired by laws of descent and distribution (his "Estate") his rights to purchase Shares under his Subscription Agreement(s), shall have the right within ninety (90) days after the death of the Participant (but in no event later than the termination of the Payment Period) to purchase from the Company that number of Shares subscribed for and not issued to the Participant prior to his death which the balance in the Participant's payroll deduction account is sufficient to purchase. The failure of the person or persons so acquiring his rights to so give notice of intention to purchase shall constitute a forfeiture of all further rights of the Participant or other persons to purchase such Shares and in such event, the balance in the Participant's payroll deduction account will be refunded, without interest. If the Participant dies more than fifty (50) days prior to the termination of the Payment Period and his Estate elects to purchase the Shares subscribed for, the Purchase Price for his Shares shall be the percentage, designated pursuant to Section 5.3, of the fair market value on the Offering Date, irrespective of the Purchase Price for other Participants.

ARTICLE XI - *Non-Transferability of Subscription Rights*

11.1 During the lifetime of a Participant, the Shares for which he subscribes may be purchased only by him. No Subscription Agreement of a Participant and no right under or interest in the Plan or any such Subscription Agreement (hereinafter collectively referred to as "Subscription Rights") may be assigned, transferred, pledged, hypothecated or disposed of in any way (whether by operation of law or otherwise), except by the Participant's will or by the applicable laws of descent and distribution, or may be subject to execution, attachment or similar process. Any assignment, transfer, pledge, hypothecation or other disposition of Subscription Rights, or any levy of execution, attachment or other process attempted upon Subscription Rights, shall be null and void and without effect, and in any such event all Subscription Rights shall, in the sole discretion of the Plan Committee (exercised by written notice to the Participant or to the person then entitled to purchase the Shares under the provisions of Sections 10.3 hereof), terminate as of the occurrence of any such event.

ARTICLE XII - *Administration of the Plan*

12.1 The Plan shall be administered by a Plan Committee which shall consist of two (2) or more members of the Board of Directors, none of whom shall be eligible to participate in the Plan. The members of the Plan Committee shall be appointed, and may be removed, by the Board of Directors. The Board of Directors shall have the power to remove and substitute for members of the Plan Committee and to fill any vacancy which may occur in the Plan Committee.

12.2 Unless otherwise determined by the Board of Directors, the members of the Plan Committee shall serve without additional compensation for their services. All expenses in connection with the administration of the Plan, including, but not limited to, clerical, legal and accounting fees, and other costs of administration, shall be paid by the Company.

12.3 The Chairman of the Plan Committee shall be designated by the Board of Directors. The Plan Committee shall select a Secretary who need not be a member of the Plan Committee. The Secretary, or in his absence, any member of the Plan Committee designated by the Chairman, shall keep the minutes of the proceedings of the Plan Committee and all data, records and documents relating to the administration of the Plan by the Plan Committee.

12.4 A quorum of the Plan Committee shall be such number as the Committee shall from time to time determine, but shall not be less than a majority of the entire Plan Committee. The acts of a majority of the members of the Plan Committee present at any meeting at which a quorum is present shall be the act of the Plan Committee. Members of the Plan Committee may participate in a meeting by means of telephone conference or similar communications procedure pursuant to which all persons participating in the meeting can hear each other. The Plan Committee may take action without a meeting if such action is evidenced by a writing signed by at least a majority of the entire Plan Committee.

12.5 The Plan Committee may, by an instrument in writing, delegate to one or more of its members or to an officer or officers of the Company any of its powers and its authority under the Plan, including the execution and delivery on its behalf of instruments, instructions and other documents.

12.6 It shall be the sole and exclusive duty and authority of the Plan Committee to interpret and construe the provisions of the Plan, to decide any disputes which may arise with regard to the status, eligibility and rights of Employees under the terms of the Plan, and any other persons claiming an interest under the terms of the Plan, and, in general, to direct the administration of the Plan.

12.7 The Plan Committee may adopt, and from time to time amend, such rules and regulations consistent with the purposes and provisions of the Plan, as it deems necessary or advisable to administer and effectuate the Plan.

12.8 The Plan Committee may shorten, lengthen (but not beyond thirty (30) days) or waive the time required by the Plan for the filing of any notice or other form under the Plan.

12.9 The discretionary powers granted hereunder to the Plan Committee shall in no event be exercised in any manner that will discriminate against individual employees or a class of employees or discriminate in favor of employees who are shareholders, officers, supervisors or highly compensated employees of the Company.

ARTICLE XIII - *Valuation of Shares of Common Stock*

13.1 For purposes of the Plan, the "fair market value" of a share of Common Stock as of any date shall be determined as follows:

[a] If the Common Stock is then listed on a national securities exchange, the "fair market value" shall be the closing price of a share of Common Stock on such exchange on such date, or, if there has been no sale of shares of Common Stock on that date, the closing price of a share of Common Stock on such exchange on the last preceding business day on which shares of Common Stock were traded.

[b] If the Common Stock is then listed on the National Association of Securities Dealers Automatic Quotation System National Market System, the "fair market value" shall be the average of the high and low sales prices of a share of Common Stock on that date, or if there has been no sale of shares of Common Stock on that date, the average of the high and low sales prices of Common Stock on the last preceding business day on which shares of Common Stock were traded.

ARTICLE XIV - *Adjustments in Certain Events*

14.1 If (i) the Company shall at any time be involved in a transaction to which sub-section [a] of Section 424 of the Code is applicable, (ii) the Company shall declare a dividend payable in, or shall sub-divide or combine, its Common Stock, or (iii) any other event shall occur which in the judgment of the Board of Directors necessitates action by way of adjusting the terms of the outstanding Subscription Agreements, the Board of Directors shall take any such action as in its judgment shall be appropriate to preserve Participant rights substantially proportionate to the rights existing prior to such event. To the extent that such action shall include an increase or decrease in the number of shares of Common Stock subject to outstanding Subscription Agreements, the aggregate number of shares available under Article III hereof for issuance under the Plan pursuant to outstanding Subscription Agreements and Subscription Agreements which may be entered into, and the aggregate number of shares available for issuance in any Offering and the number which may be subscribed for, shall be proportionately increased or decreased, as the case may be. No action shall be taken by the Board of Directors under the provisions of this Article XIV which, in its judgment, would constitute a modification, extension or renewal of the Subscription Agreement (within the meaning of Section 424[h] of the Code), or would prevent the Plan from qualifying as an "employee stock purchase plan" (within the meaning of Section 423 of the Code). The determination of the Board of Directors with respect to any matter referred to in this Article XIV shall be conclusive and binding upon each Participant.

ARTICLE XV - *Termination and Amendment of the Plan*

15.1 The Board of Directors may, without further approval by the stockholders of the Company, at any time terminate or amend the Plan without notice, or make such modifications of the Plan as it shall deem advisable; provided that the Board of Directors may not, without prior approval by the holders of a majority of the outstanding shares of Common Stock of the Company, amend or modify the Plan so as to (i) increase the maximum number of shares of Common Stock which may be issued under the Plan (except as contemplated in Article XIV hereof), (ii) extend the term during which Offerings may be made under the Plan or (iii) increase the maximum number of Shares which an Eligible Employee is entitled to purchase (except as contemplated in Article XIV hereof); and provided further that the Board of Directors may not amend or modify the Plan in any manner which would prevent the Plan from qualifying as an "employee stock purchase plan" (within the meaning of Section 423 of the Code). No termination, amendment or modification of the Plan may, without the consent of a Participant, adversely affect the rights of such Participant under an outstanding Subscription Agreement.

ARTICLE XVI - *Miscellaneous*

16.1 Unless otherwise expressly provided in the Plan, all notices or other communications by a Participant to the Company under or in connection with the Plan shall be deemed to have been duly given when received by the Secretary of the Company or when received in the form specified by the Company at the location and by the persons, designated by the Company for the receipt thereof.

16.2 Notwithstanding anything hereunder to the contrary, the offer, sale and delivery by the Company of Shares under the Plan to any Eligible Employee is subject to compliance with all applicable securities regulation and other federal and state laws. The terms of this Plan shall be construed under the laws of the State of Connecticut.

ARTICLE XVII - *Effective Date*

17.1 The Plan shall become effective at such time as the Plan has been adopted by the Board of Directors or such later date as shall be designated by the Board of Directors upon its adoption of the Plan; provided, however, that the Plan and all Subscription Agreements entered into thereunder shall be, and be deemed to have been, null and void if the Plan is not approved by the holders of a majority of the outstanding shares of Common Stock of the Company within twelve (12) months after the date on which the Plan is adopted by the Board of Directors.

Exhibit 10.27

EMPLOYMENT AGREEMENT

THIS EMPLOYMENT AGREEMENT (this "Agreement") is entered into as of January 1, 2011 among Photronics, Inc., a Connecticut corporation (the "Company"), having a principal place of business at 15 Secor Road, Brookfield, CT 06804, PKL, a company incorporated under the laws of Korea ("PKL") and Soo Hoo Jeong residing at 272-3, Gumi-Dong, Bundang, Seongnam, Kyeonggi, Korea 463-802 ("Executive").

WITNESSETH:

WHEREAS, the Company, PKL and Executive desire to enter into this Agreement to assure the Company of the continuing service of Executive and to set forth the terms and conditions of Executive's employment with the Company.

NOW, THEREFORE, in consideration of the mutual promises and covenants set forth herein, the parties agree as follows:

1. Term. The Company agrees to employ Executive and Executive hereby accepts such employment, in accordance with the terms of this Agreement. Subject to Section 5, the term of Executive's employment shall commence on the date hereof and continue for three (3) years thereafter unless this Agreement is earlier terminated as provided herein (the "Term"); provided, however, that unless the Company gives written notice to Executive at least thirty (30) days prior to the end of the Term of this Agreement (as the Term may be extended pursuant to this Section 1), on each anniversary of the date hereof, the Term of this Agreement shall automatically be extended for an additional one (1) year period.

2. Services. So long as this Agreement shall continue in effect, Executive shall devote Executive's full business time, energy and ability to the business, affairs and interests of the Company and its subsidiaries and matters related thereto. Executive shall use his best efforts and abilities to promote the Company's interests and shall perform faithfully the services contemplated by this Agreement in accordance with the Company's policies as established by the Board of Directors of the Company.

3. Duties and Responsibilities.

(a) Executive shall serve as the Chief Operating Officer of the Company, President Asia Operations and shall also service as the Chairman and Chief Executive Officer of PK, Ltd ("PKL"), a majority owned subsidiary of the Company. In the performance of Executive's duties, Executive shall report directly to the CEO or as otherwise directed by the CEO or the Company's Board of Directors, and shall have such duties, responsibilities and authority as may from time to time be assigned to the Executive by the CEO or the Company's Board of Directors.

(b) In addition, Executive agrees to observe and comply with the policies, rules and regulations of the Company. The Company agrees that the duties which may be assigned to Executive shall be the customary duties of the office of Chief Operating Officer, President of Asia Operations and Chairman and Chief Executive Officer of PKL and shall not be inconsistent with the provisions of the charter documents of the Company, PKL or applicable law.

4. Compensation.

(a) Base Compensation. During the Term, Executive will receive a base salary at the rate of U.S. $475,000 per year payable in accordance with the Company's customary payroll practices generally applicable to similarly situated employees as may be in effect from time to time (the "Base Salary"). Executive's base salary will be paid by PKL in Korea. At the end of each fiscal quarter PKL shall prepare a calculation of the average exchange rate for converting US dollar to Korean Won for each month in that quarter. PKL will then use the average exchange rate and compare that to the base salary paid to Executive for that quarter. As a result of the comparison, any overpayments by PKL will be reimbursed by Executive within ten days of receiving notification from PKL and any underpayments by PKL will be paid by PKL to Executive within ten days of completing the review.

(b) Periodic Review. The Compensation Committee or the Board of Directors of the Company shall review Executive's Base Salary and Benefits (as defined below) from time to time in accordance with the normal business practices of the Company. The Company may in its sole discretion increase the Base Salary during the Term. The amount of any increase combined with the previous year's Base Salary shall then constitute Executive's Base Salary for purposes of this Agreement.

(c)Additional Benefits. During the Term, the Executive shall be entitled to participate in the PKL employee benefit plans and arrangements as may be established from time to time in Korea (which may include, without limitation, medical plan, dental plan, disability plan, basic life insurance and business travel accident insurance plan, and the Company's bonus plan(s), or stock award plans or any successor plans thereto (the "Benefits")). The Company or PKL shall have the right to terminate or change any such plans or programs at any time. Upon termination ofExecutive's employment with PKL, Executive will receive a lump sum payment of U.S. $108,000 multiplied by the total number of years that Executive was employed by PKL (including years prior to the date of this Agreement). The sum of $108,000 shall be fixed and is not subject to escalation or increase based on any bonus or salary increase that Executive may receive during the term of this Agreement (said retirement payment being referred to as the "PKL Retirement Payment"). The PKL Retirement Payment shall be paid either in U.S. dollars or the equivalent amount in Korean Won at the time of payment.

(d)Automobile Allowance. During the Term of this Agreement, the Company shall provide the Executive with a company car and driver as is customary in Korea.

(e) Vacation. During the Term of this Agreement, Executive shall be entitled to four (4) weeks' paid vacation per calendar year, which shall not be transferable to any subsequent year.

(f) Country Club Membership.The Company will pay the annual membership fee on behalf of Executive to Two Country Clubs in Korea that Executive has membership to and uses for business purposes as is customary in Korea

5. Termination. This Agreement and all rights and obligations hereunder, except the rights and obligations contained in this Section 5, Section 7 (Confidential Information), Section 8 (Non-Competition), Section 9 (Intellectual Property) and Section 10 (Remedies), which shall survive any termination hereunder, shall terminate upon the earliest to occur of any of the following:

(a) Resignation without Good Reason; Retirement. Upon the resignation by Executive without Good Reason (as defined below) following at least thirty (30) days written notice to the Company or retirement from the Company in accordance with the normal retirement policies of the Company, Executive shall be entitled to receive a payment in the amount of the sum of (A) Executive's Base Salary through the last day of employment to the extent not theretofore paid, (B) any compensation previously deferred by Executive (together with any accrued interest or earnings thereon), (C) any accrued vacation pay according to PKL's local policy, and (D) the total amount of the PKL Retirement Payment as set forth in 4 (c) above in each case to the extent not theretofore already paid (the sum of the amounts described in clauses (A), (B), (C) and (D) shall be hereinafter referred to as the "Accrued Obligations"), in a lump sum, subject to statutory deductions and withholdings, in cash within ten (10) business days after the last day of employment or any earlier time required by applicable law.

(b) Death or Disability of Executive.

(i) If Executive's employment is terminated by reason of Executive's death or disability, this Agreement shall terminate without further obligations to Executive (or Executive's heirs or legal representatives) under this Agreement, other than for:

(1) Payment of any Accrued Obligations, which shall be paid to Executive or Executive's estate or beneficiary, as applicable, in a lump sum, subject to statutory deductions and withholdings, in cash within ten (10) business days after the date of termination or any earlier time required by applicable law.

(2) Payment to Executive or Executive's estate or beneficiary, as applicable, of any amount accrued pursuant to the terms of any other applicable benefit plan.

(ii) If Executive shall become disabled, Executive's employment may be terminated only by written notice from the Company to Executive.

(iii) For the purposes of this Agreement, "disability" or "disabled" shall mean a mental or physical incapacity which prevents Executive from performing Executive's duties with the Company for a period of three hundred sixty (360) consecutive calendar days, as certified by a physician selected by the Company or its insurers.

(c) Termination for Cause.

(i) The Company may terminate Executive's employment and all of Executive's rights to receive Base Salary, and any Benefits hereunder for Cause.

(ii) Upon such termination for Cause, Executive shall be entitled to receive any Accrued Obligations, which shall be paid to Executive in a lump sum, subject to statutory deductions and withholdings, in cash within ten (10) business days after the date of termination or any earlier time required by applicable law.

(iii) For purposes of this Agreement, the term "Cause" shall be defined as any of the following:

(1) Executive's material breach of any of any obligations under this Agreement (other than by reason of physical or mental illness, injury, or condition);

(2) Executive's conviction by, or entry of a plea of "guilty" or "nolo contendere" in a court of competent and final jurisdiction for any felony that impairs his ability to perform his duties to the Company or any crime of moral turpitude;

(3) Executive's commission of an act of fraud upon the Company;

(4) Executive's engaging in willful or reckless misconduct or gross negligence in connection with any property or activity of the Company or its Affiliates;

(5) Executive's repeated and intemperate use of alcohol or illegal drugs after written notice from the Board or Directors;

(6) Executive's material breach of any other material obligation to the Company (other than by reason of physical or mental illness, injury, or condition) that is or could reasonably be expected to result in material harm to the Company;

(7) Executive's becoming insolvent or filing for bankruptcy;

(8) Executive's becoming barred or prohibited by the SEC from holding Executive's position with the Company; or

(9) Executive's violation of any duty of loyalty (i.e., engaging in self-interested transactions, misappropriation of business opportunities that belong to the Company or PKL, or a breach of Executive's fiduciary duties to the Company or PKL).

(d) Termination Without Cause; Resignation For Good Reason.

(i) Notwithstanding any other provision of this Section 5, (i) the Company may, at its option and at any time, provide to Executive: (A) up to twelve (12) months' advance written notice of termination of employment without Cause, or (B) written notice of a current material adverse change in the Executive's position (such notice in (A) or (B) being referred to herein as a "Working Notice"). If the Company issues a Working Notice to the Executive, any entitlement to a Severance Payment and Benefit Period (as defined below) shall be reduced in proportion to the period covered by the Working Notice. During the period covered by the Working Notice, the Executive shall continue to provide the services according to Section 2, hereof as an employee of the Company. If the Executive resigns during the period covered by the Working Notice, then Executive shall receive only the Accrued Obligations through the date of termination. Executive, upon thirty (30) days advance notice to the Company, shall have the right to resign for Good Reason.

(ii) If Executive is so terminated without Cause or resigns for Good Reason, Executive shall receive from the Company:

(1) Any Accrued Obligations through the date of termination, which shall be paid to Executive in a lump sum, subject to statutory deductions and withholdings, in cash within ten (10) business days after the date of termination or any earlier time required by applicable law.

(2) A payment ("Severance Payment") equal to twelve (12) months of Executive's current Base Salary. The Severance Payment shall be paid by the Company to Executive in equal installments, following the expiration of the Revocation Period defined in the Release referred to in Section 5(d)(iv), in accordance with the Company's customary payroll practices generally applicable to similarly situated employees as may be in effect from time and shall be subject to statutory deductions and withholdings.

(iii) As used in this Agreement, the term "Good Reason" shall mean (i) (except as set forth in Section 5(e)) the relocation of the Company's principal executive offices to a location outside the contiguous 48 United States without the consent of Executive or (ii) a material diminution in Executive's overall employee benefits not the result of changes in benefit plans affecting other employees, without the consent of Executive.

(iv) As a condition to receiving the payment and benefits extension contemplated by Section 5(d) or 5(e), Executive agrees to execute and deliver to the Company the Release substantially in the form attached to this Agreement as Exhibit A.

(e) Change of Control.

(i) For purposes of the Agreement, a "change of control" means, and shall be deemed to have taken place, if;

(1) any individual, partnership, firm, corporation, association, trust, unincorporated organization or other entity or person, or any syndicate or group deemed to be a person under Section 14 (d) (2) of the Exchange Act, is or becomes the "beneficial owner" (as defined in Rule 13d-3 of the General Rules and Regulations under the Exchange Act), directly or indirectly, of securities of the Company representing 50% or more of the combined voting power of the Company's then outstanding securities entitled to vote in the election of directors of the Company;

(2) during any period of two (2) consecutive years (not including any period prior to the execution of this Agreement) individuals who at the beginning of such period constituted the Board and any new directors, whose election by the Board or nomination for election by the Company's shareholders was approved by a vote of at least three-fourths (3/4ths) of the directors then still in office who either were directors at the beginning of the period or whose election or nomination for election was previously so approved, cease for any reason to constitute a majority of the Board;

(3) there occurs a reorganization, merger, consolidation or other corporate transaction involving the Company (a "Transaction"), and shareholders of the Company immediately prior to such Transaction do not, immediately after the Transaction, own more than 50% of the combined voting power of the Company or other corporation resulting from such Transaction; or

(4) there is a "change in control" of the Company.

(iii) If during the period three (3) months before or two (2) years following a "change in control" of the Company (or any successor), the Executive is terminated by the Company for any reason (other than for Cause as defined in Section 5(c) thereof), including an election by the Company or its successor not to extend this Agreement pursuant to Section 1, or the Executive resigns for Good Reason as defined in Section 5(e)(ii)), " "Executive shall be entitled to receive a cash payment equal to eighteen (18) months of Executive's current Base Salary and the benefits described in Section 5(d)(ii) of the Agreement. Upon such "change of control" during the Term, the Term of this Agreement shall automatically be the period equal to the longer of (i) two (2) years from the date of the "change of control" or (ii) the remaining period of the initial three (3) year Term after the "change of control". In no event shall Executive be entitled to receive both the Severance Payment described in Section 5(d) hereof and the "change of control" payment described in this Section 5(e).

(iv) Any payments to be made to Executive in connection with this Section 5(e) shall be made in a lump sum, subject to statutory deductions and withholdings, in cash within ten (10) business days after the date of termination or any earlier time required by applicable law, following the expiration of the Revocation Period defined in the Release referred to in Section 5(d)(iv).

(g) Treatment of Stock Options Upon Change of Control or a Termination.

(i) All stock options or similar rights granted to Executive pursuant to the Company's stock option plans including, without limitation, any restricted stock shall immediately vest as of the effective date of such "change of control".

(ii) If this Agreement is terminated pursuant to clause (c) of this Section 5 or if Executive resigns his employment, all unvested stock options granted to Executive pursuant to the Company's stock plans shall terminate immediately.

To the extent that the Executive has been granted stock options intended to be incentive stock options under Section 422 of the Internal Revenue Code, such stock options shall cease to be incentive stock options and shall be treated as nonqualified stock options if the options are exercised by the Employee more than three (3) months (one year in case of death or disability as defined in Section 422 of the Internal Revenue Code) following termination of employment.

Except as expressly modified by this clause (g) of this Section 5, all stock options and similar rights granted under the Company's stock plans shall remain subject to all of the terms and conditions of the applicable stock plans and agreements evidencing the grants thereof.

(h) Exclusive Remedy. Executive agrees that the payments and other benefits provided and contemplated by this Agreement shall constitute the sole and exclusive obligation of the Company in respect of Executive's employment with and relationship to the Company and PKL and that the full payment thereof shall be the sole and exclusive remedy for any termination of Executive's employment. Executive covenants not to assert or pursue any other remedies, at law (including Korean statutory law) or in equity, with respect to any termination of employment. Executive further agrees that all previous employment agreements with either the Company or PKL will be terminated and except as set forth herein neither PKL nor the Company will have any other obligations or liabilities to Executive. Lastly, Executive further agrees that it waives any and all rights or remedies it may have under any Korean statutory or labor laws.

6. Business Expenses. During the Term of this Agreement, to the extent that such expenditures satisfy the criteria under applicable laws for deductibility by PKL as ordinary and necessary business expenses, PKL shall provide the Executive with reimbursement of reasonable business expenses incurred by the Executive in a manner consistent with the Company's policies and provisions applicable to the Executives of the Company.

7. Confidential Information.

(a) Executive acknowledges that the nature of Executive's employment by the Company is such that Executive shall have access to information of a confidential and/or trade secret nature which has great value to the Company and which constitutes a substantial basis and foundation upon which the business of the Company is based. Such information includes (A) trade secrets, inventions, mask works, ideas, processes, manufacturing, formulas, source and object codes, data, programs, other works of authorship, know-how, improvements, discoveries, developments or experimental work, designs, and techniques; (B) information regarding plans for research, development, new products, marketing and selling, business plans, budgets and unpublished financial statements, licenses, prices and costs, suppliers and customers; (C) information regarding the skills and compensation of other employees the Company or its affiliates, including but not limited to, their respective business plans or clients (including, without limitation, customer lists and lists of customer sources), or information relating to the products, services, customers, sales or business affairs of the Company or its Affiliates (the "Confidential Information").

(b) Executive shall keep all such Confidential Information in confidence during the Term of this Agreement and at any time thereafter and shall not disclose any of such Confidential Information to any other person, except to the extent such disclosure is (i) necessary to the performance of this Agreement and in furtherance of the Company's best interests, (ii) required by applicable law, (iii) publicly known within the relevant industry, or (iv) authorized in writing by the Board. Upon termination of Executive's employment with the Company, Executive shall deliver to the Company all documents, records, notebooks, work papers, and all similar material containing any of the foregoing information, whether prepared by Executive, the Company or anyone else.

8. Non-Competition. Executive covenants and agrees that commencing on the date hereof and continuing for the entire Term of Executive's employment and for period of twelve (12) months thereafter (the "Restricted Period"), Executive shall not:

(a) Work or be affiliated with in any capacity (including as a founder, employee, owner, consultant, or otherwise), directly or indirectly, for himself or on behalf of any other entity, in any business that manufacturers photomasks or that is otherwise competitive with the business of the Company or any subsidiary of the Company at any time during Executive's employment or during the Restricted Period, such as, for example and not as a limitation, Toppan, DNP and the photomask manufacturing operations of semiconductor manufacturers such as IBM and TSMC.

(b) Solicit, attempt to solicit, or assist others in soliciting or attempting to solicit, directly or indirectly, any business related to the business of the Company from any customers or prospective customers of the Company; for the purposes of this Section 8, the term "customer" means any entity or person who is or has been a client or customer of the Company during the time which Executive was employed with the Company, and the term "prospective customer" means a person or entity who became known to the Company during the time which Executive was employed with the Company as a result of that person's or entity's interest in obtaining the services or products of the Company; and

(c) Solicit, attempt to solicit, or assist others in soliciting or attempting to solicit, directly or indirectly, for employment or similar capacity, any person who is an employee of, or an independent contractor for, the Company or its direct or indirect subsidiaries, parents or Affiliates or who was such an employee within twelve (12) months prior to the date of such solicitation or attempted solicitation.

(d) Executive acknowledges that in the event of his employment with the Company terminates for any reason, Executive will be able to earn a livelihood without violating the foregoing restrictions.

(e) If any provision or clause, or portion thereof, within this Section 8 shall be held by any court or other tribunal of competent jurisdiction to be illegal, invalid, or unenforceable in such jurisdiction, the remainder of such provision shall not be thereby affected and shall be given full effect, without regard to the invalid portion. It is the intention of the parties that, if any court construes any provision or clause within this Section 8, or any portion thereof, to be illegal, void or unenforceable because of the duration of such provision or the geographic area or matter covered thereby, such court shall reduce the duration, area, or matter of such provision, and, in its reduced form, such provision shall then be enforceable and shall be enforced.

9. Intellectual Property.

(a) Executive has no interest (except as disclosed to the Company) in any inventions, designs, improvements, patents, copyrights and discoveries which are useful in or directly or indirectly related to the business of PKL or the Company or to any experimental work carried on by the Company or PKL. Except as may be limited by applicable law, all inventions, designs, improvements, patents, copyrights and discoveries conceived by Executive during the Term of this Agreement which are useful in or directly or indirectly related to the business of PKL or the Company or to any experimental work carried on by PKL or the Company, shall be the property of PKL or the Company. Executive will promptly and fully disclose to PKL or the Company all such inventions, designs, improvements, patents, copyrights and discoveries (whether developed individually or with other persons) and will take all steps necessary and reasonably required to assure PKL or the Company's ownership thereof and to assist PKL or the Company in protecting or defending PKL or the Company's proprietary rights therein.

(b) Executive also agrees to assist the Company in obtaining United States or foreign letters patent and copyright registrations covering inventions assigned hereunder to the Company and that Executive's obligation to assist the Company shall continue beyond the termination of Executive's employment but the Company shall compensate Executive at a reasonable rate for time actually spent by Executive at the Company's request with respect to such assistance. If the Company is unable because of Executive's mental or physical incapacity (for the period of such incapacity only) or for any other reason to secure Executive's signature to apply for or to pursue any application for any United States or foreign letters patent or copyright registrations covering inventions assigned to the Company (after reasonable efforts to contact employee), then Executive hereby irrevocably designates and appoints the Company, each of its duly authorized officers and agents as Executive's agent and attorney-in-fact to act for and in Executive's behalf and stead to execute and file any such applications and to do all other lawfully permitted acts to further the prosecution and issuance of letters patent or copyright registrations thereon with the same legal force and effect as if executed by Executive. Executive will perform all other lawful acts necessary to assist the Company to enforce any copyrights or patents obtained including, without limitation, testifying in any suit or proceeding involving any of the copyrights or patents or executing any documents deemed necessary by the Company, all without further consideration but at the expense of the Company. If Executive is called upon to render such assistance after the termination of Executive's employment, then Executive shall be entitled to a fair and reasonable per diem fee in addition to reimbursement of any expenses incurred at the request of the Company.

10. Remedies. The parties hereto agree that the services to be rendered by Executive pursuant to this Agreement, and the rights and privileges granted to the Company and PKL pursuant to this Agreement, are of a special, unique, extraordinary and intellectual character, which gives them a peculiar value, the loss of which cannot be reasonably or adequately compensated in damages in any action at law, and that a breach by Executive of any of the terms of this Agreement will cause the PKL or the Company great and irreparable injury and damage. Executive hereby expressly agrees that the PKL or Company shall be entitled to the remedies of injunction, specific performance and other equitable relief to prevent a breach of this Agreement by Executive. This Section 10 shall not be construed as a waiver of any other rights or remedies which the Company or PKL may have for damages or otherwise.

11. Return of Property. Executive agrees to return, on or before his last day of employment, all property belonging to the Company, including but not limited to computers, PDA, telephone and other credit cards, PKL or Company business records, PKL or Company automobile (if applicable), etc.

12. Severability. If any provision of this Agreement is held to be unenforceable for any reason, it shall be adjusted rather than voided, if possible, to achieve the intent of the parties to the extent possible. In any event, all other provisions of this Agreement shall be deemed valid and enforceable to the extent possible.

13. Succession. This Agreement shall inure to the benefit of and be binding upon the Company and its successors and assigns and any such successor or assignee shall be deemed substituted for the Company under the terms of this Agreement for all purposes. As used herein, “successor” and “assignee” shall include any person, firm, corporation or other business entity which at any time, whether by purchase, merger or otherwise, directly or indirectly acquires the stock of the Company or to which the Company assigns this Agreement by operation of law or otherwise. The obligations and duties of Executive hereunder are personal and otherwise not assignable. Executive’s obligations and representations under this Agreement will survive the termination of Executive’s employment, regardless of the manner of such termination.

14. Notices. Any notice or other communication provided for in this Agreement shall be in writing and sent if to the Company to its principal office at:

Photronics, Inc.
15 Secor Road, PO Box 5226
Brookfield, Connecticut 06804

Attention: Chief Executive Officer
With a copy to the Vice President, General Counsel of Photronics, Inc.

or at such other address as the Company may from time to time in writing designate, and if to Executive at the address set forth above or at such address as Executive may from time to time in writing designate. Each such notice or other communication shall be effective (I) if given by written telecommunication, three (3) days after its transmission to the applicable number so specified in (or pursuant to) this Section 14 and a verification of receipt is received, (ii) if given by certified mail, once verification of receipt is received, or (iii) if given by any other means, when actually delivered to the addressee at such address and verification of receipt is received.

15. Adequate Consideration. Executive acknowledges that the cash severance and other benefits to be provided by the Company to Executive are not available under any current plan or policies of the Company. Accordingly, Executive further acknowledges that the payments and benefits under this Agreement provide adequate consideration for Executive's obligations to the Company contained in Section 7 (Confidential Information), Section 8 (Non-Competition), Section 10 (Remedies) and Exhibit A (Release).

16. Entire Agreement. This Agreement contains the entire agreement of the parties relating to the subject matter hereof and supersedes any prior agreements, undertakings, commitments and practices relating to Executive's employment by the Company.

17. Amendments. No amendment or modification of the terms of this Agreement shall be valid unless made in writing, duly executed by both parties.

18. Waiver. No failure on the part of any party to exercise or delay in exercising any right hereunder shall be deemed a waiver thereof or of any other right, nor shall any single or partial exercise preclude any further or other exercise of such right or any other right.

19. Governing Law. This Agreement, and the legal relations between the parties, shall be governed by and construed in accordance with the laws of the State of Connecticut without regard to conflicts of law doctrines and any court action arising out of this Agreement shall be brought in any court of competent jurisdiction within the State of Connecticut.

20. Withholding. All compensation payable hereunder, including salary and other benefits, shall be subject to applicable taxes, withholding and other required, normal or elected employee deductions.

21. Counterparts. This Agreement and any amendment hereto may be executed in one or more counterparts. All of such counterparts shall constitute one and the same agreement and shall become effective when a copy signed by each party has been delivered to the other party.

22. Headings. Section and other headings contained in this Agreement are for convenience of reference only and shall not affect in any way the meaning or interpretation of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date and year first above written.

THE COMPANY

PHOTRONICS, INC.

By: /s/ Richelle Burr
Name: Richelle Burr
Title:

EXECUTIVE

/s/ Soo Hoo Jeong
Name: Dr. Soo Hoo Jeong
Address: 272-3 Gumi-Dong, Bundang, Seongnam, Kyeonggi, Korea 463-802

PKL

/s/ Soo Hoo Jeong
Name: Dr. Soo Hoo Jeong
Title:

EXHIBIT A

RELEASE

1. I signed an Employment Agreement with Photronics, Inc. (the "Company"), effective January 1, 2011 (the "Agreement"), wherein I agreed to the terms applicable to certain terminations of employment with the Company. Pursuant to the terms of the Agreement, I am entitled to certain severance payments and benefits, described in the Agreement, provided that I sign this Release.

2. In consideration of the severance payments described in the Agreement, I, on behalf of myself, my heirs, agents, representatives, predecessors, successors and assigns, hereby irrevocably release, acquit and forever discharge the Company and each of its respective agents, employees, representatives, parents, subsidiaries, divisions, affiliates, officers, directors, shareholders, investors, employees, attorneys, transferors, transferees, predecessors, successors and assigns, jointly and severally (the "Released Parties") of and from any and all debts, suits, claims, actions, causes of action, controversies, demands, rights, damages, losses, expenses, costs, attorneys' fees, compensation, liabilities and obligations whatsoever, suspected or unsuspected, known or unknown, foreseen or unforeseen, arising at any time up to and including the date of this Release, save and except for the parties' obligations and rights under this Release. In recognition of the consideration set forth in the Agreement, I hereby release and forever discharge the Released Parties from any and all claims, actions and causes of action, I have or may have as of the date of this Release arising under any federal, state, or local statute, regulation, ordinance, or law of any kind, including under the Age Discrimination in Employment Act of 1967, as amended, and the applicable rules and regulations promulgated thereunder ("ADEA"), the Connecticut Human Rights and Opportunities Law, the Connecticut Family and Medical Leave Law, and the Connecticut Age Discrimination and Employee Insurance Benefits Law, and including claims for wrongful discharge, breach of contract, or in tort.

3. I agree not to criticize, denigrate, or otherwise disparage the Company or any other Released Party.

4. This Release is not an admission of guilt or wrongdoing by either me or the Company. This Release constitutes the entire agreement between me and the Company with respect to the subject matter hereof, and I am not signing this Release in reliance on any representation not expressly set forth herein. No provisions of this Release may be modified, waived, amended or discharged except by a written document signed by me and a duly authorized Company representative. This Release binds my heirs, administrators, representatives, executors, successors, and assigns, and will inure to the benefit of all Released Parties and their respective heirs, administrators, representatives, executors, successors, and assigns. The invalidity or unenforceability of any provision of this Release shall not affect the validity or enforceability of any other provision of this Release, which shall remain in full force and effect. A waiver of any conditions or provisions of this Release in a given instance shall not be deemed a waiver of such conditions or provisions at any other time. If any of the provisions, terms or clauses of this Release are declared illegal, unenforceable or ineffective in a legal forum, those provisions, terms and clauses shall be deemed severable, such that all other provisions, terms and clauses of this Release shall remain valid and binding upon both parties. If any of the provisions, terms or clauses of this Release are found by a court to be overly broad, those provisions, terms and clauses shall be enforceable (and modified and enforced) to the broadest extent permissible under the law. The validity, interpretation, construction, and performance of this Release shall be governed by the internal laws of the State of Connecticut (excluding any that mandate the use of another jurisdiction's laws)

5. All payments to me under this Release shall be net of applicable withholdings and deductions.

6. The Company advised me to take this Release home, read it, and carefully consider all of its terms before signing it. The Company gave me at least 21 days in which to consider this Release, and I waive any right I might have to additional time beyond this consideration period within which to consider this Release. The Company advised me to discuss this Release with my own attorney (at my own expense) during this period if I wished to do so. I understand that I may revoke my acceptance of this Release within seven (7) days after I sign it ("Revocation Period"). I understand that if I revoke my acceptance of this Release, I will not be entitled to any payments or benefits hereunder or otherwise in connection with the termination of my employment with the Company, except as required by law in the absence of the Agreement and this Release. I have carefully read this Release, fully understand what it means, and am entering into it voluntarily.

Dr. Soo Hoo Jeong

/s/ Soo Hoo Jeong
Signature

Exhibit 21

SUBSIDIARIES OF PHOTRONICS, INC.

	State or Jurisdiction of Incorporation or Organization
Align-Rite International, Ltd.	(United Kingdom)
Photronics (Wales) Limited	(United Kingdom)
Photronics California, Inc.	(California, USA)
Photronics Idaho, Inc.	(Idaho, USA)
Photronics Texas Allen, Inc.	(Texas, USA)
Photronics MZD, GmbH	(Germany)
Photronics Advanced Mask Corporation	(Taiwan, R.O.C.)
Photronics DNP Mask Corporation (1)	(Taiwan, R.O.C.)
PDMC Shanghai, Ltd.	(Shanghai, P.R.C.)
Photronics Singapore Pte, Ltd.	(Singapore)
Xiamen American Japan Photronics Mask Co., Ltd.	(Xiamen, P.R.C.)
Photronics UK, Ltd.	(United Kingdom)
PK, Ltd. (2)	(Republic of Korea)
PKLT Co., Ltd.	(Taiwan, R.O.C.)
Trianja Technologies, Inc.	(Texas, USA)

Note: Entities directly owned by subsidiaries of Photronics, Inc. are indented and listed below their immediate parent. Ownership is 100% unless otherwise indicated.

(1) 50.01% owned by Photronics, Inc. and 49.99% owned by DNPJ
(2) 99.75% owned by Photronics, Inc., and 0.25% owned by minority shareholders

EXHIBIT 23
CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-160235 and 333-161857 on Form S-3 and Registration Statement Nos. 333-169296, 333-169295, 333-151763 and 333-197890 on Form S-8 of our reports dated January 6, 2017, relating to the consolidated financial statements and financial statement schedule of Photronics, Inc. and subsidiaries, and the effectiveness of Photronics, Inc. and its subsidiaries' internal control over financial reporting, appearing in this Annual Report on Form 10-K of Photronics, Inc. for the year ended October 30, 2016.

/s/ Deloitte & Touche LLP
Hartford, Connecticut
January 6, 2017

EXHIBIT 31.1

I, Peter S. Kirlin, certify that:

1. I have reviewed this Annual Report on Form 10-K of Photronics, Inc.

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report.

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report.

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this annual report based on such evaluation; and

   d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ PETER S. KIRLIN

Peter S. Kirlin
Chief Executive Officer
January 6, 2017

EXHIBIT 31.2

I, Sean T. Smith, certify that:

1. I have reviewed this Annual Report on Form 10-K of Photronics, Inc.

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report.

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report.

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this annual report based on such evaluation; and

    d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

    a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ SEAN T. SMITH

Sean T. Smith
Chief Financial Officer
January 6, 2017

EXHIBIT 32.1

I, Peter S. Kirlin, Chief Executive Officer of Photronics, Inc. (the "Company"), certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350, that:

1. the Annual Report on Form 10-K of the Company for the year ended October 30, 2016 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ PETER S. KIRLIN

Peter S. Kirlin
Chief Executive Officer
January 6, 2017

EXHIBIT 32.2

I, Sean T. Smith, Chief Financial Officer of Photronics, Inc. (the "Company"), certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350, that:

(1) the Annual Report on Form 10-K of the Company for the year ended October 30, 2016 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ SEAN T. SMITH

Sean T. Smith
Chief Financial Officer
January 6, 2017