

# PHOTRONICS INC

## FORM 10-K (Annual Report)

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**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 November 1, 2015

**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, INC.**

*(Exact name of registrant as specified in its charter)*

**Connecticut**

*(State or other jurisdiction of incorporation or organization)*

**06-0854886**

*(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**  
Common Stock, \$.01 par value

**Name of each exchange on which registered**  
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

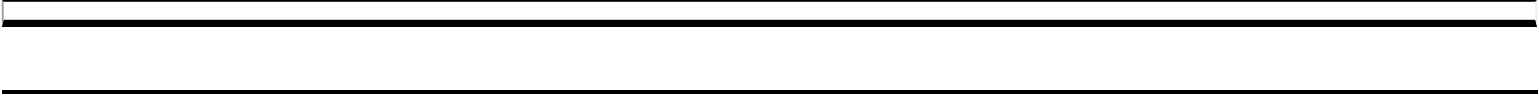
As of May 3, 2015, which was the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the shares of the registrant's common stock held by non-affiliates was approximately \$509,665,233 (based upon the closing price of \$8.87 per share as reported by the NASDAQ Global Select Market on that date).

As of December 29, 2015, 66,982,870 shares of the registrant's common stock were outstanding.

**DOCUMENTS INCORPORATED BY REFERENCE**

Proxy Statement for the 2016  
Annual Meeting of Shareholders  
to be held in March 2016

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" or the "Company" or "we"). 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," "projects," "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 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; federal, state and international tax requirements (including tax rate changes, new tax laws and revised tax law interpretations); 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; the timing, impact, and other uncertainties relating to transactions and acquisitions, divestitures and joint ventures as well as decisions the Company may make in the future regarding the Company's business, capital and organizational structure and other matters; the seasonal and cyclical nature of the semiconductor and flat panel display industries; management changes; 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" or the "Company" or "we") 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.

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>. The Company makes available, free of charge through its website, its 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.

#### 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 on a confidential basis by the Company's 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. The Company works 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 the Company's competitors that is not also available to the Company. The Company is 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 has access to technology and customer qualified manufacturing capability that allows it to compete in high-end markets, serving both 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 divestiture 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 the Company's performance is competitive, the Company will receive a specified percentage of that customer's photomask requirements. However, none of the Company's customers have entered into a significant long-term agreement with the Company requiring them to purchase the Company's products.

The Company conducts its 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. In addition to the sales personnel at the Company's manufacturing facilities, the Company has sales offices in the United States, Europe and Asia.

The Company supports international customers through both its domestic and international facilities. The Company considers its presence in international markets to be an important factor in attracting new customers, as it provides global solutions to its customers, minimizes delivery time, and allows it 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 November 1, 2015 ("fiscal 2015") included the following:

AU Optronics Corp.	Micron Technology, Inc.
Dongbu HiTek Co. Ltd.	Nanya Technology Corporation
Global Foundries, Inc.	ON Semiconductor Corporation
Himax Display, Inc.	Samsung Electronics Co., Ltd.
IM Flash Technologies, LLC	Semiconductor International Manufacturing Corp.
Innolux Corporation	Shanghai Huahong Grace Semiconductor Manufacturing Corporation
Inotera Memories, Inc.	ST Microelectronics, Inc.
LG Electronics, Inc.	Texas Instruments Incorporated
Macronix International Company, Ltd.	Tower Semiconductor, Ltd.
MagnaChip Semiconductor Corporation	United Microelectronics Corp.

During fiscal 2015, the Company sold its products and services to approximately 600 customers. Sales to one customer accounted for approximately 18%, 16% and 18% of the Company's total net sales in fiscal 2015, 2014 and 2013, respectively, and sales to another customer accounted for approximately 15% and 11% of the Company's total net sales in fiscal 2015 and 2014, respectively. The Company's five largest customers, in the aggregate, accounted for approximately 52%, 44% and 43% of net sales in fiscal 2015, 2014 and 2013, 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. The Company is typically impacted during its 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 MP Mask Technology Center, LLC ("MP Mask"), a joint venture with Micron Technology, Inc. ("Micron") and at its U.S. nanoFab, both of which are 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. The Company also conducts application oriented research and development activities to support the early adoption of new photomask or supporting data and services technology into the 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. The Company has incurred research and development expenses of \$21.9 million in fiscal years 2015 and 2014 and \$20.8 million in fiscal year 2013. 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. The Company also believes that its intellectual property and trade secret know-how will continue to be important to its maintaining technical leadership in the field of photomasks.

On March 24, 2015, the Company announced that the MP Mask joint venture would not be renewed after May 5, 2016, and concurrently, the Company announced that it entered into supply and technology license agreements with Micron. This technology license agreement commenced in March 2015 and continues through the earlier of one year from the termination of the initial technology license agreement on May 5, 2016, or when Micron certifies that it has transferred certain defined technology to the Company. The Company forevermore has the rights to use the technology obtained under these technology license agreements.

## **Patents and Trademarks**

The Company has ownership interests in approximately 50 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 2030. Additionally, pursuant to a technology license agreement with Micron, the Company has access to certain technologies of Micron and MP Mask. 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 current backlog is not considered to be a reliable indicator of future sales volume.

## **International Operations**

Sales from the Company's international operations were approximately 75%, 77% and 70% of the Company's net sales in fiscal 2015, 2014 and 2013, respectively. The Company believes that its ability to serve international markets is enhanced by it having, among other things, a local presence in the markets that it serves. This requires a significant investment 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 presents 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 the Company believes are the principal factors considered by customers in selecting their photomask suppliers. The Company also believes that proximity to customers is an important factor in certain markets where cycle time from order to delivery is critical. Some competitors have greater financial, technical, sales, marketing or other resources than the Company. An inability to meet these requirements could adversely affect the Company's financial condition, results of operations and cash flows. The Company believes that it is able to compete effectively because of its dedication to customer service, investment 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 \$3.9 billion. Its 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 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 expects such pressure to continue in the future.

## Employees

As of November 1, 2015, the Company had approximately 1,550 employees. The Company believes it offers competitive compensation and other benefits and that its employee relations are good.

## ITEM 1A. RISK FACTORS

### **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. The Company believes 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. The Company believes 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. A slowdown in the development of new technologies for fabricating ICs or FPDs could reduce the demand for related photomasks even if the demand for ICs or FPDs increases.

### **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. The Company operates in a high fixed cost environment and, should its revenues and asset utilization decrease, its operating margins could be negatively impacted.

The Company's customers generally order photomasks on an as-needed basis, and the Company's net sales in any quarter are dependent on orders received during that quarter. Since the Company operates with little backlog and the rate of new orders may vary significantly from quarter to quarter, the Company's 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 expense levels could be disproportionately high, causing operating results to be adversely affected. Due to the foregoing factors, the Company believes that quarter-to-quarter comparisons of its operating results cannot be relied upon as indicators of future performance. In addition, in future quarters the Company's 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, the Company believes that, as semiconductor geometries continue to become smaller and FPDs become larger with improved performance, it 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 2015, 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. The Company expects that it will be required to continue to make substantial capital expenditures to meet the technological demands of its customers and to position itself for future growth. The Company's capital expenditure payments for fiscal 2016 are expected to be in the range of \$50 million to \$75 million, of which \$26 million was included in accounts payable on its November 1, 2015, Consolidated Balance Sheet. The Company cannot provide assurance that it will be able to obtain the additional capital required to fund its operations on reasonable terms, if at all, or that any such inability will not have a material adverse effect on its business and results of operations.

**The Company's agreements with Micron have several risks; should either company not comply or execute under these agreements it could significantly disrupt the Company's business and technological activities, which could have a material adverse effect on the Company's operations and cash flows.**

In 2006 Photronics and Micron entered into a joint venture known as MP Mask. The joint venture, which will not be renewed after May 2016, develops and produces photomasks for leading-edge and advanced next generation semiconductors. As part of the formation of the joint venture, Micron contributed its existing photomask technology center located at its Boise, Idaho, headquarters to MP Mask and Photronics paid Micron \$135 million in exchange for a 49.99% interest in MP Mask, a license for photomask technology of Micron and certain supply agreements. Since the formation of the joint venture, the Company has, through November 1, 2015, made contributions to MP Mask of \$38 million and received returns of investments of \$10 million. On March 24, 2015, the Company announced that the MP Mask joint venture would not be renewed after May 5, 2016.

MP Mask is 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, has held majority voting power on the Board of Managers. The voting power held by each party is subject to change as ownership interests change. Under the MP Mask joint venture operating agreement, the Company may be required to make additional capital contributions to MP Mask up to the maximum amount defined in the operating agreement. However, should the Board of Managers determine that further additional funding is required, MP Mask would need to pursue its own financing. If MP Mask is unable to obtain its own financing, it may request additional capital contributions from the Company. Should the Company choose not to make a requested contribution to MP Mask, its ownership percentage may be reduced.

The failure of Photronics or Micron to comply or execute under any of these agreements, capitalize on the use of existing technology or further develop technology could result in a significant disruption to the Company's business and technological activities, and could adversely affect the Company's operations and cash flows.

**The Company has been dependent on sales to a limited number of large customers; the termination of short-term supply agreements or the lack of performance under such arrangements or the loss of any of these customers or a significant reduction in orders from or delay 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 2015, the Company's two largest customers accounted for 18% and 15% of its net sales. The Company's five largest customers accounted for 52%, 44% and 43% of net sales in fiscal 2015, 2014 and 2013, respectively. Among these customers, is the Company's joint venture partner, Micron, with whom the Company has an outsource supplier agreement to provide photomasks and related services, commencing on May 6, 2016 with a one-year term, subject to mutually agreeable renewals. 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 termination of short-term supply arrangements or the lack of performance under such arrangements or 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 the Company's 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. The inability of the Company to effectively utilize such equipment and technologies and perform such processes could have a material adverse effect on its 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 the Company's 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.

**The Company's debt agreements limit its ability to obtain financing and may obligate the Company 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 the Company to repay any outstanding balance prior to the expiration date of the agreements. The Company's ability to comply with the financial and other covenants in its 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 the Company default on certain of its long-term borrowings, a cross default would occur on other long-term borrowings, unless amended or waived.

**Acquisitions, mergers 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 joint ventures 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 the Company's 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. Such transactions are subject to acquisition accounting, as prescribed in Accounting Standards Codification Topic No. 805 "Business Combinations", under which identifiable assets acquired, liabilities assumed and any noncontrolling interests are generally recognized at their acquisition date fair values and separately from goodwill, if any, 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. 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 the Company believes to be reasonable, are subject to uncertainty.

**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 is highly dependent on its sales volume and the timing of its capital expenditures, (which can vary significantly from period to period), as it operates in a high fixed cost environment. 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. The Company expects 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 the Company's competitors may be able to more rapidly develop, produce, and achieve higher manufacturing yields than the Company. 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. The Company's inability to meet these competitive requirements could have a material adverse effect on its business and results of operations. In the past, competition 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 international operations were approximately 75%, 77% and 70% of the Company's net sales in fiscal 2015, 2014 and 2013, respectively. The Company believes that maintaining significant international operations requires it to have, among other things, a local presence in the geographic markets that it supplies. 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. 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, 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, Singapore dollar, euro, and the pound sterling. In fiscal 2015, the Company recorded a net gain from changes in foreign currency exchange rates of \$2.5 million in its statement of income, while its net assets were decreased by \$40.2 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 the Company's 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 the Company's 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 the Company's 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.

In addition, these laws and regulations may impose clean-up liabilities on current and former owners and operators of real property as well as parties who arrange for the disposal of hazardous substances at off-site locations owned or operated by others, without regard to fault, so that these liabilities may be joint and several with other parties. In the past, the Company has been involved in remediation activities related to its properties. The Company believes, based upon current information, that environmental liabilities relating to these activities or other matters are not material to its financial position or operations. However, there can be no assurances that the Company will not incur any material environmental liabilities in the future.

**The Company's production facilities could be damaged or disrupted by a natural disaster or labor strike, 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 the Company's products and the loss of sales and customers, which could have a material adverse effect on the Company's 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 audit 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, the Company believes 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.

**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. Information technology systems of the Company may be vulnerable to a variety of interruptions due to events beyond its control including, but not limited to, natural disasters, terrorist attacks, telecommunications failures, computer viruses, hackers, and other security issues. The Company has technology and information security processes and disaster recovery plans in place to mitigate its risk to these vulnerabilities. However, these measures may not be adequate to ensure that its operations will not be disrupted, should such an event occur.

**Servicing the Company's debt requires a significant amount of cash, and the Company may not have sufficient cash flows from its operations to pay its 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. The Company's business may not continue to generate sufficient cash flows from operations in the future to both service its debt and make necessary capital expenditures. If the Company is unable to generate such cash flows, it 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 the Company's financial condition at such time. The Company 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 its debt obligations.

**ITEM 1B. UNRESOLVED STAFF COMMENTS**

None

**ITEM 2. PROPERTIES**

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

<u>Location</u>	<u>Type of Interest</u>	
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.



The Company believes that its existing manufacturing facilities are suitable and adequate for its present purposes. The Company also leases various sales offices. The Company's administrative headquarters are located in Brookfield, Connecticut, in a building that it owns.

### ITEM 3. LEGAL PROCEEDINGS

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

### 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 2015 and 2014, as reported by the NASDAQ Global Select Market.

	<u>High</u>	<u>Low</u>
<b>Fiscal Year Ended November 1, 2015:</b>		
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
<b>Fiscal Year Ended November 2, 2014:</b>		
Quarter Ended February 2, 2014	\$ 9.75	\$ 7.42
Quarter Ended May 4, 2014	8.95	7.72
Quarter Ended August 3, 2014	9.38	7.92
Quarter Ended November 2, 2014	9.20	7.11

On December 29, 2015, the closing sale price of the Common Stock per the NASDAQ Global Select Market was \$12.92. Based on information available to the Company, the Company believes it has 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, the Company's credit facility precludes it 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 the Company's 2016 definitive Proxy Statement into Item 12 of Part III of this report. The 2016 Proxy Statement will be filed within 120 days after the Company's fiscal year ended November 1, 2015.

**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).

	<b>Year Ended</b>				
	<b>November 1, 2015</b>	<b>November 2, 2014</b>	<b>November 3, 2013</b>	<b>October 28, 2012</b>	<b>October 30, 2011</b>
<b>OPERATING DATA:</b>					
Net sales	\$ 524,206	\$ 455,527	\$ 422,180	\$ 450,439	\$ 512,020
<b>Cost and expenses:</b>					
Cost of sales	(381,070)	(355,181)	(322,540)	(338,519)	(375,806)
Selling, general and administrative	(48,983)	(49,638)(b)	(48,213)(d)	(46,706)	(45,240)
Research and development	(21,920)	(21,913)	(20,758)	(19,371)	(15,507)
Consolidation, restructuring and related charges	-	-	-	(1,428)(e)	-
Operating income	<u>72,233</u>	<u>28,795</u>	<u>30,669</u>	<u>44,415</u>	<u>75,467</u>
<b>Other income (expense):</b>					
Gain on acquisition	-	16,372(c)	-	-	-
Interest expense	(4,990)	(7,247)	(7,756)	(7,488)	(7,258)
Interest and other income (expense), net	2,797(a)	3,410	3,892	3,721(f)	2,949(g)
Debt extinguishment loss	-	-	-	-	(35,259)(h)
Income before income tax provision	70,040	41,330	26,805	40,648	35,899
Income tax provision	(13,181)	(9,295)	(7,229)	(10,793)	(15,691)
Net income	56,859(a)	32,035(b)(c)	19,576(d)	29,855(e)(f)	20,208(g)(h)
Net income attributable to noncontrolling interests	(12,234)	(6,039)	(1,610)	(1,987)	(3,979)
Net income attributable to Photronics, Inc. shareholders	<u>\$ 44,625(a)</u>	<u>\$ 25,996(b)(c)</u>	<u>\$ 17,966(d)</u>	<u>\$ 27,868(e)(f)</u>	<u>\$ 16,229(g)(h)</u>
<b>Earnings per share:</b>					
Basic	<u>\$ 0.67(a)</u>	<u>\$ 0.42(b)(c)</u>	<u>\$ 0.30(d)</u>	<u>\$ 0.46(e)(f)</u>	<u>\$ 0.28(g)(h)</u>
Diluted	<u>\$ 0.63(a)</u>	<u>\$ 0.41(b)(c)</u>	<u>\$ 0.29(d)</u>	<u>\$ 0.44(e)(f)</u>	<u>\$ 0.28(g)(h)</u>
<b>Weighted-average number of common shares outstanding:</b>					
Basic	<u>66,331</u>	<u>61,779</u>	<u>60,644</u>	<u>60,055</u>	<u>57,030</u>
Diluted	<u>78,383</u>	<u>66,679</u>	<u>61,599</u>	<u>76,464</u>	<u>58,458</u>

## BALANCE SHEET DATA

	As of				
	November 1, 2015	November 2, 2014	November 3, 2013	October 28, 2012	October 30, 2011
Working capital	\$ 171,422	\$ 197,375	\$ 213,879	\$ 234,281	\$ 209,306
Property, plant and equipment, net	547,284	550,069	422,740	380,808	368,680
Total assets	1,045,555	1,029,183	885,929	849,234	817,854
Long-term debt	67,120	131,805	182,203	168,956	152,577
Total Photronics, Inc. shareholders' equity	646,555	628,050	585,314	551,386	511,047

- (a) Includes \$0.9 million of financing expenses related to the exchange of \$57.5 million of 3.25% convertible senior notes.
- (b) Includes \$2.5 million, net of tax, of expenses related to the acquisition of DPTT.
- (c) Includes non-cash gain of \$16.4 million, net of tax, on acquisition of DPTT.
- (d) Includes \$0.8 million, net of tax, of expenses related to the acquisition of DPTT.
- (e) Includes consolidation and restructuring charges of \$1.4 million in connection with the discontinuance of manufacturing operations at the Company's Singapore facility.
- (f) 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.
- (g) Includes non-cash charge of \$0.4 million in connection with subsequent measurement at fair value of warrants issued to purchase the Company's common stock.
- (h) Includes losses recorded in connection with the acquisition of \$35.4 million face amount of the Company's 5.5% convertible senior notes, in exchange for 5.2 million shares of its common stock and cash of \$22.9 million.

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

### Results of Operations for the Years Ended November 1, 2015, November 2, 2014 and November 3, 2013

#### 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. The Company's 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. The Company believes 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.

The Company is typically required to fulfill its customer orders within a short period of time, sometimes within 24 hours. This results in the Company 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, including mobile display devices, 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 communications and computing solutions.

The Company 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, but believes that such transitions and cycles will continue into the future, beneficially and adversely affecting its business, financial condition and operating results as they occur. The Company believes its ability to remain successful in these environments is dependent upon its achieving its goals of being a service and technology leader and efficient solutions supplier, which it believes should enable it to continually reinvest in its 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 market. 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 2015 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 2016, 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, the Company 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 2015, one alternative method, direct-write lithography, has not been proven to be a commercially viable alternative to photomasks, as it is considered too slow for high volume semiconductor wafer production, and the Company has 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 the Company does not anticipate, respond to, or utilize these or other changing technologies due to resource, technological or other constraints, its business and results of operations could be materially adversely affected.

Both 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 \$259 million for the three fiscal years ended November 1, 2015, which has significantly contributed to the Company's operating expenses. The Company intends to continue to make the required investments to support the technological demands of its customers and position itself for future growth, and expects capital expenditure payments to be between \$50 million and \$75 million in fiscal 2016.

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 the Company's customers, the Company may have excess or underutilized production capacity that could significantly impact operating margins, or result in write-offs from asset impairments.

In the second quarter of fiscal 2015 the Company announced that the MP Mask joint venture would not be renewed after May 5, 2016. The MP Mask operating agreement provides that Micron will make a payment to the Company to purchase the Company's equity interest in MP Mask based on the Company's ownership percentage of the net book value of MP Mask at that time, which, as of September 3, 2015, was approximately \$93 million. The Company does not expect that it will incur a significant gain or loss on this transaction. Concurrently, the Company announced that it entered into supply and technology license agreements with Micron. This supply agreement, which commences on May 6, 2016, with a one-year term subject to mutually agreeable renewals, provides that the Company will be the majority outsource supplier of Micron's photomasks and related services. The technology license agreement commenced in March 2015 and continues through the earlier of one year from the termination of the initial technology license agreement, which will occur on May 5, 2016, or when Micron certifies that it has transferred certain defined technology to the Company. The Company forevermore has the rights to use the technology obtained under these technology license agreements.

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 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. 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 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 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 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 November 1, 2015. The Company had no outstanding borrowings against the credit facility at November 1, 2015, and \$50 million was available for borrowing. The interest rate on the credit facility (1.44% at November 1, 2015) is based on the Company's total leverage ratio at LIBOR plus a spread, as defined in the credit facility.

In the fourth quarter of fiscal 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 lease, which bears interest at 2.77% are \$0.5 million per month through July 2018. Under the terms of the lease agreement, the Company must maintain the equipment in good working order, and is subject to a cross default with a cross acceleration provision related to certain nonfinancial covenants incorporated in its credit facility. As of November 1, 2015, the total amount payable through the end of the lease term was \$16.0 million, of which \$15.3 million represents principal and \$0.7 million represents interest.

In the third quarter of fiscal 2013 the Company completed a tender offer for shares of PSMC. A total of 50.3 million shares were tendered at the offering price of 16.30 NTD (equivalent to a total of \$27.4 million), which increased the Company's ownership interest in PSMC from 75.11% to 98.13%. In the fourth quarter of fiscal 2013 the Company further increased its ownership interest in PSMC to 98.63% with the purchase of an additional 1.1 million shares of PSMC for \$0.7 million, and in the first quarter of fiscal 2014 the Company acquired all of the 3.0 million shares that were then held by noncontrolling interests at a cost of \$1.7 million. In April 2014 PSMC merged with DPTT to form PDMC.

In the first quarter of fiscal 2013 PSMC completed a stock repurchase plan that had been authorized by its board of directors in fiscal 2012. The completion of this repurchase plan resulted in the Company acquiring an additional 9.2 million shares at a cost \$4.2 million, and increasing its ownership percentage in PSMC from 72.09% at October 28, 2012 to 75.11% as of January 27, 2013.

## Results of Operations

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

	Year Ended		
	November 1, 2015	November 2, 2014	November 3, 2013
Net sales	100.0%	100.0%	100.0%
Cost of sales	(72.7)	(78.0)	(76.4)
Gross margin	27.3	22.0	23.6
Selling, general and administrative expenses	(9.3)	(10.9)	(11.4)
Research and development expenses	(4.2)	(4.8)	(4.9)
Operating income	13.8	6.3	7.3
Gain on acquisition	-	3.6	-
Interest expense	(1.0)	(1.6)	(1.9)
Interest and other income (expense), net	0.5	0.8	0.9
Income before income tax provision	13.3	9.1	6.3
Income tax provision	(2.5)	(2.1)	(1.7)
Net income	10.8	7.0	4.6
Net income attributable to noncontrolling interests	(2.3)	(1.3)	(0.3)
Net income attributable to Photronics, Inc. shareholders	8.5%	5.7%	4.3%

Note: All the following tabular comparisons, unless otherwise indicated, are for the fiscal years ended November 1, 2015 (2015), November 2, 2014 (2014) and November 3, 2013 (2013), in millions of dollars.

### Net Sales

	2015	2014	2013	Percent Change	
				2014 to 2015	2013 to 2014
IC	\$ 420.8	\$ 352.7	\$ 320.6	19.3%	10.0%
FPD	103.4	102.8	101.6	0.5	1.2
Total net sales	\$ 524.2	\$ 455.5	\$ 422.2	15.1%	7.9%

Net sales for 2015 increased 15.1% as compared with 2014. The increase was primarily a result of a 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. High-end photomasks, which typically have higher ASPs, include photomask sets for IC products using 45 nanometer and below technologies, and for FPD products using Generation 8 and above and AMOLED technologies. By geographic area, net sales in 2015 as compared with 2014 increased (decreased) by \$38.1 million or 22.8% in Taiwan, by \$7.5 million or 5.4% in Korea, by \$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.

Net sales for 2014 increased 7.9% to \$455.5 million as compared with \$422.2 million for 2013. The increase of \$33.3 million was primarily related to increased IC sales of \$32.1 million, principally associated with the acquisition of DPTT in Taiwan, as discussed in Note 2 to the consolidated financial statements. High-end IC sales increased \$24.1 million to \$104 million, principally related to increased units from Asian foundry business in Taiwan and Korea. Total IC sales increased by \$32.1 million or 10.0% in 2014 as compared with 2013, primarily due to the increased sales in Taiwan. Total FPD sales increased by \$1.2 million or 1.2% in 2014 as compared with 2013, primarily due to increased sales of mature units. By geographic area, net sales in 2014 as compared with 2013 increased (decreased) by \$6.1 million or 4.5% in Korea, by \$(20.3) million or (16.0)% in the United States, by \$49.7 million or 42.4% in Taiwan, by \$(2.4) million or (5.8)% in Europe and by \$0.2 million at other international locations. As a percent of total sales in 2014, sales were 31% in Korea, 23% in the United States, 37% in Taiwan, 8% in Europe, and 1% at other international locations.

### ***Gross Margin***

	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>Percent Change</u>	
				<u>2014 to 2015</u>	<u>2013 to 2014</u>
Gross profit	\$ 143.1	\$ 100.3	\$ 99.6	42.6%	0.7%
Gross margin %	27.3%	22.0%	23.6%	-	-

Gross profit and gross margin increased in 2015 compared with 2014, primarily due to increased high-end IC sales and reduced manufacturing costs. Gross margin decreased in 2014 compared with 2013 primarily due to increased equipment costs, including depreciation expense associated with additional high-end equipment. 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***

	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>Percent Change</u>	
				<u>2014 to 2015</u>	<u>2013 to 2014</u>
S,G&A expenses	\$ 49.0	\$ 49.6	\$ 48.2	(1.3%)	2.9%
% of net sales	9.3%	10.9%	11.4%	-	-

Selling, general and administrative expenses decreased by \$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. Selling, general and administrative expenses increased by \$1.4 million in 2014, as compared with 2013, primarily as a result of increased expenses related to the acquisition of DPTT.

## Research and Development

	2015	2014	2013	Percent Change	
				2014 to 2015	2013 to 2014
R&D expense	\$ 21.9	\$ 21.9	\$ 20.8	0.0%	5.6%
% of net sales	4.2%	4.8%	4.9%	-	-

Research and development expenses consist primarily of global development efforts related to high-end process technologies. Research and development expenses were \$21.9 million in 2015 and 2014, and increased \$1.1 million in 2014 from \$20.8 million in 2013, primarily due to increased activities at advanced technology nodes for IC photomask applications.

## Other Income (Expense)

	2015	2014	2013
Gain on acquisition	\$ -	\$ 16.4	\$ -
Interest expense	(5.0)	(7.2)	(7.8)
Interest and other income (expense), net	2.8	3.3	3.9
Total other income (expense), net	<u>\$ (2.2)</u>	<u>\$ 12.5</u>	<u>\$ (3.9)</u>

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 Photonics 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.

Interest expense decreased in 2014 as compared with 2013, primarily as a result of reduced outstanding borrowing balances. Interest and other income (expense), net decreased in 2014 as compared with 2013, primarily as a result of reduced interest income, offset in part by increased foreign currency exchange gains.

## Income Tax Provision

	2015	2014	2013
Income tax provision	\$ 13.2	\$ 9.3	\$ 7.2
Effective income tax rate	18.8%	22.5%	27.0%

The effective tax rate differs from the U.S. statutory rate of 35% in fiscal years 2015, 2014 and 2013 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 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. As a result of these considerations, including any changes in its deferred tax liability, the valuation allowance was increased (decreased) by (\$10.8 million), (\$7.1 million) and \$1.1 million as of the end of the fiscal years 2015, 2014 and 2013, respectively. During fiscal year 2015, the Company determined that sufficient positive evidence existed in two foreign jurisdictions that it was more likely than not that additional deferred taxes of \$2.4 million were realizable and, accordingly, reduced their related valuation allowances. The Company also regularly assesses the potential outcomes of ongoing and future tax examinations and, accordingly, has recorded accruals for such contingencies.

PKLT, the Company's FPD manufacturing facility in Taiwan, has been accorded a tax holiday which commenced in 2012 and expires in 2017. The availability of this tax holiday did not have a significant impact on the Company's decision to increase its Asian presence, which was in response to fundamental changes that took place in the semiconductor industry that the Company serves. This tax holiday had no dollar or per share effect on the 2015, 2014 and 2013 fiscal years.

PDMC acquired an IC manufacturing facility in Taiwan as a result of the DPTT Acquisition that has been accorded a tax holiday, which commenced in 2015 and expires in 2019. The availability of this tax holiday did not have a significant impact on the Company's decision to enter into the DPTT Acquisition and increase its Asian presence. The Company realized a \$0.2 million tax benefit from the PDMC tax holiday in 2015. The tax holiday had no per share effect in 2015.

### ***Net Income Attributable to Noncontrolling Interests***

Net income attributable to noncontrolling interests increased \$6.2 million to \$12.2 million in 2015, as compared with \$6.0 million in 2014, and increased \$4.4 million to \$6.0 million in 2014, as compared with \$1.6 million in 2013, primarily as a result of changes in the ownership structure of the Company's IC manufacturing facility located in Taiwan and increased net income at that 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**

	<b>November 1, 2015</b>	<b>November 2, 2014</b>	<b>November 3, 2013</b>
	<u>(in millions)</u>	<u>(in millions)</u>	<u>(in millions)</u>
Cash and cash equivalents	\$ 205.9	\$ 192.9	\$ 215.6
Net cash provided by operating activities	\$ 133.2	\$ 96.4	\$ 99.4
Net cash used in investing activities	\$ (104.3)	\$ (87.5)	\$ (66.2)
Net cash used in financing activities	\$ (7.1)	\$ (29.5)	\$ (39.8)

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 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. The Company may use its cash available 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 2, 2014, the Company had cash and cash equivalents of \$192.9 million compared with \$215.6 million as of November 3, 2013. The Company's working capital decreased \$16.5 million to \$197.4 million at November 2, 2014, as compared with \$213.9 million at November 3, 2013. The decrease in cash and working capital in 2014 was primarily related to the repayment of a term loan outstanding balance of \$21.3 million in December 2013.

As of November 1, 2015 and November 2, 2014, the Company's total cash and cash equivalents include \$102.9 million and \$105.9 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 tax 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 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 a noncash gain on the acquisition of DPTT discussed in Note 2 to the consolidated financial statements. Net cash provided by operating activities decreased to \$99.4 million in fiscal 2013, as compared with \$132.5 million in fiscal 2012, primarily due to reduced year-over-year net income and depreciation and amortization, and less cash generated from accounts receivable in 2013 than in 2012.

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. Net cash used in investing activities in fiscal 2013 decreased to \$66.2 million, as compared with \$111.9 million in 2012, primarily due to less capital expenditure payments in 2013, and also due to no additional investments being made in the MP Mask joint venture in 2013, whereas \$13.4 million was invested in 2012. Capital expenditure payments for the 2015, 2014, and 2013 fiscal years were \$104.0 million, \$91.1 million and \$63.8 million, respectively. The Company expects capital expenditure payments for fiscal 2016 to range between \$50 million and \$75 million, primarily related to investment in high-end IC manufacturing capability.

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, and was \$39.8 million in fiscal 2013 primarily comprised of payments to purchase common stock of a subsidiary and repayments of borrowings. In fiscal 2014 the Company repaid a term loan with an outstanding balance of \$21.3 million.

In March 2015 the Company announced that the MP Mask joint venture would not be renewed after May 5, 2016. The MP Mask operating agreement provides that Micron will make a payment to the Company to purchase the Company's equity interest in MP Mask based on the Company's ownership percentage of the net book value of MP Mask at that time, which, as of September 3, 2015, was approximately \$93 million. The Company does not expect that it will incur a significant gain or loss on this transaction. Concurrently, the Company announced that it entered into supply and technology license agreements with Micron. This supply agreement, which commences on May 6, 2016, with a one-year term subject to mutually agreeable renewals, provides that the Company will be the majority outsource supplier of Micron's photomasks and related services. The technology license agreement commenced in March 2015 and continues through the earlier of one year from the termination of the initial technology license agreement, which will occur on May 5, 2016, or when Micron certifies that it has transferred certain defined technology to the Company. The Company forevermore has the rights to use the technology obtained under these technology license agreements.

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 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 November 1, 2015. The Company had no outstanding borrowings against the credit facility at November 1, 2015, and \$50 million was available for borrowing. The interest rate on the credit facility (1.44% at November 1, 2015) 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.

In June 2013 the Company completed a tender offer for shares of PSMC, a former subsidiary of the Company. A total of 50.3 million shares were tendered at the offering price of 16.30 NTD, equivalent to a total of \$27.4 million. In September 2013 the Company purchased an additional 1.1 million shares of PSMC for \$0.7 million, and in January 2014 the Company acquired all of the 3.0 million shares that were then held by noncontrolling interests at a cost of \$1.7 million. In April 2014 PSMC merged with DPTT to form PDMC.

PSMC, through a series of repurchase programs which commenced in 2011 and ended in 2013, repurchased shares of its outstanding common stock. These repurchase programs resulted in 9.2 million shares being purchased for \$4.2 million in 2013, 35.9 million shares being purchased for \$15.6 million in 2012 and 21.6 million shares being purchased for \$9.9 million in 2011.

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 lease, which bears interest at 2.77% are \$0.5 million per month through July 2018. Under the terms of the lease agreement, the Company must maintain the equipment in good working order, and is subject to a cross default with a cross acceleration provision related to certain nonfinancial covenants incorporated in its credit facility. As of November 1, 2015, the total amount payable through the end of the lease term was \$16.0 million, of which \$15.3 million represents principal and \$0.7 million represents interest.

The Company's liquidity 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), as it operates in a high fixed cost environment. 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 November 1, 2015, the Company had outstanding purchase commitments of \$14 million, which included \$3 million related to capital expenditures, primarily for investment in high-end IC photomask manufacturing capability. The Company intends to finance its capital expenditures with its working capital, cash generated from operations, and, if necessary, with additional borrowings.

### Cash Requirements

The Company's cash requirements in fiscal 2016 will be primarily to fund its operations, including capital spending, and to service its debt. The Company believes that its cash on hand, cash generated from operations and amounts available under its credit facility will be sufficient to meet its 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, the Company cannot assure that additional sources of financing would be available to the Company on commercially favorable terms, should the Company's cash requirements exceed its cash available from operations, existing cash, and cash available under its credit facility.

### Contractual Obligations

The following table presents the Company's contractual obligations as of November 1, 2015:

Contractual Obligations	Payment due by period				
	Total	Less Than 1 Year	1 – 3 Years	3 – 5 Years	More Than 5 Years
Long-term borrowings	\$ 115,000	\$ 57,500	\$ -	\$ 57,500	\$ -
Operating leases	6,677	2,172	2,286	685	1,534
Capital leases	17,615	7,995	9,620	-	-
Unconditional purchase obligations	14,055	9,295	4,602	158	-
Interest	8,499	3,331	4,234	934	-
Other noncurrent liabilities	15,233	484	5,302	901	8,546
<b>Total</b>	<b>\$ 177,079</b>	<b>\$ 80,777</b>	<b>\$ 26,044</b>	<b>\$ 60,178</b>	<b>\$ 10,080</b>

As of November 1, 2015, the Company had recorded accruals for uncertain tax positions of \$4.1 million which was 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**

Under the MP Mask joint venture operating agreement, in order to maintain its 49.99% ownership interest, the Company may be required to make additional capital contributions to the joint venture up to the maximum amount defined in the operating agreement. Cumulatively, through November 1, 2015, the Company has contributed \$32.5 million to the joint venture, and has received distributions from the joint venture totaling \$10.0 million. The Company did not make any contributions and received no distributions from MP Mask during fiscal 2015. On March 24, 2015, the Company announced that the MP Mask joint venture would not be renewed after May 5, 2016. See Note 5 to the consolidated financial statements for further discussion.

Under the PDMC joint venture 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 be required to make additional capital contributions to the joint venture in order to maintain its 50.01% ownership. The PDMC operating agreement limits the amount of contributions that may be requested during both PDMC's first four years and during any individual year within those first four years. As of November 1, 2015, the Company had not been requested to and did not make any additional capital contributions 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 as customers increase their use of manufacturing foundries located outside of North America and Europe. Additional revenue growth is also anticipated in North America, as the Company expects to continue to benefit from advanced technology it may utilize under its technology license with Micron.

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, a supply 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. These certain legal entities are referred to 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, the Company evaluates the potential realization of deferred income tax assets from future taxable income and establishes 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. The Company includes any applicable interest and penalties related to uncertain tax positions in its 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.

Warranties and Other Post Shipment Obligations – 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. The Company inspects photomasks for conformity to customer specifications prior to shipment. Accordingly, customer returns of items under warranty have historically been insignificant. The Company's specific return policies include accepting returns of products with defects, or products that have not been produced to precise customer specifications.

#### *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. The Company estimates stock price volatility based on daily averages of its 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 21 – Recent Accounting Pronouncements” for recent accounting pronouncements that may affect the Company’s financial reporting.

### **ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

The Company records derivatives in the consolidated balance sheets as assets or liabilities, measured at fair value. The Company does not engage in derivative instruments for speculative purposes. Gains or losses resulting from changes in the values of those derivatives are reflected in earnings, or as accumulated other comprehensive income or loss, a separate component of equity, depending on the use of the derivatives and whether they qualify for hedge accounting. In order to qualify for hedge accounting, among other criteria, a derivative must be a hedge of an interest rate, price, foreign currency exchange rate, or credit risk that is expected to be highly effective at the inception of the hedge, be highly effective in achieving offsetting changes in the fair value or cash flows of the hedged item during the term of the hedge and formally documented at the inception of the hedge. In general, the types of risks that the Company has hedged are those related to the variability of future cash flows caused by movements in foreign currency exchange and interest rates. The Company documents its risk management strategy and hedge effectiveness at the inception of, and during the term of, each hedge.

#### **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 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.

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. 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. 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 or the Korean won.

The Company's primary net foreign currency exposures as of November 1, 2015, included the Korean won, the Japanese yen, the New Taiwan dollar, the Singapore dollar, the British pound, and the euro. As of November 1, 2015, a 10% adverse movement in the value of these currencies against the U.S. dollar would have resulted in a net unrealized pre-tax loss of \$4.8 million. The Company does not believe that a 10% change in the exchange rates of other non-U.S. dollar currencies would have a material effect on its consolidated financial position, results of operations, or cash flows.

#### **Interest Rate Risk**

At November 1, 2015, the Company did not have any variable rate borrowings. 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 November 1, 2015.

**ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

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**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 November 1, 2015 and November 2, 2014, 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 November 1, 2015, November 2, 2014 and November 3, 2013. We also have audited the Company's internal control over financial reporting as of November 1, 2015, 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 November 1, 2015 and November 2, 2014, and the results of their operations and their cash flows for each of the three fiscal years ended November 1, 2015, November 2, 2014 and November 3, 2013, 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 November 1, 2015, 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 7, 2016**

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

	<u>November 1, 2015</u>	<u>November 2, 2014</u>
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	\$ 205,867	\$ 192,929
Accounts receivable, net of allowance of \$3,301 in 2015 and \$3,078 in 2014	110,056	94,515
Inventories	24,157	22,478
Deferred income taxes	3,354	7,223
Other current assets	20,680	19,347
Total current assets	364,114	336,492
Property, plant and equipment, net	547,284	550,069
Investment in joint venture	93,021	93,122
Intangible assets, net	24,616	30,294
Deferred income taxes	11,908	11,036
Other assets	4,612	8,170
Total assets	\$ 1,045,555	\$ 1,029,183
<b>LIABILITIES AND EQUITY</b>		
Current liabilities:		
Current portion of long-term borrowings	\$ 65,495	\$ 10,381
Accounts payable	79,143	77,779
Payables – related parties	8,840	8,716
Accrued liabilities	39,214	42,241
Total current liabilities	192,692	139,117
Long-term borrowings	67,120	131,805
Deferred income taxes	4,388	3,045
Other liabilities	19,289	15,722
Total liabilities	283,489	289,689
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, 66,602 shares issued and outstanding at November 1, 2015, and 65,930 shares issued and outstanding at November 2, 2014	666	659
Additional paid-in capital	526,402	520,182
Retained earnings	130,060	85,435
Accumulated other comprehensive income (loss)	(10,573)	21,774
Total Photronics, Inc. shareholders' equity	646,555	628,050
Noncontrolling interests	115,511	111,444
Total equity	762,066	739,494
Total liabilities and equity	\$ 1,045,555	\$ 1,029,183

See accompanying notes to consolidated financial statements.

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

	Year Ended		
	November 1, 2015	November 2, 2014	November 3, 2013
Net sales	\$ 524,206	\$ 455,527	\$ 422,180
Cost and expenses:			
Cost of sales	(381,070)	(355,181)	(322,540)
Selling, general and administrative	(48,983)	(49,638)	(48,213)
Research and development	(21,920)	(21,913)	(20,758)
Operating income	72,233	28,795	30,669
Other income (expense):			
Gain on acquisition	-	16,372	-
Interest expense	(4,990)	(7,247)	(7,756)
Interest and other income (expense), net	2,797	3,410	3,892
Income before income tax provision	70,040	41,330	26,805
Income tax provision	(13,181)	(9,295)	(7,229)
Net income	56,859	32,035	19,576
Net income attributable to noncontrolling interests	(12,234)	(6,039)	(1,610)
Net income attributable to Photronics, Inc. shareholders	\$ 44,625	\$ 25,996	\$ 17,966
Earnings per share:			
Basic	\$ 0.67	\$ 0.42	\$ 0.30
Diluted	\$ 0.63	\$ 0.41	\$ 0.29
Weighted-average number of common shares outstanding:			
Basic	66,331	61,779	60,644
Diluted	78,383	66,679	61,599

See accompanying notes to consolidated financial statements.

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

	<b>Year Ended</b>		
	<b>November 1, 2015</b>	<b>November 2, 2014</b>	<b>November 3, 2013</b>
Net income	\$ 56,859	\$ 32,035	\$ 19,576
Other comprehensive income (loss), net of tax of \$0:			
Foreign currency translation adjustments	(40,154)	(5,916)	9,805
Amortization of cash flow hedge	128	128	128
Other	(381)	(41)	54
Total other comprehensive income (loss), net of tax	<u>(40,407)</u>	<u>(5,829)</u>	<u>9,987</u>
Comprehensive income	16,452	26,206	29,563
Less: comprehensive income attributable to noncontrolling interests	4,174	5,238	858
Comprehensive income attributable to Photronics, Inc. shareholders	<u>\$ 12,278</u>	<u>\$ 20,968</u>	<u>\$ 28,705</u>

See accompanying notes to consolidated financial statements.

**PHOTRONICS, INC. AND SUBSIDIARIES**  
**Consolidated Statements of Equity**  
**Years Ended November 1, 2015, November 2, 2014 and November 3, 2013**  
*(in thousands)*

	Common Stock		Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Non- Controlling Interests	Total Equity
	Shares	Amount					
<b>Balance at October 28, 2012</b>	60,213	\$ 602	\$ 493,411	\$ 41,473	\$ 15,900	\$ 34,615	\$ 586,001
Net income	-	-	-	17,966	-	1,610	19,576
Other comprehensive income	-	-	-	-	10,740	(753)	9,987
Sale of common stock through employee stock option and purchase plan	397	4	880	-	-	-	884
Restricted stock awards vestings and expense	158	2	1,281	-	-	-	1,283
Share-based compensation expense	-	-	2,692	-	-	-	2,692
Common stock warrants exercised	315	3	(3)	-	-	-	-
Repurchase of common stock of subsidiary	-	-	600	-	(237)	(32,955)	(32,592)
<b>Balance at November 3, 2013</b>	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 of subsidiary	-	-	108	-	(11)	(1,714)	(1,617)
<b>Balance at November 2, 2014</b>	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 of subsidiary	-	-	28	-	-	(107)	(79)
<b>Balance at November 1, 2015</b>	66,602	\$ 666	\$ 526,402	\$ 130,060	\$ (10,573)	\$ 115,511	\$ 762,066





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

	<b>Year Ended</b>		
	<b>November 1, 2015</b>	<b>November 2, 2014</b>	<b>November 3, 2013</b>
Cash flows from operating activities:			
Net income	\$ 56,859	\$ 32,035	\$ 19,576
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization of property, plant and equipment	75,684	72,859	65,994
Amortization of deferred financing costs and intangible assets	6,729	7,277	6,948
Gain on acquisition	-	(16,372)	-
Share-based compensation	3,689	4,071	3,975
Deferred income taxes	3,401	4,215	(266)
Changes in assets and liabilities:			
Accounts receivable	(21,815)	5,271	2,400
Inventories	(2,893)	(2,552)	(891)
Other current assets	(2,557)	1,781	(2,744)
Accounts payable, accrued liabilities and other	14,098	(12,224)	4,409
Net cash provided by operating activities	<u>133,195</u>	<u>96,361</u>	<u>99,401</u>
Cash flows from investing activities:			
Purchases of property, plant and equipment	(104,033)	(91,085)	(63,792)
Cash from acquisition	-	4,508	-
Purchases of intangible assets	(771)	(364)	(2,173)
Other	499	(544)	(272)
Net cash used in investing activities	<u>(104,305)</u>	<u>(87,485)</u>	<u>(66,237)</u>
Cash flows from financing activities:			
Repayments of long-term borrowings	(9,571)	(29,782)	(8,314)
Purchase of common stock of subsidiary	-	-	(32,374)
Proceeds from share-based arrangements	2,651	1,298	884
Payments of deferred financing fees	-	(346)	(40)
Other	(179)	(711)	-
Net cash used in financing activities	<u>(7,099)</u>	<u>(29,541)</u>	<u>(39,844)</u>
Effects of exchange rate changes on cash and cash equivalents	<u>(8,853)</u>	<u>(2,021)</u>	<u>4,252</u>
Net increase (decrease) in cash and cash equivalents	12,938	(22,686)	(2,428)
Cash and cash equivalents at beginning of year	192,929	215,615	218,043
Cash and cash equivalents at end of year	<u>\$ 205,867</u>	<u>\$ 192,929</u>	<u>\$ 215,615</u>
Supplemental disclosure of non-cash information:			
Accrual for property, plant and equipment purchased during year	\$ 25,858	\$ 28,672	\$ 17,502
Noncash net assets from acquisition	-	110,211	-
Conversion of debt to common stock	-	22,054	-
Capital lease obligation for purchases of property, plant and equipment	-	-	26,356

See accompanying notes to consolidated financial statements.

**PHOTRONICS, INC. AND SUBSIDIARIES**  
**Notes to Consolidated Financial Statements**  
**Years Ended November 1, 2015, November 2, 2014 and November 3, 2013**  
*(in thousands, except share amounts)*

**NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

**Business**

Photronics, Inc. and its subsidiaries (the "Company" or "Photronics") 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.

**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.

**Derivative Instruments and Hedging Activities**

The Company records derivatives in the consolidated balance sheets as assets or liabilities, measured at fair value. The Company does not engage in derivative instruments for speculative purposes. Gains or losses resulting from changes in the values of those derivatives are reflected in earnings, or as accumulated other comprehensive income or loss, a separate component of equity, depending on the use of the derivatives and whether they qualify for hedge accounting. In order to qualify for hedge accounting, among other criteria, a derivative must be a hedge of an interest rate, price, foreign currency exchange rate, or credit risk that is expected to be highly effective at the inception of the hedge, be highly effective in achieving offsetting changes in the fair value or cash flows of the hedged item during the term of the hedge and formally documented at the inception of the hedge. In general, the types of risks the Company has hedged are those related to the variability of future cash flows caused by movements in foreign currency exchange and interest rates. The Company documents its risk management strategy and hedge effectiveness at the inception of, and during the term of, each hedge.

**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 2015 and 2014 each included 52 weeks, while fiscal year 2013 included 53 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 primarily comprised of raw materials and are stated at the lower of cost, determined under the first-in, first-out ("FIFO") method, or market.

## **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 change in circumstances indicate that their carrying amounts may not be recoverable.

## **Intangible Assets**

Intangible assets consist primarily of a technology license agreement, a supply 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, causing 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. These certain legal entities are referred to 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, the Company evaluates the potential realization of deferred income tax assets from future taxable income and establishes 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. The Company includes any applicable interest and penalties related to uncertain tax positions in its 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. The Company estimates stock price volatility based on daily averages of its 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 carrying value of a technology license agreement with Micron Technology, Inc. ("Micron"). Under this technology license agreement, the Company has access to certain photomask technology developed by Micron.

## 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 of \$2.5 million, \$1.4 million and \$0.5 million in fiscal years 2015, 2014 and 2013, 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 November 1, 2015 and November 2, 2014 and PK Ltd. ("PKL") in Korea of which noncontrolling shareholders owned approximately 0.2% and 0.3% as of November 1, 2015 and November 2, 2014, respectively. The effect on its equity of the change in the Company's ownership interest in these subsidiaries is presented in Note 13.

## 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.

Warranties and Other Post Shipment Obligations – 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. The Company inspects photomasks for conformity to customer specifications prior to shipment. Accordingly, customer returns of items under warranty have historically been insignificant. The Company's specific return policies include accepting returns of products with defects, or products that have not been produced to precise customer specifications.

Sales Taxes – The Company reports its revenues net of any sales taxes billed to its customers.

## 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, is 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 for DPTT at the acquisition date.

Cash and cash equivalents	\$	4,508
Accounts receivable (gross amount of \$28,560, of which \$500 is 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 represents 49.99 percent of the fair value of PSMC, and is 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, resulting 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 is based on significant inputs that are not observable in the market and thus represents a fair value measurement categorized within Level 3 of the fair value hierarchy. Key assumptions include 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 represent 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 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.

Acquisition costs related to the merger were \$2.5 million and \$0.8 million in fiscal year 2014 and fiscal year 2013, respectively, and are included in selling, general and administrative expense in the consolidated statements of income. The Company did not incur any acquisition related costs in fiscal year 2015.

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.

#### 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 2013. The pro forma earnings for fiscal years 2014 and 2013 were adjusted to exclude the above mentioned \$2.5 million and \$0.8 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 and \$12.9 million for fiscal years 2014 and 2013, respectively. 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 be indicative of the Company's future financial performance.

	Year Ended	
	November 2, 2014	November 3, 2013
Revenues	\$ 499,968	\$ 514,265
Net income	\$ 23,969	\$ 34,922
Net income attributable to Photronics, Inc. shareholders	\$ 12,169	\$ 21,902
Diluted earnings per share	\$ 0.19	\$ 0.36



**NOTE 3 - PROPERTY, PLANT AND EQUIPMENT**

Property, plant and equipment consists of the following:

	<b>November 1, 2015</b>	<b>November 2, 2014</b>
Land	\$ 8,172	\$ 8,598
Buildings and improvements	121,472	124,787
Machinery and equipment	1,458,623	1,367,691
Leasehold improvements	18,856	20,165
Furniture, fixtures and office equipment	12,700	12,086
Construction in progress	6,657	81,351
	<u>1,626,480</u>	<u>1,614,678</u>
Less accumulated depreciation and amortization	1,079,196	1,064,609
	<u>\$ 547,284</u>	<u>\$ 550,069</u>

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

	<b>November 1, 2015</b>	<b>November 2, 2014</b>
Machinery and equipment	\$ 56,245	\$ 56,245
Less accumulated amortization	16,054	10,430
	<u>\$ 40,191</u>	<u>\$ 45,815</u>

**NOTE 4 - INTANGIBLE ASSETS**

Intangible assets include assets related to the investment to form the MP Mask joint venture and other finite lived intangible assets. Amortization expense of intangible assets was \$6.0 million, \$5.8 million and \$5.5 million in fiscal years 2015, 2014 and 2013, respectively.

Intangible assets consist of:

<b>As of November 1, 2015</b>	<b>Gross Amount</b>	<b>Accumulated Amortization</b>	<b>Net Amount</b>
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
	<u>\$ 81,768</u>	<u>\$ 57,152</u>	<u>\$ 24,616</u>
<b>As of November 2, 2014</b>			
Technology license agreement	\$ 59,616	\$ 33,451	\$ 26,165
Customer relationships	8,716	6,394	2,322
Supply agreements	6,959	6,605	354
Software and other	6,223	4,770	1,453
	<u>\$ 81,514</u>	<u>\$ 51,220</u>	<u>\$ 30,294</u>

The weighted-average amortization period for intangible assets acquired in fiscal year 2015 is three years, which is comprised of software and other intangible assets that have weighted-average amortization periods of three years. The weighted-average amortization period for intangible assets acquired in fiscal year 2014 is nine years, which is comprised of customer relationships and software and other intangible assets that have weighted-average amortization periods of twelve years and three years, respectively.

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

**Fiscal Years:**

2016	\$	4,928
2017		4,410
2018		4,410
2019		4,410
2020		4,410

**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 develops and produces 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.

This joint venture is a variable interest entity ("VIE") (as that term is defined in the ASC) because all costs of the joint venture are passed on to the Company and Micron through purchase agreements they have entered into with the joint venture, and it is dependent upon the Company and Micron for any additional cash requirements. On a quarterly basis the Company reassesses whether its interest in MP Mask gives it a controlling financial interest in this VIE. The purpose of this quarterly reassessment is to identify the primary beneficiary (which is defined in the ASC as the entity that consolidates a VIE) of the VIE. As a result of the reassessments in fiscal year 2015, the Company determined that Micron is still the primary beneficiary of the VIE, by virtue of its tie-breaking voting rights within MP Mask's Board of Managers, thereby giving it the power to direct the activities of MP Mask that most significantly impact 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 has utilized MP Mask for both high-end IC photomask production and research and development purposes. MP Mask charges its variable interest holders based on their actual usage of its facility and charges separately for any research and development activities it engages in at the requests of its owners.

MP Mask is 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, has held majority voting power on the Board of Managers. The voting power held by each party is subject to change as ownership interests change. Under the MP Mask joint venture operating agreement, the Company may be required to make additional capital contributions to MP Mask up to the maximum amount defined in the operating agreement. However, should the Board of Managers determine that further additional funding is required, MP Mask shall pursue its own financing. If MP Mask is unable to obtain its own financing, it may request additional capital contributions from the Company. Should the Company choose not to make a requested contribution to MP Mask, its ownership percentage may be reduced. MP Mask did not request, and the Company did not make, any contributions to MP Mask in fiscal years 2015 or 2014 and it did not receive any distributions from MP Mask during those fiscal years.

The Company's investment in the VIE, which represents its maximum exposure to loss, was \$93.0 million at November 1, 2015 and \$93.1 million at November 2, 2014. These amounts are reported in the Company's consolidated balance sheets as Investment in joint venture. The Company recorded a loss from its investment in MP Mask of \$0.1 million in fiscal years 2015 and 2013 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.

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 has 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 has 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.

As of November 3, 2013, the Company owed MP Mask \$4.5 million and had a receivable from Micron of \$4.9 million, both primarily related to the aforementioned supply agreements. The Company, in 2013, recorded \$0.9 million of commission revenue earned under the supply agreements it has with Micron and MP Mask, and amortization of \$0.3 million of the related supply agreement intangible asset. In 2013 the Company also recorded cost of sales in the amount of \$8.7 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 2013 the Company purchased equipment from MP Mask for \$6.1 million.

On March 24, 2015, the Company announced that the MP Mask joint venture would not be renewed after May 5, 2016. The MP Mask operating agreement provides that Micron will make a payment to the Company to purchase the Company's equity interest in MP Mask based on the Company's ownership percentage of the net book value of MP Mask at that time, which, as of September 3, 2015, was approximately \$93 million. The Company does not expect that it will incur a significant gain or loss on this transaction. Concurrently, the Company announced that it entered into supply and technology license agreements with Micron. This supply agreement, which commences on May 6, 2016, with a one-year term subject to mutually agreeable renewals, provides that the Company will be the majority outsource supplier of Micron's photomasks and related services, if any. The technology license agreement commenced in March 2015 and continues through the earlier of one year from the termination of the initial technology license agreement, which will occur on May 5, 2016, or when Micron certifies that it has transferred certain defined technology to the Company. The Company forevermore has the rights to use the technology obtained under these technology license agreements.

Summarized financial information of MP Mask is presented below.

	As of Fiscal Year End	
	2015	2014
Current assets	\$ 30,567	\$ 31,696
Noncurrent assets	173,840	205,457
Current liabilities	18,234	44,024
Noncurrent liabilities	-	6,804

	Fiscal Year		
	2015	2014	2013
Net sales	\$ 96,068	\$ 81,399	\$ 77,900
Gross profit	1,215	3,427	4,663
Net income (loss)	(151)	1,259	4,735

**NOTE 6 - ACCRUED LIABILITIES**

Accrued liabilities include salaries, wages and related benefits of \$14.3 million and \$10.4 million at November 1, 2015 and November 2, 2014, respectively, and an acquisition liability of \$7.1 million and \$7.2 million at November 1, 2015 and November 2, 2014, respectively.

**NOTE 7 - LONG-TERM BORROWINGS**

Long-term borrowings consist of the following:

	November 1, 2015	November 2, 2014
3.25% convertible senior notes due in April 2016	\$ 57,500	\$ 115,000
3.25% convertible senior notes due in April 2019	57,500	-
2.77% capital lease obligation payable through July 2018	15,346	20,481
3.09% capital lease obligation payable through March 2016	2,269	6,705
	132,615	142,186
Less current portion	65,495	10,381
	<u>\$ 67,120</u>	<u>\$ 131,805</u>

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 November 1, 2015. The Company had no outstanding borrowings against the credit facility at November 1, 2015, and \$50 million was available for borrowing. The interest rate on the credit facility (1.44% at November 1, 2015) 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. Under the terms of the lease agreement, the Company must maintain the equipment in good working order, and is subject to a cross default with cross acceleration provision related to certain nonfinancial covenants incorporated in its credit facility. As of November 1, 2015, the total amount payable through the end of the lease term was \$16.0 million, of which \$15.3 million represented principal and \$0.7 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 bears interest at 3.09%, are \$0.4 million per month through March 2016. The lease agreement provides that the Company must maintain the equipment in good working order, and includes a cross default with cross acceleration provision related to certain non-financial covenants incorporated in the Company's credit facility agreement. As of November 1, 2015, the total amount payable through the end of the lease term, substantially all of which represented principal was \$2.3 million.

As of November 1, 2015, minimum lease payments under the Company's capital lease obligations were as follows:

**Fiscal Years:**

2016	\$	8,398
2017		5,168
2018		4,698
		<u>18,264</u>
Less interest		<u>649</u>
Net minimum lease payments under capital leases		17,615
Less current portion of net minimum lease payments		<u>7,995</u>
Long-term portion of minimum lease payments	\$	<u>9,620</u>

Interest payments were \$4.4 million in fiscal 2015, and \$6.3 million in fiscal 2014 and 2013, including deferred financing cost payments of \$0.3 million in fiscal 2014.

**NOTE 8 - OPERATING LEASES**

The Company leases various real estate and equipment under non-cancelable operating leases, for which rental expense was \$2.8 million, \$2.8 million and \$2.7 million in fiscal years 2015, 2014 and 2013, respectively.

At November 1, 2015, future minimum lease payments under non-cancelable operating leases with initial terms in excess of one year are as follows:

2016	\$	2,116
2017		1,665
2018		622
2019		368
2020		317
Thereafter		1,534
	<u>\$</u>	<u>6,622</u>

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

## NOTE 9 – SHARE-BASED COMPENSATION

The Company has a share-based compensation plan ("Plan"), under which options, restricted stock, restricted stock units, stock appreciation rights, performance stock, performance units, and other awards based on, or related to, shares of the Company's common stock may be granted from shares authorized but unissued or shares previously issued and reacquired by the Company. The maximum number of shares of common stock approved by the Company's shareholders to be issued under the Plan was increased from six million to nine million shares during fiscal 2014. 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 \$3.7 million, \$4.1 million and \$4.0 million in fiscal years 2015, 2014 and 2013, 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 prices 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 options issued during fiscal years 2015, 2014 and 2013 are presented in the following table:

	<b>Year Ended</b>		
	<b>November 1, 2015</b>	<b>November 2, 2014</b>	<b>November 3, 2013</b>
Expected volatility	53.7%	61.0%	98.0%
Risk-free rate of return	1.3 – 1.6%	1.4%	0.5 – 1.4%
Dividend yield	0.0%	0.0%	0.0%
Expected term	4.7 years	4.6 years	4.3 years

A summary of option activity under the Plan as of November 1, 2015, and changes during the year then ended is presented as follows:

Options	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life	Aggregate Intrinsic Value
Outstanding at November 2, 2014	4,076,781	\$ 7.60		
Granted	679,800	8.32		
Exercised	(459,188)	4.60		
Cancelled and forfeited	(494,225)	13.82		
Outstanding at November 1, 2015	<u>3,803,168</u>	<u>\$ 7.29</u>	<u>6.0 years</u>	<u>\$ 11,215</u>
Exercisable at November 1, 2015	<u>2,299,693</u>	<u>\$ 6.92</u>	<u>4.5 years</u>	<u>\$ 8,592</u>
Vested and expected to vest as of November 1, 2015	<u>3,705,186</u>	<u>\$ 7.28</u>	<u>5.9 years</u>	<u>\$ 11,039</u>

The weighted-average grant date fair value of options granted during fiscal years 2015, 2014 and 2013 were \$3.81, \$4.44 and \$4.00, respectively. The total intrinsic value of options exercised during fiscal years 2015, 2014 and 2013 was \$2.0 million, \$1.4 million and \$1.6 million, respectively.

The Company received cash from option exercises of \$2.2 million, \$1.1 million and \$0.5 million in fiscal years 2015, 2014 and 2013, respectively. As of November 1, 2015, the total unrecognized compensation cost of unvested option awards was approximately \$3.9 million. That cost is expected to be recognized over a weighted-average amortization period of 2.4 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 weighted-average grant date fair values of restricted stock awards issued during fiscal years 2015, 2014 and 2013 were \$8.28, \$8.86 and \$5.48, respectively. The total fair value of awards for which restrictions lapsed was \$1.4 million, \$1.5 million and \$1.3 million during fiscal years 2015, 2014 and 2013, respectively. As of November 1, 2015, the total compensation cost for restricted stock awards not yet recognized was approximately \$0.8 million. That cost is expected to be recognized over a weighted-average amortization period of 2.2 years.

A summary of the status of the Company's outstanding restricted stock awards as of November 1, 2015, is presented below:

Restricted Stock	Shares	Weighted-Average Fair Value at Grant Date
Outstanding at November 2, 2014	235,481	\$ 6.81
Granted	121,334	8.28
Vested	(159,039)	7.25
Cancelled	(8,188)	7.87
Outstanding at November 1, 2015	<u>189,588</u>	<u>\$ 7.34</u>
Vested and expected to vest as of November 1, 2015	<u>179,471</u>	<u>\$ 7.35</u>

*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 November 1, 2015, 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 November 1, 2015, and approximately 50,000 shares are subject to outstanding subscriptions. As of November 1, 2015, the total compensation cost related to the ESPP not yet recognized was \$0.1 million, which is expected to be recognized in fiscal 2016.

**NOTE 10 - EMPLOYEE RETIREMENT PLANS**

The Company maintains a 401(k) Savings and Profit Sharing Plan ("401(k) Plan") which covers all full and part time domestic 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 the Company's defined contribution plans were \$0.7 million in fiscal years 2015 and 2014 and \$0.6 million in fiscal year 2013.

**NOTE 11 - INCOME TAXES**

Income before the income tax provisions consist of the following:

	<b>Year Ended</b>		
	<b>November 1, 2015</b>	<b>November 2, 2014</b>	<b>November 3, 2013</b>
United States	\$ 6,646	\$ (23,083)	\$ (14,164)
Foreign	63,394	64,413	40,969
	<u>\$ 70,040</u>	<u>\$ 41,330</u>	<u>\$ 26,805</u>

The income tax provisions consist of the following:

	<b>Year Ended</b>		
	<b>November 1, 2015</b>	<b>November 2, 2014</b>	<b>November 3, 2013</b>
Current:			
Federal	\$ 160	\$ 354	\$ 208
State	(109)	-	65
Foreign	9,729	4,726	7,222
Deferred:			
Federal	-	-	-
State	7	(5)	(181)
Foreign	3,394	4,220	(85)
Total	<u>\$ 13,181</u>	<u>\$ 9,295</u>	<u>\$ 7,229</u>



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:

	<b>Year Ended</b>		
	<b>November 1, 2015</b>	<b>November 2, 2014</b>	<b>November 3, 2013</b>
U.S. federal income tax at statutory rate	\$ 24,514	\$ 14,465	\$ 9,382
Changes in valuation allowances	(11,471)	(7,575)	1,325
Distributions from foreign subsidiaries	448	12,674	1,957
State income taxes, net of federal benefit	263	(141)	267
Foreign tax rate differentials	(4,356)	(4,864)	(4,851)
Tax credits	(2,729)	(2,847)	(3,967)
Uncertain tax positions, including reserves, settlements and resolutions	(175)	(2,255)	1,471
Gain on acquisition of DPTT	-	(5,748)	-
Intercompany gain elimination	-	4,759	-
Tax on foreign subsidiary earnings	6,589	-	-
Equity based compensation	634	714	765
Other, net	(536)	113	880
	<u>\$ 13,181</u>	<u>\$ 9,295</u>	<u>\$ 7,229</u>

The effective tax rate differs from the U.S. statutory rate of 35% in fiscal years 2015, 2014 and 2013 primarily due to earnings, including the fiscal year 2014 gain on acquisition of DPTT, being taxed at lower statutory rates in foreign jurisdictions, combined with the benefit of various investment credits in a foreign jurisdiction. Valuation allowances in jurisdictions with historic and continuing losses eliminate the effective rate impact of these jurisdictions.

The net deferred income tax assets consist of the following:

	<b>As of</b>	
	<b>November 1, 2015</b>	<b>November 2, 2014</b>
<b>Deferred income tax assets :</b>		
Net operating losses	\$ 56,582	\$ 64,529
Reserves not currently deductible	8,158	6,948
Alternative minimum tax credits	3,281	3,121
Tax credit carryforwards	8,809	8,368
Other	1,782	1,773
	<u>78,612</u>	<u>84,739</u>
Valuation allowances	(38,763)	(49,548)
	<u>39,849</u>	<u>35,191</u>
<b>Deferred income tax liabilities:</b>		
Undistributed earnings of foreign subsidiaries	(5,953)	(5,366)
Property, plant and equipment	(17,874)	(11,503)
Investments	(4,596)	(2,660)
Other	(552)	(448)
	<u>(28,975)</u>	<u>(19,977)</u>
<b>Net deferred income tax assets</b>	<u>\$ 10,874</u>	<u>\$ 15,214</u>
<b>Reported as:</b>		
Current deferred tax assets	\$ 3,354	\$ 7,223
Noncurrent deferred tax assets	11,908	11,036
Noncurrent deferred tax liabilities	(4,388)	(3,045)
	<u>\$ 10,874</u>	<u>\$ 15,214</u>

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

	Year Ended		
	November 1, 2015	November 2, 2014	November 3, 2013
Balance at beginning of year	\$ 4,993	\$ 4,757	\$ 3,793
Additions (reductions) for tax positions in prior years	(212)	3,437	1,224
Additions based on current year tax positions	318	272	207
Settlements	(720)	(3,155)	(406)
Lapses of statutes of limitations	(350)	(318)	(61)
Balance at end of year	<u>\$ 4,029</u>	<u>\$ 4,993</u>	<u>\$ 4,757</u>

Unrecognized tax benefits associated with uncertain tax positions were \$4.1 million at November 1, 2015, which is recorded in other liabilities in the consolidated balance sheet and were \$5.1 million at November 2, 2014, of which \$5.0 million is recorded in other liabilities in the consolidated balance sheet, and \$0.1 million is recorded as a reduction to deferred tax assets. If recognized, \$4.1 million of the benefits would favorably impact the Company's effective tax rate in future periods. Included in these amounts in fiscal years 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 above table includes the fiscal year 2015 settlement of two foreign audits and the recognition of previously unrecognized tax benefits resulting from the lapse of their assessment periods. Included within fiscal year 2014 is the settlement of an Internal Revenue Service ("IRS") income tax examination of the Company's 2011 and 2012 federal income tax returns, as well as the recognition of previously unrecognized tax benefits resulting from the lapse of the assessment periods, which were offset in part by uncertain tax positions related to the acquisition of DPTT (as discussed in Note 2). 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. Shortly after the close of the 2013 fiscal year, the Company reached a settlement with the relevant tax authorities regarding one of its non-US subsidiary's 2010 tax year, as reflected in the fiscal 2013 table above. As of November 1, 2015, 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.

The following tables present the Company's available operating loss and credit carryforwards at November 1, 2015, and the related expiration periods:

### Operating Loss Carryforwards

	<u>Amount</u>	<u>Expiration Period</u>
Federal	\$ 120,263	2023-2035
State	\$ 214,591	2016-2035
Foreign	\$ 35,464	2016-2023

### Tax Credit Carryforwards

	<u>Amount</u>	<u>Expiration Period</u>
Federal research and development	\$ 4,337	2019-2035
Federal alternative minimum tax	\$ 3,281	Indefinite
State tax	\$ 6,879	2016-2029

Included in the above foreign operating loss carryforward amount is \$3.5 million of the \$58.6 million operating loss carryforward amount acquired in the DPTT acquisition.

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. The valuation allowance increased (decreased) by \$(10.8 million), \$(7.1 million) and \$1.1 million in fiscal years 2015, 2014 and 2013, respectively. During fiscal year 2015, the Company determined that sufficient positive evidence existed in two foreign jurisdictions that it was more likely than not that additional deferred taxes of \$2.4 million were realizable and, therefore, reduced the valuation allowance accordingly.

As of November 1, 2015, the undistributed earnings of foreign subsidiaries included in consolidated retained earnings amounted to \$161.4 million, of which \$17.0 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 \$144.4 million, as they are expected to be indefinitely invested in foreign jurisdictions and, therefore, are not anticipated to be subject to U.S. tax. The amount of undistributed earnings is calculated taking into account the net amount of earnings of the Company's foreign subsidiaries, considering its multitier subsidiary structure, and translating those earnings into U.S. dollars using exchange rates in effect as of the balance sheet date. During fiscal year 2015, the Company determined that the historic and future accumulated earnings of a foreign subsidiary were not required for future investment due to changes in the operational structure of the subsidiary. Accordingly, a deferred tax liability of \$5.7 million has been established on \$16.4 million of earnings previously considered indefinitely invested. Prior to the fiscal 2014 acquisition of DPTT, PDMC (formerly PSMC), in accordance with the ownership provisions in the DPTT acquisition agreements, made a onetime remittance of \$35 million of earnings that had been previously considered to be indefinitely invested. The Company has not changed its assertion on the balance of PDMC earnings which remain indefinitely invested. 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.

PKLT, the Company's FPD manufacturing facility in Taiwan, has been accorded a tax holiday, which started in 2012 and expires in 2017. This tax holiday had no dollar or per share effect in the fiscal years ended November 1, 2015, November 2, 2014 and November 3, 2013. PDMC, which acquired an IC manufacturing facility in Taiwan as a result of the DPTT Acquisition, has been accorded a tax holiday that commenced in 2015 and expires in 2019. The Company realized \$0.2 million in tax benefits from the PDMC tax holiday in the year ended November 1, 2015. The tax holiday had no per share effect on the Company's financial results in the year ended November 1, 2015. In Korea, various investment tax credits have been earned to reduce the Company's effective income tax rate.

Income tax payments were \$4.9 million, \$5.2 million and \$10.7 million in fiscal 2015, 2014 and 2013, respectively. Cash received for refunds of income taxes paid in prior years amounted to \$0.1 million, \$1.4 million and \$0.3 million in fiscal years 2015, 2014 and 2013, respectively.

## NOTE 12 - EARNINGS PER SHARE

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

	Year Ended		
	November 1, 2015	November 2, 2014	November 3, 2013
Net income attributable to Photonics, Inc. shareholders	\$ 44,625	\$ 25,996	\$ 17,966
Effect of dilutive securities:			
Interest expense on convertible notes, net of related tax effects	4,363	1,426	-
Earnings for diluted earnings per share	<u>\$ 48,988</u>	<u>\$ 27,422</u>	<u>\$ 17,966</u>
Weighted-average common shares computations:			
Weighted-average common shares used for basic earnings per share	66,331	61,779	60,644
Effect of dilutive securities:			
Convertible notes	11,085	3,945	-
Share-based payment awards	967	955	813
Common stock warrants	-	-	142
Dilutive common shares	<u>12,052</u>	<u>4,900</u>	<u>955</u>
Weighted-average common shares used for diluted earnings per share	<u>78,383</u>	<u>66,679</u>	<u>61,599</u>
Basic earnings per share	\$ 0.67	\$ 0.42	\$ 0.30
Diluted earnings per share	\$ 0.63	\$ 0.41	\$ 0.29

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		
	November 1, 2015	November 2, 2014	November 3, 2013
Share based payment awards	1,641	1,911	2,880
Convertible notes	-	11,085	6,168
Total potentially dilutive shares excluded	<u>1,641</u>	<u>12,996</u>	<u>9,048</u>

In the first quarter of fiscal year 2016, the Company awarded approximately 0.7 million shared-based payment awards to its employees and directors.

#### NOTE 13 – SUBSIDIARY SHARE REPURCHASES AND TENDER OFFER

In June 2015 the Company increased its ownership interest in PKL, a subsidiary of the Company based in Korea, to 99.77% from 99.75%, by purchasing shares of its common stock from noncontrolling interests at a cost of \$0.1 million.

Since the second quarter of fiscal 2011, the board of directors of PSMC (in 2014 PSMC's name was changed to PDMC, see Note 2), a subsidiary of the Company based in Taiwan, authorized several share repurchase programs for PSMC to purchase for retirement shares of its outstanding common stock. The last of these repurchase programs concluded in the first fiscal quarter of 2013 in which PSMC purchased shares at a cost of \$4.2 million. These repurchase programs increased the Company's ownership in PSMC from 72.09% at October 28, 2012, to 75.11% at January 27, 2013. During fiscal 2013 the Company increased its ownership interest in PSMC, primarily through a tender offer, to 98.63% by purchasing shares at a cost of \$28.1 million. In January 2014 the Company increased its ownership percentage in PSMC 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 and PKL on the Company's equity for fiscal years 2015, 2014 and 2013 (in 2015 shares of PKL common stock were purchased, in 2014 shares of PSMC common stock were issued in connection with the DPTT Acquisition and shares were acquired from the former noncontrolling interests, and in 2013 shares of PSMC common stock were purchased).

	<b>Year Ended</b>		
	<b>November 1, 2015</b>	<b>November 2, 2014</b>	<b>November 3, 2013</b>
Net income attributable to Photronics, Inc. shareholders	\$ 44,625	\$ 25,996	\$ 17,966
Increase (decrease) in Photronics, Inc.'s additional paid-in capital	28	(6,183)	600
Increase (decrease) in Photronics, Inc.'s accumulated other comprehensive income	-	399	(237)
Change from net income attributable to Photronics, Inc. shareholders due to issuance of shares of PDMC and transfers to or from noncontrolling interests	<u>\$ 44,653</u>	<u>\$ 20,212</u>	<u>\$ 18,329</u>

#### NOTE 14 - COMMITMENTS AND CONTINGENCIES

At November 1, 2015, the Company had outstanding purchase commitments of \$14 million, which included \$3 million related to capital expenditures, and had recorded liabilities for the purchase of equipment of \$26 million. See Note 8 for operating lease commitments.

The Company is subject to various claims that arise in the ordinary course of business. The Company believes such claims, individually or 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 2015, 2014 and 2013 net sales by geographic area and of ICs and FPDs, and long-lived assets by geographic area were as follows:

	<b>Year Ended</b>		
	<b>November 1, 2015</b>	<b>November 2, 2014</b>	<b>November 3, 2013</b>
<b>Net sales</b>			
Taiwan	\$ 205,141	\$ 167,075	\$ 117,364
Korea	147,921	140,386	134,300
United States	132,792	106,740	127,054
Europe	35,792	38,726	41,126
All other Asia	2,560	2,600	2,336
	<u>\$ 524,206</u>	<u>\$ 455,527</u>	<u>\$ 422,180</u>
<b>IC</b>			
	\$ 420,833	\$ 352,679	\$ 320,579
<b>FPD</b>			
	103,373	102,848	101,601
	<u>\$ 524,206</u>	<u>\$ 455,527</u>	<u>\$ 422,180</u>
<b>As of</b>			
	<b>November 1, 2015</b>	<b>November 2, 2014</b>	<b>November 3, 2013</b>
<b>Long-lived assets</b>			
Taiwan	\$ 185,087	\$ 207,324	\$ 66,836
Korea	167,618	176,141	153,878
United States	184,282	158,325	191,518
Europe	10,287	8,259	10,471
All other Asia	10	20	37
	<u>\$ 547,284</u>	<u>\$ 550,069</u>	<u>\$ 422,740</u>

One customer accounted for 18%, 16% and 18% of the Company's net sales in fiscal years 2015, 2014 and 2013, respectively, and another customer accounted for 15% and 11% of the Company's net sales in fiscal 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 November 1, 2015 and November 2, 2014:

	<b>Year Ended November 1, 2015</b>			
	<b>Foreign Currency Translation Adjustments</b>	<b>Amortization of Cash Flow Hedge</b>	<b>Other</b>	<b>Total</b>
Balance at November 2, 2014	\$ 22,651	\$ (434)	\$ (443)	\$ 21,774
Other comprehensive income (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	<u>\$ (9,634)</u>	<u>\$ (306)</u>	<u>\$ (633)</u>	<u>\$ (10,573)</u>

	<b>Year Ended November 2, 2014</b>			
	<b>Foreign Currency Translation Adjustments</b>	<b>Amortization of Cash Flow Hedge</b>	<b>Other</b>	<b>Total</b>
Balance at November 3, 2013	\$ 27,797	\$ (562)	\$ (832)	\$ 26,403
Other comprehensive loss before reclassifications	(5,916)	-	(41)	(5,957)
Amounts reclassified from other accumulated comprehensive income	-	128	-	128
Net current period other comprehensive income (loss)	(5,916)	128	(41)	(5,829)
Less: other comprehensive loss attributable to noncontrolling interests	770	-	31	801
Other accumulated comprehensive income allocated to noncontrolling interests	-	-	410	410
Purchase of common stock of subsidiary	-	-	(11)	(11)
Balance at November 2, 2014	<u>\$ 22,651</u>	<u>\$ (434)</u>	<u>\$ (443)</u>	<u>\$ 21,774</u>

The amortization of the cash flow hedge is included in Cost of sales in the consolidated statements of income for 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 temporary cash investments. The Company sells its products primarily to manufacturers in the semiconductor and FPD industries 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 a company that provides secure managed information technology services to Photronics. Another director of the Company is also a shareholder, chief executive officer and chairman of the board of this company. Since 2002, the Company has entered into various service contracts with this company to provide services to all of the Company's worldwide facilities. The Company incurred expenses for services provided by this company of \$1.0 million, \$1.2 million, and \$1.7 million in fiscal years 2015, 2014 and 2013, respectively, and had an outstanding balance of less than \$0.1 million due to this company as of November 1, 2015 and \$0.1 million as of November 2, 2014. As of November 1, 2015, the Company had contracted with this company for various services through June 2016 at a cost of \$0.2 million.

The Company purchases photomask blanks from a company of which an officer of the Company is a significant shareholder. The Company purchased \$20.2 million, \$20.1 million and \$20.0 million of photomask blanks from this company in 2015, 2014 and 2013, respectively, for which the amount owed to this company was \$4.5 million at November 1, 2015, and \$4.4 million at November 2, 2014.

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 other 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 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 November 1, 2015, or November 2, 2014. During the three month period ended May 4, 2014, the Company measured and recorded the net assets it acquired in its subsidiary's acquisition of DPTT at fair value. See Note 2 for further information.

### *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 value of the Company's convertible senior notes is a Level 2 measurement that is determined using recent bid prices.



The table below presents the fair and carrying values of the Company's convertible senior notes at November 1, 2015, and November 2, 2014.

	November 1, 2015		November 2, 2014	
	Fair Value	Carrying Value	Fair Value	Carrying Value
3.25% convertible senior notes due 2016	\$ 60,375	\$ 57,500	\$ 122,544	\$ 115,000
3.25% convertible senior notes due 2019	\$ 64,550	\$ 57,500	\$ -	\$ -

**NOTE 20 - QUARTERLY RESULTS OF OPERATIONS (UNAUDITED)**

The following table sets forth certain unaudited quarterly financial data:

	First	Second	Third	Fourth	Year
<b>Fiscal 2015:</b>	(a)				(a)
Net sales	\$ 123,505	\$ 127,309	\$ 131,699	\$ 141,693	\$ 524,206
Gross margin	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
<b>Fiscal 2014:</b>	(b)	(c)(d)			(c)(e)
Net sales	\$ 101,542	\$ 104,882	\$ 124,852	\$ 124,251	\$ 455,527
Gross margin	22,882	22,190	28,650	26,624	100,346
Net income	2,041	15,950	7,344	6,700	32,035
Net income attributable to Photronics, Inc. shareholders	1,993	15,540	4,186	4,277	25,996
Earnings per share:					
Basic	\$ 0.03	\$ 0.25	\$ 0.07	\$ 0.07	\$ 0.42
Diluted	\$ 0.03	\$ 0.22	\$ 0.07	\$ 0.07	\$ 0.41

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

(b) Includes expenses of \$0.5 million, net of tax, related to the acquisition of DPTT.

(c) Includes non-cash gain of \$16.4 million, net of tax, related to the acquisition of DPTT.

(d) Includes expenses of \$2.0 million, net of tax, related to the acquisition of DPTT.

(e) Includes expenses of \$2.5 million, net of tax, related to the acquisition of DPTT.

## **NOTE 21 - RECENT ACCOUNTING PRONOUNCEMENTS**

In November 2015 the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“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. This ASU is effective for the Company in its first quarter of fiscal 2017, with early application permitted and, upon adoption, may be applied either prospectively or retrospectively. The Company is currently evaluating the effect this ASU will have on its consolidated financial 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 2017 and, upon adoption, should be applied retrospectively. Early adoption is permitted. The Company is currently evaluating the effect this ASU will have 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 2019. ASU 2014-09 allows for either full retrospective or modified retrospective adoption. The Company is evaluating the transition method that will be elected and the potential effects of the adoption of ASU 2014-09 on its consolidated financial statements.

## **NOTE 22 – SUBSEQUENT EVENT**

The Company had a minority interest in a foreign entity. In December 2015 the Company sold its investment in the foreign entity for \$8.8 million and expects to recognize a net gain of approximately \$8.5 million in the Company’s quarter ending January 31, 2016.

## **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 November 1, 2015, 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 November 1, 2015.

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 November 1, 2015, as stated in their attestation report on page 33 of this Form 10-K.

January 7, 2016

### **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 2016 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 2016 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 controller. A copy of the code of ethics may be obtained, free of charge, by writing to the vice president, general counsel of Photonics, 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 2016 definitive Proxy Statement under the captions "EXECUTIVE COMPENSATION," "CERTAIN AGREEMENTS", "DIRECTORS' COMPENSATION", "COMPENSATION COMMITTEE INTERLOCKS AND INSIDER PARTICIPATION" and "COMPENSATION COMMITTEE REPORT," 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 2016 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 2016 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 2016 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 2016 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:

	<b>Page No.</b>
1. Financial Statements: See "INDEX TO CONSOLIDATED FINANCIAL STATEMENTS" in Part II, Item 8 of this Form 10-K.	32
2. Financial Statement Schedules:	
Report of Independent Registered Public Accounting Firm	66
Schedule II - Valuation and Qualifying Accounts for the years ended November 1, 2015, November 2, 2014 and November 3, 2013	66
All other schedules are omitted because they are not applicable.	
3. Exhibits	67

**Report of Independent Registered Public Accounting Firm**

**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 November 1, 2015 and November 2, 2014, and for each of the three fiscal years ended November 1, 2015, November 2, 2014 and November 3, 2013, and the Company's internal control over financial reporting as of November 1, 2015, and have issued our report thereon dated January 7, 2016; such report is included elsewhere in this Form 10-K. Our audits also included the consolidated financial statement schedule of the Company listed in Item 15. This consolidated financial statement schedule is the responsibility of the Company's management. Our responsibility is to express an opinion based on our audits. In our opinion, such consolidated financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

/s/ Deloitte & Touche LLP

**Hartford, Connecticut  
January 7, 2016**

**Schedule II**

**Valuation and Qualifying Accounts  
for the Years Ended November 1, 2015, November 2, 2014  
and November 3, 2013  
(in thousands)**

	<u>Balance at Beginning of Year</u>	<u>Charged to Costs and Expenses</u>	<u>Deductions</u>	<u>Balance at End of Year</u>
<b>Allowance for Doubtful Accounts</b>				
Year ended November 1, 2015	\$ 3,078	\$ 730	\$ (507)(a)	\$ 3,301
Year ended November 2, 2014	\$ 3,541	\$ (740)	\$ 277(a)	\$ 3,078
Year ended November 3, 2013	\$ 3,902	\$ (398)	\$ 37(a)	\$ 3,541
<b>Deferred Tax Asset Valuation Allowance</b>				
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
Year ended November 3, 2013	\$ 55,536	\$ 1,125	\$ -	\$ 56,661

(a) Uncollectible accounts written off, net, and impact of foreign currency translation.

(b) Partial reversal of valuation allowance

(c) Increase in deferred tax liability and utilization of net operating losses.

**EXHIBITS INDEX**

<b>Exhibit Number</b>	<b>Description</b>
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).
<a href="#">3.2</a>	By-laws of the Company as restated August 28, 2015.*
4.4	Indenture dated March 28, 2011, between the Company and Wells Fargo (as successor trustee to the Bank of Nova Scotia Trust Company of New York) (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on March 29, 2011).
4.5	First Supplement to Indenture dated April 27, 2011 (incorporated by reference to Exhibit 4.6 of the Company's Quarterly Report on Form 10-Q filed June 8, 2011).
4.6	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	Master Service Agreement dated January 11, 2002 between the Company and RagingWire Telecommunications, Inc. (incorporated by reference to Exhibit 10.1 of the Company's Annual Report on Form 10-K filed January 6, 2015).
10.2	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). +
10.3	Amendment to the Employee Stock Purchase Plan as of March 24, 2004 (incorporated by reference to Exhibit 10.7 to the Company's Annual Report on Form 10-K for the fiscal year ended October 31, 2010 filed January 14, 2011). +
<a href="#">10.4</a>	Amendment to the Employee Stock Purchase Plan as of April 8, 2010.* +
10.5	Amendment to the Employee Stock Purchase Plan as of March 28, 2012 (incorporated by reference to Exhibit 10.9 to the Company's Quarterly Report on Form 10-Q filed September 5, 2012). +

10.6	The Company's 2007 Long-Term Equity Incentive Plan (incorporated by reference to the Company's Proxy filed on March 3, 2014). +
<a href="#">10.7</a>	Amendment to the 2007 Long Term Equity Incentive Plan as of April 8, 2010.* +
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 Photonics, Inc. ("Photonics") dated May 5, 2006 (incorporated by reference to Exhibit 10.14 to the Company's Annual Report on Form 10-K for the fiscal year ended October 30, 2011). #
10.13	Contribution and Units Purchase Agreement between Micron, Photonics 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, Photonics 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	Photonics to Micron Supply Agreement between Micron and Photonics 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 Photonics Supply Agreement between MP Mask and Photonics 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 Photonics 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 Photonics 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 between the Company, Dai Nippon Printing Co., Ltd and Photonics 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 Photonics 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 between 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 (incorporated by reference to Exhibit 10.40 to the Company's Quarterly Report on Form 10-Q filed on June 8, 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. Kirilin 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). +
<a href="#">10.30</a>	Executive Employment Agreement between the Company and Richelle E. Burr dated May 21, 2010.*
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 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 January 6, 2015).
<a href="#">21</a>	List of Subsidiaries of the Company.*
<a href="#">23</a>	Consent of Deloitte & Touche LLP.*
<a href="#">31.1</a>	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.*
<a href="#">31.2</a>	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.*
<a href="#">32.1</a>	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.*
<a href="#">32.2</a>	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 January 7, 2016  
Sean T. Smith  
Senior Vice President  
Chief Financial Officer  
(Principal Accounting Officer/  
Principal Financial Officer)

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 January 7, 2016  
Peter S. Kirlin  
Chief Executive Officer  
Director  
(Principal Executive Officer)

By /s/ SEAN T. SMITH January 7, 2016  
Sean T. Smith  
Senior Vice President  
Chief Financial Officer  
(Principal Accounting Officer/  
Principal Financial Officer)

By /s/ CONSTANTINE S. MACRICOSTAS January 7, 2016  
Constantine S. Macricostas  
Executive Chairman of the Board

By /s/ WALTER M. FIEDEROWICZ January 7, 2016  
Walter M. Fiederowicz  
Director

By /s/ JOSEPH A. FIORITA, JR. January 7, 2016  
Joseph A. Fiorita, Jr.  
Director

By /s/ LIANG-CHOO HSIA January 7, 2016  
Liang-Choo Hsia  
Director

By /s/ GEORGE MACRICOSTAS January 7, 2016  
George Macricostas  
Director

By /s/ MITCHELL G. TYSON January 7, 2016  
Mitchell G. Tyson  
Director

Amended  
BY-LAWS  
OF  
PHOTRONICS , INC.

ARTICLE I: IDENTIFICATION

Section 1. Name. The name of the Corporation is Photronics , Inc.

Section 2. Seal. Upon the seal of the Corporation shall appear the name of the Corporation and the state and year of incorporation, and the words "Corporate Seal."

Section 3. Offices. The principal office of the Corporation shall be located in Brookfield Center, Connecticut. The Corporation may also have other offices at such other places, either within or without the State of Connecticut, as the Board may determine or as the activities of the Corporation may require.

ARTICLE II: MEETINGS OF SHAREHOLDERS

Section 1. Place of Meetings. Meetings of the shareholders of the Corporation shall be held at the principal office of the Corporation, or at such other place, either within or without the State of Connecticut, as may be fixed by the Board of Directors and stated in the notice of meeting or in a duly executed waiver of notice thereof.

Section 2. Annual Meeting . An annual meeting of the shareholders for the election of directors and the transaction of such other business as may properly come before the meeting, shall be held each year on such date in the first six months of the Corporation's fiscal year as shall be designated by the, by the Board of Directors.

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Section 3. Special Meetings. Special meetings of the shareholders may be called at anytime by the Chairman of the Board or by a majority of the Board of Directors, or shall be called by the Secretary at the request in writing of the holders of not less than one-tenth of the voting power of all shares entitled to vote at the meeting.

Section 4 . Notice . Written or printed notice of each meeting of shareholders, stating the place, day and hour of the meeting and, in the case of a special meeting , the purpose or purposes for which the meeting is called, shall be given not less than ten days nor more than sixty days prior to each meeting, to each shareholder of record entitled to vote at such meeting by leaving such notice with him personally or by depositing such notice in the mails in postage prepaid envelope addressed to him at his post office address as it appears on the corporate records of the Corporation.

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Section 5. Waiver of Notice . Notice of any shareholders meeting may be waived , in writing, by any shareholder, either before or after the time stated therein and, if any shareholder entitled to vote is present at a shareholders meeting and does not protest, prior to or at the commencement of the meeting, the lack of receipt of proper notice, such shareholder shall be deemed to have waived notice of such meeting.

Section 6. Voting List . For the purpose of determining shareholders entitled to notice of , or to vote at, any meeting of shareholders or any adjournment thereof , or shareholders entitled to receive payment of dividends, or for any other proper purpose, the Board of Directors may set a record date which shall not be a date earlier than the date on which such action is taken by the Board of Directors, nor more than sixty , nor less than ten days before the particular event requiring such determination of shareholders. The Secretary of the Corporation shall make, or cause to be made, at least two days after the meeting notice is given and continuing until the date of the meeting, a list or other record of the shareholders entitled to vote at such meeting , with the address of , and the number and class of shares held by each.

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Section 7. Quorum and Required Vote. The holders of a majority of the stock entitled to vote, represented in person or by proxy, shall constitute a quorum at a meeting of shareholders except as otherwise specifically provided by the By-Laws, by the Certificate of Incorporation or by law. The affirmative vote, at a meeting of shareholders duly held and at which a quorum is present, of a majority of the voting power of the shares represented at such meeting which are entitled to vote on the subject matter shall be the act of the shareholders, except as is otherwise specially provided by a By-Law, by the Certificate of Incorporation or law. The holders of a majority of the voting power of the shares entitled to vote represented at a meeting may adjourn such meeting from time to time.

Section 8. Voting. Each holder of voting stock shall be entitled to vote in person or by proxy at each meeting, and he shall have one vote for each share of voting stock registered in his name. However, a proxy shall not be valid after eleven months from its date of execution, unless it specifies the length of time for which it shall continue in force or limits its use to a particular meeting not yet held.

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Section 9. [Action Without a Meeting . Any action which may be taken at a meeting of shareholders may be taken without a meeting , if consent in writing , setting forth such action, is signed by all of the persons who would be entitled to vote upon such act ion at a meeting, or by their duly authorized attorneys.]

ARTICLE III: BOARD OF DIRECTORS

Section 1. Number. The number of directors who will constitute the entire Board of Directors shall be not less than three nor more than fifteen. The number of directorships at any time shall be that number most recently fixed by resolution of the Board of Directors or the shareholders or , absent such action, shall be that number of directors elected at the preceding annual meeting or substitute annual meeting of shareholders, plus the number elected since such meeting , if any , to fill a vacancy created by an increase in the size of the Board, provided, however, that at such times as the Corporation has less than three shareholders, the number of directors may not be less than the number of shareholders and at such times as the Corporation has three or more shareholders, the number of directors must at least be three.

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Section 2. Election. Members of the initial Board of Directors as elected at the organization meeting shall hold office until the first annual meeting of shareholders and until their respective successors shall have been duly elected and qualified. At each annual meeting of shareholders, directors shall be elected to hold office until the next succeeding annual meeting and until their respective successors have been duly elected and qualified.

Section 3. Regular Meetings. Regular meetings of the Board of Directors may be held with or without notice at such time and place as the Board may from time to time determine.

Section 4. Special Meetings. Special meetings of the Board may be called by any director, the Chairman of the Board on at least two days' notice to each director given either by mail, n or orally, in person or by telephone or e-mail. Said notice may be waived by a written waiver signed by all of the directors who receive no such notice of meeting. Attendance by a director at a meeting, without protesting, prior to or at the commencement of the meeting, the lack of proper notice, shall be deemed to be a waiver by such director of notice of such meeting.

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Section 5. Quorum. At all meetings of the Board of Directors, a majority of directors shall constitute a quorum for the transaction of business. The act of a majority of the directors present at a meeting at which a quorum is present shall be the act of the Board of Directors unless a greater number is specially required by the By-Laws, by the Certificate of Incorporation or by law. A meeting may be adjourned by less than a quorum if a quorum is not present at the meeting. A director may participate at a meeting of the Board of Directors by means of a conference telephone or similar communications equipment, provided such equipment enables all directors at a meeting to hear one another.

Section 6. Committees of Directors. The Board of Directors, by resolution adopted by a majority of the entire Board, designate two or more directors to constitute an executive committee or other committee and may appoint or provide for the appointment of one or more directors as alternate members of any such committee, who may replace any absent or disqualified member at any meeting of the committee. Any such committee shall have and may exercise the powers of the Board of Directors in the management of the business, property and affairs of the Corporation, as shall be provided in these By-Laws or in the resolution of the Board constituting the committee. All committees shall keep records of their acts and proceedings and report the same to the Board of Directors as and when required. Any director may be removed from a committee with or without cause by the affirmative vote of a majority of the entire Board of Directors.

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Section 7. Action Without a Meeting. If all of the directors or all members of a committee of the Board of Directors, as the case may be, severally or collectively, consent in writing to any action taken or to be taken by the Corporation, and the number of such directors or members constitutes a quorum for such action, such action shall be as valid corporate action as though it had been authorized at a meeting of the Board of Directors or committee, as the case may be.

Section 8. Resignation and Removal. Unless otherwise provided in any contract with the Corporation, any director may resign or be removed at any time. A director who intends to resign shall give written notice to the president or to the secretary. Removal of a director, with or without cause, may be effected by the affirmative vote of the holders of a majority of the stock entitled to vote.

Section 9. Vacancies. Any vacancy occurring on the Board of Directors, including a vacancy resulting from an increase in the number of directors, may be filled by the affirmative vote of a majority of the remaining directors though less than a quorum of the Board. A director elected to fill a vacancy shall be elected for the unexpired term of his predecessor and until his successor is duly chosen.

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Section 10. Compensation of Directors. The directors may be reimbursed for any expenses incurred by them in attendance at any meeting of the Board of Directors or of any of its committees. Every director may be paid a stated salary as director and/or a fixed sum for attendance at each meeting which he attends. No payments or reimbursements described herein shall preclude any director from serving the Corporation in any other capacity and receiving compensation therefor.

Nomination of Directors.

(a) Only persons who are nominated in accordance with the following procedures shall be eligible for election as directors at any annual or special meeting of stockholders. Nominations of persons for election as directors may be made only by or at the direction of the Board of Directors, or by a qualifying stockholder at any annual meeting of stockholders or at any special meeting for which the election of directors is a purpose specified in the notice of meeting given by the person calling the special meeting. A nomination by a qualifying stockholder may be made only pursuant to timely notice in proper written form to the Secretary. To be in proper form, such stockholder's notice shall set forth:

- (i) as to each person whom the stockholder proposes to nominate for election or reelection as a director :
    - (A) the name, age, business address and residence address of the person,
    - (B) the principal occupation or employment of the person,
    - (C) the class and number of shares of capital stock of the corporation that are, directly or indirectly, owned, beneficially or of record, by the person and/or the person's affiliates and associates,
    - (D) a description of all direct and indirect compensation and other material monetary agreements , arrangements and understandings during the past three years, and any other material relationships, between or among (x) the nominating stockholder, each other beneficial owner of the corporation's capital stock, if any, on whose behalf the nomination is being made and the respective affiliates and associates of , or others acting in concert with, such stockholder and any such other such beneficial owner, on the one hand, and (y) each proposed nominee and his or her respective affiliates and associates, or others acting in concert with such nominee(s), on the other hand, including all information that would be required to be disclosed pursuant to Item 404 of Securities and Exchange Commission ("SEC") Regulation S-K if the nominating stockholder and any such beneficial owner or any affiliate or associate thereof or person acting in concert therewith were the "registrant" for purposes of such Item and the proposed nominee were a director of such registrant, and
    - (E) any other information relating to the proposed nominee and his or her affiliates and associates that is required to be disclosed in solicitations for proxies for election of directors pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended (the "Exchange Act " ) ; and
  - (ii) as to the nominating stockholder and each beneficial owner, if any, on whose behalf the nomination is being made:
    - (A) the name, address and principal occupation or business activity of such stockholder and each such beneficial owner,
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(B) the class, series, and number of shares of capital stock of the corporation that are, directly or indirectly, owned, beneficially or of record, by such stockholder and each such beneficial owner and their respective affiliates and associates,

(C) a description of any agreement, arrangement or understanding between or among such stockholder and / or such beneficial owner and/or their respective affiliates and associates and each proposed nominee, the nominee's affiliates and associates and any other person or persons (including their names) pursuant to which the nomination(s) are being made or who may participate in the solicitation of proxies in favor of electing such nominee(s),

(D) a description of any agreement, arrangement or understanding (including any derivative or short positions, swaps, profits interests, options, warrants, convertible securities, stock appreciation or similar rights, hedging transactions, and borrowed or loaned shares) that has been entered into by, or on behalf of, such stockholder or any such beneficial owner, or any of their respective affiliates and associates, the effect or intent of which is to mitigate loss to , manage risk or benefit of share price changes for, or increase or decrease the voting power of, such stockholder or any such beneficial owner or any of their respective affiliates and associates with respect to shares of stock of the corporation,

(E) a description of any material pending or threatened legal proceeding in which such stockholder or any such beneficial owner or any of their respective affiliates and associates is a party or material participant involving the corporation or any affiliate of the corporation,

(F) any other material relationship between such stockholder or any such beneficial owner or any of their respective affiliates and associates , on the one hand, and the corporation, any affiliate of the corporation, or any principal competitor of the corporation, on the other hand,

(G) any direct or indirect material interest of such stockholder or any such beneficial owner or any of their respective affiliates and associates in any material contract or agreement with the corporation , any affiliate of the corporation or any principal competitor of the corporation (the information called for by clauses (0) through (G) is referred to hereinafter as the "Stockholder Information"),

(H) any other information relating to such stockholder and any such beneficial owner and their respective affiliates and associates that would be required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for the election of directors in a contested election pursuant to Section 14 of the Exchange Act and the rules and regulations promulgated thereunder,

(I) a representation that such stockholder is entitled to vote for the election of directors at the meeting and intends to appear in person or by proxy at the meeting to nominate the person(s) named in its notice, and

(J) a representation whether such stockholder and / or any such beneficial owner intends or is part of a group that intends (x) to deliver a proxy statement and/or form of proxy to holders of at least the percentage of the corporation's outstanding capital stock reasonably believed by such stockholder or such beneficial owner to be sufficient to elect the nominee (and such representation shall be included in any such proxy statement and form of proxy) and/or (y) otherwise to solicit proxies from stockholders in support of such nomination (and such representation shall be included in any such solicitation materials).

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The foregoing notwithstanding, the Stockholder Information need not be provided with respect to the ordinary course business activities of any broker, dealer, bank, or other nominee who is a nominating stockholder solely as a result of being the stockholder directed to prepare and submit the notice required by these by-laws on behalf of a beneficial owner. A stockholder shall not have complied with this Section 1.6 if the stockholder (or any beneficial owner on whose behalf the nomination is made) solicits or does not solicit, as the case may be, proxies in support of such stockholder's nominee in contravention of the representations with respect thereto made pursuant to the foregoing clause (J).

(b) To be eligible to be a nominee for election or reelection as a director of the corporation, a person must deliver timely notice to the Secretary of the corporation at the principal executive offices of the corporation his or her written consent to serve as a director if elected and a written questionnaire with respect to his or her background and qualification (which questionnaire shall be provided by the Secretary upon written request) and a written representation and agreement (in the form provided by the Secretary upon written request) that he or she

- (i) is not and will not become a party to (A) any agreement, arrangement or understanding with, and has not given any commitment or assurance to, any person or entity as to how he or she, if elected as a director of the corporation, will act or vote on any issue or question (a "Voting Commitment") that has not been disclosed to the corporation or (B) any Voting Commitment that could limit or interfere with his or her ability to comply, if elected as a director of the corporation, with his or her fiduciary duties under applicable law,
- (ii) is not and will not become a party to any agreement, arrangement or understanding with any person or entity other than the corporation with respect to any direct or indirect compensation, reimbursement or indemnification in connection with service or action as a director that has not been disclosed therein, and
- (iii) in his or her individual capacity and on behalf of any person or entity on whose behalf the nomination is being made, would be in compliance, if elected as a director of the corporation, and will comply with, applicable law and all applicable publicly disclosed corporate governance, conflict of interest, corporate opportunities, confidentiality and stock ownership and trading policies and guidelines of the corporation.

The corporation may require any proposed nominee to furnish such other information as the corporation may reasonably require to determine the eligibility of such proposed nominee to serve as a director of the corporation or whether such nominee would be independent under applicable SEC and stock exchange listing standards and the corporation's publicly disclosed corporate governance guidelines.

(c) Not later than each of (i) five days after the record date for the meeting and (ii) eight days before the meeting, the nominating stockholder and the proposed nominee shall supplement the information required by Section 1.6(a)(i), clauses (A)-(H) of Section 1.6(a)(ii), and Section 1.6(b), as applicable, by providing to the Secretary at the principal executive offices of the corporation updated information current as of the record date and as of the tenth day before the meeting, respectively.

(d) The chairman of the meeting shall, if the facts warrant, determine and declare to the meeting that a nomination was not made in accordance with the foregoing procedure, and if the chairman should so determine, he or she shall so declare to the meeting and the defective nomination shall be disregarded.

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## ARTICLE IV: OFFICERS

Section 1. Election. A Chief Executive Officer, a secretary and when deemed necessary by the Board of Directors, a chairman of the Board, one or more vice presidents, a treasurer and such other officers and assistant officers shall be elected by the Board of Directors to hold office until their respective successors are duly elected and qualified. Any two or more offices may be held by the same person except the offices of Chief Executive Officer and Secretary.

Section 2. Chairman of the Board. The Chairman of the Board (who may also be designated as Executive Chairman if serving as an employee of the Corporation), if such an officer be elected, shall preside at all meetings of the Board of Directors and of the shareholders of the Corporation. In the Chairman of the Board's absence, such duties shall be attended to by any vice chairman of the Board of Directors, or if there is no vice chairman, or such vice chairman is absent, then by the Independent Lead Director. The Chairman of the Board shall act as liaison between the Board of Directors and the executive officers of the Corporation and shall be responsible for general oversight of such executive officers. The Chairman of the Board may also, but shall not be required to, hold the position of Chief Executive Officer of the Corporation, if so elected or appointed by the Board of Directors. The Chairman of the Board shall formulate and submit to the Board of Directors matters of general policy for the Corporation and shall perform such other duties as usually appertain to the office or as may be prescribed by the Board of Directors.

Section 3. Chief Executive Officer. The Chief Executive Officer shall have the general powers and duties of supervision and management usually vested in the office of Chief Executive Officer of a corporation.

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In the absence or nonelection of a chairman, the independent lead director shall preside at all meetings of the Board of Directors and shareholders, discharging the duties incumbent upon a the independent lead director .

The Chief Executive Officer shall have the direction of all other officers, agents and employees of the Corporation and shall see that all orders and resolutions of the Board are carried into effect. The Chief Executive Officer shall also perform such other duties and exercise such other powers as the By-Laws may provide or the Board of Directors may assign.

Section 4. Vice President. Vice presidents, when elected, shall have such powers and perform such duties as the Chief Executive Officer may from time to time assign and shall perform such other duties as may be prescribed by these By-Laws.

Section 5. Secretary. The secretary shall keep true and complete records of the proceedings of the meetings of the shareholders, the Board of Directors and any committees of directors and shall file any written consents of the shareholders, the Board of Directors and any committees of directors with these records. It shall be the duty of the secretary to be custodian of the records and of the seal of the Corporation. The Secretary shall also attend to the giving of all notices and shall perform such other duties as the By-Laws may provide or the Board of Directors may assign.

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Section 6. Assistant Secretary. If one shall be elected, the assistant secretary shall have such powers and perform such duties as the president, secretary or the Board may from time to time assign and shall perform such other duties as may be prescribed by these By-Laws. At the request of the secretary, or in case of his absence or inability to act, the assistant secretary shall perform the duties of the secretary and, when so acting, shall have all the powers of, and be subject to all the restrictions upon, the secretary.

Section 7. Treasurer. If one shall be elected, the treasurer shall keep correct and complete records of account showing accurately at all times the financial condition of the Corporation. The treasurer shall also act as legal custodian of all moneys, notes, securities, and other valuables that may from time to time come into the possession of the Corporation, and shall promptly deposit all funds of the Corporation coming into his hands in the bank or other depository designated by the Board of Directors and shall keep this bank account in the name of the Corporation. Whenever requested by the Board of Directors, the treasurer shall furnish a statement of the financial condition of the Corporation and shall perform such other duties as the By-Law's may provide and the Board of Directors may assign.

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Section 8. Assistant Treasurer. If one shall be elected, the assistant treasurer shall have such powers and perform such duties as the president, treasurer or Board may from time to time assign and shall perform such other duties as may be prescribed by these By-Laws. At the request of the treasurer , or in case of his absence or inability to act , the assistant treasurer shall perform the duties of the treasurer and, when so acting , shall have all the powers of , and be subject to all the restrictions upon, the treasurer.

Section 9. Other Officers. Such other officers as are appointed shall exercise such duties and have such powers as the Board of Directors may assign.

Section 10. Transfer of Authority. In case of the absence of any officer of the Corporation or for any other reason that the Board of Directors may deem sufficient , the Board of Directors may transfer the powers or duties of that officer to any other officer or to any director or employee of the Corporation, provided that a majority of the entire Board of Directors approves.

Section 11. Resignation and Removal. Unless otherwise provided in any contract with the Corporation, any officer may resign or be removed at any time. An officer who intends to resign shall give written notice to the Board of Directors in care of the Chief Executive Officer or the Secretary. Removal of an officer, with or without cause, may be effected by the Board of Directors.

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Section 12. Vacancies. A vacancy occurring in any office may be filled for the unexpired portion of the term of office by the Board of Directors.

ARTICLE V: CAPITAL STOCK

Section 1. Consideration and Payment. The capital stock may be issued for such consideration as may be fixed from time to time by the Board of Directors, provided, however, that the consideration may not be less than the par value of any of such stock having a par value. Payment of such consideration may be made, in whole or in part, in (a) cash, securities or other property of any description, or any interest therein, (b) labor or services rendered to or for the benefit of the Corporation, or (c) shares, securities or other obligations of the Corporation actually surrendered, cancelled or reduced. No certificate shall be issued for any shares until such shares are fully paid.

Section 2. Certificates Representing Shares. Shares of the Corporation stock may be certificated or uncertificated. Each holder of stock in the Corporation represented by certificates, any upon request of every holder of uncertificated shares, shall be entitled to have a certificate signed by or in the name of the Corporation by the Chairman of the Board and the Secretary certifying the number of shares owned by the shareholder and sealed with the seal or a facsimile of the seal of the Corporation. Any or all of the signatures on the certificate may be a facsimile. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the Corporation with the same effect as if he were such officer, transfer agent, or registrar at the date of issue.

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Section 3. Lost Certificates. Whenever a person shall request the issuance of a certificate of stock to replace a certificate alleged to have been lost by theft, destruction or otherwise, the Board of Directors shall require that such person make an affidavit to the fact of such loss before the Board shall authorize the requested issuance. Before issuing a new certificate, the Board may also require a bond of indemnity against any claim that may be made against the Corporation with respect to the certificate alleged to have been lost.

Section 4. Transfer of Stock. The Corporation or its transfer agent shall register a transfer of a stock certificate, issue a new certificate and cancel the old certificate upon presentation for transfer of a stock certificate duly endorsed or accompanied by proper evidence of succession, assignment or authority to transfer if there has been compliance with any applicable tax law relating to the collection of taxes and after the Corporation or its agent has discharged any duty to inquire into any adverse claims of which the Corporation or agent has notice. Notwithstanding the foregoing, no such transfer shall be effected by the Corporation or its transfer agent if such transfer is prohibited by law, by the Certificate of Incorporation or a By-Law of the Corporation or by any contract or agreement to which the Corporation is a party.

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Section 5. Regulation. The Board of Directors shall make such regulations as it may deem expedient concerning the issue, transfer and registration of shares.

ARTICLE VI: DIVIDENDS AND RESERVES

Section 1. Dividends. Subject to any limitations or conditions contained in the Certificate of Incorporation, dividends may be declared by a resolution duly adopted by the Board of Directors and may be paid in cash; property or in shares of the capital stock of the Corporation.

Section 2. Reserves. Before payment of any dividend, the Board of Directors may set aside out of any funds available for dividends such sum or sums as the Board, in its absolute discretion, may determine as a reserve or reserves to meet contingencies, to equalize dividends, to repair or maintain property or to serve other purposes conducive to the interests of the Corporation.

ARTICLE VII: SPECIAL CORPORATE ACTS

Section 1. All checks, drafts, notes, bonds, bills of exchange, and orders for the payment of money of the Corporation; all deeds, mortgages and other written contracts and agreements to which the Corporation shall be a party; and all assignments or endorsements of stock certificates, registered bonds or other securities owned by the Corporation shall be signed by the Chief Executive Officer, and, if required by law, attested by the secretary or an assistant secretary, unless otherwise directed by the Board of Directors or otherwise required by law.

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ARTICLE VIII: FISCAL YEAR

Section 1. The fiscal year of the Corporation shall be determined by resolution of the Board of Directors.

ARTICLE IX: INDEMNIFICATION

Section 1. The Corporation shall indemnify its directors, and officers .

ARTICLE X: AMENDMENT OF BY-LAWS

Section 1. These By-Laws may be amended or repealed or new By-Laws may be adopted by the affirmative vote of the holders of a majority of the stock entitled to vote at any meeting of shareholders or by the affirmative vote of directors holding a majority of the directorships at any meeting of directors provided that notice of such amendment, repeal or adoption of new By-Laws be included in the notice of such meeting.

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# EMPLOYEE STOCK PURCHASE PLAN

(Amended and Current as of April 8, 2010)

## 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 1,200,000. 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.

**Photronics, Inc.**  
**2007 Long Term Equity Incentive Plan**  
(as Amended on April 8, 2010)

**1. Purposes of the Plan**

The purposes of the Plan are to (a) promote the long-term success of the Company and its Subsidiaries and to increase stockholder value by providing Eligible Individuals with incentives to contribute to the long-term growth and profitability of the Company by offering them an opportunity to obtain a proprietary interest in the Company through the grant of equity-based awards and (b) assist the Company in attracting, retaining and motivating highly qualified individuals who are in a position to make significant contributions to the Company and its Subsidiaries.

Upon the Effective Date, no further Awards will be granted under the Prior Plans.

**2. Definitions and Rules of Construction**

(a) Definitions. For purposes of the Plan, the following capitalized words shall have the meanings set forth below:

“*Award*” means an Option, Restricted Stock, Restricted Stock Unit, Stock Appreciation Right, Performance Stock, Performance Unit or Other Award granted by the Committee pursuant to the terms of the Plan.

“*Award Document*” means an agreement, certificate or other type or form of document or documentation approved by the Committee that sets forth the terms and conditions of an Award. An Award Document may be in written, electronic or other media, may be limited to a notation on the books and records of the Company and, unless the Committee requires otherwise, need not be signed by a representative of the Company or a Participant.

“*Beneficial Owner*” and “*Beneficially Owned*” have the meaning set forth in Rule 13d-3 under the Exchange Act.

“*Board*” means the Board of Directors of the Company, as constituted from time to time.

“*Change of Control*” means:

(i) Any Person becomes the Beneficial Owner, directly or indirectly, of securities of the Company representing thirty-five percent (35%) or more of the combined voting power of the Company’s then outstanding securities; or

(ii) The following individuals cease for any reason to constitute a majority of the number of directors then serving: individuals who, on the Effective Date, constitute the Board and any new director (other than a director whose initial assumption of office is in connection with an actual or threatened election contest, including, but not limited to, a consent solicitation, relating to the election of directors of the Company) whose appointment or election by the Board or nomination for election by the Company’s stockholders was approved or recommended by a vote of at least a majority of the directors then still in office who either were directors on the Effective Date or whose appointment, election or nomination for election was previously so approved or recommended; or

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(iii) There is consummated a merger or consolidation of the Company or any Subsidiary with any other corporation, other than (A) a merger or consolidation which would result in the voting securities of the Company outstanding immediately prior to such merger or consolidation continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity or any parent thereof), in combination with the ownership of any trustee or other fiduciary holding securities under an employee benefit plan of the Company or any Subsidiary of the Company, more than fifty percent (50%) of the combined voting power of the securities of the Company or such surviving entity or any parent thereof outstanding immediately after such merger or consolidation, or (B) a merger or consolidation effected to implement a recapitalization of the Company (or similar transaction) in which no Person is or becomes the Beneficial Owner, directly or indirectly, of securities of the Company representing thirty-five percent (35%) or more of the combined voting power of the Company's then outstanding securities; or

(iv) The stockholders of the Company approve a plan of complete liquidation or dissolution of the Company or there is consummated an agreement for the sale or disposition by the company of all or substantially all of the Company's assets, other than a sale or disposition by the Company of all or substantially all of the Company's assets to an entity, more than fifty percent (50%) of the combined voting power of the voting securities of which are owned by stockholders of the Company in substantially the same proportions as their ownership of the Company immediately prior to such sale.

Notwithstanding the foregoing, with respect to an Award that is subject to Section 409A of the Code and the payment or settlement of the Award will accelerate upon a Change of Control, no event set forth herein will constitute a Change of Control for purposes of the Plan or any Award Document unless such event also constitutes a "change in ownership," "change in effective control," or "change in the ownership of a substantial portion of the Company's assets" as defined under Section 409A of the Code.

" *Code* " means the Internal Revenue Code of 1986, as amended, and the applicable rulings and regulations promulgated thereunder.

" *Committee* " means the Compensation Committee of the Board, any successor committee thereto or any other committee appointed from time to time by the Board to administer the Plan, which committee shall meet the requirements of Section 162(m) of the Code, Section 16(b) of the Exchange Act and the applicable rules of the NASDAQ; *provided, however*, that, if any Committee member is found not to have met the qualification requirements of Section 162(m) of the Code and Section 16(b) of the Exchange Act, any actions taken or Awards granted by the Committee shall not be invalidated by such failure to so qualify.

" *Common Stock* " means the common stock of the Company, par value \$0.01 per share, or such other class of share or other securities as may be applicable under Section 13 of the Plan.

" *Company* " means Photonics, Inc., a Connecticut corporation, or any successor to all or substantially all of the Company's business that adopts the Plan.

" *EBITDA* " means earnings before interest, taxes, depreciation and amortization.

“ *Effective Date* ” means the date on which the Plan is adopted by the Board and approved by the Shareholders of the Company.

“ *Eligible Individuals* ” means the individuals described in Section 4(a) of the Plan who are eligible for Awards under the Plan.

“ *Exchange Act* ” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“ *Fair Market Value* ” means, with respect to a share of Common Stock, the fair market value on the date of valuation of such Award as determined by the Compensation Committee; provided, however, that with respect to an incentive stock option issued to a 10% or more shareholder, Fair Market Value shall mean 110% of the fair market value or such other percentage as may be permitted by the Code and regulations promulgated thereunder.

“ *Incentive Stock Option* ” means an Option that is intended to comply with the requirements of Section 422 of the Code or any successor provision thereto.

“ *NASDAQ* ” means the NASDAQ Stock Market, Inc.

“ *Non-Employee Director* ” means any member of the Board who is not an officer or employee of the Company or any Subsidiary.

“ *Nonqualified Stock Option* ” means an Option that is not intended to comply with the requirements of Section 422 of the Code or any successor provision thereto.

“ *Option* ” means an Incentive Stock Option or Nonqualified Stock Option granted pursuant to Section 7 of the Plan.

“ *Other Award* ” means any form of Award other than an Option, Restricted Stock, Restricted Stock Unit or Stock Appreciation Right granted pursuant to Section 11 of the Plan.

“ *Participant* ” means an Eligible Individual who has been granted an Award under the Plan.

“ *Performance Period* ” means the period established by the Committee and set forth in the applicable Award Document over which Performance Targets are measured.

“ *Performance Stock* ” means a Target Number of Shares granted pursuant to Section 10(a) of the Plan.

“ *Performance Target* ” means the performance measures established by the Committee, from among the performance criteria provided in Section 6(g), and set forth in the applicable Award Document.

“ *Performance Unit* ” means a right to receive a Target Number of Shares or cash in the future granted pursuant to Section 10(b) of the Plan.

“ *Permitted Transferees* ” means (i) a Participant’s family member, (ii) one or more trusts established in whole or in part for the benefit of one or more of such family members, (iii) one or more entities which are beneficially owned in whole or in part by one or more such family members, or (iv) a charitable or not-for-profit organization.

“ **Person** ” means any person, entity or "group" within the meaning of Section 13(d)(3) or Section 14(d)(2) of the Exchange Act, except that such term shall not include (i) the Company or any of its Subsidiaries, (ii) a trustee or other fiduciary holding securities under an employee benefit plan of the Company, (iii) an underwriter temporarily holding securities pursuant to an offering of such securities, (iv) a corporation owned, directly or indirectly, by the stockholders of the Company in substantially the same proportions as their ownership of stock of the Company, or (v) a person or group as used in Rule 13d-1(b) under the Exchange Act.

“ **Plan** ” means this 2007 Long Term Equity Incentive Plan, as amended or restated from time to time.

“ **Plan Limit** ” means the maximum aggregate number of Shares that may be issued for all purposes under the Plan as set forth in Section 5(a) of the Plan.

“ **Prior Plan** ” means the 1996 Stock Option Plan, the 1998 Stock Option Plan, and the 2000 Stock Plan, as amended from time to time.

“ **Restricted Stock** ” means one or more Shares granted or sold pursuant to Section 8(a) of the Plan.

“ **Restricted Stock Unit** ” means a right to receive one or more Shares (or cash, if applicable) in the future granted pursuant to Section 8(b) of the Plan.

“ **Shares** ” means shares of Common Stock, as may be adjusted pursuant to Section 13(b).

“ **Stock Appreciation Right** ” means a right to receive all or some portion of the appreciation on Shares granted pursuant to Section 9 of the Plan.

“ **Subsidiary** ” means (i) a corporation or other entity with respect to which the Company, directly or indirectly, has the power, whether through the ownership of voting securities, by contract or otherwise, to elect at least a majority of the members of such corporation’s board of directors or analogous governing body, or (ii) any other corporation or other entity in which the Company, directly or indirectly, has an equity or similar interest and which the Committee designates as a Subsidiary for purposes of the Plan. For purposes of determining eligibility for the grant of Incentive Stock Options under the Plan, the term “Subsidiary” shall be defined in the manner required by Section 424(f) of the Code.

“ **Substitute Award** ” means any Award granted upon assumption of, or in substitution or exchange for, outstanding employee equity awards previously granted by a company or other entity acquired by the Company or with which the Company combines pursuant to the terms of an equity compensation plan that was approved by the stockholders of such company or other entity.

“ **Target Number** ” means the target number of Shares or cash value established by the Committee and set forth in the applicable Award Document.

(b) Rules of Construction. The masculine pronoun shall be deemed to include the feminine pronoun, and the singular form of a word shall be deemed to include the plural form, unless the context requires otherwise. Unless the text indicates otherwise, references to sections are to sections of the Plan.

### 3. Administration

(a) Committee. The Plan shall be administered by the Committee, which shall have full power and authority, subject to the express provisions hereof, to:

(i) select the Participants from the Eligible Individuals;

(ii) grant Awards in accordance with the Plan;

(iii) determine the number of Shares subject to each Award or the cash amount payable in connection with an Award;

(iv) determine the terms and conditions of each Award, including, without limitation, those related to term, permissible methods of exercise, vesting, cancellation, payment, settlement, exercisability, Performance Periods, Performance Targets, and the effect, if any, of a Participant's termination of employment with the Company or any of its Subsidiaries or, subject to Section 6(d), a Change of Control of the Company;

(v) subject to Sections 16 and 17(e) of the Plan, amend the terms and conditions of an Award after the granting thereof;

(vi) specify and approve the provisions of the Award Documents delivered to Participants in connection with their Awards;

(vii) construe and interpret any Award Document delivered under the Plan;

(viii) make factual determinations in connection with the administration or interpretation of the Plan;

(ix) adopt, prescribe, amend, waive and rescind administrative regulations, rules and procedures relating to the Plan;

(x) employ such legal counsel, independent auditors and consultants as it deems desirable for the administration of the Plan and to rely upon any advice, opinion or computation received therefrom;

(xi) vary the terms of Awards to take account of tax and securities law and other regulatory requirements or to procure favorable tax treatment for Participants;

(xii) correct any defects, supply any omission or reconcile any inconsistency in any Award Document or the Plan; and

(xiii) make all other determinations and take any other action desirable or necessary to interpret, construe or implement properly the provisions of the Plan or any Award Document.

(b) Plan Construction and Interpretation. The Committee shall have full power and authority, subject to the express provisions hereof, to construe and interpret the Plan.

(c) Determinations of Committee Final and Binding. All determinations by the Committee in carrying out and administering the Plan and in construing and interpreting the Plan shall be made in the Committee's sole discretion and shall be final, binding and conclusive for all purposes and upon all persons interested herein.

(d) Delegation of Authority. To the extent not prohibited by applicable laws, rules and regulations, the Committee may, from time to time, delegate some or all of its authority under the Plan to a subcommittee or subcommittees thereof or other persons or groups of persons as it deems necessary, appropriate or advisable under such conditions or limitations as it may set at the time of such delegation or thereafter; *provided, however*, that the Committee may not delegate its authority (i) to make Awards to employees (A) who are subject on the date of the Award to the reporting rules under Section 16(a) of the Exchange Act, (B) whose compensation for such fiscal year may be subject to the limit on deductible compensation pursuant to Section 162(m) of the Code or (C) who are officers of the Company who are delegated authority by the Committee hereunder, or (ii) pursuant to Section 16 of the Plan. For purposes of the Plan, reference to the Committee shall be deemed to refer to any subcommittee, subcommittees, or other persons or groups of persons to whom the Committee delegates authority pursuant to this Section 3(d).

(e) Liability of Committee. Subject to applicable laws, rules and regulations: (i) no member of the Board or Committee (or its delegates) shall be liable for any good faith action or determination made in connection with the operation, administration or interpretation of the Plan and (ii) the members of the Board or the Committee (and its delegates) shall be entitled to indemnification and reimbursement in the manner provided in the Company's Certificate of Incorporation as it may be amended from time to time. In the performance of its responsibilities with respect to the Plan, the Committee shall be entitled to rely upon information and/or advice furnished by the Company's officers or employees, the Company's accountants, the Company's counsel and any other party the Committee deems necessary, and no member of the Committee shall be liable for any action taken or not taken in reliance upon any such information and/or advice.

(f) Action by the Board. Anything in the Plan to the contrary notwithstanding, subject to applicable laws, rules and regulations, any authority or responsibility that, under the terms of the Plan, may be exercised by the Committee may alternatively be exercised by the Board.

#### **4. Eligibility**

(a) Eligible Individuals. Awards may be granted to officers, employees, directors, Non-Employee Directors, consultants, advisors and independent contractors of the Company or any of its Subsidiaries or joint ventures, partnerships or business organizations in which the Company or its Subsidiaries have an equity interest; *provided, however*, that only employees of the Company or Subsidiary may be granted Incentive Stock Options. The Committee shall have the authority to select the persons to whom Awards may be granted and to determine the type, number and terms of Awards to be granted to each such Participant. Under the Plan, references to "employment" or "employed" include the engagement of Participants who are consultants, advisors and independent contractors of the Company or its Subsidiaries and the service of Participants who are Non-Employee Directors, except for purposes of determining eligibility to be granted Incentive Stock Options.

(b) Grants to Participants. The Committee shall have no obligation to grant any Eligible Individual an Award or to designate an Eligible Individual as a Participant solely by reason of such Eligible Individual having received a prior Award or having been previously designated as a Participant. The Committee may grant more than one Award to a Participant and may designate an Eligible Individual as a Participant for overlapping periods of time.

## 5. Shares Subject to the Plan

(a) Plan Limit. Subject to adjustment in accordance with Section 13 of the Plan, the maximum aggregate number of Shares that may be issued for all purposes under the Plan shall be six million (6,000,000) plus any Shares that are available for issuance under the Prior Plans or that become available for issuance upon cancellation or expiration of awards granted under the Prior Plans without having been exercised or settled. 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) and that are being held in treasury, or a combination thereof. All of the Shares subject to the Plan Limit may be issued pursuant to Incentive Stock Options.

(b) Rules Applicable to Determining Shares Available for Issuance. The number of Shares remaining available for issuance will be reduced by the number of Shares subject to outstanding Awards and, for Awards that are not denominated by Shares, by the number of Shares actually delivered upon settlement or payment of the Award. For purposes of determining the number of Shares that remain available for issuance under the Plan, (i) the number of Shares that are tendered by a Participant or withheld by the Company to pay the exercise price of an Award or to satisfy the Participant's tax withholding obligations in connection with the exercise or settlement of an Award and (ii) all of the Shares covered by a stock-settled Stock Appreciation Right to the extent exercised, will not be added back to the Plan Limit. In addition, for purposes of determining the number of Shares that remain available for issuance under the Plan, the number of Shares corresponding to Awards under the Plan that are forfeited or cancelled or otherwise expire for any reason without having been exercised or settled or that is settled through issuance of consideration other than Shares (including, without limitation, cash) shall be added back to the Plan Limit and again be available for the grant of Awards; *provided, however*, that this provision shall not be applicable with respect to (i) the cancellation of a Stock Appreciation Right granted in tandem with an Option upon the exercise of the Option or (ii) the cancellation of an Option granted in tandem with a Stock Appreciation Right upon the exercise of the Stock Appreciation.

(c) Special Limits. Anything to the contrary in Section 5(a) above notwithstanding, but subject to adjustment under Section 13 of the Plan, the following special limits shall apply to Shares available for Awards under the Plan:

(i) the maximum number of Shares that may be issued pursuant to awards of Restricted Stock, Restricted Stock Units, Performance Stock, Performance Units and Other Awards that are payable in Shares granted under the Plan shall equal fifteen percent of the Shares in the aggregate;

(ii) the maximum amount of Awards (other than those Awards set forth in Section 5(c)) that may be awarded to any Eligible Individual in any calendar year is fifteen percent of the Shares measured as of the date of grant (with respect to Awards denominated in Shares).

(d) Any Shares underlying Substitute Awards shall not be counted against the number of Shares remaining for issuance and shall not be subject to Section 5(c).

## 6. Awards in General

(a) Types of Awards. Awards under the Plan may consist of Options, Restricted Stock, Restricted Stock Units, Stock Appreciation Rights, Performance Stock, Performance Units and Other Awards. Any Award described in Sections 7 through 11 of the Plan may be granted singly or in combination or tandem with any other Award, as the Committee may determine. Awards under the Plan may be made in combination with, in replacement of, or as alternatives to awards or rights under any other compensation or benefit plan of the Company, including the plan of any acquired entity.

(b) Terms Set Forth in Award Document. The terms and conditions of each Award shall be set forth in an Award Document in a form approved by the Committee for such Award, which Award Document shall contain terms and conditions not inconsistent with the Plan. Notwithstanding the foregoing, and subject to applicable laws, the Committee may accelerate (i) the vesting or payment of any Award, (ii) the lapse of restrictions on any Award or (iii) the date on which any Award first becomes exercisable. The terms of Awards may vary among Participants, and the Plan does not impose upon the Committee any requirement to make Awards subject to uniform terms. Accordingly, the terms of individual Award Documents may vary.

(c) Termination of Employment. The Committee shall specify at or after the time of grant of an Award the provisions governing the disposition of an Award in the event of a Participant's termination of employment with the Company or any of its Subsidiaries. Subject to applicable laws, rules and regulations, in connection with a Participant's termination of employment, the Committee shall have the discretion to accelerate the vesting, exercisability or settlement of, eliminate the restrictions and conditions applicable to, or extend the post-termination exercise period of an outstanding Award. Such provisions may be specified in the applicable Award Document or determined at a subsequent time.

(d) Change of Control. (i) The Committee shall have full authority to determine the effect, if any, of a Change of Control of the Company or any Subsidiary on the vesting, exercisability, settlement, payment or lapse of restrictions applicable to an Award, which effect may be specified in the applicable Award Document or determined at a subsequent time. Subject to applicable laws, rules and regulations, the Board or the Committee shall, at any time prior to, coincident with or after the effective time of a Change of Control, take such actions as it may consider appropriate, including, without limitation: (A) providing for the acceleration of any vesting conditions relating to the exercise or settlement of an Award or that an Award shall terminate or expire unless exercised or settled in full on or before a date fixed by the Committee; (B) making such adjustments to the Awards then outstanding as the Committee deems appropriate to reflect such Change of Control; (C) causing the Awards then outstanding to be assumed, or new rights substituted therefor, by the surviving corporation in such Change of Control; or (D) permit or require Participants to surrender outstanding Options and Stock Appreciation Rights in exchange for a cash payment, if any, equal to the difference between the highest price paid for a Share in the Change of Control transaction and the Exercise Price of the Award. In addition, except as otherwise specified in an Award Document (or a Participant's written employment agreement with the Company or any Subsidiary):

(1) any and all Options and Stock Appreciation Rights outstanding as of the effective date of the Change of Control shall become immediately exercisable, and shall remain exercisable until the earlier of the expiration of their initial term or the second (2<sup>nd</sup>) anniversary of the Participant's termination of employment with the Company;

(2) any restrictions imposed on Restricted Stock and Restricted Stock Units outstanding as of the effective date of the Change of Control shall lapse;

(3) the Performance Targets with respect to all Performance Units, Performance Stock and other performance-based Awards granted pursuant to Sections 6(g) or 10 outstanding as of the effective date of the Change of Control shall be deemed to have been attained at the specified target level of performance; and

(4) the vesting of all Awards denominated in Shares outstanding as of the effective date of the Change in Control shall be accelerated.

(ii) Subject to applicable laws, rules and regulations, the Committee may provide, in an Award Document or subsequent to the grant of an Award for the accelerated vesting, exercisability and/or the deemed attainment of a Performance Target with respect to an Award upon specified events similar to a Change of Control.

(iii) Notwithstanding any other provision of the Plan or any Award Document, the provisions of this Section 6(d) may not be terminated, amended, or modified upon or after a Change of Control in a manner that would adversely affect a Participant's rights with respect to an outstanding Award without the prior written consent of the Participant. Subject to Section 16, the Board, upon recommendation of the Committee, may terminate, amend or modify this Section 6(d) at any time and from time to time prior to a Change of Control.

(e) Dividends and Dividend Equivalents. The Committee may provide Participants with the right to receive dividends or payments equivalent to dividends or interest with respect to an outstanding Award, which payments can either be paid currently or deemed to have been reinvested in Shares, and can be made in Shares, cash or a combination thereof, as the Committee shall determine; *provided, however*, that the terms of any reinvestment of dividends must comply with all applicable laws, rules and regulations, including, without limitation, Section 409A of the Code. Notwithstanding the foregoing, no dividends or dividend equivalents shall be paid with respect to Options or Stock Appreciation Rights.

(f) Rights of a Stockholder. A Participant shall have no rights as a stockholder with respect to Shares covered by an Award (including voting rights) until the date the Participant or his nominee becomes the holder of record of such Shares. No adjustment shall be made for dividends or other rights for which the record date is prior to such date, except as provided in Section 13.

(g) Performance-Based Awards. (i) The Committee may determine whether any Award under the Plan is intended to be "performance-based compensation" as that term is used in Section 162(m) of the Code. Any such Awards designated to be "performance-based compensation" shall be conditioned on the achievement of one or more Performance Targets to the extent required by Section 162(m) of the Code and will be subject to all other conditions and requirements of Section 162(m). The Performance Targets will be comprised of specified levels of one or more of the following performance criteria as the Committee deems appropriate: net income; cash flow or cash flow on investment; pre-tax or post-tax profit levels or earnings; operating earnings; return on investment; earned value added expense reduction levels; free cash flow; free cash flow per share; earnings per share; net earnings per share; return on assets; return on net assets; return on equity; return on capital; return on sales; growth in managed assets; operating margin; total stockholder return or stock price appreciation; EBITDA; adjusted EBITDA; revenue; revenue before deferral, in each case determined in accordance with generally accepted accounting principles (subject to modifications approved by the Committee) consistently applied on a business unit, divisional, subsidiary or consolidated basis or any combination thereof. The Performance Targets may be described in terms of objectives that are related to the individual Participant or objectives that are Company-wide or related to a Subsidiary, division, department, region, function or business unit and may be measured on an absolute or cumulative basis or on the basis of percentage of improvement over time, and may be measured in terms of Company performance (or performance of the applicable Subsidiary, division, department, region, function or business unit) or measured relative to selected peer companies or a market index. In addition, for Awards not intended to qualify as "performance-based compensation" under Section 162(m) of the Code, the Committee may establish Performance Targets based on other criteria as it deems appropriate.



(ii) The Participants will be designated, and the applicable Performance Targets will be established, by the Committee within ninety (90) days following the commencement of the applicable Performance Period (or such earlier or later date permitted or required by Section 162(m) of the Code). Each Participant will be assigned a Target Number payable if Performance Targets are achieved. Any payment of an Award granted with Performance Targets shall be conditioned on the written certification of the Committee in each case that the Performance Targets and any other material conditions were satisfied. The Committee may determine, at the time of Award grant, that if performance exceeds the specified Performance Targets, the Award may be settled with payment greater than the Target Number, but in no event may such payment exceed the limits set forth in Section 5(c). The Committee retains the right to reduce any Award notwithstanding the attainment of the Performance Targets.

(h) Deferrals. In accordance with the procedures authorized by, and subject to the approval of, the Committee, Participants may be given the opportunity to defer the payment or settlement of an Award to one or more dates selected by the Participant; *provided, however*, that the terms of any deferrals must comply with all applicable laws, rules and regulations, including, without limitation, Section 409A of the Code. No deferral opportunity shall exist with respect to an Award unless explicitly permitted by the Committee on or after the time of grant.

(i) Repricing of Options and Stock Appreciation Rights. Notwithstanding anything in the Plan to the contrary, an Option or Stock Appreciation Right shall not be granted in substitution for a previously granted Option or Stock Appreciation Right being canceled or surrendered as a condition of receiving a new Award, if the new Award would have a lower exercise price than the Award it replaces, nor shall the exercise price of an Option or Stock Appreciation Right be reduced once the Option or Stock Appreciation Right is granted. The foregoing shall not (i) prevent adjustments pursuant to Section 13 or (ii) apply to grants of Substitute Awards.

## **7. Terms and Conditions of Options**

(a) General. The Committee, in its discretion, may grant Options to Eligible Individuals and shall determine whether such Options shall be Incentive Stock Options or Nonqualified Stock Options. Each Option shall be evidenced by an Award Document that shall expressly identify the Option as an Incentive Stock Option or Nonqualified Stock Option, and be in such form and contain such provisions as the Committee shall from time to time deem appropriate.

(b) Exercise Price. The exercise price of an Option shall be fixed by the Committee at the time of grant or shall be determined by a method specified by the Committee at the time of grant. In no event shall the exercise price of an Option be less than one hundred percent (100%) of the Fair Market Value of a Share on the date of grant; *provided, however* that the exercise price of a Substitute Award granted as an Option shall be determined in accordance with Section 409A of the Code and may be less than one hundred percent (100%) of the Fair Market Value.

(c) Term. An Option shall be effective for such term as shall be determined by the Committee and as set forth in the Award Document relating to such Option, and the Committee may extend the term of an Option after the time of grant; *provided, however*, that the term of an Option may in no event extend beyond the tenth (10<sup>th</sup>) anniversary of the date of grant of such Option.

(d) Exercise; Payment of Exercise Price. Options shall be exercised by delivery of a notice of exercise in a form approved by the Company. Subject to the provisions of the applicable Award Document, the exercise price of an Option may be paid (i) in cash or cash equivalents, (ii) by actual delivery or attestation to ownership of freely transferable Shares already owned by the person exercising the Option, (iii) by a combination of cash and Shares equal in value to the exercise price, (iv) through net share settlement or similar procedure involving the withholding of Shares subject to the Option with a value equal to the exercise price or (v) by such other means as the Committee may authorize. In accordance with the rules and procedures authorized by the Committee for this purpose, the Option may also be exercised through a “cashless exercise” procedure authorized by the Committee from time to time that permits Participants to exercise Options by delivering irrevocable instructions to a broker to deliver promptly to the Company the amount of sale or loan proceeds necessary to pay the exercise price and the amount of any required tax or other withholding obligations or such other procedures determined by the Company from time to time.

(e) Incentive Stock Options. The exercise price per Share of an Incentive Stock Option shall be fixed by the Committee at the time of grant or shall be determined by a method specified by the Committee at the time of grant, but in no event shall the exercise price of an Incentive Stock Option be less than one hundred percent (100%) of the Fair Market Value of a Share on the date of grant. No Incentive Stock Option may be issued pursuant to the Plan to any individual who, at the time the Incentive Stock Option is granted, owns stock possessing more than ten percent (10%) of the total combined voting power of all classes of stock of the Company or any of its Subsidiaries, unless (i) the exercise price determined as of the date of grant is at least one hundred ten percent (110%) of the Fair Market Value on the date of grant of the Shares subject to such Incentive Stock Option and (ii) the Incentive Stock Option is not exercisable more than five (5) years from the date of grant thereof. No Participant shall be granted any Incentive Stock Option which would result in such Participant receiving a grant of Incentive Stock Options that would have an aggregate Fair Market Value in excess of one hundred thousand dollars (\$100,000), determined as of the time of grant, that would be exercisable for the first time by such Participant during any calendar year. No Incentive Stock Option may be granted under the Plan after the tenth anniversary of the Effective Date. The terms of any Incentive Stock Option granted under the Plan shall comply in all respects with the provisions of Section 422 of the Code, or any successor provision thereto, as amended from time to time.

#### **8. Terms and Conditions of Restricted Stock and Restricted Stock Units**

(a) Restricted Stock. The Committee, in its discretion, may grant or sell Restricted Stock to Eligible Individuals. An Award of Restricted Stock shall consist of one or more Shares granted or sold to an Eligible Individual, and shall be subject to the terms, conditions and restrictions set forth in the Plan and established by the Committee in connection with the Award and specified in the applicable Award Document. Restricted Stock may, among other things, be subject to restrictions on transferability, vesting requirements or other specified circumstances under which it may be canceled.

(b) Restricted Stock Units. The Committee, in its discretion, may grant Restricted Stock Units to Eligible Individuals. A Restricted Stock Unit shall entitle a Participant to receive, subject to the terms, conditions and restrictions set forth in the Plan and the applicable Award Document, one or more Shares. Restricted Stock Units may, among other things, be subject to restrictions on transferability, vesting requirements or other specified circumstances under which they may be canceled. If and when the cancellation provisions lapse, the Restricted Stock Units shall become Shares owned by the applicable Participant or, at the sole discretion of the Committee, cash, or a combination of cash and Shares, with a value equal to the Fair Market Value of the Shares at the time of payment.

## 9. Stock Appreciation Rights

(a) General. The Committee, in its discretion, may grant Stock Appreciation Rights to Eligible Individuals. A Stock Appreciation Right shall entitle a Participant to receive, upon satisfaction of the conditions to payment specified in the applicable Award Document, an amount equal to the excess, if any, of the Fair Market Value on the exercise date of the number of Shares for which the Stock Appreciation Right is exercised over the grant price for such Stock Appreciation Right specified in the applicable Award Document. The grant price per share of Shares covered by a Stock Appreciation Right shall be fixed by the Committee at the time of grant or, alternatively, shall be determined by a method specified by the Committee at the time of grant, but in no event shall the grant price of a Stock Appreciation Right be less than one hundred percent (100%) of the Fair Market Value of a Share on the date of grant; *provided, however*, that the grant price of a Substitute Award granted as a Stock Appreciation Rights shall be in accordance with Section 409A of the Code and may be less than one hundred percent (100%) of the Fair Market Value. Payments to a Participant upon exercise of a Stock Appreciation Right may be made in cash or Shares, having an aggregate Fair Market Value as of the date of exercise equal to the excess, if any, of the Fair Market Value on the exercise date of the number of Shares for which the Stock Appreciation Right is exercised over the grant price for such Stock Appreciation Right. The term of a Stock Appreciation Right settled in Shares shall not exceed seven (7) years.

(b) Stock Appreciation Rights in Tandem with Options. A Stock Appreciation Right granted in tandem with an Option may be granted either at the same time as such Option or subsequent thereto. If granted in tandem with an Option, a Stock Appreciation Right shall cover the same number of Shares as covered by the Option (or such lesser number of shares as the Committee may determine) and shall be exercisable only at such time or times and to the extent the related Option shall be exercisable, and shall have the same term as the related Option. The grant price of a Stock Appreciation Right granted in tandem with an Option shall equal the per-share exercise price of the Option to which it relates. Upon exercise of a Stock Appreciation Right granted in tandem with an Option, the related Option shall be canceled automatically to the extent of the number of Shares covered by such exercise; conversely, if the related Option is exercised as to some or all of the shares covered by the tandem grant, the tandem Stock Appreciation Right shall be canceled automatically to the extent of the number of Shares covered by the Option exercise.

## 10. Terms and Conditions of Performance Stock and Performance Units

(a) Performance Stock. The Committee may grant Performance Stock to Eligible Individuals. An Award of Performance Stock shall consist of a Target Number of Shares granted to an Eligible Individual based on the achievement of Performance Targets over the applicable Performance Period, and shall be subject to the terms, conditions and restrictions set forth in the Plan and established by the Committee in connection with the Award and specified in the applicable Award Document.

(b) Performance Units. The Committee, in its discretion, may grant Performance Units to Eligible Individuals. A Performance Unit shall entitle a Participant to receive, subject to the terms, conditions and restrictions set forth in the Plan and established by the Committee in connection with the Award and specified in the applicable Award Document, a Target Number of Shares or cash based upon the achievement of Performance Targets over the applicable Performance Period. At the sole discretion of the Committee, Performance Units shall be settled through the delivery of Shares or cash, or a combination of cash and Shares, with a value equal to the Fair Market Value of the underlying Shares as of the last day of the applicable Performance Period.

## 11. Other Awards

The Committee shall have the authority to specify the terms and provisions of other forms of equity-based or equity-related Awards not described above that the Committee determines to be consistent with the purpose of the Plan and the interests of the Company, which Awards may provide for cash payments based in whole or in part on the value or future value of Shares, for the acquisition or future acquisition of Shares, or any combination thereof.

## 12. Certain Restrictions

(a) Transfers. No Award shall be transferable other than pursuant to a beneficiary designation under Section 12(c), by last will and testament or by the laws of descent and distribution or, except in the case of an Incentive Stock Option, pursuant to a domestic relations order, as the case may be; *provided, however*, that the Committee may, subject to applicable laws, rules and regulations and such terms and conditions as it shall specify, permit the transfer of an Award, other than an Incentive Stock Option, for no consideration to a Permitted Transferee. Any Award transferred to a Permitted Transferee shall be further transferable only by last will and testament or the laws of descent and distribution or, for no consideration, to another Permitted Transferee of the Participant.

(b) Award Exercisable Only by Participant. During the lifetime of a Participant, an Award shall be exercisable only by the Participant or by a Permitted Transferee to whom such Award has been transferred in accordance with Section 12(a) above. The grant of an Award shall impose no obligation on a Participant to exercise or settle the Award.

(c) Beneficiary Designation. The beneficiary or beneficiaries of the Participant to whom any benefit under the Plan is to be paid in case of his death before he receives any or all of such benefit shall be determined under the Company's Group Life Insurance Plan. A Participant may, from time to time, name any beneficiary or beneficiaries to receive any benefit in case of his death before he receives any or all of such benefit. Each such designation shall revoke all prior designations by the same Participant, including the beneficiary designated under the Company's Group Life Insurance Plan, and will be effective only when filed by the Participant in writing (in such form or manner as may be prescribed by the Committee) with the Company during the Participant's lifetime. In the absence of a valid designation under the Company's Group Life Insurance Plan or otherwise, if no validly designated beneficiary survives the Participant or if each surviving validly designated beneficiary is legally impaired or prohibited from receiving the benefits under an Award, the Participant's beneficiary shall be the Participant's estate.

## 13. Recapitalization or Reorganization

(a) Authority of the Company and Stockholders. The existence of the Plan, the Award Documents and the Awards granted hereunder shall not affect or restrict in any way the right or power of the Company or the stockholders of the Company to make or authorize any adjustment, recapitalization, reorganization or other change in the Company's capital structure or business, any merger or consolidation of the Company, any issue of stock or of options, warrants or rights to purchase stock or of bonds, debentures, preferred or prior preference stocks whose rights are superior to or affect the Shares or the rights thereof or which are convertible into or exchangeable for Shares, or the dissolution or liquidation of the Company, or any sale or transfer of all or any part of its assets or business, or any other corporate act or proceeding, whether of a similar character or otherwise.

(b) Change in Capitalization. Notwithstanding any provision of the Plan or any Award Document, the number and kind of Shares authorized for issuance under Section 5 of the Plan, including the maximum number of Shares available under the special limits provided for in Section 5(c), may be equitably adjusted in the sole discretion of the Committee in the event of a stock split, reverse stock split, stock dividend, recapitalization, reorganization, partial or complete liquidation, reclassification, merger, consolidation, separation, extraordinary cash dividend, split-up, spin-off, combination, exchange of Shares, warrants or rights offering to purchase Shares at a price substantially below Fair Market Value, or any other corporate event or distribution of stock or property of the Company affecting the Shares in order to preserve, but not increase, the benefits or potential benefits intended to be made available under the Plan. In addition, upon the occurrence of any of the foregoing events, the number and kind of Shares subject to any outstanding Award and the exercise price per Share (or the grant price per Share, as the case may be), if any, under any outstanding Award may be equitably adjusted (including by payment of cash to a Participant) in the sole discretion of the Committee in order to preserve the benefits or potential benefits intended to be made available to Participants. Such adjustments shall be made by the Committee. Unless otherwise determined by the Committee, such adjusted Awards shall be subject to the same restrictions and vesting or settlement schedule to which the underlying Award is subject.

#### **14. Term of the Plan**

Unless earlier terminated pursuant to Section 16, the Plan shall terminate on the tenth (10<sup>th</sup>) anniversary of the Effective Date, except with respect to Awards then outstanding. No Awards may be granted under the Plan after the tenth (10<sup>th</sup>) anniversary of the Effective Date.

#### **15. Effective Date**

The Plan shall become effective on the Effective Date, subject to approval by the stockholders of the Company.

#### **16. Amendment and Termination**

Subject to applicable laws, rules and regulations, the Board may at any time terminate or, from time to time, amend, modify or suspend the Plan; *provided, however*, that no termination, amendment, modification or suspension (i) will be effective without the approval of the stockholders of the Company if such approval is required under applicable laws, rules and regulations, including the rules of NASDAQ and (ii) shall materially and adversely alter or impair the rights of a Participant in any Award previously made under the Plan without the consent of the holder thereof. Notwithstanding the foregoing, the Board shall have broad authority to amend the Plan or any Award under the Plan without the consent of a Participant to the extent it deems necessary or desirable (a) to comply with, take into account changes in, or interpretations of, applicable tax laws, securities laws, employment laws, accounting rules and other applicable laws, rules and regulations, (b) to take into account unusual or nonrecurring events or market conditions (including, without limitation, the events described in Section 13(b)), or (c) to take into account significant acquisitions or dispositions of assets or other property by the Company.

#### **17. Miscellaneous**

(a) Tax Withholding. The Company or a Subsidiary, as appropriate, may require any individual entitled to receive a payment of an Award to remit to the Company, prior to payment, an amount sufficient to satisfy any applicable tax withholding requirements. In the case of an Award payable in Shares, the Company or a Subsidiary, as appropriate, may permit or require a Participant to satisfy, in whole or in part, such obligation to remit taxes by directing the Company to withhold shares that would otherwise be received by such individual or to repurchase shares that were issued to the Participant to satisfy the minimum statutory withholding rates for any applicable tax withholding purposes, in accordance with all applicable laws and pursuant to such rules as the Committee may establish from time to time. The Company or a Subsidiary, as appropriate, shall also have the right to deduct from all cash payments made to a Participant (whether or not such payment is made in connection with an Award) any applicable taxes required to be withheld with respect to such payments.

(b) No Right to Awards or Employment. No person shall have any claim or right to receive Awards under the Plan. Neither the Plan, the grant of Awards under the Plan nor any action taken or omitted to be taken under the Plan shall be deemed to create or confer on any Eligible Individual any right to be retained in the employ of the Company or any Subsidiary or other affiliate thereof, or to interfere with or to limit in any way the right of the Company or any Subsidiary or other affiliate thereof to terminate the employment of such Eligible Individual at any time. No Award shall constitute salary, recurrent compensation or contractual compensation for the year of grant, any later year or any other period of time. Payments received by a Participant under any Award made pursuant to the Plan shall not be included in, nor have any effect on, the determination of employment-related rights or benefits under any other employee benefit plan or similar arrangement provided by the Company and the Subsidiaries, unless otherwise specifically provided for under the terms of such plan or arrangement or by the Committee.

(c) Securities Law Restrictions. An Award may not be exercised or settled, and no Shares may be issued in connection with an Award, unless the issuance of such shares (i) has been registered under the Securities Act of 1933, as amended, (ii) has qualified under applicable state “blue sky” laws (or the Company has determined that an exemption from registration and from qualification under such state “blue sky” laws is available) and (iii) complies with all applicable foreign securities laws. The Committee may require each Participant purchasing or acquiring Shares pursuant to an Award under the Plan to represent to and agree with the Company in writing that such Eligible Individual is acquiring the Shares for investment purposes and not with a view to the distribution thereof. All certificates for Shares delivered under the Plan shall be subject to such stock-transfer orders and other restrictions as the Committee may deem advisable under the rules, regulations, and other requirements of the Securities and Exchange Commission, any exchange upon which the Shares are then listed, and any applicable securities law, and the Committee may cause a legend or legends to be put on any such certificates to make appropriate reference to such restrictions.

(d) Section 162(m) of the Code. The Plan is intended to comply in all respects with Section 162(m) of the Code; *provided, however*, that in the event the Committee determines that compliance with Section 162(m) of the Code is not desired with respect to a particular Award, compliance with Section 162(m) of the Code will not be required. In addition, if any provision of this Plan would cause Awards that are intended to constitute “qualified performance-based compensation” under Section 162(m) of the Code, to fail to so qualify, that provision shall be severed from, and shall be deemed not to be a part of, the Plan, but the other provisions hereof shall remain in full force and effect.

(e) Section 409A of the Code. Notwithstanding any contrary provision in the Plan or an Award Document, if any provision of the Plan or an Award Document contravenes any regulations or guidance promulgated under Section 409A of the Code or would cause an Award to be subject to additional taxes, accelerated taxation, interest and/or penalties under Section 409A of the Code, such provision of the Plan or Award Document may be modified by the Committee without consent of the Participant in any manner the Committee deems reasonable or necessary. In making such modifications the Committee shall attempt, but shall not be obligated, to maintain, to the maximum extent practicable, the original intent of the applicable provision without contravening the provisions of Section 409A of the Code. Moreover, any discretionary authority that the Committee may have pursuant to the Plan shall not be applicable to an Award that is subject to Section 409A of the Code to the extent such discretionary authority would contravene Section 409A of the Code or the guidance promulgated thereunder.

(f) Awards to Individuals Subject to Laws of a Jurisdiction Outside of the United States. To the extent that Awards under the Plan are awarded to Eligible Individuals who are domiciled or resident outside of the United States or to persons who are domiciled or resident in the United States but who are subject to the tax laws of a jurisdiction outside of the United States, the Committee may adjust the terms of the Awards granted hereunder to such person (i) to comply with the laws, rules and regulations of such jurisdiction and (ii) to permit the grant of the Award not to be a taxable event to the Participant. The authority granted under the previous sentence shall include the discretion for the Committee to adopt, on behalf of the Company, one or more sub-plans applicable to separate classes of Eligible Individuals who are subject to the laws of jurisdictions outside of the United States.

(g) Satisfaction of Obligations. Subject to applicable law, the Company may apply any cash, Shares, securities or other consideration received upon exercise or settlement of an Award to any obligations a Participant owes to the Company and the Subsidiaries in connection with the Plan or otherwise, including, without limitation, any tax obligations or obligations under a currency facility established in connection with the Plan.

(h) No Limitation on Corporate Actions. Nothing contained in the Plan shall be construed to prevent the Company or any Subsidiary from taking any corporate action, whether or not such action would have an adverse effect on any Awards made under the Plan. No Participant, beneficiary or other person shall have any claim against the Company or any Subsidiary as a result of any such action.

(i) Unfunded Plan. The Plan is intended to constitute an unfunded plan for incentive compensation. Prior to the issuance of Shares, cash or other form of payment in connection with an Award, nothing contained herein shall give any Participant any rights that are greater than those of a general unsecured creditor of the Company. The Committee may, but is not obligated, to authorize the creation of trusts or other arrangements to meet the obligations created under the Plan to deliver Shares with respect to awards hereunder.

(j) Successors. All obligations of the Company under the Plan with respect to Awards granted hereunder shall be binding on any successor to the Company, whether the existence of such successor is the result of a direct or indirect purchase, merger, consolidation, or otherwise, of all or substantially all of the business and/or assets of the Company.

(k) Application of Funds. The proceeds received by the Company from the sale of Shares pursuant to Awards will be used for general corporate purposes.

(l) Award Document. In the event of any conflict or inconsistency between the Plan and any Award Document, the Plan shall govern and the Award Document shall be interpreted to minimize or eliminate any such conflict or inconsistency.

(m) Headings. The headings of Sections herein are included solely for convenience of reference and shall not affect the meaning of any of the provisions of the Plan.

(n) Severability. If any provision of this Plan is held unenforceable, the remainder of the Plan shall continue in full force and effect without regard to such unenforceable provision and shall be applied as though the unenforceable provision were not contained in the Plan.

(o) Expenses. The costs and expenses of administering the Plan shall be borne by the Company.

(p) Arbitration. Any dispute, controversy or claim arising out of or relating to the Plan that cannot be resolved by the Participant on the one hand, and the Company on the other, shall be submitted to arbitration in the State of Connecticut under the National Rules for the Resolution of Employment Disputes of the American Arbitration Association; *provided, however*, that any such submission by the Participant must be made within one (1) year of the date of the events giving rise to such dispute, controversy or claim. The determination of the arbitrator shall be conclusive and binding on the Company and the Participant, and judgment may be entered on the arbitrator's award in any court having jurisdiction. The expenses of such arbitration shall be borne by the Company; *provided, however*, that each party shall bear its own legal expenses unless the Participant is the prevailing party, in which case the Company shall promptly pay or reimburse the Participant for the reasonable legal fees and expenses incurred by the Participant in connection with such contest or dispute (excluding any fees payable pursuant to a contingency fee arrangement).

(q) Governing Law. Except as to matters of federal law, the Plan and all actions taken thereunder shall be governed by and construed in accordance with the laws of the State of Connecticut.



EMPLOYMENT AGREEMENT

THIS EMPLOYMENT AGREEMENT (this "Agreement") is entered into as of May 21, 2010 by and between Photronics, Inc., a Connecticut corporation (the "Company"), having a principal place of business at 15 Secor Road, Brookfield, CT 06804 and Richelle E. Burr ("Executive") residing at 7 Greenknoll Drive, Brookfield, CT 06804.

WITNESSETH:

WHEREAS, the Company 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 Vice President, General Counsel and Secretary. 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 Vice President, General Counsel and Secretary and shall not be inconsistent with the provisions of the charter documents of the Company or applicable law.

#### **4. Compensation.**

(a) Base Compensation. During the Term, the Company agrees to pay Executive a base salary at the rate of \$170,000 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"). All payments required hereunder, including the payments required by this Section 4(a), may be allocated by the Company to one or more of its subsidiaries to which Executive renders services but the Company shall remain responsible for all payments hereunder and Executive shall have no obligation to seek payment from such subsidiaries.

(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 employee benefit plans and arrangements as the Company may establish from time to time in which other employees similarly situated are entitled to participate (which may include, without limitation, bonus plan(s), medical plan, dental plan, disability plan, basic life insurance and business travel accident insurance plan, 401(k) plan, stock option or stock purchase plans or any successor plans thereto (the "Benefits")). The Company shall have the right to terminate or change any such plans or programs at any time.

(d) Automobile Allowance. During the Term of this Agreement, the Company shall provide the Executive with an automobile allowance or company car consistent with the Company's policies and provisions applicable to other similarly situated executives of the Company.

(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.

**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), and (C) any accrued vacation pay according to Company U.S. Vacation Policy, in each case to the extent not theretofore paid (the sum of the amounts described in clauses (A), (B) and (C) 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 my 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 a breach of Executive’s fiduciary duties to the Company).

(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.

(3) Payment of Executive’s COBRA premiums for the 360-day period following termination of employment (“Benefit Period”), provided Executive elects to receive COBRA continuation coverage and is eligible for COBRA continuation coverage.

(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 within the meaning of Section 280G of the U.S. Federal internal revenue code of 1986.

(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(e) 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).

(f) Tax Consideration.

(i) In the event that the aggregate of all payments or benefits made or provided to the Executive under this Agreement and under all other plans and programs of the Company (the “Aggregate Payment”) is determined to constitute a Parachute Payment, as such term is defined in Section 280G(b)(2) of the Internal Revenue Code of 1986, as amended (the “Code”), the Company shall pay to the Executive an additional amount (the “Gross-Up Amount”), prior to the time any excise tax (“Excise Tax”) is imposed by Section 4999 of the Code is payable with respect to such Aggregate Payment, which, after the imposition of all excise, federal, state and local income taxes, enables the Executive to retain a total amount equal to the Aggregate Payment prior to the payment of the Gross-Up Amount. Notwithstanding the foregoing, if it shall be determined that the Executive is entitled to receive the Gross-Up Amount, but the portion of the Aggregate Payment that would be treated as a Parachute Payment does not exceed 125% of the greatest amount that could be paid to the Executive such that the receipt of the Aggregate Payment would not give rise to any Excise Tax (the “Safe Harbor Amount”), then no Gross-Up Amount shall be paid to the Executive and the Aggregate Payment shall be reduced to the Safe Harbor Amount.

(ii) All determinations required to be made under this Section 5(f), including whether the Aggregate Payment constitutes a Parachute Payment, the amount of the Gross-Up Amount to be paid to the Executive, if any, and the determination of the Safe Harbor Amount, if applicable, shall be made in good faith by the by the Company's regular outside auditors (the "Accounting Firm"); provided, however, that such Accounting Firm presents its rationale and supporting calculations to the Executive upon his request and shall in good faith work to resolve any discrepancies raised by accountants or lawyers chosen by the Executive who present reasonable critiques of the determination. If a dispute over the methodology or conclusions of the Accounting Firm cannot be resolved between the parties, an impartial accounting firm shall be consulted to resolve the dispute. All fees and expenses of the Accounting Firm incurred in connection with the retention of the Accounting Firm pursuant to this Section 5(f) shall be borne by the Company. All fees and expenses of the accountants and lawyers chosen by the Executive and, if retained, the additional accounting firm, incurred in connection with the resolution of any disputes pursuant to this Section 5(f) shall be borne by the non-prevailing party.

(iii) As a result of uncertainty in the application of Sections 280G and 4999 of the Code at the time of the determination by the Accounting Firm, the parties hereto acknowledge and agree that it is possible that the Company will have paid a Gross-Up Amount that exceeds the amount that the Company should have paid pursuant to this Section 5(f) (the "Overpayment") or that the Company will have paid a Gross-Up Amount that is less than the amount that the Company should have paid pursuant to this Section 5(f) (the "Underpayment"). In the event the Accounting Firm, in a written opinion delivered to the Company and to the Executive, determines that, based upon the assertion of a deficiency by the Internal Revenue Service against the Executive, which the Accounting Firm believes has a high probability of success, an Overpayment has been made, then any such Overpayment shall, to the extent permitted under applicable law (including Section 402 of the Sarbanes-Oxley Act of 2002), be treated for all purposes as a loan to the Executive which the Executive shall promptly repay to the Company together with interest at the Applicable Federal Rate provided for in Section 7872(f)(2) of the Code; provided, however, the Executive may contest any such determination by the Accounting Firm at his own expense. In the event the Accounting Firm, based upon controlling precedent or other substantial authority, determines that an Underpayment has occurred, any such Underpayment shall be promptly paid by the Company to or for the benefit of the Executive together with interest at the Applicable Federal Rate provided for in Section 7872(f)(2) of the Code.

(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 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 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 or in equity, with respect to any termination of employment.

**6. Business Expenses**. During the Term of this Agreement, to the extent that such expenditures satisfy the criteria under the Internal Revenue Code or other applicable laws for deductibility by the Company (whether or not fully deductible by the Company) for federal income tax purposes as ordinary and necessary business expenses, the Company shall provide the Executive with reimbursement of reasonable business expenses incurred by the Executive while conducting Company business 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 manufactures 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 the Company or to any experimental work carried on by the Company. 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 the Company or to any experimental work carried on by the Company, shall be the property of the Company. Executive will promptly and fully disclose to 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 the Company's ownership thereof and to assist the Company in protecting or defending 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 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 Company great and irreparable injury and damage. Executive hereby expressly agrees that the 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 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, Company business records, 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/ Constantine S. Macricostas

Name: Constantine S. Macricostas

Title: Chief Executive Officer and President

**EXECUTIVE**

/s/ Richelle E. Burr

Name: Richelle E. Burr

Address: 7 Greenknoll Dr.

Brookfield, CT 06804

## EXHIBIT A

### RELEASE

1. I signed an Employment Agreement with Photonics, Inc. (the "Company"), dated \_\_\_\_\_ (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.

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Print Name

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Date

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Signature

## SUBSIDIARIES OF PHOTRONICS, INC.

	State or Jurisdiction of Incorporation or Organization
Align-Rite International, Ltd.	(United Kingdom)
Photronics (Wales) Limited	(United Kingdom)
Photronics, B.V.	(Netherlands)
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.)
Photronics Switzerland, S.a.r.L	(Switzerland)
Photronics Singapore Pte, Ltd.	(Singapore)
Photronics UK, Ltd.	(United Kingdom)
PK, Ltd. (2)	(Korea)
PKLT	(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) 90.14% owned by Photronics, Inc., and 9.63% owned by Photronics Singapore Pte Ltd.



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**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, 333-02245, 333-42010, 333-50809, 333-86846, 333-78102, 333-151763 and 333-197890 on Form S-8 of our reports dated January 7, 2016, 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. and its subsidiaries for the year ended November 1, 2015.

**/s/Deloitte & Touche LLP**

**Hartford, Connecticut  
January 7, 2016**

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**EXHIBIT 31.1**

I, Peter S. Kirlin, certify that:

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

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Peter S. Kirlin  
Chief Executive Officer  
January 7, 2016

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**EXHIBIT 31.2**

I, Sean T. Smith, certify that:

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

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Sean T. Smith  
Chief Financial Officer  
January 7, 2016

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**EXHIBIT 32.1**

**Section 1350 Certification of the Chief Executive Officer**

I, Peter S. Kirlin, Chief Executive Officer of Photonics, 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 November 1, 2015 (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 7, 2016

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**EXHIBIT 32.2**

**Section 1350 Certification of the Chief Financial Officer**

I, Sean T. Smith, Chief Financial Officer of Photonics, 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 November 1, 2015 (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 7, 2016

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