

PHOTRONICS INC  
Form 10-K  
January 03, 2014

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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 3, 2013

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

15 Secor Road, Brookfield, Connecticut 06804  
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code (203) 775-9000

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

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

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

None

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

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

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).

Yes  No

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

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

Large Accelerated Filer  Accelerated Filer  Non-Accelerated Filer  Smaller Reporting Company

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes  No

As of April 28, 2013, 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 \$445,857,320 (based upon the closing price of \$7.49 per share as reported by the NASDAQ Global Select Market on that date).

As of December 27, 2013, 61,556,948 shares of the registrant's common stock were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Proxy Statement for the 2014  
Annual Meeting of Shareholders Incorporated into Part III  
to be held in April 2014 of this Form 10-K

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## 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"). 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", 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 future 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 of future 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. is a Connecticut corporation, organized in 1969. Its principal executive offices are located at 15 Secor Road, Brookfield, Connecticut 06804, telephone (203) 775-9000. Photronics, Inc. and its subsidiaries are collectively referred to herein as "Photronics" or the "Company". 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 amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 as soon as reasonably practicable after such materials are electronically filed or furnished to the Securities and Exchange Commission. The information contained or incorporated in the Company's website is not part of these documents.

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 eight manufacturing facilities; two of which are located in Europe, two in Taiwan, one in Korea and three in the United States.

#### 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) technologies. Electron beam and laser-based systems are the predominant technologies used for photomask manufacturing. These technologies 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 critical layer photomasks. 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. Photomasks produced using laser-based systems are less expensive and less precise than those manufactured on high-end electron beam 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 and high

equipment reliability. The Company works to meet these requirements by making significant investments in research and development, 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 65 nanometers or larger. 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, including a limited number of manufacturers who have the capability to internally manufacture photomasks. Photomasks are manufactured by independent merchant manufacturers like Photronics, and by semiconductor and FPD manufacturers that produce photomasks exclusively for their own use (captive 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 capture certain roadmap requirements. Nevertheless, most captives 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.

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, providing global solutions to its customers, minimizing delivery time, and serving customers that utilize manufacturing foundries outside of the United States, principally in Asia. See Note 17 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 3, 2013 ("fiscal 2013") included the following:

|                            |                                      |
|----------------------------|--------------------------------------|
| ASML Holding NV            | LG Electronics, Inc.                 |
| AU Optronics Corp.         | Micron Technology, Inc.              |
| Chimei Innolux Corporation | Nanya Technology Corporation         |
| Dongbu HiTek Co. Ltd.      | Novatek Microelectronics Corp., Ltd. |
| Global Foundries, Inc.     | ON Semiconductor Corp.               |
| Himax Display, Inc.        | Samsung Electronics Co., Ltd.        |
| Ili Technology Corp.       | ST Microelectronics, Inc.            |
| IM Flash Technologies, LLC | Texas Instruments Incorporated       |
| Inotera Memories, Inc.     | United Microelectronics Corp.        |
| Jenoptik AG                | X-FAB Silicon Foundries              |

During fiscal 2013, the Company sold its products and services to approximately 600 customers. Samsung Electronics Co., Ltd. accounted for approximately 18%, 22% and 20% of the Company's net sales in fiscal 2013, 2012, and 2011, respectively. This included sales of both IC and FPD photomasks. The Company's five largest customers, in the aggregate, accounted for approximately 43%, 43%, and 45% of net sales in fiscal 2013, 2012 and 2011, 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 its primary 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, and also at PK, Ltd. ("PKL"), its subsidiary in Korea, and at Photronics Semiconductor Mask Corporation ("PSMC"), one of its subsidiaries in Taiwan, and for FPD photomasks at PKL, and in site-specific research and development programs to support strategic customers. These research and development programs and activities are designed to advance the Company's leadership 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 masks, substrates larger than Generation 8 and 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 device capabilities at and below 45 nanometer and at and above Generation 8. The Company has incurred research and development expenses of \$20.8 million, \$19.4 million and \$15.5 million in fiscal 2013, 2012 and 2011, respectively. 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.

Patents and Trademarks

The Company has ownership interests in over 45 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 technology of Micron and MP Mask. The Company also has a number of trademarks and trademark registrations in the United States and in other countries.

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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.

#### Pending Merger of PSMC with DNP Photomask Technology Taiwan Co., LTD.

In November 2013 the Company announced that it had entered into an agreement to merge Photronics Semiconductor Mask Corporation (PSMC), its Taiwanese IC subsidiary, with DNP Photomask Technology Taiwan Co., Ltd., a wholly owned subsidiary of Dai Nippon Printing Co., Ltd. (DNP), to form a joint venture which will operate under the name of Photronics DNP Mask Corporation (PDMC). The pending merger, which is a noncash transaction, would result in the Company owning 50.01% and DNP owning 49.99% of PDMC, whose financial results would be included in the Company's consolidated financial statements. The merger is subject to regulatory approvals and customary closing conditions, and is expected to be finalized during the first half of fiscal 2014.

#### International Operations

Sales from the Company's international operations were approximately 70%, 70%, and 69% of the Company's net sales in fiscal 2013, 2012 and 2011, 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 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 17 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. A few competitors have greater financial, technical, sales, marketing and 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 \$3.7 billion. Its competitors include Compugraphics, Inc., Dai Nippon Printing Co., Ltd., 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 has contributed to the decrease in the number of independent manufacturers, and expects such pressure to continue in the future.

## Employees

As of November 3, 2013, the Company had approximately 1,300 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 semiconductor 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 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 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. Further, advances in design and production methods for semiconductors and other high performance electronics could reduce the demand for photomasks. 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 either 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 recent years were due, in part, to macroeconomic factors, which resulted in 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.

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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 substantially all of 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. Consequently, if anticipated sales in any quarter do not occur when expected, capital expenditures and expense levels could be disproportionately high, and the Company's operating results would be adversely affected. Due to the foregoing factors, the Company believes that quarter-to-quarter comparisons of its operating results are not necessarily meaningful and that these comparisons cannot be relied upon as indicators of future performance. In addition, in future quarters the Company's operating results could be below the expectations of public market analysts and investors which, in turn, could materially adversely affect 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, increased 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 2013, 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 designs to semiconductor wafers 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 2014 are expected to be in the range of \$70 million to \$90 million, of which \$19 million was in accounts payable and accrued liabilities as of November 3, 2013. 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.

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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 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 3, 2013, made contributions to MP Mask of \$38 million and received returns of investments of \$10 million.

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 loss of any of these customers or a significant reduction in orders from these customers could have a material adverse effect on its sales and results of operations.

Historically, the Company has sold a significant proportion of photomasks to a limited number of IC and FPD manufacturers. During fiscal 2013, one customer, Samsung Electronics Co., Ltd., accounted for 18% of the Company's net sales. The Company's five largest customers, in the aggregate, accounted for 43%, 43% and 45% of net sales in fiscal 2013, 2012, and 2011, respectively. 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 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 market, economic, or 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 small number of suppliers for equipment and raw materials and, if the Company's suppliers do not deliver their products to it, the Company may be unable to deliver its products to 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. Further, the Company relies on equipment manufacturers to develop future generations of manufacturing equipment to meet its requirements. In addition, the manufacturing equipment

necessary to produce advanced photomasks could become prohibitively expensive.

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. The Company has no long-term contracts for the supply of these raw materials. 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.

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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 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 amended in December 2013, 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 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. In November 2013 the Company announced that it had entered into an agreement to merge PSMC with DNP Photomask Technology Taiwan Co., Ltd., a wholly owned subsidiary of Dai Nippon Printing Co., Ltd. (DNP), to form a joint venture which will operate under the name of Photronics DNP Mask Corporation (PDMC) (see Note 22 to the consolidated financial statements for further discussion), and it may make other acquisitions or participate in other joint ventures or mergers in the future. Such transactions are subject to acquisition accounting, as prescribed in ASC 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. After the completion of such an acquisition, if in fact the transaction is consummated, the Company may be subject to various risks which could adversely affect its future earnings and cash flows. These may include that: 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.



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, Dai Nippon Printing Co., Ltd., 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. Many of the Company's competitors have substantially greater financial, technical, sales, marketing and 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 requirements could have a material adverse effect on its business and results of operations. In the past, competition led to pressure to reduce prices which, the Company believes, contributed to the decrease in the number of independent photomask suppliers. This pressure to reduce prices 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 70%, 70% and 69% of the Company's net sales in fiscal 2013, 2012 and 2011, 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 new 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.

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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 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 2013, the Company recorded a net gain from changes in foreign currency exchange rates of \$0.5 million in its statement of income, while its net assets were increased by \$10.6 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, engineering 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 upon 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, or 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.

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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 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.

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ITEM 1B. UNRESOLVED STAFF COMMENTS

None

ITEM 2. PROPERTIES

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

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

(1)The Company owns its manufacturing facility in Taichung, 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.

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## PART II

ITEM MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS, AND  
5. 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 2013 and 2012, as reported by the NASDAQ Global Select Market.

|                                     | High   | Low    |
|-------------------------------------|--------|--------|
| Fiscal Year Ended November 3, 2013: |        |        |
| Quarter Ended January 27, 2013      | \$6.21 | \$4.56 |
| Quarter Ended April 28, 2013        | 7.50   | 5.81   |
| Quarter Ended July 28, 2013         | 8.85   | 7.07   |
| Quarter Ended November 3, 2013      | 8.89   | 7.03   |

## Fiscal Year Ended October 28, 2012:

|                                |        |        |
|--------------------------------|--------|--------|
| Quarter Ended January 29, 2012 | \$7.65 | \$4.95 |
| Quarter Ended April 29, 2012   | 7.70   | 5.80   |
| Quarter Ended July 29, 2012    | 6.72   | 5.33   |
| Quarter Ended October 28, 2012 | 6.45   | 4.80   |

On December 27, 2013, the closing sale price of the Common Stock per the NASDAQ Global Select Market was \$8.98. Based on information available to the Company, the Company believes it has approximately 11,000 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 2014 definitive Proxy Statement into Item 12 of Part III of this report. The 2014 Proxy Statement will be filed within 120 days after the Company's fiscal year ended November 3, 2013.

## 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 Form 10-K (in thousands, except per share amounts).

|   | Year Ended             |                        |                        |                        |                        |
|---|------------------------|------------------------|------------------------|------------------------|------------------------|
|   | November<br>3,<br>2013 | October<br>28,<br>2012 | October<br>30,<br>2011 | October<br>31,<br>2010 | November<br>1,<br>2009 |
| <b>OPERATING DATA:</b>  |                        |                        |                        |                        |                        |
| Net sales   | \$422,180              | \$450,439              | \$512,020              | \$425,554              | \$361,353              |
| Cost and expenses:  |                        |                        |                        |                        |                        |
| Cost of sales   | (322,540)              | (338,519)              | (375,806)              | (333,739)              | (304,282)              |
| Selling, general and<br>administrative                                | (48,213 ) (a)          | (46,706 )              | (45,240 )              | (42,387 )              | (41,162 )              |
| Research and development  | (20,758 )              | (19,371 )              | (15,507 )              | (14,932 )              | (15,423 )              |
| Consolidation, restructuring<br>and related (charges) credits         | -                      | (1,428 ) (b)           | -                      | 4,979 (f)              | (13,557 ) (h)          |
| Impairment of long-lived<br>assets                                    | -                      | -                      | -                      | -                      | (1,458 ) (i)           |
| Gain on sale of facility  | -                      | -                      | -                      | -                      | 2,034                  |
| Operating income (loss)   | 30,669                 | 44,415                 | 75,467                 | 39,475                 | (12,495 )              |
| Other income (expense):   |                        |                        |                        |                        |                        |
| Interest expense  | (7,756 )               | (7,488 )               | (7,258 )               | (9,475 )               | (22,401 )              |
| Interest and other income<br>(expense), net                           | 3,892                  | 3,721 (c)              | 2,949 (d)              | 2,553 (g)              | (2,208 ) (j)           |
| Debt extinguishment loss  | -                      | -                      | (35,259 ) (e)          | -                      | -                      |
| Income (loss) before income<br>tax provision                          | 26,805                 | 40,648                 | 35,899                 | 32,553                 | (37,104 )              |
| Income tax provision  | (7,229 )               | (10,793 )              | (15,691 )              | (7,471 )               | (4,323 )               |
| Net income (loss)   | 19,576 (a)             | 29,855 (c)             | 20,208 (e)             | 25,082 (g)             | (41,427 ) (j)          |
| Net income attributable to<br>noncontrolling interests                | (1,610 )               | (1,987 )               | (3,979 )               | (1,160 )               | (483 )                 |
| Net income (loss) attributable<br>to Photronics, Inc.<br>shareholders | \$17,966 (a)           | \$27,868 (c)           | \$16,229 (e)           | \$23,922 (g)           | \$(41,910 ) (j)        |
| Earnings (loss) per share:  |                        |                        |                        |                        |                        |
| Basic   | \$0.30 (a)             | \$0.46 (c)             | \$0.28 (e)             | \$0.45 (g)             | \$(0.97 ) (j)          |
| Diluted   | \$0.29 (a)             | \$0.44 (c)             | \$0.28 (e)             | \$0.43 (g)             | \$(0.97 ) (j)          |
| Weighted-average number of<br>common shares outstanding:              |                        |                        |                        |                        |                        |

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|         |        |        |        |        |        |
|---------|--------|--------|--------|--------|--------|
| Basic   | 60,644 | 60,055 | 57,030 | 53,433 | 43,210 |
| Diluted | 61,599 | 76,464 | 58,458 | 65,803 | 43,210 |

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## BALANCE SHEET DATA

|                                    | As of            |                  |                  |                  |                  |
|------------------------------------|------------------|------------------|------------------|------------------|------------------|
|                                    | November 3, 2013 | October 28, 2012 | October 30, 2011 | October 31, 2010 | November 1, 2009 |
| Working capital                    | \$213,879        | \$234,281        | \$209,306        | \$86,573         | \$89,542         |
| Property, plant and equipment, net | 422,740          | 380,808          | 368,680          | 369,814          | 347,889          |
| Total assets                       | 885,929          | 849,234          | 817,854          | 703,879          | 663,656          |
| Long-term debt                     | 182,203          | 168,956          | 152,577          | 78,852           | 112,137          |
| Equity                             | 587,831          | 586,001          | 559,756          | 495,943          | 449,696          |

- (a) Includes transaction expenses of \$0.8 million in connection with the pending joint venture with DNP Photomask Technology Co., Ltd.
- (b) Includes consolidation and restructuring charges of \$1.4 million in connection with the discontinuance of manufacturing operations at the Company's Singapore facility.
- (c) 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.
- (d) 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.
- (e) 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.
- (f) Includes consolidation and restructuring credits of \$5.0 million in connection with the closure of the Company's Shanghai, China, facility.
- (g) Includes non-cash charge of \$0.9 million in connection with subsequent measurement at fair value of warrants issued to purchase the Company's common stock.
- (h) Includes consolidation and restructuring charges of \$13.6 million in connection with the closures of the Company's Shanghai, China, and Manchester, U.K., manufacturing facilities.
- (i) Includes impairment charge of \$1.5 million related to the Company's Manchester, U.K., manufacturing facility.
- (j) Includes non-cash charge of \$0.3 million in connection with subsequent measurement at fair value of warrants issued to purchase the Company's common stock.

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

Results of Operations for the Years Ended November 3, 2013, October 28, 2012 and October 30, 2011

### 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.

Thus, the Company's selling cycle is tightly interwoven with the development and release of new semiconductor designs and flat panel applications, particularly as it relates to the semiconductor industry's migration to more advanced 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 could also reduce the demand for photomasks. 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.

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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 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 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 in the near term. 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 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 2013 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 2014, 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. 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 2013, 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 \$243 million for the three fiscal years ended November 3, 2013, 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 \$70 million and \$90 million in fiscal 2014.

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 eight 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.

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In the first quarter of fiscal 2014 the Company entered an agreement to merge PSMC with DNP Photomask Technology Taiwan Co., Ltd., a wholly owned subsidiary of Dai Nippon Printing Co., Ltd. (DNP), to form a joint venture which will operate under the name of Photronics DNP Mask Corporation (PDMC). The pending merger, which is a noncash transaction, will result in the Company owning 50.01% and DNP owning 49.99% of PDMC, whose financial results will be included in the Company's consolidated financial statements. PDMC is expected to generate sufficient cash flows to fund its operating and capital requirements. The merger is subject to regulatory approvals and customary closing conditions, and is expected to be finalized during the first half of fiscal 2014.

In the first quarter of fiscal 2014 the Company amended its credit facility to a five year \$50 million credit facility (the "new credit facility") with an expansion capacity to \$75 million, and simultaneously repaid its \$21.3 million term loan. The new credit facility, which replaced the credit facility in effect at November 3, 2013, bears interest based on the Company's total leverage ratio, at LIBOR plus a spread, as defined in the new credit facility.

In the fourth quarter of fiscal 2013 a \$26.4 million principal amount, five year capital lease to fund the purchase of a high-end lithography tool commenced. 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 3, 2013, the total amount payable through the end of the lease term was \$26.8 million, of which \$25.1 million represented principal and \$1.7 million represented 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.

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.

In the second quarter of fiscal 2012 the Company paid \$35 million to Micron in connection with its purchase of the U.S. nanoFab facility, which it had been leasing from Micron under an operating lease that was to end in December 2014. The purchase of the facility resulted in the Company's outstanding operating lease commitments being reduced by a total of \$15 million for fiscal years 2013 and 2014.

In the second quarter of fiscal 2012 the Company, in connection with its purchase of the U.S. nanoFab facility, amended its credit facility ("the credit facility") to include the addition of a \$25 million term loan maturing in March 2017 with minimum quarterly principal payments of \$0.6 million (quarterly payments commenced in June 2012 and were based on a ten year repayment period). The Company repaid the \$21.3 million balance of this term loan that was outstanding at November 3, 2013, in the first quarter of fiscal 2014. The credit facility bore interest (2.69% at November 3, 2013), based on the Company's total leverage ratio, at LIBOR plus a spread, as defined in the credit facility.

In the first quarter of fiscal 2012 the Company ceased the manufacture of photomasks at its Singapore facility. This action, which was substantially completed in fiscal 2012, resulted in the Company recording restructuring charges of \$1.4 million in fiscal 2012.

In 2012 the board of directors of PSMC authorized PSMC to repurchase additional shares of its outstanding common stock for retirement. These repurchase programs resulted in 35.9 million shares being purchased for \$15.6 million in the fiscal year ended October 28, 2012. PSMC's repurchase of these shares increased the Company's ownership

percentage in PSMC from 62.25% at October 30, 2011 to 72.09% as of October 28, 2012.

In 2011 the board of directors of PSMC authorized PSMC to repurchase shares of its outstanding common stock for retirement. These repurchase programs resulted in 21.6 million shares being purchased for \$9.9 million. PSMC's repurchase of these shares increased the Company's ownership percentage in PSMC from 57.53% at October 31, 2010 to 62.25% as of October 30, 2011.

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In the second quarter of fiscal 2011 the Company issued, through a private offering pursuant to Rule 144A under the Securities Act of 1933, as amended, \$115 million aggregate principal amount of 3.25% convertible senior notes. The notes mature on April 1, 2016, and note holders may convert each \$1,000 principal amount of notes to 96.3879 shares of common stock (equivalent to an initial conversion price of \$10.37 per share of common stock) at any time prior to the close of business on the second scheduled trading day immediately preceding April 1, 2016. The conversion rate is subject to adjustment upon the occurrence of certain events, which are described in the indenture dated March 28, 2011. 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. Interest payments on the notes commenced on October 1, 2011. The net proceeds of the notes were approximately \$110.7 million, which were used, in part, to repurchase \$35.4 million of the Company's 5.5% convertible senior notes, which were to mature in October 2014, and to pay, in full, its then outstanding obligations under capital leases of \$19.8 million.

In the second and third quarters of fiscal 2011 the Company, in two separate transactions, acquired \$35.4 million of its 5.5% convertible senior notes in exchange for 5.2 million shares of its common stock, with a fair value of \$45.7 million, and cash of \$22.9 million (the note holders received 147.529 shares and cash of \$647 for each \$1,000 note). The Company, in connection with these transactions, recorded extinguishment losses of \$35.1 million, which included the write-off of deferred financing fees of \$2.0 million. The losses are included in other income (expense) in the Company's consolidated statements of income. As discussed above, in the first quarter of fiscal 2014 the Company entered into an amended five year \$50 million credit facility. The Company intends to repay its remaining 5.5% convertible senior notes with borrowings against the amended credit facility and, therefore, has classified as long-term the entire \$22.1 million of those notes that was outstanding as of November 3, 2013.

#### Results of Operations

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

|  | Year Ended |         |         |
|--|------------|---------|---------|
|  | November   | October | October |
|  | 3,         | 28,     | 30,     |
|  | 2013       | 2012    | 2011    |
| Net sales  | 100.0%     | 100.0 % | 100.0 % |
| Cost of sales  | (76.4 )    | (75.1 ) | (73.4 ) |
| Gross margin   | 23.6       | 24.9    | 26.6    |
| Selling, general and administrative expenses             | (11.4 )    | (10.4 ) | (8.9 )  |
| Research and development expenses                        | (4.9 )     | (4.3 )  | (3.0 )  |
| Consolidation, restructuring and related charges         | -          | (0.3 )  | -       |
| Operating income   | 7.3        | 9.9     | 14.7    |
| Interest expense   | (1.9 )     | (1.7 )  | (1.4 )  |
| Interest and other income (expense), net                 | 0.9        | 0.8     | 0.6     |
| Debt extinguishment loss                                 | -          | -       | (6.9 )  |
| Income before income tax provision                       | 6.3        | 9.0     | 7.0     |
| Income tax provision                                     | (1.7 )     | (2.4 )  | (3.1 )  |
| Net income   | 4.6        | 6.6     | 3.9     |
| Net income attributable to noncontrolling interests      | (0.3 )     | (0.4 )  | (0.8 )  |
| Net income attributable to Photronics, Inc. shareholders | 4.3 %      | 6.2 %   | 3.1 %   |

Note: All the following tabular comparisons, unless otherwise indicated, are for the fiscal years ended November 3, 2013 (2013), October 28, 2012 (2012) and October 30, 2011 (2011), in millions of dollars.

## Net Sales

|                 | 2013    | 2012    | 2011    | Percent Change |              |
|-----------------|---------|---------|---------|----------------|--------------|
|                 |         |         |         | 2012 to 2013   | 2011 to 2012 |
| IC              | \$320.6 | \$350.1 | \$391.2 | (8.4)%         | (10.5)%      |
| FPD             | 101.6   | 100.3   | 120.8   | 1.3            | (17.0)       |
| Total net sales | \$422.2 | \$450.4 | \$512.0 | (6.3)%         | (12.0)%      |

Net sales for 2013 decreased 6.3% to \$422.2 million as compared to \$450.4 million for 2012, primarily related to reduced high-end IC sales of \$30 million as compared to the prior year. The reduced high-end IC revenue was primarily attributable to an Asian foundry customer for which the Company was not qualified as a result of a node migration, and to a lesser extent, reduced average selling prices (ASPs). Total IC sales decreased by \$29.5 million or 8.4% in 2013 as compared to 2012, primarily due to reduced high-end IC sales discussed previously, and mainstream IC sales were essentially flat. Total FPD sales increased by \$1.3 million or 1.3% in 2013 as compared to 2012, primarily due to increased high-end FPD sales, which was partially offset by a \$4 million decrease in mainstream FPD sales. Total revenues attributable to high-end products decreased by \$24 million to \$149 million in 2013, as high-end revenues for IC decreased by \$30 million to \$80 million, which were partially offset by a \$6 million increase in high-end FPD revenues to \$69 million. High-end photomask applications, 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 2013 as compared to 2012 decreased by \$26.9 million or 16.7% in Korea, decreased by \$8.1 million or 6.0% in the United States, increased by \$8.1 million or 7.4% in Taiwan, increased by \$0.5 million or 1.2% in Europe and decreased by \$1.8 million at other international locations. As a percent of total sales in 2013, sales were 32% in Korea, 30% in the United States, 28% in Taiwan, 9% in Europe, and 1% at other international locations.

Net sales for 2012 decreased 12.0% to \$450.4 million as compared to \$512.0 million for 2011, primarily due to reduced photomask demand as a result of a general slowdown in the semiconductor industry, although high-end IC unit demand and revenues increased. Revenues attributable to high-end products increased by \$12 million to \$173 million, as high-end revenues for IC increased by \$15 million to \$110 million, which were partially offset by a \$3 million reduction in high-end FPD revenues to \$63 million. Mainstream IC and FPD revenues decreased in 2012 as compared to 2011 as a result of decreases in both unit demand and ASPs. By geographic area, net sales in 2012 as compared to 2011 decreased by \$22.8 million or 14.5% in the United States, by \$12.8 million or 10.5% in Taiwan, by \$10.2 million or 5.9% in Korea, by 9.8 million in Singapore or 69.8% (the Company ceased the manufacture of photomasks at its Singapore facility in the first quarter of fiscal 2012) and by \$6.0 million or 12.8% in Europe. As a percent of total sales in 2012 sales were 36% in Korea, 30% in the United States, 24% in Taiwan, 9% in Europe and 1% at other international locations.

## Gross Margin

|                | 2013   | 2012    | 2011    | Percent Change |              |
|----------------|--------|---------|---------|----------------|--------------|
|                |        |         |         | 2012 to 2013   | 2011 to 2012 |
| Gross margin   | \$99.6 | \$111.9 | \$136.2 | (11.0)%        | (17.8)%      |
| Gross margin % | 23.6%  | 24.9 %  | 26.6 %  | -              | -            |



Gross margin percentage decreased to 23.6% in 2013 from 24.9% in 2012, primarily due to a decrease in sales in 2013 as compared to 2012. 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. Gross margin percentage decreased to 24.9% in 2012 from 26.6% in 2011. This decrease was also primarily due to a decrease in sales in 2012 as compared to 2011.

#### Selling, General and Administrative Expenses

|                | 2013   | 2012   | 2011   | Percent Change |              |
|----------------|--------|--------|--------|----------------|--------------|
|                |        |        |        | 2012 to 2013   | 2011 to 2012 |
| S,G&A expenses | \$48.2 | \$46.7 | \$45.2 | 3.2%           | 3.2%         |
| % of net sales | 11.4%  | 10.4%  | 8.9%   | -              | -            |

Selling, general and administrative expenses increased by \$1.5 million to \$48.2 million in 2013, as compared to 2012, primarily as a result of transaction expenses of \$0.8 million related to a pending joint venture, and to a lesser extent, increased selling-related expenses. Selling, general and administrative expenses increased by \$1.5 million to \$46.7 million in 2012 as compared to 2011 primarily as a result of increased employee compensation and selling-related expenses.

#### Research and Development

|                | 2013   | 2012   | 2011   | Percent Change |              |
|----------------|--------|--------|--------|----------------|--------------|
|                |        |        |        | 2012 to 2013   | 2011 to 2012 |
| R&D expense    | \$20.8 | \$19.4 | \$15.5 | 7.2%           | 24.9%        |
| % of net sales | 4.9%   | 4.3%   | 3.0%   | -              | -            |

Research and development expenses consist primarily of global development efforts related to high-end process technologies for advanced sub-wavelength reticle solutions for IC technologies. Research and development expenses increased by \$1.4 million to \$20.8 million in 2013 as compared to 2012, and increased by \$3.9 million to \$19.4 million in 2012 as compared to 2011, primarily due to increased activities at advanced nanometer technology nodes for IC photomask applications.

#### Consolidation, Restructuring and Related Charges

Consolidation, restructuring and related charges of \$1.4 million in 2012 primarily relate to the Company ceasing the manufacture of photomasks at its Singapore facility, and were primarily comprised of employee terminations and other costs of \$1.1 million and asset write-downs of \$0.3 million.

The Company continues to assess its global manufacturing strategy. This ongoing assessment could result in future facility closures, asset redeployments, workforce reductions, and the addition of increased manufacturing facilities, all of which would be predicated on market conditions and customer requirements.

## Other Income (Expense)

|  | 2013    | 2012    | 2011     |
|--|---------|---------|----------|
| Interest expense                         | \$(7.8) | \$(7.5) | \$(7.2 ) |
| Interest and other income (expense), net | 3.9     | 3.7     | 2.9      |
| Debt extinguishment loss                 | -       | -       | (35.3)   |
| Total other income (expense), net        | \$(3.9) | \$(3.8) | \$(39.6) |

Interest expense increased slightly in 2013 as compared to 2012, primarily as a result of an additional capital lease commencing in 2013 related to the purchase of high-end equipment. Interest and other income (expense), net increased in 2013 as compared to 2012, primarily as a result of increased foreign currency exchange gains.

Interest expense increased slightly in 2012 as compared to 2011, primarily as a result of the term loan entered into in the second quarter of 2012. Interest and other income (expense), net increased in 2012 as compared to 2011, primarily as a result of increased interest income on the Company's higher cash balances in 2012.

In the second and third quarters of fiscal 2011, the Company acquired \$35.4 million aggregate principal amount of its 5.5% convertible senior notes by delivering \$22.9 million in cash and 5.2 million shares of its common stock, with a fair value of \$45.7 million. In connection with these 2011 acquisitions the Company recorded total debt extinguishment losses of \$35.1 million, which included the write-off of \$2.0 million of deferred financing fees. A portion of the net proceeds of the Company's March 28, 2011, 3.25% convertible senior notes offering was used to repurchase these notes.

## Income Tax Provision

|                           | 2013  | 2012   | 2011   |
|---------------------------|-------|--------|--------|
| Income tax provision      | \$7.2 | \$10.8 | \$15.7 |
| Effective income tax rate | 27.0% | 26.6%  | 43.7%  |

The effective tax rate differs from the U.S. statutory rate of 35% in fiscal years 2013 and 2012 primarily due to a higher level of earnings being taxed at lower statutory rates in foreign jurisdictions, combined with the benefit of various investment credits in the foreign jurisdictions.

The effective tax rate differs from the U.S. statutory rate of 35% in fiscal year 2011 primarily due to the impact of the non-deductible debt extinguishment losses and the impact of a foreign subsidiary tax settlement, offset by a higher level of earnings taxed at lower statutory rates in foreign jurisdictions. Further, in Korea and in Taiwan, various investment tax credits have been earned, which also reduced the Company's effective income tax rate in 2011.

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, reduces its deferred tax assets by a valuation allowance. As a result of these considerations, the valuation allowance was increased (decreased) by \$1.1 million, \$2.5 million and \$(8.2) million in 2013, 2012 and 2011, respectively. 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. In addition, the Company was accorded a tax holiday in China which expired in 2011. The availability of these tax holidays 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. These tax holidays had no dollar or per share effect on the 2013, 2012 or 2011 fiscal years.  
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## Net Income Attributable to Noncontrolling Interests

Net income attributable to noncontrolling interests decreased to \$1.6 million in 2013 as compared to \$2.0 million in 2012, primarily as a result of the effect of shares of PSMC purchased under the tender offer and share repurchase programs discussed in Note 15 to the consolidated financial statements. Net income attributable to noncontrolling interests decreased to \$2.0 million in 2012 as compared to \$4.0 million in 2011, primarily as a result of decreased net income at PSMC, the Company's non-wholly owned subsidiary in Taiwan, and to a lesser extent, due to PSMC's share repurchase program (discussed below).

In June 2013 the Company completed the tender offer for the outstanding shares of PSMC that commenced in April 2013. 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. This increased the Company's ownership interest in PSMC to 98.13%. In September 2013 the Company purchased an additional 1.1 million shares for \$0.7 million which further increased its ownership interest in PSMC to 98.63% as of November 3, 2013.

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. PSMC's repurchase of these shares increased the Company's ownership percentage in PSMC from 57.53% at October 31, 2010, to 62.25% as of October 30, 2011, to 72.09% as of October 28, 2012, and to 75.11% as of January 27, 2013.

## Liquidity and Capital Resources

|   | November<br>3,<br>2013<br>(in<br>millions) | October<br>28,<br>2012<br>(in<br>millions) | October<br>30,<br>2011<br>(in<br>millions) |
|---|--|--|--|
| Cash and cash equivalents                           | \$ 215.6                                   | \$ 218.0                                   | \$ 189.9                                   |
| Net cash provided by operating activities           | \$ 99.4                                    | \$ 132.5                                   | \$ 136.6                                   |
| Net cash used in investing activities               | \$ (66.2 )                                 | \$ (111.9 )                                | \$ (100.7 )                                |
| Net cash provided by (used in) financing activities | \$ (39.8 )                                 | \$ 4.6                                     | \$ 54.5                                    |

As of November 3, 2013, the Company had cash and cash equivalents of \$215.6 million compared to \$218.0 million as of October 28, 2012. The Company's working capital decreased \$20.4 million to \$213.9 million at November 3, 2013, as compared to \$234.3 million at October 28, 2012. The decrease in working capital was primarily the result of the purchase of PSMC shares and increased payables for capital expenditures. 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 October 28, 2012, the Company had cash and cash equivalents of \$218.0 million compared to \$189.9 million as of October 30, 2011. The Company's working capital increased \$25.0 million to \$234.3 million at October 28, 2012, as compared to \$209.3 million at October 30, 2011. The increase in working capital was primarily the result of cash generated from operations.

As of November 3, 2013 and October 28, 2012, the Company's total cash and cash equivalents include \$165.7 million and \$158.2 million, respectively, held by its foreign subsidiaries. The majority of earnings of the Company's foreign subsidiaries are considered to be indefinitely reinvested. 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. 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.

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Net cash provided by operating activities decreased to \$99.4 million in fiscal 2013, as compared to \$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 provided by operating activities was \$132.5 million in fiscal 2012, as compared to \$136.6 million in fiscal 2011. The decrease was the result of less favorable, when adjusted for a significant non-cash debt extinguishment loss charge, year-over-year operating results, which was partially offset by more cash generated through reduced accounts receivable and inventory balances. Net cash provided by operating activities was \$136.6 million in fiscal 2011 as compared to \$95.9 million in fiscal 2010. The increase was the effect of improved year-over-year operating results (excluding the effect of the non-cash debt portion of the extinguishment loss) as a result of increased sales.

Net cash used in investing activities in fiscal 2013 decreased to \$66.2 million, as compared to \$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. Net cash used in investing activities increased to \$111.9 million in fiscal 2012, as compared to \$100.7 million in fiscal 2011, due to increased purchases of property, plant and equipment, which were partially offset by a decrease in the amount of the Company's year-over-year investment in the MP Mask joint venture. The investments in the joint venture were primarily the result of capital calls made by the joint venture. Net cash used in investing activities in fiscal 2011 increased to \$100.7 million, as compared to \$58.2 million in 2010, primarily due to increases in the Company's investment in MP Mask as a result of capital calls and net proceeds from the sale of the Company's former manufacturing facility in Shanghai, China, which reduced total net proceeds used in investing activities in fiscal 2010, and increased capital expenditures in 2011. Capital expenditure payments for the 2013, 2012, and 2011 fiscal years were \$63.8 million, \$97.0 million and \$82.1 million, respectively. The Company expects capital expenditure payments for fiscal 2014 to range between \$70 million and \$90 million, primarily related to investment in high-end IC manufacturing capability.

Net cash used in financing activities was \$39.8 million in fiscal 2013 as compared to \$4.6 million provided by financing activities in fiscal 2012, and was primarily comprised of payments to acquire additional shares of PSMC and repayments of long-term borrowings. Net cash provided by financing activities was \$4.6 million in fiscal 2012, as compared to \$54.5 million provided by financing activities in fiscal 2011 and, in 2012, was primarily comprised of the proceeds of a \$25 million term loan, that was entered into by the Company in connection with its purchase of the US nanoFab facility, which was partially offset by payments for the repurchase of common stock of PSMC from noncontrolling interests and repayments on long-term borrowings. Net cash provided by financing activities was \$54.5 million in fiscal 2011 as compared to \$32.4 million used in financing activities in fiscal 2010, and was primarily comprised of the net proceeds received from the March 2011 issuance of 3.25% convertible senior notes, partially offset by the repayment of certain other higher interest rate long-term borrowings.

In November 2013 the Company entered into an agreement to merge PSMC with DNP Photomask Technology Taiwan Co., Ltd., a wholly owned subsidiary of Dai Nippon Printing Co., Ltd. (DNP), to form a joint venture which will operate under the name of Photronics DNP Mask Corporation (PDMC). The pending merger, which is a noncash transaction, will result in the Company owning 50.01% and DNP owning 49.99% of PDMC, whose financial results will be included in the Company's consolidated financial statements. PDMC is expected to generate sufficient cash flows to fund its operating and capital requirements. The merger is subject to regulatory approvals and customary closing conditions, and is expected to be finalized during the first half of fiscal 2014.

In December 2013 the Company amended its credit facility to a five year \$50 million credit facility (the "new credit facility") with an expansion capacity of \$75 million. The new credit facility, which replaces the credit facility in effect at November 3, 2013, bears interest based on the Company's total leverage ratio, at LIBOR plus a spread, as defined in the credit facility. Simultaneously, the Company repaid its \$21.3 million term loan.

In March 2011 the Company issued \$115 million aggregate principal amount of 3.25% convertible senior notes. The Company realized net proceeds of \$110.7 million from the issuance of the notes, which mature on April 1, 2016, and commenced paying interest semiannually on October 1, 2011. During the three month period ended May 1, 2011, the

Company used \$19.7 million of the net proceeds of the 3.25% convertible senior notes and issued common stock to repurchase approximately \$30.4 million principal amount of its 5.5% convertible senior notes, and used an additional \$19.8 million of the net proceeds to repay its outstanding obligations under capital leases. In June 2011 the Company acquired an additional \$5.0 million principal amount of its outstanding 5.5% convertible senior notes for \$3.2 million and common stock. The Company may use a portion of the remaining net proceeds of its 3.25% convertible senior notes to repurchase additional amounts of its outstanding 5.5% senior convertible notes and for capital expenditure and working capital purposes.

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In March 2011 the Company and its lenders amended its revolving credit facility. Under the terms of the amended credit facility, the total amount available to the Company to borrow was reduced from \$65 million to \$30 million. The credit facility bore interest (2.69% at November 3, 2013), based on the Company's total leverage ratio, at LIBOR plus a spread, as defined in the agreement. The credit facility was secured by substantially all of the Company's assets located in the United States, as well as common stock the Company owns in certain of its foreign subsidiaries, and was subject to financial covenants, including the following, as defined in the agreement: minimum fixed charge ratio, total leverage ratio and minimum unrestricted cash balance. As of November 3, 2013, the Company was in compliance with the covenants of its credit facility, had no outstanding borrowings under the credit facility and \$30 million was available for borrowing. As discussed above this credit facility was replaced with a new credit facility in December 2013.

In June 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.

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 to fund the purchase of a high-end lithography tool commenced. 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 3, 2013, the total amount payable through the end of the lease term was \$26.8 million, of which \$25.1 million represented principal and \$1.7 million represented interest.

In April 2011 the Company entered into a five year, \$21.2 million capital lease of manufacturing equipment. Payments under the lease, which bears interest at 3.09%, are \$0.4 million per month through March 2016. As of November 3, 2013, the total lease amount payable through the end of the lease term was \$11.1 million, of which \$10.7 million represented principal and \$0.4 million represented interest.

In February 2012 the Company paid \$35 million to Micron in connection with the purchase of the U.S. nanoFab facility. In connection therewith, the Company amended its credit facility to include the addition of a \$25 million term loan maturing in March 2017, with minimum quarterly principal payments of \$0.6 million. In the first quarter of fiscal 2014 the Company repaid the \$21.3 million balance of this term loan that was outstanding at November 3, 2013. As a result of the purchase of the U.S. nanoFab facility, the Company's lease agreement with Micron for the U.S. nanoFab facility was cancelled, which reduced the Company's related outstanding operating lease commitments by a combined total of \$15 million for fiscal years 2013 and 2014.

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, 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 3, 2013, the Company had outstanding purchase commitments of \$48 million, which included \$42 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.

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## Cash Requirements

The Company's cash requirements in fiscal 2014 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 3, 2013:

|                                    | Payment due by period |                  |             |             |                   |
|------------------------------------|-----------------------|------------------|-------------|-------------|-------------------|
|                                    | Total                 | Less Than 1 Year | 1 - 3 Years | 3 - 5 Years | More Than 5 Years |
| Contractual Obligations            |                       |                  |             |             |                   |
| Long-term borrowings               | \$158,304             | \$2,500          | \$142,054   | \$13,750    | \$-               |
| Operating leases                   | 8,180                 | 2,152            | 3,592       | 1,715       | 721               |
| Capital leases                     | 35,717                | 9,318            | 16,779      | 9,620       | -                 |
| Unconditional purchase obligations | 47,544                | 44,421           | 3,123       | -           | -                 |
| Interest                           | 14,309                | 6,439            | 7,483       | 387         | -                 |
| Other noncurrent liabilities       | 8,634                 | -                | 180         | -           | 8,454             |
| Total                              | \$272,688             | \$64,830         | \$173,211   | \$25,472    | \$9,175           |

In December 2013 the Company amended its credit facility, which increased its limit to \$50 million and extended its term to December 2018. The Company intends to repay the remaining outstanding 5.5% convertible senior notes issued in September 2009 with borrowings against this new credit facility and, therefore, has classified as long-term the entire \$22.1 million of those notes that were outstanding as of November 3, 2013.

As of November 3, 2013, the Company had recorded accruals for uncertain tax positions of \$1.7 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 3, 2013, 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 2013.

Under the PDMC joint venture operating agreement the shareholders of PDMC may be requested to make additional contributions to the pending joint venture. 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 joint venture operating agreement limits the amount of contributions that may be requested during both the first four years of the joint venture and during any individual year within those first four years.

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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 9 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 market capitalization, 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 values of the Company's 3.25% and 5.5% convertible senior notes are 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.

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## 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. If applicable, 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 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).

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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 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.

#### 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 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 product warranty obligations, 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. However, the Company records a liability for the insignificant amount of estimated warranty returns based on historical experience. The Company's specific return policies include accepting returns of products with defects, or products that have not been produced to precise customer specifications. At the time of revenue recognition, a liability is established for these items.

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## 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.

## Effect of Recent Accounting Pronouncements

There have been no recent accounting pronouncements whose adoption is expected to affect the Company's financial statements or related disclosures.

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

The Company records derivatives in the consolidated balance sheet 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 historically 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.

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. In some instances, the Company may sell or purchase products in a currency other than the functional currency of the country where it was produced. 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 Company's primary net foreign currency exposures as of November 3, 2013, included the Korean won, the Japanese yen, the New Taiwan dollar, the Singapore dollar, the British pound, and the euro. As of November 3, 2013, 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 \$3.1 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 3, 2013, the Company had \$21.3 million in variable rate borrowings, which was repaid in full in December 2013. 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 3, 2013.



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 3, 2013 and October 28, 2012, and the related consolidated statements of income, comprehensive income, equity and cash flows for each of the three fiscal years ended November 3, 2013, October 28, 2012 and October 30, 2011. We also have audited the Company's internal control over financial reporting as of November 3, 2013, based on criteria established in Internal Control — Integrated Framework (1992) 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 Annual 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 3, 2013 and October 28, 2012, and the results of their operations and their cash flows for each of the three fiscal years ended November 3, 2013, October 28, 2012 and

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October 30, 2011, 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 3, 2013 based on the criteria established in Internal Control — Integrated Framework (1992) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

/s/ Deloitte & Touche LLP

Hartford, Connecticut

January 3, 2014

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## PHOTRONICS, INC. AND SUBSIDIARIES

## Consolidated Balance Sheets

(in thousands, except per share amounts)

|   | November<br>3,<br>2013 | October<br>28,<br>2012 |
|---|------------------------|------------------------|
| <b>ASSETS</b>   |                        |                        |
| Current assets:   |                        |                        |
| Cash and cash equivalents   | \$ 215,615             | \$ 218,043             |
| Accounts receivable, net of allowance of \$3,541 in 2013 and \$3,902 in 2012  | 73,357                 | 75,685                 |
| Inventories   | 18,849                 | 17,702                 |
| Deferred income taxes   | 1,082                  | 1,199                  |
| Other current assets  | 9,563                  | 7,165                  |
| Total current assets  | 318,466                | 319,794                |
| Property, plant and equipment, net  | 422,740                | 380,808                |
| Investment in joint venture   | 93,124                 | 93,252                 |
| Intangible assets, net  | 34,080                 | 37,384                 |
| Deferred income taxes   | 12,455                 | 11,395                 |
| Other assets  | 5,064                  | 6,601                  |
| Total assets  | \$ 885,929             | \$ 849,234             |
| <b>LIABILITIES AND EQUITY</b>   |                        |                        |
| Current liabilities:  |                        |                        |
| Current portion of long-term borrowings   | \$ 11,818              | \$ 7,781               |
| Accounts payable  | 59,210                 | 42,235                 |
| Payables – related parties  | 9,211                  | 10,796                 |
| Accrued liabilities   | 24,348                 | 24,701                 |
| Total current liabilities   | 104,587                | 85,513                 |
| Long-term borrowings  | 182,203                | 168,956                |
| Deferred income taxes   | 1,007                  | 661                    |
| Other liabilities   | 10,301                 | 8,103                  |
| Total liabilities   | 298,098                | 263,233                |
| 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, 61,083 shares issued and outstanding at November 3, 2013, and 60,213 shares issued and outstanding at October 28, 2012 | 611                    | 602                    |
| Additional paid-in capital  | 498,861                | 493,411                |
| Retained earnings   | 59,439                 | 41,473                 |
| Accumulated other comprehensive income  | 26,403                 | 15,900                 |
| Total Photronics, Inc. shareholders' equity   | 585,314                | 551,386                |
| Noncontrolling interests  | 2,517                  | 34,615                 |
| Total equity  | 587,831                | 586,001                |

|                              |            |            |
|------------------------------|------------|------------|
| Total liabilities and equity | \$ 885,929 | \$ 849,234 |
|------------------------------|------------|------------|

See accompanying notes to consolidated financial statements.

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## PHOTRONICS, INC. AND SUBSIDIARIES

## Consolidated Statements of Income

(in thousands, except per share amounts)

|  | Year Ended             |                        |                        |
|--|------------------------|------------------------|------------------------|
|  | November<br>3,<br>2013 | October<br>28,<br>2012 | October<br>30,<br>2011 |
| Net sales  | \$422,180              | \$450,439              | \$512,020              |
| Cost and expenses:                                       |                        |                        |                        |
| Cost of sales  | (322,540)              | (338,519)              | (375,806)              |
| Selling, general and administrative                      | (48,213 )              | (46,706 )              | (45,240 )              |
| Research and development                                 | (20,758 )              | (19,371 )              | (15,507 )              |
| Consolidation, restructuring and related charges         | -                      | (1,428 )               | -                      |
| Operating income   | 30,669                 | 44,415                 | 75,467                 |
| Other income (expense):                                  |                        |                        |                        |
| Interest expense   | (7,756 )               | (7,488 )               | (7,258 )               |
| Interest and other income (expense), net                 | 3,892                  | 3,721                  | 2,949                  |
| Debt extinguishment loss                                 | -                      | -                      | (35,259 )              |
| Income before income tax provision                       | 26,805                 | 40,648                 | 35,899                 |
| Income tax provision                                     | (7,229 )               | (10,793 )              | (15,691 )              |
| Net income   | 19,576                 | 29,855                 | 20,208                 |
| Net income attributable to noncontrolling interests      | (1,610 )               | (1,987 )               | (3,979 )               |
| Net income attributable to Photronics, Inc. shareholders | \$17,966               | \$27,868               | \$16,229               |
| Earnings per share:                                      |                        |                        |                        |
| Basic  | \$0.30                 | \$0.46                 | \$0.28                 |
| Diluted  | \$0.29                 | \$0.44                 | \$0.28                 |
| Weighted-average number of common shares outstanding:    |                        |                        |                        |
| Basic  | 60,644                 | 60,055                 | 57,030                 |
| Diluted  | 61,599                 | 76,464                 | 58,458                 |

See accompanying notes to consolidated financial statements.

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

|   | Year Ended |           |           |
|---|------------|-----------|-----------|
|   | November   | October   | October   |
|   | 3,         | 28,       | 30,       |
|   | 2013       | 2012      | 2011      |
| Net income  | \$ 19,576  | \$ 29,855 | \$ 20,208 |
| Other comprehensive income, net of tax of \$0:                      |            |           |           |
| Foreign currency translation adjustments                            | 9,805      | 7,188     | 3,267     |
| Amortization of cash flow hedge                                     | 128        | 128       | 128       |
| Other   | 54         | (109 )    | (35 )     |
| Total other comprehensive income, net of tax                        | 9,987      | 7,207     | 3,360     |
| Comprehensive income  | 29,563     | 37,062    | 23,568    |
| Less: comprehensive income attributable to noncontrolling interests | 858        | 3,387     | 4,196     |
| Comprehensive income attributable to Photronics, Inc. shareholders  | \$ 28,705  | \$ 33,675 | \$ 19,372 |

See accompanying notes to consolidated financial statements.

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## PHOTRONICS, INC. AND SUBSIDIARIES

## Consolidated Statements of Equity

Years Ended November 3, 2013, October 28, 2012 and October 30, 2011

(in thousands)

|  | Common<br>Shares | Stock<br>Amount | Additional<br>Paid-In<br>Capital | Retained<br>Earnings<br>(Accumulated<br>Deficit) | Accumulated<br>Other<br>Comprehensive<br>Income | Non-<br>Controlling<br>Interests | Total<br>Equity |
|--|------------------|-----------------|----------------------------------|--|---|----------------------------------|-----------------|
| Balance at October 31, 2010  | 53,779           | \$ 538          | \$ 436,825                       | \$ (2,624 )                                      | \$ 7,062  | \$ 54,142                        | \$ 495,943      |
| Net income   | -                | -               | -                                | 16,229   | -   | 3,979                            | 20,208          |
| Other comprehensive income   | -                | -               | -                                | -  | 3,143   | 217                              | 3,360           |
| Common stock issued to<br>extinguish debt                                  | 5,229            | 52              | 45,585                           | -  | -   | -                                | 45,637          |
| Sale of common stock through<br>employee stock option and<br>purchase plan | 440              | 5               | 851                              | -  | -   | -                                | 856             |
| Restricted stock awards vestings<br>and expense                            | 81               | 1               | 1,035                            | -  | -   | -                                | 1,036           |
| Share-based compensation<br>expense  | -                | -               | 1,422                            | -  | -   | -                                | 1,422           |
| Common stock warrants<br>exercised   | 122              | 1               | 1,157                            | -  | -   | -                                | 1,158           |
| Repurchase of common stock of<br>subsidiary                                | -                | -               | (201 )                           | -  | (34 )   | (9,629 )                         | (9,864 )        |
| Balance at October 30, 2011  | 59,651           | 597             | 486,674                          | 13,605   | 10,171  | 48,709                           | 559,756         |
| Net income   | -                | -               | -                                | 27,868   | -   | 1,987                            | 29,855          |
| Other comprehensive income   | -                | -               | -                                | -  | 5,807   | 1,400                            | 7,207           |
| Sale of common stock through<br>employee stock option and<br>purchase plan | 277              | 3               | 542                              | -  | -   | -                                | 545             |
| Restricted stock awards vestings<br>and expense                            | 108              | 1               | 901                              | -  | -   | -                                | 902             |
| Share-based compensation<br>expense  | -                | -               | 2,258                            | -  | -   | -                                | 2,258           |
| Common stock warrants<br>exercised   | 177              | 1               | 1,051                            | -  | -   | -                                | 1,052           |
| Repurchase of common stock of<br>subsidiary                                | -                | -               | 1,985                            | -  | (78 )   | (17,481 )                        | (15,574 )       |
| Balance at October 28, 2012  | 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<br>employee stock option and<br>purchase plan | 397              | 4               | 880                              | -  | -   | -                                | 884             |
| Restricted stock awards vestings<br>and expense                            | 158              | 2               | 1,281                            | -  | -   | -                                | 1,283           |



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|  |        |        |            |           |           |           |            |
|--|--------|--------|------------|-----------|-----------|-----------|------------|
| 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 )  |
| Balance at November 3, 2013              | 61,083 | \$ 611 | \$ 498,861 | \$ 59,439 | \$ 26,403 | \$ 2,517  | \$ 587,831 |

See accompanying notes to consolidated financial statements.

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## PHOTRONICS, INC. AND SUBSIDIARIES

## Consolidated Statements of Cash Flows

(in thousands)

|   | Year Ended             |                        |                        |
|---|------------------------|------------------------|------------------------|
|   | November<br>3,<br>2013 | October<br>28,<br>2012 | October<br>30,<br>2011 |
| Cash flows from operating activities:   |                        |                        |                        |
| Net income  | \$19,576               | \$29,855               | \$20,208               |
| Adjustments to reconcile net income to net cash provided by operating activities: |                        |                        |                        |
| Depreciation and amortization of property, plant and equipment                    | 65,994                 | 78,623                 | 86,661                 |
| Amortization of deferred financing costs and intangible assets                    | 6,948                  | 6,586                  | 6,799                  |
| Debt extinguishment loss  | -                      | -                      | 27,399                 |
| Consolidation, restructuring and related charges                                  | -                      | 262                    | -                      |
| Share-based compensation  | 3,975                  | 3,160                  | 2,458                  |
| Deferred income taxes   | (266 )                 | (615 )                 | (224 )                 |
| Changes in assets and liabilities:  |                        |                        |                        |
| Accounts receivable   | 2,400                  | 11,190                 | (1,806 )               |
| Inventories   | (891 )                 | 4,683                  | (6,544 )               |
| Other current assets  | (2,744 )               | (79 )                  | 223                    |
| Accounts payable, accrued liabilities and other                                   | 4,409                  | (1,116 )               | 1,379                  |
| Net cash provided by operating activities   | 99,401                 | 132,549                | 136,553                |
| Cash flows from investing activities:   |                        |                        |                        |
| Purchases of property, plant and equipment  | (63,792 )              | (96,978 )              | (82,121 )              |
| Investment in joint venture   | -                      | (13,397 )              | (18,271 )              |
| Payments for intangible assets  | (2,173 )               | (27 )                  | (95 )                  |
| Other   | (272 )                 | (1,541 )               | (250 )                 |
| Net cash used in investing activities   | (66,237 )              | (111,943 )             | (100,737 )             |
| Cash flows from financing activities:   |                        |                        |                        |
| Proceeds from long-term borrowings  | -                      | 25,000                 | 17,000                 |
| Proceeds from convertible debt offering   | -                      | -                      | 115,000                |
| Purchase of common stock of subsidiary  | (32,374 )              | (15,598 )              | (9,878 )               |
| Repayments of long-term borrowings  | (8,314 )               | (5,293 )               | (64,107 )              |
| Proceeds from share-based arrangements  | 884                    | 653                    | 828                    |
| Payments of deferred financing fees   | (40 )                  | (198 )                 | (117 )                 |
| Payments of expenses related to debt offering                                     | -                      | -                      | (4,201 )               |
| Net cash provided by (used in) financing activities                               | (39,844 )              | 4,564                  | 54,525                 |
| Effects of exchange rate changes on cash and cash equivalents                     | 4,252                  | 2,945                  | 642                    |
| Net increase (decrease) in cash and cash equivalents                              | (2,428 )               | 28,115                 | 90,983                 |
| Cash and cash equivalents at beginning of year                                    | 218,043                | 189,928                | 98,945                 |
| Cash and cash equivalents at end of year  | \$215,615              | \$218,043              | \$189,928              |
| Supplemental disclosure of non-cash information:                                  |                        |                        |                        |
| Capital lease obligation for purchases of property, plant and equipment           | \$26,356               | -                      | \$21,248               |
| Accrual for property, plant and equipment purchased during year                   | 17,502                 | \$5,052                | 6,869                  |
| Deposit related to facility purchase  | -                      | 2,000                  | -                      |
| Common stock issued to extinguish debt  | -                      | -                      | 20,234                 |

See accompanying notes to consolidated financial statements.



PHOTRONICS, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

Years Ended November 3, 2013, October 28, 2012 and October 30, 2011

(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 eight manufacturing facilities; two of which are located in Europe, two 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. Actual results may differ from such estimates.

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 year 2013 included 53 weeks, while fiscal years 2012 and 2011 each included 52 weeks.

Cash and Cash Equivalents

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

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## 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 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. If applicable, 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.

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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 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.

#### 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.

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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 \$0.5 million, \$0.2 million and \$0.4 million in fiscal years 2013, 2012 and 2011, respectively.

#### Noncontrolling Interests

Noncontrolling interests represents the minority shareholders' proportionate share in the equity of the Company's two majority-owned subsidiaries, PK Ltd. ("PKL") in Korea of which noncontrolling shareholders owned approximately 0.3% as of November 3, 2013 and October 28, 2012, and Photronics Semiconductor Mask Corporation ("PSMC") in Taiwan, of which noncontrolling interests owned 1.37% and 27.91%, as of November 3, 2013 and October 28, 2012, respectively. The effect on its equity of the change in the Company's ownership interest in PSMC is presented in Note 15.

## 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 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 product warranty obligations, both of which are accrued when the related revenue is recognized.

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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. However, the Company records a liability for the insignificant amount of estimated warranty returns based on historical experience. The Company’s specific return policies include accepting returns of products with defects, or products that have not been produced to precise customer specifications. At the time of revenue recognition, a liability is established for these items.

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

#### NOTE 2 - PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment consists of the following:

|  | November<br>3,<br>2013 | October<br>28,<br>2012 |
|--|------------------------|------------------------|
| Land   | \$8,692                | \$8,538                |
| Buildings and improvements                     | 103,676                | 101,409                |
| Machinery and equipment                        | 1,225,091              | 1,197,854              |
| Leasehold improvements                         | 4,179                  | 5,854                  |
| Furniture, fixtures and office equipment       | 11,546                 | 13,484                 |
| Construction in progress                       | 97,319                 | 26,642                 |
|  | 1,450,503              | 1,353,781              |
| Less accumulated depreciation and amortization | 1,027,763              | 972,973                |
|  | \$422,740              | \$380,808              |

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

|                               | November<br>3,<br>2013 | October<br>28,<br>2012 |
|-------------------------------|------------------------|------------------------|
| Machinery and equipment       | \$ 21,327              | \$21,327               |
| Construction in progress      | 34,918                 | -                      |
|                               | 56,245                 | 21,327                 |
| Less accumulated amortization | 4,932                  | 2,758                  |
|                               | \$ 51,313              | \$18,569               |

Depreciation expense for property, plant and equipment (excluding property under capital leases) was \$63.8 million, \$73.8 million and \$77.0 million in fiscal years 2013, 2012 and 2011, respectively. Amortization expense for property under capital leases was \$2.2 million, \$4.8 million and \$9.7 million in fiscal years 2013, 2012 and 2011, respectively.

#### NOTE 3 - INTANGIBLE ASSETS

Intangible assets include assets related to the purchase of additional shares of PKL and the investment to form the MP Mask joint venture. Amortization expense of intangible assets was \$5.5 million, \$5.0 million and \$5.3 million in fiscal years 2013, 2012 and 2011, respectively.



Intangible assets consist of:

|                              | Gross<br>Amount | Accumulated<br>Amortization | Net<br>Amount |
|------------------------------|-----------------|-----------------------------|---------------|
| As of November 3, 2013       |                 |                             |               |
| Technology license agreement | \$59,616        | \$ 29,477                   | \$30,139      |
| Customer lists               | 7,210           | 5,599                       | 1,611         |
| Supply agreement             | 6,959           | 6,381                       | 578           |
| Software and other           | 5,728           | 3,976                       | 1,752         |
|                              | \$79,513        | \$ 45,433                   | \$34,080      |
| As of October 28, 2012       |                 |                             |               |
| Technology license agreement | \$59,616        | \$ 25,503                   | \$34,113      |
| Customer lists               | 7,210           | 4,876                       | 2,334         |
| Supply agreement             | 6,959           | 6,157                       | 802           |
| Software and other           | 3,491           | 3,356                       | 135           |
|                              | \$77,276        | \$ 39,892                   | \$37,384      |

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

Fiscal Years:

|      |         |
|------|---------|
| 2014 | \$5,689 |
| 2015 | 5,689   |
| 2016 | 4,497   |
| 2017 | 3,974   |
| 2018 | 3,974   |

NOTE 4 - 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 both 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 Accounting Standards Codification ("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 2013, 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. During fiscal 2012 the Company made additional capital contributions of \$13.4 million to the MP Mask joint venture, which were primarily related to capital calls made by the joint venture. The Company did not make any contributions to MP Mask in fiscal 2013 and it did not receive any distributions from MP Mask during fiscal 2013 or fiscal 2012.

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The Company's investment in the VIE, which represents its maximum exposure to loss, was \$93.1 million and \$93.3 million at November 3, 2013 and October 28, 2012, respectively. These amounts are reported in the Company's consolidated balance sheets as Investment in joint venture. The Company recorded losses from its investment in MP Mask of \$0.1 million in fiscal years 2013 and 2012 and income of \$0.6 million in fiscal year 2011. Income (loss) from MP Mask is included in Interest and other income, net, in the consolidated statements of income.

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.

As of October 28, 2012, the Company owed MP Mask \$6.4 million and had a receivable from Micron of \$9.0 million, both primarily related to the aforementioned supply agreements. The Company, in 2012, recorded \$1.6 million of commission revenue earned under the supply agreements it has with Micron and MP Mask, and amortization of \$0.4 million of the related supply agreement intangible asset. The Company, for certain sales made during 2012, also recorded cost of sales in the amount of \$7.6 million for photomasks produced by MP Mask for the Company's customers, and incurred expenses of \$2.0 million for research and development activities and other goods and services purchased from MP Mask by the Company. In 2012 the Company purchased equipment from MP Mask for \$1.9 million, of which \$1.5 million was recorded as the cost of the equipment and \$0.4 million was recorded as an investment in joint venture.

The Company, in 2011, recorded \$1.7 million of commission revenue earned under the supply agreements it has with Micron and MP Mask, and amortization of \$0.5 million of the related supply agreement intangible asset. The Company, for certain sales made during 2011, also recorded cost of sales in the amount of \$18.5 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. In 2011, the Company purchased equipment from MP Mask for \$4.6 million, of which \$2.3 million was recorded as the cost of the equipment and \$2.3 million was recorded as an investment in joint venture.

In the second quarter of fiscal 2012 the Company paid \$35 million to Micron in connection with the purchase of the U.S. nanoFab facility and the remaining term of the operating lease agreement through 2014 was cancelled.

Summarized financial information of MP Mask is presented below.

|                        | As of October |          |
|------------------------|---------------|----------|
|                        | 2013          | 2012     |
| Current assets         | \$35,794      | \$25,701 |
| Noncurrent assets      | 177,769       | 170,226  |
| Current liabilities    | 28,497        | 15,597   |
| Noncurrent liabilities | -             | -        |

  

|              | Year Ended October |          |          |
|--------------|--------------------|----------|----------|
|              | 2013               | 2012     | 2011     |
| Net sales    | \$77,900           | \$84,216 | \$79,766 |
| Gross profit | 4,663              | 1,799    | 2,649    |
| Net income   | 4,735              | 831      | 6,691    |





## NOTE 5 - ACCRUED LIABILITIES

Accrued liabilities consist of the following:

|                                      | November<br>3,<br>2013 | October<br>28,<br>2012 |
|--------------------------------------|------------------------|------------------------|
| Salaries, wages and related benefits | \$ 10,223              | \$7,379                |
| Income taxes                         | 4,754                  | 6,989                  |
| VAT and other taxes                  | 3,019                  | 2,228                  |
| Other                                | 6,352                  | 8,105                  |
|                                      | \$ 24,348              | \$24,701               |

## NOTE 6 - DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES

The Company has utilized derivative instruments to reduce its exposure to the effects of the variability of interest rates and foreign currencies on its financial performance when it believes such action is warranted. Historically, the Company has been a party to derivative instruments to hedge either the variability of cash flows of a prospective transaction or the fair value of a recorded asset or liability. In certain instances, the Company has designated these transactions as hedging instruments. However, whether or not a derivative was designated as being a hedging instrument, the Company's purpose for engaging in the derivative has always been for risk management (and not speculative) purposes. The Company has historically not been a party to a significant number of derivative instruments and does not expect its derivative activity to significantly increase in the foreseeable future.

In addition to the utilization of derivative instruments discussed above, the Company attempts to minimize its risk of foreign currency exchange rate variability by, whenever possible, procuring production materials within the same country that it will utilize the materials in manufacturing and, by selling to customers from manufacturing sites within the country in which the customers are located.

In May 2009, in connection with an amendment to its credit facility, the Company issued 2.1 million warrants, each exercisable for one share of the Company's common stock at an exercise price of \$0.01 per share. Forty percent of the warrants were exercisable upon issuance, and the remaining balance was to become exercisable in twenty percent increments at various points in time after October 31, 2009. As a result of certain net cash settleable put provisions within the warrant agreement, the warrants were recorded as a liability in the Company's consolidated balance sheet. As of the issuance date and for future periods that such warrants remained outstanding, the Company had adjusted the liability based upon the current fair value of the warrants, with any changes in their fair value being recognized in earnings. Due to the warrants' exercise price of \$0.01 per share, their fair value approximated the market price of the Company's common stock. Approximately 1.2 million of these warrants were cancelled as a result of the Company's early repayment of certain amounts under its credit facility during the year ended November 1, 2009, and the associated liability was reduced accordingly. All of the 0.2 million of these warrants that remained outstanding were exercised in fiscal 2012. See Note 8 for disclosures related to other common stock warrants.

A portion of an existing loss on a cash flow hedge, in the amount of \$0.1 million, is expected to be reclassified into earnings over the next twelve months.

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The table below presents the effect of derivative instruments on the Company's consolidated statements of income for the years ended November 3, 2013, October 28, 2012 and October 30, 2011.

| Derivatives Not Designated<br>as Hedging Instruments Under<br>ASC 815 | Location of Gain (Loss)<br>Recognized Related to<br>Derivative Instruments | Amount of Gain<br>(Loss)<br>Recognized Related<br>to<br>Derivative<br>Instruments<br>Year Ended |                        |                        |
|---|--|---|------------------------|------------------------|
|   |  | November<br>3,<br>2013  | October<br>28,<br>2012 | October<br>30,<br>2011 |
| Warrants on common stock  | Interest and other income (expense), net                                   | \$-   | \$ 94                  | \$(424 )               |

NOTE 7 - LONG-TERM BORROWINGS

Long-term borrowings consist of the following:

|   | November<br>3,<br>2013 | October<br>28,<br>2012 |
|---|------------------------|------------------------|
| 3.25% convertible senior notes due in April 2016  | \$ 115,000             | \$ 115,000             |
| 2.77% capital lease obligation payable through July 2018  | 25,065                 | -                      |
| 5.50% convertible senior notes due in October 2014  | 22,054                 | 22,054                 |
| Term loan, which bears interest at a variable rate, as defined (2.69% at November 3, 2013), repaid in December 2013 | 21,250                 | 23,750                 |
| 3.09% capital lease obligation payable through March 2016   | 10,652                 | 15,175                 |
| 4.75% financing loan with customer  | -                      | 758                    |
|   | 194,021                | 176,737                |
| Less current portion  | 11,818                 | 7,781                  |
|   | \$ 182,203             | \$ 168,956             |

As of November 3, 2013, long-term borrowings, excluding capital lease obligations, mature as follows: \$2,500, \$24,554, \$117,500 and \$13,750 in fiscal years 2014, 2015, 2016 and 2017 respectively.

As of November 3, 2013, minimum lease payments under the Company's capital lease obligation were as follows:

Fiscal Years:

|      |           |
|------|-----------|
| 2014 | \$ 10,218 |
| 2015 | 10,218    |

|  |        |
|--|--------|
| 2016   | 7,076  |
| 2017   | 6,108  |
| 2018   | 4,228  |
|  | 37,848 |
| Less interest                                      | 2,131  |
| Net minimum lease payments under capital leases    | 35,717 |
| Less current portion of net minimum lease payments | 9,318  |
| Long-term portion of minimum lease payments        | 26,399 |

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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 3, 2013, the total amount payable through the end of the lease term was \$26.8 million, of which \$25.1 million represented principal and \$1.7 million represented interest.

In March 2012 the Company, in connection with its purchase of the U.S. nanoFab facility (see Note 4 for further discussion), amended its credit facility (“the credit facility”) to include the addition of a \$25 million term loan that was to mature in March 2017. In December 2013, simultaneous with the new credit facility, the Company repaid the \$21.3 million balance of this term loan that was outstanding at November 3, 2013.

In December 2013 the Company amended its credit facility, which increased its limit to \$50 million with an expansion capacity to \$75 million, and extended its term to December 2018. The amended credit facility, which replaces the credit facility in effect at November 3, 2013, bears interest based on the Company’s total leverage ratio, at LIBOR plus a spread, as defined in the credit facility. The amended credit facility decreased the interest rate spread on borrowings, replaced the minimum fixed charge ratio covenant with a minimum interest coverage ratio and increased investment baskets, as defined, and continues to include a total leverage ratio and minimum unrestricted cash balance covenant. As of December 2013, the Company had no outstanding borrowings under the amended credit facility and \$50 million was available for borrowing. The amended credit facility is secured by substantially all of the Company’s assets located in the United States, as well as common stock the Company owns in certain of its foreign subsidiaries.

In March 2011 the Company amended its credit facility which, as then amended, included, among other things: i) a reduction of the aggregate commitments of the lenders from \$65 million to \$30 million; ii) a reduction of the applicable interest rates and modifications of the leverage ratios related thereto; iii) an extension of the maturity date to April 30, 2015; iv) an increase in the permitted amount of certain financed capital assets up to \$75 million outstanding at any one time; v) an allowance to issue the 3.25% convertible senior notes (discussed below); vi) an increase in the investments “basket” from \$15 million to \$25 million per year; vii) an allowance to repurchase the 5.5% convertible senior notes and other indebtedness; and viii) removal of the limitation on maximum last twelve months capital expenditures. The credit facility bore interest (2.69% at November 3, 2013), based on the Company’s total leverage ratio, at LIBOR plus a spread, as defined in the credit facility

In March 2011 the Company issued through a private offering pursuant to Rule 144A under the Securities Act of 1933, as amended, \$115 million aggregate principal amount of 3.25% convertible senior notes. The notes mature on April 1, 2016, and note holders may convert each \$1,000 principal amount of notes to approximately 96 shares of common stock (equivalent to an initial conversion price of \$10.37 per share of common stock) at any time prior to the close of business on the second scheduled trading day immediately preceding April 1, 2016. The conversion rate is subject to adjustment upon the occurrence of certain events, which are described in the indenture dated March 28, 2011. 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 net proceeds of the notes were approximately \$110.7 million, which were used, in part, to acquire \$35.4 million of the Company’s 5.5% convertible senior notes which were to mature on October 1, 2014, and to repay, in full, its then outstanding obligations under capital leases of \$19.8 million.

In June 2011 the Company acquired \$5.0 million of its 5.5% convertible senior notes in exchange for 0.7 million shares of its common stock with a fair value of \$6.5 million and cash of \$3.2 million (the note holders received approximately 148 shares and cash of \$647 for each \$1,000 note). The Company, in connection with this repurchase, recorded an extinguishment loss of \$5.0 million, which included the write off of deferred financing fees of \$0.3 million. The loss is included in other income (expense) in the Company's consolidated statements of income. In March 2011 the Company acquired \$30.4 million of its 5.5% convertible senior notes in exchange for 4.5 million shares of its common stock with a fair value of \$39.2 million and cash of \$19.7 million (the note holders received

approximately 148 shares and cash of \$647 for each \$1,000 note). The Company, in connection with this repurchase, recorded an extinguishment loss of \$30.1 million, which included the write off of deferred financing fees of \$1.7 million. The loss is included in other income (expense) in the Company's consolidated statement of income.

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In September 2009 the Company issued, through a public offering, \$57.5 million aggregate principal amount of 5.5% convertible senior notes, which were to mature on October 1, 2014. Under the terms of the offering, the note holders could convert each \$1,000 principal amount of notes to approximately 197 shares of common stock (equivalent to an initial conversion price of \$5.08 per share of common stock) on, or before, September 30, 2014. The conversion rate is subject to adjustment upon the occurrence of certain events which are described in the indenture dated September 16, 2009. The Company is not required to redeem the notes prior to their maturity. The net proceeds of this offering were approximately \$54.9 million, which were used to reduce amounts outstanding under the Company's credit facility. As discussed above, \$35.4 million aggregate principal amount of these notes were acquired by the Company during fiscal 2011. In addition, in December 2013 the Company entered into a new five year \$50 million credit facility. The Company intends to repay the remaining outstanding 5.5% convertible senior notes issued in September 2009 with borrowings against this new credit facility and, therefore, has classified as long-term the entire \$22.1 million of those notes that were outstanding as of November 3, 2013.

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 3, 2013, the total amount payable through the end of the lease term was \$11.1 million, of which \$10.7 million represented principal and \$0.4 million represented interest.

In January 2010 the Company borrowed \$3.7 million from a customer to purchase manufacturing equipment. This loan, which bore interest at 4.75%, was fully repaid during fiscal 2013 with product supplied to the customer. Product valued at \$0.8 million and \$1.0 million was shipped to the customer and applied against the loan during fiscal 2013 and 2012, respectively.

Interest payments were \$6.3 million, \$6.3 million and \$9.7 million in fiscal 2013, 2012 and 2011, respectively, including deferred financing cost payments of \$0.2 million and \$4.3 million in fiscal 2012 and 2011, respectively.

#### NOTE 8 - COMMON STOCK WARRANTS

In September 2009 the Company entered into two warrant agreements with Intel Capital Corporation to purchase a total of 750,000 shares of the Company's common stock. Under one warrant agreement 500,000 shares of the Company's common stock could be purchased at an exercise price of \$4.15 per share and under the second warrant agreement 250,000 shares of the Company's common stock could be purchased at an exercise price of \$5.08 per share. The warrant agreements were to expire in September 2014. Also in September 2009, the Company and Intel Corporation entered into an agreement to share technical and operations information regarding the development of the Company's products, the capabilities of the Company's photomask manufacturing lines and the alignment of photomask toolsets. Intel Capital Corporation also invested in the Company's convertible debt offering of September 2009. The warrants were recorded at their fair value on their date of grant, which was determined using the Black-Scholes option pricing model. In June 2013 Intel Capital Corporation exercised all of the warrants under both warrant agreements on a net share basis and received 0.3 million shares of the Company's common stock.

In conjunction with a May 2009 amendment to its credit facility, the Company also entered into a warrant agreement with its lenders. See Note 6 for further discussion of these warrants.

#### NOTE 9 - OPERATING LEASES

The Company leases various real estate and equipment under non-cancelable operating leases, for which rental expense was \$2.7 million in fiscal years 2013 and 2012 and \$2.9 million in fiscal year 2011. In fiscal 2012 the Company paid the former lessor \$35 million in connection with its purchase of the U.S. nanoFab, which reduced the Company's outstanding operating lease commitments by a total of \$15 million for fiscal years 2013 and 2014.





At November 3, 2013, future minimum lease payments under non-cancelable operating leases with initial terms in excess of one year are as follows:

|            |         |
|------------|---------|
| 2014       | \$2,141 |
| 2015       | 1,897   |
| 2016       | 1,695   |
| 2017       | 1,361   |
| 2018       | 354     |
| Thereafter | 721     |
|            | \$8,169 |

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

#### NOTE 10 – SHARE-BASED COMPENSATION

In March 2007 the Company's shareholders approved a new 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. A maximum of six million shares of common stock may be issued under the plan. 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 \$4.0 million, \$3.2 million and \$2.5 million in fiscal years 2013, 2012 and 2011, 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 2013, 2012 and 2011 are presented in the following table:

|                          | Year Ended       |   |                  |   |                  |   |
|--------------------------|------------------|---|------------------|---|------------------|---|
|                          | November 3, 2013 |   | October 28, 2012 |   | October 30, 2011 |   |
| Expected volatility      | 98.0             | % | 102.1            | % | 98.7             | % |
| Risk-free rate of return | 0.5 – 1.4%       |   | 0.6 – 0.9%       |   | 0.7 – 1.9%       |   |
| Dividend yield           | 0.0              | % | 0.0              | % | 0.0              | % |

Expected term      4.3 years    4.3 years    4.2 years

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A summary of option activity under the Plan as of November 3, 2013, 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 October 28, 2012         | 3,999,302  | \$ 8.34                         |   |                           |
| Granted                                 | 616,500    | 5.78                            |   |                           |
| Exercised                               | (327,469 ) | 1.54                            |   |                           |
| Cancelled and forfeited                 | (114,031 ) | 10.84                           |   |                           |
| Outstanding at November 3, 2013         | 4,174,302  | \$ 8.43                         | 5.6 years                                   | \$ 10,198                 |
| Exercisable at November 3, 2013         | 2,691,323  | \$ 9.83                         | 4.3 years                                   | \$ 6,639                  |
| Expected to vest as of November 3, 2013 | 1,325,098  | \$ 8.52                         | 8.1 years                                   | \$ 3,192                  |

The weighted-average grant date fair value of options granted during fiscal years 2013, 2012 and 2011 were \$4.00, \$4.47 and \$4.75, respectively. The total intrinsic value of options exercised during fiscal years 2013, 2012 and 2011 was \$1.6 million, \$1.3 million and \$2.1 million, respectively.

The Company received cash from option exercises of \$0.5 million, \$0.3 million and \$0.4 million in fiscal years 2013, 2012 and 2011, respectively. As of November 3, 2013, the total unrecognized compensation cost of unvested option awards was approximately \$3.8 million. That cost is expected to be recognized over a weighted-average amortization period of 2.3 years.

#### Restricted Stock

The Company periodically grants restricted stock awards. The restrictions on these awards lapse over a service period that has ranged from less-than-one to eight years. The weighted-average grant date fair values of restricted stock awards issued during fiscal years 2013, 2012 and 2011 were \$5.48, \$6.28 and \$6.71, respectively. The total fair value of awards for which restrictions lapsed was \$1.3 million, \$0.5 million and \$0.5 million during fiscal years 2013, 2012 and 2011 respectively. As of November 3, 2013, the total compensation cost for restricted stock awards not yet recognized was approximately \$1.2 million. That cost is expected to be recognized over a weighted-average amortization period of 2.0 years.

A summary of the status of the Company's outstanding restricted stock awards as of November 3, 2013, is presented below:

| Restricted Stock                        | Shares    | Weighted-Average Fair Value at Grant Date |
|---|-----------|---|
| Outstanding at October 28, 2012         | 252,314   | \$ 7.56                                   |
| Granted                                 | 209,500   | 5.48                                      |
| Vested                                  | (157,937) | 6.87                                      |
| Cancelled                               | (250 )    | 13.99                                     |
| Outstanding at November 3, 2013         | 303,627   | 6.48                                      |
| Expected to vest as of November 3, 2013 | 275,291   | 6.42                                      |



## Employee Stock Purchase Plan

The Company's Employee Stock Purchase Plan ("ESPP") permits employees to purchase shares at 85% of the lower of the fair market value at the commencement of the offering or the last day of the payroll payment period. The maximum number of shares of common stock approved by the Company's shareholders to be purchased under the ESPP was increased from 0.9 million shares to 1.2 million shares during fiscal 2010. The vesting period for shares purchased under the ESPP is approximately one year. Under the ESPP, approximately 1.1 million shares had been issued through November 3, 2013, and approximately 63,000 shares are subject to outstanding subscriptions. As of November 3, 2013, the total compensation cost related to the ESPP not yet recognized was \$0.1 million, which is expected to be recognized in fiscal 2014.

## NOTE 11 - EMPLOYEE RETIREMENT PLAN

The Company maintains a 401(k) Savings and Profit Sharing Plan ("401(k) Plan") which covers all full-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. Employer contributions amounted to \$0.4 million in fiscal years 2013, 2012 and 2011.

## NOTE 12 - CONSOLIDATION, RESTRUCTURING AND RELATED CHARGES

In the first quarter of fiscal 2012 the Company ceased the manufacture of photomasks at its Singapore facility and, in connection therewith, recorded charges of \$1.4 million during fiscal 2012. This restructuring, which was comprised primarily of employee termination costs, was substantially completed in fiscal 2012.

The following table sets forth the Company's restructuring reserve, primarily related to its Singapore facility, as of November 3, 2013 and October 28, 2012, and reflects the activity affecting the reserve for the year then ended.

|                                 | Year Ended November 3, 2013 |          |           |        |
|---------------------------------|-----------------------------|----------|-----------|--------|
|                                 | October                     |          | November  |        |
|                                 | 29,                         |          | 3,        |        |
|                                 | 2012                        | Charges  | Utilized  | 2013   |
| Employee terminations and other | \$295                       | \$ -     | \$(265)   | \$ 30  |
|                                 | \$295                       | \$ -     | \$(265)   | \$ 30  |
|                                 | Year Ended October 28, 2012 |          |           |        |
|                                 | October                     |          | October   |        |
|                                 | 31,                         |          | 28,       |        |
|                                 | 2012                        | Charges  | Utilized  | 2012   |
| Employee terminations and other | \$-                         | \$ 1,166 | \$(871)   | \$ 295 |
| Asset write-downs               | -                           | 262      | (262)     | -      |
|                                 | \$-                         | \$ 1,428 | \$(1,133) | \$ 295 |

## NOTE 13 - INCOME TAXES

The income before income tax provision consists of the following:

|               | Year Ended          |                     |                     |
|---------------|---------------------|---------------------|---------------------|
|               | November 3,<br>2013 | October 28,<br>2012 | October 30,<br>2011 |
| United States | \$(14,164)          | \$(5,474)           | \$(20,396)          |
| Foreign       | 40,969              | 46,122              | 56,295              |
|               | \$26,805            | \$40,648            | \$35,899            |

The income tax provision consists of the following:

|           | Year Ended          |                     |                     |
|-----------|---------------------|---------------------|---------------------|
|           | November 3,<br>2013 | October 28,<br>2012 | October 30,<br>2011 |
| Current:  |                     |                     |                     |
| Federal   | \$208               | \$81                | \$291               |
| State     | 65                  | (5 )                | 74                  |
| Foreign   | 7,222               | 11,332              | 15,550              |
| Deferred: |                     |                     |                     |
| Federal   | -                   | -                   | -                   |
| State     | (181 )              | -                   | -                   |
| Foreign   | (85 )               | (615 )              | (224 )              |
| Total     | \$7,229             | \$10,793            | \$15,691            |

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

|  | Year Ended          |                     |                     |
|--|---------------------|---------------------|---------------------|
|  | November 3,<br>2013 | October 28,<br>2012 | October 30,<br>2011 |
| U.S. federal income tax at statutory rate                                | \$9,382             | \$14,227            | \$12,564            |
| Changes in valuation allowances  | 1,325               | 1,806               | (8,334 )            |
| Distributions from foreign subsidiaries                                  | 1,957               | 2,073               | 1,925               |
| State income taxes, net of federal benefit                               | 267                 | (1,956 )            | 503                 |
| Foreign tax rate differentials   | (4,851)             | (3,805 )            | (4,467 )            |
| Tax credits  | (3,967)             | (1,071 )            | (522 )              |
| Uncertain tax positions, including reserves, settlements and resolutions | 1,471               | 1,984               | 1,499               |
| Debt extinguishment losses   | -                   | (2,879 )            | 11,942              |
| Equity based compensation  | 765                 | 499                 | 231                 |
| Other, net   | 880                 | (85 )               | 350                 |
|  | \$7,229             | \$10,793            | \$15,691            |

The effective tax rate differs from the U.S. statutory rate of 35% in fiscal years 2013 and 2012 primarily due to a higher level of earnings being taxed at lower statutory rates in foreign jurisdictions, combined with the benefit of various investment credits in certain foreign jurisdictions. The effective tax rate differs from the U.S. statutory rate of 35% in fiscal year 2011 primarily due to the impact of the non-deductible debt extinguishment losses related to the Company's acquisition of a portion of its 5.5% convertible senior notes and the impact of a foreign subsidiary's tax settlement, offset by a higher level of earnings taxed at lower statutory rates in foreign jurisdictions.

The net deferred income tax assets consist of the following:

|  | November<br>3,<br>2013 | October<br>28,<br>2012 |
|--|------------------------|------------------------|
| Deferred income tax assets:                    |                        |                        |
| Net operating losses                           | \$ 57,631              | \$ 56,252              |
| Reserves not currently deductible              | 7,101                  | 6,382                  |
| Alternative minimum tax credits                | 3,116                  | 3,116                  |
| Tax credit carryforwards                       | 7,051                  | 4,785                  |
| Other  | 1,892                  | 2,634                  |
|  | 76,791                 | 73,169                 |
| Valuation allowances                           | (56,661 )              | (55,536 )              |
|  | 20,130                 | 17,633                 |
| Deferred income tax liabilities:               |                        |                        |
| Undistributed earnings of foreign subsidiaries | (5,347 )               | (4,575 )               |
| Property, plant and equipment                  | (890 )                 | (604 )                 |
| Investments                                    | (371 )                 | (170 )                 |
| Other  | (992 )                 | (351 )                 |
|  | (7,600 )               | (5,700 )               |
| Net deferred income tax assets                 | \$ 12,530              | \$ 11,933              |
| Reported as:                                   |                        |                        |
| Current deferred tax assets                    | \$ 1,082               | \$ 1,199               |
| Long-term deferred tax assets                  | 12,455                 | 11,395                 |
| Long-term deferred tax liabilities             | (1,007 )               | (661 )                 |
|  | \$ 12,530              | \$ 11,933              |

Unrecognized tax benefits associated with uncertain tax positions were \$4.9 million at November 3, 2013, of which \$1.7 million is recorded in other liabilities in the consolidated balance sheet, and \$3.2 million is recorded as a reduction to deferred tax assets and the related valuation allowance, and were \$3.9 million at October 28, 2012, of which \$1.9 million is recorded in other liabilities in the consolidated balance sheet, and \$2.0 million is recorded as a reduction to deferred tax assets and the related valuation allowance. If recognized, \$1.7 million of the benefits would favorably affect the Company's effective tax rate in future periods. Included in these amounts for both fiscal years 2013 and 2012 was \$0.1 million for interest and penalties. The Company includes any applicable interest and penalties related to uncertain tax positions in its income tax provision. 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 subsidiaries' 2010 tax year, as reflected below. As of November 3, 2013, the Company believes it is not reasonably possible that the total amounts of unrecognized tax benefits will significantly increase or decrease in the next twelve months. The Company is currently subject to examination by the U.S. for fiscal years 2011 and 2012. With respect to major foreign and state tax jurisdictions, the Company is no longer subject to tax authority examinations for years prior to fiscal year 2008.

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

|   | Year Ended       |                  |                  |
|---|------------------|------------------|------------------|
|   | November 3, 2013 | October 28, 2012 | October 30, 2011 |
| Balance at beginning of year                            | \$3,793          | \$1,824          | \$1,676          |
| Additions (reductions) for tax positions in prior years | 1,224            | 1,932            | 709              |
| Additions based on current year tax positions           | 207              | 616              | 502              |
| Settlements   | (406 )           | (518 )           | (1,063)          |
| Lapses of statutes of limitations                       | (61 )            | (61 )            | -                |
| Balance at end of year                                  | \$4,757          | \$3,793          | \$1,824          |

As of November 3, 2013, the Company had available U.S. Federal tax operating loss carryforwards of approximately \$129.8 million which expire between 2020 and 2033, and research and development tax credit carryforwards of approximately \$3.8 million which expire between 2018 and 2033. As of November 3, 2013, the Company also has U.S. state tax operating loss carryforwards of approximately \$193.0 million and foreign tax operating loss carryforwards of approximately \$40.9 million. These loss carryforwards expire between 2014 and 2033 with the exception of \$0.6 million that has an indefinite life.

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 may expire prior to utilization. The valuation allowance increased (decreased) by \$1.1 million, \$2.5 million and \$(8.2) million in fiscal years 2013, 2012 and 2011, respectively.

As of November 3, 2013, the Company had \$3.1 million of alternative minimum tax credit carryforwards that are available to offset future federal income taxes payable. The Company also has state tax credits available of \$4.9 million which, if they are not utilized, will begin to expire in 2014 and foreign investment tax credits of \$0.1 million.

As of November 3, 2013, the undistributed earnings of foreign subsidiaries included in consolidated retained earnings amounted to \$136.4 million, of which \$15.3 million of earnings is considered not to be permanently reinvested. The amount of undistributed earnings is calculated taking into account the net amount of earnings of the Company's foreign subsidiaries, considering its multi-tier subsidiary structure, and translating those earnings into U.S. dollars using exchange rates in effect as of the balance sheet date. During fiscal year 2008 a decision was made to not indefinitely reinvest earnings in certain foreign jurisdictions. No provision has been made for taxes due on the remaining undistributed earnings of \$121.1 million considered to be 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. In addition, the Company had been accorded a tax holiday in China which expired in 2011. These tax holidays had no dollar or per share effect in the fiscal years ended November 3, 2013, October 28, 2012 and October 30, 2011. In Korea and at Photronics Semiconductor Mask Corporation (PSMC) in Taiwan, various investment tax credits have been earned to reduce the Company's effective income tax rate.



Income tax payments were \$10.7 million, \$14.3 million and \$10.4 million in fiscal 2013, 2012 and 2011, respectively. Cash received for refunds of income taxes paid in prior years amounted to \$0.3 million, \$0.1 million and \$0.2 million in fiscal years 2013, 2012 and 2011, respectively.

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## NOTE 14 - EARNINGS PER SHARE

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

|  | Year Ended |          |          |
|--|------------|----------|----------|
|  | November   | October  | October  |
|  | 3,         | 28,      | 30,      |
|  | 2013       | 2012     | 2011     |
| Net income attributable to Photronics, Inc. shareholders           | \$17,966   | \$27,868 | \$16,229 |
| Effect of dilutive securities:                                     |            |          |          |
| Interest expense on convertible notes, net of related tax effects  | -          | 6,168    | -        |
| Gain related to common stock warrants fair value adjustment        | -          | (94 )    | -        |
| Earnings for diluted earnings per share                            | \$17,966   | \$33,942 | \$16,229 |
| Weighted-average common shares computations:                       |            |          |          |
| Weighted-average common shares used for basic earnings per share   | 60,644     | 60,055   | 57,030   |
| Effect of dilutive securities:                                     |            |          |          |
| Share-based payment awards   | 813        | 767      | 1,145    |
| Common stock warrants  | 142        | 219      | 283      |
| Convertible notes  | -          | 15,423   | -        |
| Dilutive potential common shares                                   | 955        | 16,409   | 1,428    |
| Weighted-average common shares used for diluted earnings per share | 61,599     | 76,464   | 58,458   |
| Basic earnings per share   | \$0.30     | \$0.46   | \$0.28   |
| Diluted earnings per share   | \$0.29     | \$0.44   | \$0.28   |

The table below shows the outstanding weighted-average share-based payment awards and common stock warrants 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   | October | October |
|  | 3,         | 28,     | 30,     |
|  | 2013       | 2012    | 2011    |
| Convertible notes                          | 6,168      | -       | 13,994  |
| Share based payment awards                 | 2,880      | 2,587   | 2,407   |
| Common stock warrants                      | -          | -       | 213     |
| Total potentially dilutive shares excluded | 9,048      | 2,587   | 16,614  |

In the first quarter of fiscal year 2014, the Company awarded approximately 0.7 million shared-based payment awards to its employees and directors.

## NOTE 15 – SUBSIDIARY SHARE REPURCHASE

Since the second quarter of fiscal 2011, the board of directors of PSMC, a subsidiary of the Company based in Taiwan, has 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 quarter of fiscal 2013. During the year ended November 3, 2013, PSMC purchased 9.2 million shares at a cost of \$4.2 million. PSMC purchased 35.9 million shares at a cost of \$15.6 million during the year ended October 28, 2012. These repurchase programs increased the Company's ownership in PSMC from 62.25% at October 30, 2011, to 72.09% at October 28, 2012, and to 75.11% at January 27, 2013.

In June 2013 the Company completed a tender offer, which had commenced in April 2013, for the outstanding shares of PSMC. A total of 50.3 million shares were purchased 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 to 98.13%. In September 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.

The table below presents the effect of the change in the Company's ownership interest in PSMC on the Company's equity for fiscal years 2013, 2012 and 2011 (60.5 million, 35.9 million and 21.6 million shares of common stock of PSMC purchased, respectively).

|  | Year Ended          |                     |                     |
|--|---------------------|---------------------|---------------------|
|  | November 3,<br>2013 | October 28,<br>2012 | October 30,<br>2011 |
| Net income attributable to Photronics, Inc. shareholders   | \$17,966            | \$27,868            | \$16,229            |
| Increase (decrease) in Photronics, Inc.'s additional paid-in capital   | 600                 | 1,985               | (201 )              |
| Decrease in Photronics, Inc.'s accumulated other comprehensive income  | (237 )              | (78 )               | -                   |
| Change from net income attributable to Photronics, Inc. shareholders and transfers to or from noncontrolling interests | \$18,329            | \$29,775            | \$16,028            |

In November 2013 the Company announced that it had entered into an agreement to merge PSMC with DNP Photomask Technology Taiwan Co., Ltd., a wholly owned subsidiary of Dai Nippon Printing Co., Ltd. (DNP), to form a joint venture which will operate under the name of Photronics DNP Mask Corporation (PDMC). See Note 22 for further discussion.

## NOTE 16 - COMMITMENTS AND CONTINGENCIES

At November 3, 2013, the Company had outstanding purchase commitments of \$48 million, which included \$42 million related to capital expenditures, and had recorded liabilities for the purchase of equipment of \$19 million. See Note 9 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 17 - 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 2013, 2012 and 2011 net sales by geographic area and of ICs and FPDs, and long-lived assets by geographic area were as follows:

|               | Year Ended       |                  |                  |
|---------------|------------------|------------------|------------------|
|               | November 3, 2013 | October 28, 2012 | October 30, 2011 |
| Net sales     |                  |                  |                  |
| Korea         | \$ 134,300       | \$ 161,154       | \$ 171,327       |
| United States | 127,054          | 135,170          | 158,005          |
| Taiwan        | 117,364          | 109,232          | 122,070          |
| Europe        | 41,126           | 40,653           | 46,613           |
| All other     | 2,336            | 4,230            | 14,005           |
|               | \$422,180        | \$450,439        | \$512,020        |
| IC            | \$320,579        | \$350,105        | \$391,158        |
| FPD           | 101,601          | 100,334          | 120,862          |
|               | \$422,180        | \$450,439        | \$512,020        |

|                   | As of            |                  |                  |
|-------------------|------------------|------------------|------------------|
|                   | November 3, 2013 | October 28, 2012 | October 30, 2011 |
| Long-lived assets |                  |                  |                  |
| United States     | \$ 191,518       | \$ 177,614       | \$ 159,845       |
| Korea             | 153,878          | 120,628          | 119,855          |
| Taiwan            | 66,836           | 72,185           | 77,367           |
| Europe            | 10,471           | 10,262           | 10,879           |
| All other         | 37               | 119              | 734              |
|                   | \$422,740        | \$380,808        | \$368,680        |

Samsung Electronics Co., Ltd. accounted for 18%, 22% and 20% of the Company's net sales in fiscal years 2013, 2012 and 2011, respectively.

## NOTE 18 - 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 year ended November 3, 2013:

|   | Year Ended November 3, 2013   |            |         |          |
|---|---|------------|---------|----------|
|   | Foreign<br>Currency Amortization<br>Translation of Cash<br>Adjustment | Flow Hedge | Other   | Total    |
| Balance at October 29, 2012   | \$17,241  | \$ (690 )  | \$(651) | \$15,900 |
| Other comprehensive income before reclassifications                     | 9,805   | -          | 54      | 9,859    |
| Amounts reclassified from other comprehensive income                    | -   | 128        | -       | 128      |
| Net current period other comprehensive income                           | 9,805   | 128        | 54      | 9,987    |
| Less: other comprehensive loss attributable to noncontrolling interests | 751   | -          | 2       | 753      |
| Purchase of common stock of subsidiary                                  | -   | -          | (237)   | (237 )   |
| Balance at November 3, 2013   | \$27,797  | \$ (562 )  | \$(832) | \$26,403 |

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

## NOTE 19 – 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 20 - OTHER RELATED PARTY TRANSACTIONS

The chairman of the board and chief executive officer of the Company is also the vice chairman of the board and majority shareholder 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 executive 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 \$1.7 million, \$1.8 million, and \$1.8 million in fiscal years 2013, 2012 and 2011, respectively, and had an outstanding balance of \$0.1 million and \$0.2 million due to this company as of November 3, 2013 and October 28, 2012, respectively. As of November 3, 2013, the Company had contracted with this company for various services through June 2015 at a cost of \$2.2 million.

The Company purchases photomask blanks from a company of which an officer of the Company is a significant shareholder. The Company purchased \$20.0 million, \$20.1 million and \$21.4 million of photomask blanks from this company in 2013, 2012 and 2011, respectively, for which the amount owed to this company was \$4.6 million at November 3, 2013, and \$4.2 million at October 28, 2012.

The Company believes that the terms of its transactions with 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 4 for other related party transactions.

## NOTE 21 - 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 3, 2013 or October 28, 2012.

## 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 variable rate term loan is a Level 2 measurement and approximates its carrying value due to the variable nature of the underlying interest rates. The fair value of the Company's convertible senior notes is a Level 2 measurement that is determined using recent bid prices. The fair value of the Company's financing loan with a customer was a Level 2 measurement that approximated its carrying value due to its short-term maturity.

The table below presents the fair and carrying values of the Company's convertible senior notes at November 3, 2013 and October 28, 2012.

|                                | November 3, 2013 |                | October 28, 2012 |                |
|--------------------------------|------------------|----------------|------------------|----------------|
|                                | Fair Value       | Carrying Value | Fair Value       | Carrying Value |
| 3.25% convertible senior notes | \$ 130,330       | \$ 115,000     | \$ 110,239       | \$ 115,000     |

|                               |          |          |          |          |
|-------------------------------|----------|----------|----------|----------|
| 5.5% convertible senior notes | \$37,567 | \$22,054 | \$27,755 | \$22,054 |
|-------------------------------|----------|----------|----------|----------|

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## NOTE 22 – PENDING MERGER OF PSMC WITH DNP PHOTOMASK TECHNOLOGY TAIWAN CO., LTD.

In November 2013 the Company announced that it had entered into an agreement to merge PSMC with DNP Photomask Technology Taiwan Co., Ltd., a wholly owned subsidiary of Dai Nippon Printing Co., Ltd. (DNP), to form a joint venture to operate under the name of Photronics DNP Mask Corporation (PDMC). The pending merger, which is a noncash transaction, would result in the Company owning 50.01% and DNP owning 49.99% of PDMC, whose financial results would be included in the Company's consolidated financial statements. The merger is subject to regulatory approvals and customary closing conditions, and is expected to be completed during the first half of fiscal 2014.

## NOTE 23 - QUARTERLY RESULTS OF OPERATIONS (UNAUDITED)

The following table sets forth certain unaudited quarterly financial data:

|  | First     | Second    | Third     | Fourth    | Year               |
|--|-----------|-----------|-----------|-----------|--------------------|
| Fiscal 2013:   |           |           |           | (a)       | (a)                |
| Net sales  | \$99,839  | \$106,680 | \$109,652 | \$106,009 | \$422,180          |
| Gross margin   | 21,098    | 24,789    | 27,078    | 26,675    | 99,640             |
| Net income   | 2,859     | 5,442     | 6,364     | 4,911     | 19,576             |
| Net income attributable to Photronics, Inc. shareholders | 2,323     | 4,863     | 5,940     | 4,840     | 17,966             |
| Earnings per share:                                      |           |           |           |           |                    |
| Basic  | \$0.04    | \$0.08    | \$0.10    | \$0.08    | \$0.30             |
| Diluted  | \$0.04    | \$0.08    | \$0.10    | \$0.08    | \$0.29             |
| Fiscal 2012:   | (b) (c)   | (d)       |           | (e)       | (b) (c)<br>(d) (e) |
| Net sales  | \$112,154 | \$117,451 | \$116,616 | \$104,218 | \$450,439          |
| Gross margin   | 25,458    | 29,861    | 32,304    | 24,297    | 111,920            |
| Net income   | 4,841     | 9,530     | 11,267    | 4,217     | 29,855             |
| Net income attributable to Photronics, Inc. shareholders | 4,268     | 8,818     | 10,950    | 3,832     | 27,868             |
| Earnings per share:                                      |           |           |           |           |                    |
| Basic  | \$0.07    | \$0.15    | \$0.18    | \$0.06    | \$0.46             |
| Diluted  | \$0.07    | \$0.14    | \$0.16    | \$0.06    | \$0.44             |

(a) Includes transaction expenses of \$0.8 million, net of tax, in connection with the pending joint venture with DNP Photomask Technology Co., Ltd.

(b) Includes consolidation and restructuring charges of \$1.1 million, net of tax, in connection with the discontinuance of manufacturing operations at the Company's Singapore facility.

(c) Includes non-cash gain of \$0.1 million, net of tax, in connection with subsequent measurement at fair value of warrants issued to purchase the Company's stock.

(d) Includes consolidation and restructuring charges of \$0.1 million, net of tax, in connection with the discontinuance of manufacturing operations at the Company's Singapore facility.

(e)



Includes consolidation and restructuring charges of \$0.2 million, net of tax, in connection with the discontinuance of manufacturing operations at the Company's Singapore facility.

NOTE 24 - RECENT ACCOUNTING PRONOUNCEMENTS

In February 2013 the Financial Accounting Standards Board issued Accounting Standards Update (ASU) No. 2013-02, "Reporting Amounts Reclassified Out of Other Comprehensive Income". The amendments included in ASU No. 2013-02 require an entity to provide information about the amounts reclassified out of accumulated other comprehensive income by component, and present changes in accumulated balances for each component of comprehensive income on an interim basis. The Company adopted the provisions of ASU No. 2013-02 in the year ended November 3, 2013, and has presented its required disclosures in Note 18.

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ITEM CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND  
9. 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 ensure 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 3, 2013, based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in "Internal Control - Integrated Framework" (1992). Management, under the supervision and with the participation of the Company's chief executive officer and chief financial officer, assessed that the Company's internal control over financial reporting was effective as of November 3, 2013.

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 3, 2013, as stated in their attestation report on page 34 of this Form 10-K.

January 3, 2014



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 2014 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 2014 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 Photronics, Inc. at 15 Secor Road, Brookfield, Connecticut 06804.

ITEM 11. EXECUTIVE  
COMPENSATION

The information required by Item 402 of Regulation S-K and paragraph (e)(4) and (e)(5) of Item 407 is set forth in the Company's 2014 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 2014 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 2014 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 2014 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 2014 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:

|   | Page<br>No. |
|---|-------------|
| 1. Financial Statements: See "INDEX TO CONSOLIDATED FINANCIAL STATEMENTS" in Part II, Item 8 of this Form 10-K.             | 33          |
| 2. Financial Statement Schedules:   |             |
| Report of Independent Registered Public Accounting Firm   | 65          |
| Schedule II - Valuation and Qualifying Accounts for the years ended November 3, 2013, October 28, 2012 and October 30, 2011 | 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<br>Photronics, Inc.<br>Brookfield, Connecticut  |             |

We have audited the consolidated financial statements of Photronics, Inc. and subsidiaries (the "Company") as of November 3, 2013 and October 28, 2012, and for each of the three fiscal years ended November 3, 2013, October 28, 2012 and October 30, 2011, and the Company's internal control over financial reporting as of November 3, 2013, and have issued our report thereon dated January 3, 2014; 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 3, 2014  
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## Schedule II

Valuation and Qualifying Accounts  
for the Years Ended November 3, 2013,  
October 28, 2012  
and October 30, 2011  
(in thousands)

|  | Balance<br>at<br>Beginning<br>of<br>Year | Charged<br>to<br>and<br>Expenses | Deductions  | Balance<br>at<br>End of<br>Year |
|--|--|----------------------------------|-------------|---------------------------------|
| Allowance for Doubtful Accounts        |  |                                  |             |                                 |
| Year ended November 3, 2013            | \$3,902                                  | \$ (398 )                        | \$ 37       | (a) \$3,541                     |
| Year ended October 28, 2012            | \$4,055                                  | \$ (203 )                        | \$ 50       | (a) \$3,902                     |
| Year ended October 30, 2011            | \$4,235                                  | \$ 298                           | \$ (478 )   | (a) \$4,055                     |
| Deferred Tax Asset Valuation Allowance |  |                                  |             |                                 |
| Year ended November 3, 2013            | \$55,536                                 | \$ 1,125                         | \$ -        | \$56,661                        |
| Year ended October 28, 2012            | \$53,063                                 | \$ 3,331                         | \$ (858 )   | (b) \$55,536                    |
| Year ended October 30, 2011            | \$61,303                                 | \$ -                             | \$ (8,240 ) | (b) \$53,063                    |

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

(b) Primarily due to utilization of net operating losses and expiration of investment tax credit.

EXHIBITS INDEX

| <u>Exhibit Number</u> | <u>Description</u>   |
|-----------------------|--|
| <u>3.1</u>            | Certificate of Incorporation as amended July 9, 1986, April 9, 1990, March 16, 1995, November 13, 1997, April 15, 2002 and June 20, 2005.*   |
| 3.2                   | By-laws of the Company, (incorporated by reference to Exhibit 3.2 to the Company's Registration Statement on Form S-1, File Number 33-11694, which was declared effective by the Commission on March 10, 1987).  |
| 4.1                   | Form of Indenture between the Company and the Bank of New York, as Trustee (incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-3 File Number 333-160235 filed on June 25, 2009).   |
| 4.2                   | Indenture dated September 16, 2009 between the Company and the Bank of New York, as Trustee (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8K filed September 17, 2009).  |
| 4.3                   | Supplement to Indenture dated September 16, 2009 between the Company and the Bank of New York, as Trustee relating to the issuance of the Company's 5.5% Convertible Notes due 2014 (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8K filed September 17, 2009).                      |
| 4.4                   | Indenture dated March 28, 2011 between the Company and Wells Fargo (as successor trustee to Nova Scotia) (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on March 29, 2011).   |
| 10.1                  | Master Service Agreement dated January 11, 2002 between the Company and RagingWire Telecommunications, Inc. (incorporated by reference to Exhibit 10.1 to the Company's Annual Report on Form 10-K for the fiscal year ended November 1, 2009).  |
| 10.2                  | Underwriting Agreement between the Company and Morgan Stanley & Co. Incorporated dated September 10, 2009 relating to the issuance of the Company's 5.5% Convertible Notes due 2014 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8K filed September 11, 2009).                     |
| 10.3                  | Underwriting Agreement between the Company and Morgan Stanley & Co. Incorporated dated September 10, 2009 relating to the issuance of 9,638,554 shares of common stock (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8K filed September 11, 2009 (Commission File Number 0-15451)). |
| 10.4                  | 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)†   |
| 10.5                  | 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 30, 2011)†   |
| 10.6                  | Amendment to the Employee Stock Purchase Plan as of April 8, 2010 (incorporated by reference to Exhibit 10.42 to the Company's Quarterly Report on Form 10-Q filed on June 10, 2010).†   |
| 10.7                  | Amendment to the Employee Stock Purchase Plan as of March 28, 2012 (incorporated by reference to the Company's Quarterly Report on Form 10-Q filed September 5, 2012)†   |



- 10.8 The Company's 2007 Long-Term Equity Incentive Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q filed September 5, 2012).<sup>+</sup>
- 10.9 Amendment to the 2007 Long Term Equity Incentive Plan as of April 8, 2010 (incorporated by reference to Exhibit 10.43 to the Company's Quarterly Report on Form 10-Q filed on June 10, 2010).<sup>+</sup>
- 10.10 Consulting Agreement between the Company and Constantine S. Macricostas, dated July 11, 2005. (incorporated by reference to Exhibit 10.11 to the Company's Annual Report on Form 10-K for the fiscal year ended October 30, 2011 filed on January 13, 2012) <sup>+</sup>

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- 10.11 Amendment No. 1 to the Consulting Agreement between Constantine S. Macricostas and the Company dated November 10, 2008.\*+
- Executive Employment Agreement between the Company and Sean T. Smith dated February 20, 2003
- 10.12 (incorporated by reference to Exhibit 10.12 to the Company's Annual Report on Form 10-K for the fiscal year ended November 1, 2009).+
- Limited Liability Company Operating Agreement of MP Mask Technology Center, LLC between Micron
- 10.13 Technology, Inc. ("Micron") and Photronics, Inc. ("Photronics") dated May 5, 2006. (incorporated by reference to Exhibit 10.14 to the Company's Annual Report on Form 10-K for the fiscal year ended October 30, 2011)#
- Contribution and Units Purchase Agreement between Micron, Photronics and MP Mask Technology Center,
- 10.14 LLC ("MP Mask") dated May 5, 2006. (incorporated by reference to Exhibit 10.15 to the Company's Annual Report on Form 10-K for the fiscal year ended October 30, 2011) #
- Technology License Agreement among Micron, Photronics and MP Mask dated May 5, 2006. (incorporated by
- 10.15 reference to Exhibit 10.16 to the Company's Annual Report on Form 10-K for the fiscal year ended October 30, 2011) #
- Photronics to Micron Supply Agreement between Micron and Photronics dated May 5, 2006. (incorporated by
- 10.16 reference to Exhibit 10.17 to the Company's Annual Report on Form 10-K for the fiscal year ended October 30, 2011) #
- Company to Photronics Supply Agreement between MP Mask and Photronics dated May 5, 2006. (incorporated
- 10.17 by reference to Exhibit 10.18 to the Company's Annual Report on Form 10-K for the fiscal year ended October 30, 2011) #
- 10.18 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)
- Executive Employment Agreement between the Company and Soo Hong Jeong dated May 31, 2011
- 10.19 (incorporated by reference to Exhibit 10.40 to the Company's Quarterly Report on Form 10-Q filed on June 8, 2011). +
- Executive Employment Agreement between the Company and Christopher J. Progler, Vice President, Chief
- 10.20 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).+
- 10.21 Executive Employment Agreement between the Company and Peter Kirlin dated May 21, 2010 (incorporated by reference to Exhibit 10.42 of the Company's Quarterly Report on Form 10-Q filed on June 10, 2010).+
- 10.22 Executive Employment Agreement between the Company and Richelle Burr dated May 21, 2010 (incorporated by reference to Exhibit 10.43 of the Company's Quarterly Report on Form 10-Q filed on June 10, 2010).+
- 10.23 Form of Amendment to Executive Employment Agreement dated March 16, 2012 (incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed on March 16, 2012)†
- 10.24 Third Amended and Restated Credit Agreement dated as of December 5, 2013.\*
- 21 List of Subsidiaries of the Company.\*

23 Consent of Deloitte & Touche LLP.\*

31.1 Certification of Chief Executive Officer pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.\*

31.2 Certification of Chief Financial Officer pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.\*

32.1 Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.\*

32.2 Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.\*

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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 3, 2014  
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/ CONSTANTINE S. MACRICOSTAS    January 3, 2014  
Constantine S. Macricostas  
Chairman of the Board  
Chief Executive Officer  
(Principal Executive Officer)

By/s/ SEAN T. SMITH                      January 3, 2014  
Sean T. Smith  
Senior Vice President  
Chief Financial Officer  
(Principal Accounting Officer/  
Principal Financial Officer)

By/s/ WALTER M. FIEDEROWICZ            January 3, 2014  
Walter M. Fiederowicz  
Director

By/s/ JOSEPH A. FIORITA, JR.            January 3, 2014  
Joseph A. Fiorita, Jr.  
Director

By/s/ LIANG-CHOO HSIA                    January 3, 2014  
Liang-Choo Hsia  
Director

By/s/ GEORGE MACRICOSTAS              January 3, 2014  
George Macricostas  
Director

By/s/ MITCHELL G. TYSON                January 3, 2014  
Mitchell G. Tyson  
Director

