(Mark One)
[X] ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended ...October 31, 1999...

OR
[ ] TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from................. to ......................
Commission file number...0-15451...
...PHOTRONICS, INC...
(Exact name of registrant as specified in its charter)
...Connecticut...
(State or other jurisdiction of
incorporation or organization)
...06-0854886...
(I.R.S. Employer

Identification No.)
... 1061 East Indiantown Road, Jupiter, Florida...
(Address of principal executive offices)
(Registrant's telephone number, including area code)

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:
Title of each class

Name of each exchange on which
$\qquad$
None
. 33477.
(Zip Code)
registered

SECURITIES REGISTERED PURSUANT TO SECTION 12(g) OF THE ACT:
....Common Stock, \$0.01 par value per share..... (Title of Class)

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..X.. No .....

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation $\mathrm{S}-\mathrm{K}$ 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 $10-\mathrm{K}$ or any amendment to this Form $10-\mathrm{K}$. [X]

As of December 31, 1999, 23,974,668 shares of the registrant's Common Stock were outstanding. The aggregate market value of registrant's voting stock held by non-affiliates of the registrant as of December 31, 1999 was approximately \$594,900,722.

## DOCUMENTS INCORPORATED BY REFERENCE

Proxy Statement for the 2000 Annual Meeting of Shareholders to be held on April 4, 2000.

Incorporated into Part III of this Form 10-K.

ITEM 1. BUSINESS
General
masters to transfer circuit patterns onto semiconductor wafers during the fabrication of integrated circuits and, to a lesser extent, other types of electrical components. The Company operates principally from ten facilities, six of which are located in the United States, three in Europe and one in Singapore.

In addition to manufacturing photomasks, the Company, through its wholly-owned subsidiary Beta Squared, Inc. ("Beta Squared"), services wafer plasma etching systems and conducts research and development related to cleaning and etching processes. The Company also provides mask-related technology consulting and data processing services through its D2W division. See "Related Sales and Services."

During fiscal 1999, the Company continued to invest in its global manufacturing network and enhance its technological and manufacturing capabilities. In addition, the Company increased its research and development activities and continued to invest in advanced manufacturing equipment to allow it to meet future technological and volume demands. The Company believes that its efforts have established it as a leading independent photomask manufacturer on a global basis and provide it with the facilities and expertise to continue to expand its sales base.

The Company is a Connecticut corporation, organized in 1969. Its principal executive offices are located at 1061 East Indiantown Road, Jupiter, Florida, telephone (561) 745-1222.

Fiscal 1999 Developments
In January 1999, the Company sold its large area mask operation that was located in Colorado Springs, Colorado.

In March 1999, the Company acquired from Cirrus Logic, Inc., a leading supplier of semiconductor products, substantially all of the assets of its mask engineering group. As part of this acquisition, the Company established a new business unit, "D2W." D2W offers mask-related technology consulting and data processing services to the semiconductor industry to optimize the integration of the various processes used to produce semiconductors. D2W is based in Fremont, California and is staffed primarily by those employees formerly with Cirrus Logic, Inc.'s mask engineering group.

In July 1999, the Company and International Business Machines, Inc. ("IBM") began a joint research and development venture related to "next generation lithography" technologies. These "post-optical" manufacturing technologies involve an exposure source other than light (such as an X-ray or electron beam source) for circuits having critical dimensions smaller than believed possible with currently utilized optical exposure
methods. The purpose of the venture is to further develop and create a commercialization path for masks for use in wafer exposure systems proposed for introduction when current optically-based wafer exposure systems become incapable of producing smaller circuit patterns. The venture is being conducted at an advanced manufacturing facility at IBM's Burlington, Vermont location.

Also in July 1999, the Company leased a building in Phoenix, Arizona to relocate the photomask manufacturing operations currently being conducted in Mesa, Arizona at facilities leased from Motorola, Inc. ("Motorola"). This operation resulted from the Company's December 1997 acquisition of Motorola's internal photomask manufacturing operations. The Company anticipates that the new Phoenix facility will be complete in the second half of fiscal 2000.

On September 15, 1999, the Company, AL Acquisition Corp., a wholly owned subsidiary of the Company, and Align-Rite International, Inc. ("Align-Rite"), entered into an Agreement and Plan of Merger, as amended by Amendment No. 1 to the Agreement and Plan of Merger, dated January 10, 2000 (as amended, the "Merger Agreement") pursuant to which the Company would acquire Align-Rite in a merger transaction (the "Merger"). The Merger Agreement provides, among other things, that each outstanding share of Align-Rite's common stock will be converted into .85 shares of the Company's common stock on the effective date of the Merger, resulting in Align-Rite shareholders holding approximately $15 \%$ of the Company's outstanding shares of common stock when the Merger is complete. The Merger is subject to the approval of Align-Rite's shareholders, and to various regulatory and closing conditions, including compliance with the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended.

Align-Rite manufactures photomasks using electron beam, laser beam and optical-based technologies at four facilities located in Burbank, California; Melbourne, Florida; Bridgend, Wales;and Heilbronn, Germany. Align-Rite is a public company whose shares trade on the NASDAQ Stock Market under the symbol "MASK."

On November 1, 1999, the Company sold substantially all the assets and transferred to the buyer substantially all of the liabilities of the Company's Beta Squared business unit that sold refurbished semiconductor manufacturing equipment and replacement parts and provided engineering and field services for such equipment (the "Beta Lithography Equipment Division").

## Manufacturing Technology

The Company manufactures photomasks, which are primarily used as masters to transfer circuit patterns onto semiconductor wafers. The Company's photomasks are manufactured in accordance with circuit designs provided on a confidential basis by its customers. The typical manufacturing process for one of the company's photomasks involves receipt and conversion of circuit design data to manufacturing pattern data. This manufacturing data is then used to control the lithography system that exposes the circuit pattern onto the photomask blank. The exposed areas are dissolved and etched to produce that pattern on the photomask. The photomask is inspected for defects and conformity to the customer design data, any defects are repaired, any required pellicles (or protective
membranes) are applied and, after final cleaning, the photomask is shipped to the customer.

The Company currently supports customers across the full spectrum of integrated circuit production technologies by manufacturing photomasks using electron beam or laser-based technologies and, to a significantly lesser degree, optical-based technologies. Laser-based or electron beam systems are the predominant technologies used for photomask manufacturing. Such technologies are capable of producing the finer line resolution, lighter overlay and larger die size for the larger and more complex circuits currently being designed. Laser and electron beam generated photomasks can be used with the most advanced processing techniques to produce VLSI (very large scale integrated circuit) devices. The Company currently owns a number of laser writing systems and electron beam systems and has committed to purchase additional advanced systems in order to maintain technological leadership. Compared to laser or electron beam generated photomasks, the production of photomasks by the optical method is less expensive, but also less precise. The optical method traditionally is used on less complex and lower priced photomasks.

The first several levels of photomasks sometimes are required to be delivered by the Company within 24 hours from the time it receives a customer's design. The ability to manufacture high quality photomasks within short time periods is dependent upon efficient manufacturing methods, high yields and high equipment reliability. The Company believes that it meets these requirements and has made significant investments in manufacturing and data processing systems and 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 yields required. Each photomask is inspected several times during the manufacturing process to ensure compliance with customer specifications. The Company has made a substantial investment in equipment to inspect and repair photomasks and to ensure that customer specifications are met. After inspection and any necessary repair, the Company utilizes technological processes to clean the photomasks prior to shipment.

## Sales and Marketing

The market for photomasks primarily consists of semiconductor manufacturers and designers, both domestic and international, including manufacturers that have the capability to manufacture photomasks. 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 in order to expedite the placement of individual purchase orders. Some of these prices may remain in effect for an extended period. The Company also negotiates prices, and occasionally enters into purchase arrangements, based on the understanding that, so 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 through a staff of full-time sales personnel and customer service representatives who work closely with the Company's general management and technical personnel. In addition to the sales personnel at the Company's manufacturing facilities in Brookfield, Connecticut; Milpitas and Sunnyvale, California; Allen and Austin, Texas; Dresden, Germany; Manchester, United Kingdom; Neuchatel, Switzerland; and Singapore, the Company has sales offices in Carlsbad and Pasadena, California; Colorado Springs, Colorado; Hillsboro, Oregon; and Taiwan. The Company also has a sales representative in Korea.

The Company supports international customers through both its domestic and foreign facilities and has sub-contract manufacturing arrangements in Taiwan. The Company considers its presence in international markets important to attracting new customers, providing global solutions to its existing customers and serving customers that utilize manufacturing foundries outside of the United States, principally in Asia. For a statement of the amount of net sales, operating income or loss, and identifiable assets attributable to each of the Company's geographic areas of operations, see Note 12 of Notes to the Consolidated Financial Statements.

## Related Sales and Services

In addition to the manufacture of photomasks, the Company, through its wholly-owned subsidiary, Beta Squared, services a wafer plasma etching system used in the processing of semiconductor wafers. The original system was developed by Texas Instruments which licensed to Beta Squared the right to manufacture and sell the system. Beta Squared also conducts research and development related to cleaning and etching processes. Prior to the sale of the Beta Lithography Equipment Division, Beta Squared also sold refurbished semiconductor manufacturing equipment, engineering services and replacement parts and field service for such equipment on a third-party basis. Such activities represented approximately $2 \%$ of the Company's net sales during fiscal 1999.

The Company's D2W division offers mask-related technology consulting and data processing services to the semiconductor industry. D2W's activities represented less than $1 \%$ of the Company's net sales during fiscal 1999.

## Customers

The Company primarily sells its products to leading semiconductor manufacturers. The Company's largest customers during fiscal 1999 included the following:

Analog Devices, Inc. Lucent Technologies, Inc.
Atmel Corporation
Chartered Semiconductor
Manufacturing, Ltd
Cirrus Logic, Inc.
Compaq Computer Corp
Cypress Semiconductor Corp.
Fairchild Semiconductor Corp Integrated Device Technology, Inc. International Business Machines, Inc. LSI Logic Corp.

Motorola, Inc.
National Semiconductor Corp. Philips Electronics NV
Raytheon Company
ST Microelectronics
Texas Instruments, Inc. Triquint Semiconductor, Inc. Vitesse Semiconductor Corp. VLSI Technology, Inc.

The Company has continually expanded its customer base and, during fiscal 1999, sold its products and services to approximately 400 customers. During fiscal 1999, no single customer other than Texas Instruments or Motorola accounted for more than 10\% of the Company's net sales. The Company's five largest customers, in the aggregate, accounted for approximately $40 \%$ of net sales in fiscal 1999. A significant decrease in the amount of sales to any of these customers could have a material adverse effect on the Company.

## Research and Development

The Company conducts ongoing research and development programs intended to maintain the Company's leadership in technology and manufacturing efficiency. Since fiscal 1994, the Company has increased its investment in research and development activities and current efforts include deep ultraviolet, phase-shift and optical proximity correction photomasks for advanced semiconductor manufacturing as well as photomasks for next generation "post-optical" manufacturing technologies. Phaseshift and optical proximity correction photomasks use advanced lithography techniques for enhanced resolutions of images on a semiconductor wafer. Next generation "post-optical" manufacturing technologies use an exposure source other than light (such as an x-ray or electron beam source) for wafer patterning and are designed for the manufacture of integrated circuits with critical dimensions below that believed possible with currently utilized optical exposure methods. Post-optical manufacturing technologies are still under development and have not yet been adopted as standard production methods. Since July 1999, next generation lithography research and development has been conducted in connection with the Company's research and development venture with IBM, described above. The Company incurred expenses of $\$ 10.6$ million, $\$ 12.9$ million and $\$ 15.5$ million for research and development in fiscal 1997, 1998 and 1999, respectively. While the Company believes that it possesses valuable proprietary information and has received licenses under certain patents, the Company does not believe that patents are a material factor in the photomask manufacturing business. The Company holds only two patents and has applications pending for three other patents.

## Materials and Supplies

Raw materials utilized by the Company generally include high precision quartz plates, which are used as photomask blanks, primarily obtained from Japanese suppliers (including Toppan Printing Co., Ltd. ["Toppan"] and Hoya Corporation ["Hoya"]), pellicles (which are protective transparent cellulose membranes) and electronic grade chemicals used in the manufacturing process. Such materials are generally available from a number of suppliers and the Company is not dependent on any one supplier for its raw materials. The Company believes that its utilization of a broad range of suppliers enables it to access the most advanced material technology available. The Company has established purchasing arrangements with each of Toppan and Hoya and it is expected that the Company will purchase substantially all of its photomask blanks from Toppan and Hoya so long as their price, quality, delivery and service are competitive.

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, the inability to obtain equipment when required could adversely affect the Company's business and results of operations. The Company also relies on these suppliers to develop future generations of manufacturing systems to support the Company's requirements.

Backlog
The first several levels of photomasks for a circuit sometimes are required to be shipped within 24 hours of receiving a customer's design. Because of the short period between order and shipment dates (typically from one day to two weeks) for the principal portion of the Company's sales, the dollar amount of current backlog is not considered to be a reliable indication of future sales volume.

## Competition

The photomask industry is highly competitive and most of the Company's customers utilize more than one photomask supplier. The Company's ability to compete depends primarily upon the consistency of product quality and timeliness of delivery, as well as pricing, technical capability and service. The Company also believes that proximity to customers is an important factor in certain markets. Certain competitors have considerably greater financial and other resources than the Company. The Company believes that it is able to compete effectively because of its dedication to customer service, its investment in state-of-the-art photomask equipment and facilities and its experienced technical employees.

Since the mid-1980s there has been a decrease in the number of independent manufacturers as a result of independents being acquired or discontinuing operations. The Company believes that entry into the market by a new independent manufacturer would require a major investment of capital, a significant period of time to establish a commercially viable operation and additional time to attain meaningful market share and achieve profitability. In the past, competition and relatively flat demand led to pressure to reduce prices which the Company believes contributed to the decrease in the number of independent manufacturers. Although independent photomask manufacturers experienced increased demand since late 1993, demand softened and pricing pressures re-emerged, particularly in 1998. Although demand has been increasing since late 1998 as a part of a cyclical upturn in the semiconductor industry, intense competition has continued to pressure pricing for photomasks.

Based upon available market information, the Company believes that it has a larger share of the United States market than any other photomask manufacturer and that it is one of the largest photomask manufacturers in the world. Competitors in the United States include DuPont Photomasks and Align-Rite; and in international markets, Dai Nippon Printing, Toppan, Hoya, DuPont, Taiwan Mask Corp., Innova, Precision Semiconductor Mask Corp., Align-Rite and Compugraphics. In addition, some of the Company's customers possess their own captive facilities for manufacturing photomasks and certain semiconductor manufacturers market their photomask manufacturing services to outside customers as well as to their internal organization.

## Employees

As of October 31, 1999, the Company employed approximately 1,200 persons on a full-time basis. The Company believes that it offers competitive compensation and other benefits and that its employee relations are good. Except for employees in the United Kingdom, none of the Company's employees is represented by a union

## ITEM 1A. EXECUTIVE OFFICERS OF REGISTRANT

The names of the executive officers of the Company are set forth below, together with the positions held by each person in the Company. All executive officers are elected annually by the Board of Directors and serve until their successors are duly elected and qualified.

## NAME AND AGE

Constantine S. Macricostas, 64

Michael J. Yomazzo, 57

James R. Northup, 39

Jeffrey P. Moonan, 43

Robert J. Bollo, 55

POSITION
SERVED AS AN OFFICER SINCE

Chairman of the 1974 Board, Member of the Office of the Chief Executive and Director

Vice Chairman, Member of the Office of the Chief Executive and Director

President and Member of 1994 the Office of the Chief Executive

Executive Vice President 1988 Finance and Administration, Member of the Office of the Chief Executive, General Counsel and Secretary

Vice President/Finance 1994 and Chief Financial Officer

For the past five years each of the executive officers of the Company held the office shown, except as follows:

Constantine S. Macricostas served as Chief Executive Officer until August 1997. Mr. Macricostas also serves as a Director of Nutmeg Federal Savings and Loan Association and the DII Group, Inc., a supplier of integrated electronic manufacturing products and services.

Michael J. Yomazzo has been Vice Chairman since January 1, 1999. From August 1997 until January 1999, he served as President and Chief Executive Officer, from January 1994 until August 1997 he served as President and Chief Operating Officer and from November 1990 until January 1994, he served as Executive Vice President and Chief Financial Officer. Mr. Yomazzo is a member of the Board of Directors of NMBT Corp., the bank holding company of New Milford Bank and Trust Company.

James R. Northup has been President since January 1, 1999. From November 1996 until January, 1999, he served as Senior Vice President North American Operations, from January 1996 to November 1996, he served as Vice President - Operations, and from January 1994 to January 1996, he served as Director of Connecticut Operations.

Jeffrey P. Moonan has been Executive Vice President since January 1, 1999. From January 1994 until January 1999, he served as Senior Vice President. He has also served as General Counsel and Secretary since July 1988. From July 1989 until January 1994, he also served as Vice President/Administration.

Robert J. Bollo has been Vice President/Finance and Chief Financial Officer since November 1994. From August 1994 to November 1994, he served as Director of Finance.

## ITEM 2. DESCRIPTION OF PROPERTY

The Company's properties include buildings in which the Company currently conducts manufacturing operations or land for future construction of facilities. The following table presents certain information about the Company's manufacturing facilities.

## Location

Brookfield, CT (Building \#1)
Brookfield, CT (Building \#2)
Milpitas, CA (2 buildings)
Sunnyvale, CA (3 buildings)
Allen, TX
Austin, TX
Phoenix, AZ
Manchester, UK
Neuchatel, Switzerland Singapore元

Lease terms range from five years with options to renew to up to twenty years for other facilities. In addition, the Company leases office space in Jupiter, Florida; Carlsbad and Pasadena, California; Hillsboro, Oregon and certain adjacent property in Brookfield, Connecticut. The Company has also obtained property in Brookfield, Connecticut and Hillsboro, Oregon for the construction of additional facilities.

The Company believes it has made adequate arrangements for the lease or ownership of its current manufacturing facilities and continually evaluates opportunities for further expansion, both domestically and internationally.

The leased properties in Brookfield, Connecticut, are leased from entities controlled by Constantine S. Macricostas under fixed lease rates which were determined by reference to fair market value rates at the beginning of the respective lease term. Mr. Macricostas is Chairman of the Board and a Director of the Company.

For the year ended October 31, 1999, the Company leased real property and equipment at an aggregate annual rental of approximately $\$ 4.0$ million.

Other than new manufacturing facilities or equipment which have not yet been placed into service and property held for the possible construction of facilities, the Company believes it substantially utilized its facilities during the 1999 fiscal year.

## ITEM 3. LEGAL PROCEEDINGS

The Company is not a party to any material pending legal proceedings, nor is the property of the Company subject to any such proceedings.

## ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

No matters were submitted to a vote of the Company's security holders during the fourth quarter of fiscal 1999.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY AND RELATED STOCKHOLDERS' MATTERS

The Common Stock of the Company is traded on the NASDAQ National Market System (NMS) under the symbol PLAB. The table below shows the range of high and low sale prices per share for each quarter for fiscal year 1999 and 1998, as reported on the NASDAQ NMS. All per share prices have been adjusted for a two-for-one stock split for shareholders of record on November 17, 1997.

|  | High | Low |
| ---: | ---: | ---: |
| Fiscal Year Ended October 31, 1999: | -------18 |  |
| Quarter Ended January 31, 1999 | $\$ 28.13$ | $\$ 18.00$ |
| Quarter Ended May 2, 1999 | 26.25 | 18.63 |
| Quarter Ended August 1, 1999 | 28.88 | 19.13 |
| Quarter Ended October 31, 1999 | 29.50 | 17.88 |
|  |  |  |
| Fiscal Year Ended November 1, 1998: |  |  |
| Quarter Ended February 1, 1998 | $\$ 25.75$ | $\$ 18.00$ |
| Quarter Ended May 3, 1998 | 37.88 | 23.00 |
| Quarter Ended August 2, 1998 | 37.13 | 16.38 |
| Quarter Ended November 1, 1998 | 22.94 | 9.50 |

On December 31, 1999, the closing sale price for the Common Stock as reported by NASDAQ was $\$ 28.63$. Based on information available to the Company, the Company believes it has approximately 8,000 beneficial shareholders.

The Company has not paid any cash dividend to date and, for the foreseable future, anticipates that earnings will continue to be retained for use in its business.

## ITEM 6. SELECTED FINANCIAL DATA

The following selected financial data is derived from the Company's consolidated financial statements. The data should be read in conjunction with the consolidated financial statements and notes thereto and other financial information included elsewhere in this Form 10-K. All share and per share amounts have been adjusted for a two-for-one stock split for shareholders of record on November 17, 1997.

(in thousands, except per share amounts)
OPERATING DATA:

| Net sales | $\$ 223,702$ | $\$ 22,572$ | $\$ 197,451$ |
| :--- | :---: | :---: | :---: |
| Costs and expenses: |  |  | $\$ 160,071$ |
| Cost of sales <br> Selling, general and <br> administrative | 156,278 | 141,628 | 121,502 |

Results of Operations for the
Years Ended October 31, 1999, November 1, 1998 and November 2, 1997

## OVERVIEW

A significant portion of the changes in Photronics, Inc. ("Photronics") results of operations over the course of the three years ended October 31, 1999 are attributable to expansion of the Company's international operations in Europe and Asia. In fiscal 1996, Photronics established its first operations outside of the United States by acquiring operations in the U.K., and in Switzerland, opening a new manufacturing facility in Singapore and acquiring a minority interest in an independent photomask manufacturer in Korea. In addition, during fiscal 1997 the company acquired an independent photomask manufacturer in Germany. These facilities, together with the Company's U.S. facilities, comprise a global manufacturing network supporting semiconductor fabricators in the Asian, European and North American markets. As a result of the Company's globalization, revenues from foreign operations have grown to approximately $22 \%$ in 1999 compared to $20 \%$ in 1998 and $19 \%$ in 1997. Management believes that this trend will continue. Substantially all of the Company's consolidated Asian sales have been denominated in U.S Dollars resulting in minimal foreign currency exchange risk on transactions in that region.

In addition to its international expansion, on December 31, 1997, the Company acquired the internal photomask manufacturing operations of Motorola, Inc. in Mesa, Arizona, and in February 1998, commenced operations in its newly constructed Austin, Texas facility. The Company's growth has also been affected by the rapid technological changes taking place in the semiconductor industry resulting in a greater mix of high-end photomask requirements for more complex integrated circuit designs.

A cyclical slow-down experienced by the semiconductor industry began impacting the release of new integrated circuit designs to photomask manufacturers in the middle of fiscal 1998. As a result, the Company experienced weakness in photomask demand and accentuated competitive pressures, especially for more mature technologies, during the second half of fiscal 1998. During fiscal 1999, the Company continued to see a weakness in selling prices for more mature technologies, but began experiencing an increase in unit volumes and a better mix of orders for high-end technology products. The Company cannot predict the duration of such cyclical industry conditions or their impact on its future operating results.

Both revenues and costs have been affected by the increased demand for higher technology photomasks which require more advanced manufacturing capabilities but generally command higher average selling prices. To meet the technological demands of its customers and position the Company for future growth, the Company continues to make substantial investments in high-end manufacturing capability both at existing and new facilities. The Company's capital expenditures for new facilities and equipment to support its customers requirements for high technology products exceeded $\$ 235$ million for the three years ended October 31, 1999, resulting in significant increases in operating expenses. Based on the anticipated
technological changes in the industry, the Company expects those trends to continue.

## RESULTS OF OPERATIONS

Net Sales:
Net sales for the fiscal year ended October 31, 1999 increased $1 \%$ to $\$ 223.7$ million, compared to $\$ 222.6$ million in 1998. The increase was due to an increase in sales from Photronics' foreign operations, partially offset by a decrease in sales domestically. The domestic decrease was primarily attributable to a decrease in average selling prices on mature technologies, offset by higher unit volumes and a better mix of high-end products.

Net sales for the fiscal year ended November 1, 1998 increased 13\% to $\$ 222.6$ million, compared with $\$ 197.5$ million in the prior year. Sales from Photronics' international manufacturing operations accounted for approximately $55 \%$ of the increase. The remaining portion of the growth resulted from the new Mesa and Austin operations and increased volume from the Company's other U.S. operations during the first six months of 1998. These increases were partially offset by pricing pressures and lower volumes in the second half of the year precipitated generally by the cyclical slow-down in the semiconductor industry.

Cost of Sales:
Cost of sales for the year ended October 31, 1999 increased $10.3 \%$ to $\$ 156.3$ million compared with $\$ 141.6$ million in fiscal 1998. Gross margins decreased to $30.1 \%$ of sales compared to $36.4 \%$ in 1998 principally because of higher depreciation and other fixed costs incurred in anticipation of the industry's rapid move to higher-end technologies. Depreciation and amortization increased $21.0 \%$ in 1999 to $\$ 35.7$ million from $\$ 29.5$ million in 1998. In addition, the Company experienced higher equipment maintenance, materials and labor costs in fiscal 1999.

Cost of sales for the year ended November 1, 1998 increased $16.6 \%$ to $\$ 141.6$ million compared with $\$ 121.5$ million in fiscal 1997. Gross margins decreased to $36.4 \%$ of sales compared to $38.5 \%$ in 1997 because of the lower sales in the second half of 1998 and higher fixed costs resulting from the strategic investments in new facilities and capital equipment. Depreciation and amortization increased $58 \%$ in 1998 to $\$ 29.5$ million from $\$ 18.6$ million in 1997. In addition, the Company experienced lower margins in the formerly captive Mesa, Arizona operation that was acquired earlier in the year.

Selling, General and Administrative Expenses:
Selling, general and administrative expenses increased 7.9\% during 1999 to $\$ 31.1$ million or $13.9 \%$ of sales, from $\$ 28.8$ million, or $12.9 \%$ of sales in 1998. The increase was primarily due to growth related expenses including information systems and communications costs which were expended to ensure an infrastructure commensurate with Photronics' expansion. Other growth related costs, including compensation and travel, also increased in 1999.

Selling, general and administrative expenses increased 15.4\% during 1998 to $\$ 28.8$ million or $12.9 \%$ of sales, from $\$ 24.9$ million or $12.6 \%$ of sales in 1997 due to higher staffing costs associated with the Company's growth, including the expansion into Austin, Texas and Mesa, Arizona, as well as the full year impact of additions made in 1997, especially in Europe and Asia. Such increases were partially offset by lower incentive compensation expenses in fiscal 1998, and reduction in discretionary spending, especially in the second half of the year in response to the semiconductor industry slow-down.

Research and Development:
Research and development expenses for the year ended October 31, 1999 increased by $20.5 \%$ to $\$ 15.5$ million, or $6.9 \%$ of sales,from $\$ 12.9$ million or $5.8 \%$ of sales in 1998. The increase reflects continued work on advanced photomasks utilizing optical enhancement features, as well as expenses incurred in connection with our Next Generation Lithography Mask Center of Competency, a joint effort with IBM which was established in July 1999.

Research and development expense for 1998 increased by $21.6 \%$ to $\$ 12.9$ million, or $5.8 \%$ of sales from $\$ 10.6$ million in 1997 , or $5.4 \%$ of sales in 1997. The increase is the result of the continued work on advanced photomask engineering projects including phase shift, optical proximity correction and deep ultra-violet applications.

## Non-Recurring Restructuring Charge:

The Company recorded a non-recurring restructuring charge of $\$ 3.8$ million in the second quarter of fiscal 1998 in connection with the optimization of its North American operations. The Company reorganized its two California operations, dedicating its Milpitas facility to the production of high-end technology photomasks and its Sunnyvale facility to the production of mature technology photomasks. In addition, it consolidated its Colorado Springs, Colorado photomask manufacturing operations into its other North American manufacturing facilities. The Company determined that its Large Area Mask (LAM) Division, which was also located in Colorado Springs, did not represent a long-term strategic fit with its core photomask business, and, accordingly, announced plans to sell the LAM Division. The major component of the non-recurring charge related to a reduction in the value of equipment. After tax, the charge amounted to $\$ 2.4$ million, or $\$ .08$ per share on a diluted basis. The LAM division was sold in 1999 without any additional effect on results of operations.

Other Income and Expense:
Net other expenses increased $\$ 1.5$ million to a net expense of $\$ 3.9$ million in 1999 as a result of higher interest expense, due primarily to utilization of the Company's unsecured revolving line of credit, as well as lower investment income due to a decrease in short-term investment balances throughout the year.

Interest income in 1998 increased as a result of higher average short-term investment balances. Interest expense increased to \$6.1 million in 1998 from $\$ 2.5$ million in 1997, primarily due to the effect of a full year of interest expense on the convertible notes in 1998 compared to only five months of interest expense on the convertible notes, which were issued in fiscal 1997.

Foreign currency transaction gains or losses were not significant in fiscal 1999, 1998 or 1997.

Income Taxes:
The Company provided federal, state and foreign income taxes at a combined effective annual tax rate of $37.1 \%$ in 1999 as compared to $38.1 \%$ in 1998 and 1997. The lower rate in 1999 was primarily due to higher available research and development expense credits.

Net Income:
Net income for the year ended October 31, 1999 decreased $47.9 \%$ to $\$ 10.7$ million, or $\$ 0.45$ per diluted share, compared to $\$ 20.5$ million, or $\$ 0.84$ per diluted share in the prior year. Net income for the year ended November 1, 1998 decreased $20.1 \%$ to $\$ 20.5$ million, or $\$ 0.84$ per diluted share, compared with $\$ 25.6$ million or $\$ 1.03$ per diluted share in the prior year.

Fiscal 1998 included a non-recurring after tax charge of \$2.4 million, \$0.08 per diluted share. All share and earnings per share amounts reflect a two-for-one stock split effected in November 1997 (see Note 5 of Notes to the Consolidated Financial Statements).

## LIQUIDITY AND CAPITAL RESOURCES

The Company's cash, cash equivalents and short-term investments decreased $\$ 15.1$ million during fiscal 1999 to $\$ 16.3$ million. The decrease is attributable to capital expenditures for facilities and equipment of $\$ 72.4$ million. In addition, $\$ 6.9$ million of cash was utilized to repurchase 500,000 shares of the Company's common stock. The decrease was partially offset by positive cash flows generated by operations of more than $\$ 55.0$ million and borrowings of $\$ 12.8$ million.

Accounts receivable increased $31.0 \%$ to $\$ 41.3$ million because of stronger sales in the fourth quarter of 1999 compared to the fourth quarter of 1998.

Other current assets increased to $\$ 9.3$ million in 1999 from $\$ 4.5$ million in 1998, primarily due to refundable income taxes.

Property, plant and equipment increased to $\$ 282.2$ million at October 31, 1999 from $\$ 249.4$ million at November 1, 1998. Deposits on and purchases of equipment aggregated $\$ 72.4$ million during the year ended November 1, 1999. These increases were reduced by depreciation expense totalling $\$ 37.9$ million in fiscal 1999. The increase in intangible assets to $\$ 28.4$ million at October 31, 1999 from $\$ 24.4$ million at November 2 , 1998, was primarily due to the costs incurred to develop our manufacturing and financial software systems.

Investments and other non-current assets increased to $\$ 13.6$ million at October 31, 1999 from $\$ 10.3$ million at November 1, 1998 due to the increase in the market value of investments available for sale.

Accounts payable and other accrued liabilities increased at October 31,1999 to $\$ 51.6$ million compared to $\$ 41.6$ million at November 1, 1998 primarily due to the timing of payments related to capital equipment. Accrued salaries and wages decreased to $\$ 2.5$ million as of October 31, 1999 from $\$ 4.2$ million as of November 1, 1998, largely as a result of lower incentive compensation accruals in 1999.

Total amounts due on borrowings of $\$ 117.0$ million at October 31, 1999 increased from $\$ 106.3$ million as of November 1, 1998 principally due to the borrowings in 1999 of $\$ 12.8$ million under the Company's revolving credit facility.

Deferred income taxes and other liabilities increased to \$28.9 million at October 31, 1999 compared to $\$ 16.4$ million at November 1, 1998, largely due to increases in deferred income taxes resulting from the differences between the carrying amounts of assets and liabilities for financial reporting and the amounts used for income tax purposes.

The Company's commitments represent on-going investments in additional manufacturing capacity, as well as advanced equipment for research and development of the next generation of higher technology and more complex photomasks. At November 1, 1999, the Company had commitments outstanding for capital expenditures of approximately $\$ 20$ million. Additional commitments are expected to be incurred during 2000. The Company maintains an unsecured, $\$ 125$ million committed revolving credit facility available at any time through the end of fiscal year 2003. The Company believes that its currently available resources, together with its capacity for substantial growth and its accessibility to other debt and equity financing sources, are sufficient to satisfy its cash requirements for the foreseeable future.

## YEAR 2000

As of the date of this filing, the Company has not experienced any Year 2000 problems that have affected its operations, the realization of financial assets, or the Company's results of operations. The Company will continue to monitor its operations for non-compliant components. The Company is also monitoring its open transactions with customers and vendors to ensure that there are no undetected problems that could have a future impact.

As of the date of this filing, the Company believes there are no remaining significant risks or exposure as a result of the Year 2000 issue.

## EFFECT OF NEW ACCOUNTING STANDARDS

In April 1998, the American Institute of Certified Public Accountants (AICPA) issued Statement of Position 98-5, "Reporting on the Costs of Start-Up Activities." In June 1998, the FASB issued SFAS No. 133 "Accounting for Derivative Instruments and Hedging Activities." In September 1999, the AICPA issued Statement of Position 99-3, "Accounting and Reporting of Certain Defined Contribution Plan Investments and Other Disclosure Matters." Each of these statements establish new standards for financial statement reporting and disclosure of certain information effective for the Company in future fiscal years. The Company does not expect these new standards to have a material impact on its financial position, results of operations or cash flows.
"SAFE HARBOR" STATEMENT UNDER THE PRIVATE SECURITIES LITIGATION REFORM ACT OF 1995:

Except for historical information, the matters discussed above may be considered forward-looking statements and may be subject to certain risks and uncertainties that could cause the actual results to differ materially from those projected, including uncertainties in the market, pricing, competition, procurement and manufacturing efficiencies, and other risks.

## Item 7A

Quantitative and Qualitative Disclosures about Market Risk
The Company, in the normal course of doing business, is exposed to the risks associated with foreign currency exchange rates and changes in interest rates.

## Foreign Currency Exchange Rate Risk

The Company conducts business in several major international currencies through its worldwide operations, and as a result is subject to foreign exchange exposures due to changes in exchange rates of the various currencies. Changes in exchange rates can positively or negatively effect the Company's sales, gross margins and retained earnings. The Company attempts to minimize currency exposure risk by producing its products in the same country or region in which the products are sold and thereby generating revenues and incurring expenses in the same currency and by managing its working capital; although there can be no assurance that this approach will be successful, especially in the event of a significant and sudden decline in the value of any of the international currencies of the Company's worldwide operations. At October 31, 1999 the Company had no outstanding foreign exchange contracts. The Company does not engage in purchasing forward exchange contracts for speculative purposes.

## Interest Rate Risk

The majority of the Company's borrowings are in the form of its convertible subordinated notes which bear interest at the fixed rate of $6 \%$. Accordingly, the Company does not expect changes in interest rates to have a material effect on income or cash flows in 2000, although there can be no assurances that interest rates will not significantly change.

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Board of Directors and Shareholders
Photronics, Inc.
Jupiter, Florida

We have audited the accompanying consolidated balance sheets of Photronics, Inc. and its subsidiaries as of October 31, 1999 and November 1, 1998, and the related consolidated statements of earnings, shareholders' equity and cash flows for each of the three years in the period ended October 31, 1999. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, such consolidated financial statements present fairly, in all material respects, the consolidated financial position of Photronics, Inc. and its subsidiaries as of October 31, 1999 and November 1, 1998, and the results of their operations and their cash flows for each of the three years in the period ended October 31, 1999 in conformity with generally accepted accounting principles.

DELOITTE \& TOUCHE LLP
Hartford, Connecticut
December 6, 1999
(except as to Footnote 15,
as to which the date
is January 10, 2000)

## PHOTRONICS, INC. AND SUBSIDIARIES

Consolidated Balance Sheet

October 31, 1999 and November 1, 1998
(dollars in thousands)

| Assets | 1999 | 1998 |
| :---: | :---: | :---: |
| Current assets: |  |  |
| Cash and cash equivalents | \$ 16,269 | \$ 23, 841 |
| Short-term investments | - | 7,532 |
| Accounts receivable (less allowance for doubtful accounts of $\$ 235$ in |  |  |
| 1999 and 1998) | 41,293 | 31,515 |
| Inventories | 13,888 | 14,057 |
| Deferred income taxes | 5,458 | 5,923 |
| Other current assets | 9,299 | 4,507 |
| Total current assets | 86,207 | 87,375 |
| Property, plant and equipment | 282,157 | 249,389 |
| Intangible assets (less accumulated amortization of \$8,062 in 1999 |  |  |
| and \$6,009 in 1998) | 28,357 | 24,450 |
| Investments | 8,594 | 6,705 |
| Other assets | 5,041 | 3,630 |
|  | \$410, 356 | \$371, 549 |

Consolidated Balance Sheet
October 31, 1999 and November 1, 1998
(dollars in thousands, except per share amounts)

| Liabilities and Shareholders' Equity | 1999 | 1998 |
| :---: | :---: | :---: |
| Current liabilities: |  |  |
| Current portion of long-term debt | \$ 261 | \$ 2,076 |
| Accounts payable | 45,608 | 31,431 |
| Accrued salaries and wages | 2,490 | 4,170 |
| Accrued interest payable | 2,636 | 2,674 |
| Other accrued liabilities | 6,021 | 10,153 |
| Total current liabilities | 57,016 | 50,504 |
| Long-term debt | 116,703 | 104,261 |
| Deferred income taxes | 19,942 | 11, 222 |
| Other liabilities | 8,995 | 5,132 |
| Total liabilities | 202,656 | 171,119 |
| Commitments and contingencies |  |  |
| Shareholders' equity: |  |  |
| Preferred stock, \$.01 par value, 2,000,000 shares authorized, none issued and outstanding | - | - |
| Common stock, $\$ .01$ par value, 75,000,000 shares authorized, $23,948,807$ shares issued and outstanding in 1999; |  |  |
| $24,164,106$ shares issued and outstanding in 1998 | 239 | 242 |
| Additional paid-in capital | 80,242 | 82,377 |
| Retained earnings | 130,759 | 120, 091 |
| Accumulated other comprehensive loss | $(3,489)$ | $(2,141)$ |
| Deferred compensation on restricted stock | (51) | (139) |
| Total shareholders' equity | 207,700 | 200,430 |
|  | \$410, 356 | \$371, 549 |

See accompanying notes to consolidated financial statements.

PHOTRONICS, INC. AND SUBSIDIARIES
Consolidated Statement of Earnings

| Years Ended |  |  |
| :---: | :---: | :---: |
| $\begin{gathered} \text { October 31, } \\ 1999 \end{gathered}$ | $\begin{gathered} \text { November 1, } \\ 1998 \end{gathered}$ | $\begin{gathered} \text { November 2, } \\ 1997 \end{gathered}$ |
| (in thousands, | except per | amounts) |
| \$223, 702 | \$222,572 | \$197, 451 |


| Net sales | \$223, 702 | \$222, 572 | \$197, 451 |
| :---: | :---: | :---: | :---: |
| Costs and expenses: |  |  |  |
| Cost of sales | 156,278 | 141,628 | 121,502 |
| Selling, general and administrative | 31,063 | 28,793 | 24,940 |
| Research and development | 15,536 | 12,893 | 10,605 |
| Non-recurring restructuring charge | - | 3,800 | - |
| Operating income | 20,825 | 35,458 | 40,404 |

Other income and expense:

| Interest income | 1,149 | 2,721 | 2,424 |
| :---: | :---: | :---: | :---: |
| Interest expense | $(6,445)$ | $(6,143)$ | $(2,466)$ |
| Other income, net | 1,439 | 1,046 | 1,074 |
| Income before income taxes | 16,968 | 33, 082 | 41,436 |
| Provision for income taxes | 6,300 | 12,600 | 15,800 |
| Net income | \$ 10,668 | \$ 20,482 | \$ 25,636 |

Earnings per share:

| Basic | \$0.45 | \$0.84 | \$1.07 |
| :---: | :---: | :---: | :---: |
| Diluted | \$0.45 | \$0.84 | \$1.03 |
|  | ===== | === | = $=$ |
| ghted average number of |  |  |  |
| Basic | 23,958 | 24,350 | 23,910 |
| Diluted | 23,958 | 28,958 | 26,628 |

See accompanying notes to consolidated financial statements.

Cash flows from operating activities:
Net income Adjustments to reconcile net income to ne
cash provided by operating activities:
Depreciation and amortization of property, plant and equipment
Amortization of intangible assets
Gain on sale of investments
Deferred income taxes
Non-recurring restructuring charges
Other
Changes in assets and liabilities, net of effects of acquisitions:
Accounts receivable
Inventories
Other current assets
Accounts payable and accrued liabilities
Net cash provided by operating activities

Cash flows from investing activities: Acquisitions of and investments in photomask operations
Deposits on and purchases of property, plant and equipment
Net change in short-term investments
Proceeds from sale of investments
Other
Net cash used in investing activities
Cash flows from financing activities:
Issuance of subordinated convertible notes,
net of deferred issuance costs
Borrowings under revolving credit facility
Repayment of long-term debt
Proceeds from issuance of common stock
Purchase and retirement of common stock
Other
Net cash provided (used) by financing activities
Effect of exchange rate changes on cash
Net increase (decrease) in cash and cash equivalents

| \$10, 668 | \$20, 482 | \$25,636 |
| :---: | :---: | :---: |
| 37,948 | 31,461 | 19,817 |
| 2,783 | 2,529 | 1,322 |
| $(1,479)$ | (838) | $(1,562)$ |
| 7,175 | 264 | 989 |
| - | 3,800 | - |
| 97 | 224 | 98 |
| (10, 003) | 2,954 | $(9,405)$ |
| 120 | $(2,374)$ | $(3,157)$ |
| $(4,437)$ | $(3,318)$ | (870) |
| 12,463 | $(10,115)$ | 13,677 |
| 55,335 | 45,069 | 46,545 |
| - | $(32,455)$ | $(1,065)$ |
| $(72,373)$ | $(66,448)$ | $(96,319)$ |
| 7,532 | 20,657 | $(20,271)$ |
| 1,578 | 932 | 1,939 |
| $(7,817)$ | 2,218 | 2,151 |
| $(71,080)$ | $(75,096)$ | $(113,565)$ |
| - | - | 99,697 |
| 12,750 | - | - |
| $(2,068)$ | (266) | (151) |
| 4,762 | 3,997 | 6,063 |
| $(6,900)$ | $(6,750)$ | - |
| (351) | - | - |
| 8,193 | $(3,019)$ | 105,609 |
| (20) | (958) | 490 |
| $(7,572)$ | $(34,004)$ | 39,079 |
| 23,841 | 57,845 | 18,766 |
| \$16, 269 | \$23, 841 | \$57,845 |
| ======= | ====== | ======= |

PHOTRONICS, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements
Years ended October 31, 1999, November 1, 1998 and November 2, 1997
(dollars in thousands, except per share amounts)

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES
Consolidation
The accompanying consolidated financial statements include the accounts of Photronics, Inc. and its subsidiaries. All significant intercompany balances and transactions have been eliminated.

Foreign Currency Translation
The Company's subsidiaries in Europe and Singapore 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 as other comprehensive income (loss) as a separate component of shareholders' equity. The effects of changes in exchange rates on foreign currency transactions are included in income.

## Cash and Cash Equivalents

Cash and cash equivalents include cash and highly liquid investments purchased with an original maturity of three months or less. The carrying values approximate fair value based on the short maturity of the instruments.

## Investments

The Company's debt and equity investments available for sale are carried at fair value. Short-term investments include a diversified portfolio of high quality marketable securities are liquidated as needed to meet the Company's current cash requirements. All other investments are classified as available for sale non-current assets. Unrealized gains and losses, net of tax, are reported as other comprehensive income (loss) as a separate component of shareholders' equity. Gains and losses are included in income when realized, determined based on the disposition of specifically identified investments.

## Inventories

Inventories, principally raw materials, are stated at the lower of cost, determined under the first-in, first-out (FIFO) method, or market.

## Long-Lived Assets

Property, plant and equipment are recorded at cost less accumulated depreciation. Repairs and maintenance as well as renewals and replacements of a routine nature are charged to operations as incurred, while those which improve or extend the lives of existing assets are capitalized. Upon sale or other disposition, the cost of the asset and accumulated depreciation are eliminated from the accounts, and any resulting gain or loss is reflected in income.

For financial reporting purposes, depreciation and amortization are computed on 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. For income tax purposes, depreciation is computed using various accelerated methods and, in some cases, different useful lives than those used for financial reporting.

Goodwill and other intangibles are amortized on a straight-line basis over periods estimated to be benefited, generally 5 to 20 years. The future economic benefit of the carrying value of all long-lived assets is reviewed periodically and any diminution in useful life or impairment in value based on future anticipated cash flows would be recorded in the period so determined.

## Income Taxes

The provision for income taxes is computed on the basis of consolidated financial statement income. Deferred income taxes reflect the tax effects of differences between the carrying amounts of assets and liabilities for financial reporting and the amounts used for income tax purposes.

Net Income Per Common Share
Net income per common share is computed in accordance with the provision of Statement of Financial Accounting Standards No. 128 "Earnings Per Share" ("SFAS 128").

## Stock Based Compensation

The Company records stock option awards in accordance with the provisions of Accounting Principles Board Opinion 25, "Accounting for Stock Issued to Employees". The Company estimates the fair value of stock option awards in accordance with Statement of Financial Accounting Standards No. 123, "Accounting for Stock-Based Compensation," and discloses the resulting estimated compensation effect on net income on a pro forma basis.

Reclassifications
Certain prior year amounts have been reclassified to conform to the current year presentation.

NOTE 2 - INVESTMENTS
Short-term investments consist of:
November 1,
1998
-------
$\$ 2,268$
3,010
2,254
-----
$\$ 7,532$
======

There were no short-term investments as of October 31, 1999.
Other investments consist of available-for-sale equity securities of publicly traded technology companies and a minority interest in a photomask manufacturer in Korea. The fair values of available-for-sale investments are based upon quoted market prices. In the absence of quoted market prices, the estimated fair value is based upon the financial condition and the operating results and projections of the investee and is considered to approximate cost. Unrealized gains on investments were determined as follows:

|  | $\begin{gathered} \text { October 31, } \\ 1999 \end{gathered}$ | $\begin{gathered} \text { November } 1 \\ 1998 \end{gathered}$ |
| :---: | :---: | :---: |
| Fair value | \$ 8,594 | \$ 6,705 |
| Cost | 4,523 | 4,700 |
|  | 4, 071 | 2,005 |
| Less deferred income taxes | 1,547 | 838 |
| Net unrealized gains | \$ 2,524 | \$ 1,167 |

NOTE 3 - PROPERTY, PLANT AND EQUIPMENT
Property, plant and equipment consists of the following:

|  | $\begin{gathered} \text { October 31, } \\ 1999 \end{gathered}$ | $\begin{gathered} \text { November 1, } \\ 1998 \end{gathered}$ |
| :---: | :---: | :---: |
| Land | \$ 3,937 | \$ 3,772 |
| Buildings and improvements | 38,800 | 33,943 |
| Machinery and equipment | 355,647 | 301,611 |
| Leasehold improvements | 7,818 | 7,378 |
| Furniture, fixtures and office equipment | 15,697 | 6,642 |
|  | 421,899 | 353,346 |
| Less accumulated depreciation and amortization | 139,742 | 103,957 |
| Property, plant and equipment | \$282, 157 | \$249,389 |

NOTE 4 - LONG-TERM DEBT
Long-term debt consists of the following:


Revolving credit facility,
effective interest rate of $6.21 \%$
6\% Convertible Subordinated Notes due June 1, 2004
\$ 12, 750

103,500 \$103,500

Acquisition indebtedness payable
December 1, 1998, net of interest of \$9 in 1998, imputed at 7.45\%

1,791
Installment note payable by foreign subsidiary with interest at 4.75\% through June, 2001

Industrial development mortgage note, secured by building, with interest at 6.58\%, payable through November 2005

338
381

Less current portio
Long-term debt

| ------- | ------- |
| ---: | ---: |
| 116,964 | 106,337 |
| 261 | 2,076 |
| ---------- |  |
| $\$ 116,703$ | \$104, 261 |
| $=======$ | $======$ |

Long-term debt matures as follows: 2001 - \$211; 2002-\$53; 2003 $\$ 58 ; 2004$ - $\$ 116,311$; years after 2004-\$70. The fair value of longterm debt not yet substantively extinguished is estimated based on the current rates offered to the Company and is not significantly different from carrying value, except that the fair value of the convertible subordinated notes, based upon the most recently reported trade as of October 31, 1999, amounted to $\$ 101.4$ million.

The Company has an unsecured revolving credit facility to provide for borrowings of up to $\$ 125.0$ million at any time through November, 2003. The Company is charged a commitment fee on the average unused amount of the available credit and is subject to compliance with and maintenance of certain financial covenants and ratios. The company had $\$ 12.8$ million of outstanding borrowings under its revolving credit facility at October 31, 1999.

On May 29, 1997, the Company sold $\$ 103.5$ million of convertible subordinated notes, due in 2004, in a public offering. The notes bear interest at $6 \%$ per annum and are convertible at any time by the holders into 3.7 million shares of the Company's common stock, at a conversion price of $\$ 27.97$ per share. The notes are redeemable at the Company's option, in whole or in part, at any time after June 1, 2000 at certain premiums decreasing through the maturity date. Interest is payable semiannually.

Cash paid for interest amounted to $\$ 6,606, \$ 6,311$ and $\$ 164$ in 1999, 1998 and 1997 respectively.

NOTE 5 - EARNINGS PER SHARE
Earnings per share amounts are calculated in accordance with the provisions of SFAS No. 128. Basic 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 securities or other contracts to issue common stock were exercised or converted.

A reconciliation of basic and diluted EPS follows (in thousands, except per share amounts):

|  | Net Income | Average Shares Outstanding | Earnings Per Share |
| :---: | :---: | :---: | :---: |
| 1999: |  |  |  |
| Basic | \$ 10,668 | 23,958 | \$ 0.45 |
| Effect of potential dilution from exercise of stock options and conversion of notes (a) | - | - | ===== |
| Diluted | \$ 10,668 | 23,958 | \$ 0.45 |
| 1998: |  |  |  |
| Basic | \$ 20,482 | 24,350 | \$ 0.84 |
| Effect of potential dilution from exercise of stock options and conversion of notes | 3,809 | 4,608 | ==== |
| Diluted | \$ 24, 291 | 28,958 | \$ 0.84 |
| 1997: |  |  |  |
| Basic | \$ 25,636 | 23,910 | \$ 1.07 |
| Effect of potential dilution from exercise of stock options and conversion of notes | 1,841 | 2,718 | ===== |
| Diluted | \$ 27, 477 | 26,628 | \$ 1.03 |

(a) The effect of the exercise of stock options and the conversion of notes for 1999 is anti-dilutive.

In September, 1997, the Company's Board of Directors authorized a two-for-one stock split effected in the form of a stock dividend, which was paid to shareholders of record on November 17, 1997. The stock split resulted in the issuance of 12.2 million additional shares of common stock. All applicable share and per share amounts reflect the stock split.

NOTE 6 - BUSINESS COMBINATIONS
On December 31, 1997, the Company acquired the internal photomask manufacturing operations of Motorola, Inc. ("Motorola") in Mesa, Arizona for $\$ 29$ million in cash. The assets acquired include modern manufacturing systems, capable of supporting a wide range of photomask technologies. Additionally, the Company entered into a multi-year supply agreement whereby it will supply the photomask requirements previously provided by Motorola's internal operations. The acquisition was accounted for as a purchase and, accordingly, the acquisition price was allocated to property, plant and equipment as well as certain intangible assets based on relative fair value. The excess of purchase price over the fair value of assets acquired is being amortized over fifteen (15) years. The Consolidated Statement of Earnings includes the results of the former Motorola photomask operations from December 31, 1997, the effective date of the acquisition.

On June 26, 1997, the Company acquired all of the outstanding shares of MZD Maskenzentrum fur Mikrostruktrierung Dresden GmbH (MZD), an independent photomask manufacturer located in Dresden, Germany, for \$3.1 million in cash and common shares of the Company. The acquisition was accounted for as a purchase and, accordingly, the acquisition price was allocated to assets and liabilities based on relative fair value.

NOTE 7 - INCOME TAXES
The provision for income taxes consists of the following:

|  |  | 1999 | 1998 | 1997 |
| :---: | :---: | :---: | :---: | :---: |
| Current: | Federal | \$ $(1,129)$ | \$10,417 | \$11,993 |
|  | State | 228 | 1,610 | 2,617 |
|  | Foreign | 26 | 309 | 201 |
|  |  | (875) | 12,336 | 14,811 |
| Deferred: | Federal | 6,641 | 417 | 995 |
|  | State | 569 | (192) | (6) |
|  | Foreign | (35) | 39 | - |
|  |  | 7,175 | 264 | 989 |
|  |  | \$ 6,300 | \$12,600 | \$15,800 |

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

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| U.S. Federal income tax at statutory rate | \$ 5,940 | \$11,579 | \$14,503 |
| State income taxes, net of Federal benefit | 718 | 921 | 1,697 |
| Tax benefits of tax exempt income | (14) | (42) | (35) |
| Foreign tax rate differential | 398 | (853) | (681) |
| Other, net | (742) | 995 | 316 |
|  | \$6,300 | \$12,600 | \$15,800 |

The Company's net deferred tax liability consists of the following:

|  | $\begin{gathered} \text { October 31, } \\ 1999 \end{gathered}$ | $\begin{gathered} \text { November 1, } \\ 1998 \end{gathered}$ |
| :---: | :---: | :---: |
| Deferred income tax liabilities: |  |  |
| Property, plant and equipment | \$17, 021 | \$8,840 |
| Investments | 1,547 | 838 |
| Other | 1,374 | 1,544 |
| Total deferred tax liability | 19,942 | 11,222 |
| Deferred income tax assets: |  |  |
| Reserves not currently deductible | 1,691 | 3,712 |
| Other | 3,767 | 2,211 |
| Total deferred tax asset | 5,458 | 5,923 |
| Net deferred tax liability | \$14,484 | \$5,299 |

Cash paid for income taxes amounted to $\$ 1.2$ million, $\$ 15.0$ million and $\$ 7.2$ million in 1999, 1998 and 1997 respectively.

NOTE 8 - EMPLOYEE STOCK PURCHASE AND OPTION PLANS

In March 1998, the shareholders approved the adoption of the 1998 Stock Option Plan which includes provisions allowing for the award of qualified and non-qualified stock options and the granting of restricted stock awards. A total of 1.0 million shares of common stock may be issued pursuant to options or restricted stock awards granted under the Plan. Restricted stock awards do not require the payment of any cash consideration by the recipient, but shares subject to an award may be forfeited unless conditions specified in the grant are satisfied.

The Company has adopted a series of other stock option plans under which incentive and non-qualified stock options and restricted stock awards may be granted. All plans provide that the exercise price may not be less than the fair market value of the common stock at the date the options are granted and limit the maximum term of options granted to a
maximum of ten years.
The following table summarizes stock option activity under the plans:

Balance at November 1, 1996 Granted
Exercised
Cancelled

Balance at November 2, 1997
Granted
Exercised
Cancelled

Balance at November 1, 1998 Granted
Exercised
Cancelled
Balance at October 31, 1999

| Stock Options | Exercise Prices |
| :---: | :---: |
| 2,383,526 | \$ 1.59-13.69 |
| 275, 300 | 14.88-21.97 |
| $(454,042)$ | 1.59-13.69 |
| $(65,006)$ | 3.75-16.38 |
| 2,139,778 | 1.75-21.97 |
| 826,100 | 11.00-31.44 |
| $(295,710)$ | 1.75-16.38 |
| $(94,877)$ | 6.71-31.44 |
| 2,575,291 | 1.75-31.44 |
| 226,000 | 18.13-25.88 |
| $(253,323)$ | 3.08-21.97 |
| $(135,003)$ | 3.75-31.44 |
| 2,412,965 | \$1.75-31.44 |

The following table summarizes information concerning currently outstanding and exercisable options:

|  | Range of Exercise Prices |  |
| :---: | :---: | :---: |
| \$1.75-\$10.00 | \$10.00-\$20.00 | \$20.00-\$31.44 |

Outstanding:

Number of options
Weighted average remaining years
Weighted average
exercise price
514,132
1,381,258
7.5
3.5
\$4.82
$\$ 12.80$
517, 575
8.5
\$23. 21

Exercisable:
Number of options
Weighted average exercise price

514,132
$\$ 4.82$

714, 808
\$12.51

126,177
$\$ 22.87$

At October 31, 1999, 488,203 shares were available for grant and $1,355,117$ shares were exercisable at a weighted average exercise price of \$10. 56 .

The Company has not recognized compensation expense in connection with stock option grants under the plans. However, had compensation expense been determined based on the fair value of the options on the grant dates, the Company's pro forma net income and earnings per share for 1999 would have been reduced by approximately $\$ 1.7$ million, or $\$ 0.07$ per diluted share, for 1998 would have been reduced by approximately $\$ 1.9$ million, or $\$ 0.07$ per diluted share, and for 1997 would have been reduced by approximately $\$ 1.5$ million, or $\$ 0.06$ per diluted share. The weighted average fair value of options granted was $\$ 21.35$ per share in 1999, $\$ 6.55$ per share in 1998 and $\$ 7.39$ per share in 1997 . Fair value is estimated based on the Black-Scholes option-pricing model with the following weighted average assumptions: dividend yield of 0\%; expected volatility
of 67.1\% in 1999, 54.4\% in 1998 and 51.6\% in 1997; and risk-free interest rates of 6.2\% in 1999, 4.4\% in 1998 and 6.4\% in 1997.

The Company maintains an Employee Stock Purchase Plan ("Purchase Plan"), under which 600,000 shares of common stock are reserved for issuance. The Purchase Plan enables eligible employees to subscribe, through payroll deductions, to purchase shares of the Company's common stock at a purchase price equal to $85 \%$ of the lower of the fair market value on the commencement date of the offering and the last day of the payroll payment period. At October 31, 1999, 346,254 shares had been issued and 71,413 shares were subject to outstanding subscriptions under the Purchase Plan.

## NOTE 9 - EMPLOYEE BENEFIT PLANS

The Company maintains a 401(k) Savings and Profit-Sharing Plan (the "Plan") which covers all domestic employees who have completed six months of service and are eighteen years of age or older. Under the terms of the Plan, an employee may contribute up to $15 \%$ of their compensation which will be matched by the Company at $50 \%$ of the employee's contributions which are not in excess of $4 \%$ of the employee's compensation. Employee and employer contributions vest fully upon contribution. Employer contributions amounted to $\$ 0.6$ million in 1999, \$0.3 million in 1998 and $\$ 0.5$ million in 1997.

The Company maintains a cafeteria plan to provide eligible domestic employees with the option to receive non-taxable medical, dental, disability and life insurance benefits. The cafeteria plan is offered to all active full-time domestic employees and their qualifying dependents. The Company's contribution amounted to $\$ 4.5$ million in 1999, $\$ 3.3$ million in 1998 and $\$ 3.0$ million in 1997.

The Company's foreign subsidiaries maintain benefit plans for their employees which vary by country. The obligations and cost of these plans are not significant to the Company.

## NOTE 10 - LEASES

The Company leases various real estate and equipment under noncancelable operating leases. Rental expense under such leases amounted to $\$ 4.0$ million in 1999, $\$ 4.4$ million in 1998 and $\$ 4.5$ million in 1997. Included in such amounts were $\$ 0.1$ million in each year to affiliated entities, which are owned, in part, by a significant shareholder of the Company.

Future minimum lease payments under non-cancelable operating leases with initial or remaining terms in excess of one year amounted to $\$ 6.5$ million at October 31, 1999, as follows:


The Company and a significant shareholder have jointly guaranteed a loan totaling approximately $\$ 0.3$ million as of October 31, 1999, on certain real estate which is being leased by the Company. The Company is subject to certain financial covenants in connection with the guarantee.

As of October 31, 1999, the Company had capital expenditure purchase commitments outstanding of approximately $\$ 20$ million.

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make certain estimates and assumptions, including collectability of accounts receivable, depreciable lives and recoverability of property, plant, equipment, intangible assets and certain accrued liabilities. Actual results may differ from such estimates.

Financial instruments that potentially subject the Company to credit risk consist principally of trade receivables and temporary cash investments. The Company sells its products primarily to manufacturers in the semiconductor and computer 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. Historically, the Company has not incurred any significant credit related losses.

## NOTE 12 - SEGMENT INFORMATION

The Company operates in a single industry segment as a manufacturer of photomasks, which are high precision quartz plates containing microscopic images of electronic circuits for use in the fabrication of semiconductors. In addition to its manufacturing facilities in the United States, the Company has operations in the United Kingdom, Switzerland, Germany and Singapore. The Company's 1999, 1998 and 1997 net sales, operating profit and identifiable assets by geographic area were as follows:

|  | Net Sales | Operating <br> Income (Loss) | Identifiable Assets |
| :---: | :---: | :---: | :---: |
| 1999: |  |  |  |
| United States | \$184,564 | \$22,465 | \$314, 434 |
| Europe | 26,488 | 145 | 65,953 |
| Asia | 12,650 | $(1,785)$ | 29,969 |
|  | \$223,702 | \$20,825 | \$410, 356 |
|  | $=====$ | ====== | ======= |
| 1998: |  |  |  |
| United States | \$185,772 | \$32,443 | \$285, 115 |
| Europe | 20,008 | (416) | 51,326 |
| Asia | 16,792 | 3,431 | 35,108 |
|  | \$222, 572 | \$35,458 | \$371, 549 |
| 1997: |  |  |  |
| United States | \$174, 043 | \$37,989 | \$288, 970 |
| Europe | 12,938 | 180 | 46,586 |
| Asia | 10,470 | 2,235 | 29,656 |
|  | \$197,451 | \$40,404 | \$365, 212 |
|  | ======== | === | $=$ |

Approximately 5\% of net domestic sales in 1999 were for delivery outside of the United States (4\% in 1998 and 7\% in 1997).

The Company had two customers who represented approximately $11 \%$ of total net sales in 1999, and one customer who represented $16 \%$ in 1998 and 23\% in 1997.

NOTE 13 - COMPREHENSIVE INCOME
In June 1997, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards (SFAS) NO. 130 "Reporting Comprehensive Income." The Statement, which the Company adopted in the first quarter of 1999, establishes standards for reporting comprehensive income and its components in financial statements. Where applicable, earlier periods have been restated to conform to the standards set forth in SFAS No. 130. The Company's comprehensive income as reported in the Condensed Consolidated Statement of Shareholders' Equity, consists of net earnings, and all changes in equity during a period except those resulting from investments by owners and distributions to owners, which are presented before tax. The Company does not provide for U.S. income taxes on foreign currency translation adjustments because it does not provide for such taxes on undistributed earnings of foreign subsidiaries. Accumulated other comprehensive income consists of unrealized gains and losses on certain investments in equity securities and foreign currency translation adjustments. The related tax effects allocated to each component of other comprehensive income (loss) were as follows for the three years ended October 31, 1999:

1999:
Foreign currency translation adjustment
\$(2,705)
Tax (Expense)
or Benefit
Before-Tax
Amount
Net-of-Tax
Amount
$\qquad$

Unrealized gains on investments:
Unrealized holding gains arising during the period

4,574
$(1,738)$
Less: reclassification adjustment
for gains realized in net income
Net unrealized gains
Other comprehensive loss

1998:
Foreign currency translation adjustment
\$(1, 300$)$
\$

Unrealized losses on investments: Unrealized holding losses arising during the period
\$(2, 010)
\$ 764
Less: reclassification adjustment for gains realized in net income

Net unrealized losses
Other comprehensive loss

| $(1,351)$ | 513 |
| :---: | :---: |
| $(3,361)$ | 1,277 |
| \$ $(4,661)$ | \$1,277 |

\$(1,300)
$\$(1,246)$
\$(2,705)
------

2,836
------
1,357
\$(1,348)
=======
(838)
$(2,084)$
\$(3,384)
======

|  | Before-Tax Amount | ```Tax (Expense) or Benefit``` | Net-of-Tax Amount |
| :---: | :---: | :---: | :---: |
| 1997: |  |  |  |
| Foreign currency translation adjustment | \$(2,066) | - | \$(2,066) |
| Unrealized losses on investments: |  |  |  |
| Unrealized holding gains arising during the period | 218 | (83) | 135 |
| Less: reclassification adjustment for gains realized in net income | $(2,519)$ | 957 | $(1,562)$ |
| Net unrealized losses | $(2,301)$ | 874 | $(1,427)$ |
| Other comprehensive loss | \$ 4,367$)$ | \$ 874 | \$ $(3,493)$ |

NOTE 14 - NON-RECURRING RESTRUCTURING CHARGE
In March, 1998, the Company initiated a plan to optimize its North American manufacturing network. It re-organized its two California operations, dedicating its Milpitas facility to the production of highend technology photomasks and its Sunnyvale facility to the production of mature technology photomasks, and it consolidated its Colorado Springs, Colorado photomask manufacturing operations into its other North American manufacturing facilities. The Company determined that its Large Area Mask (LAM) Division, which was also located in Colorado Springs, did not represent a long-term strategic fit with its core photomask business, and accordingly, announced its intention to sell the LAM Division. The Company recorded a $\$ 3.8$ million charge in the second quarter of 1998 for the restructuring, including $\$ 3.3$ million of non-cash charges to reduce the carrying value of LAM Division property, plant and equipment to its net realizable value based upon the estimated proceeds from the sale of the LAM Division business taken as a whole. Such assets, consisting principally of specialized manufacturing tools and equipment, had a carrying value of $\$ 3.6$ million (prior to the write-down), remained in use and continued to be depreciated pending the disposition of the LAM division. The LAM division was sold in January 1999 without any additional effect on results of operations.

## NOTE 15 - ALIGN-RITE MERGER

On September 15, 1999, the Company signed a definitive agreement to merge with Align-Rite International, Inc., an independent photomask manufacturer based in Burbank, California. The agreement, as amended on January 10, 2000, provides for the exchange of .85 shares of the Company's common stock for each share of Align-Rite's common stock. Approximately 4.2 million shares of the Company's common stock will be issued in connection with the transaction. The merger will be accounted for a pooling-of-interests and Align-Rite will become a wholly-owned subsidiary of the Company.

The transaction is expected to be completed during the Company's second fiscal quarter of 2000, and is subject to approval of Align-Rite's shareholders, as well as various regulatory and closing conditions, including compliance with the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended.

NOTE 16 - QUARTERLY RESULTS OF OPERATIONS (UNAUDITED)
The following table sets forth certain unaudited quarterly financial data:

|  | First | Second | Third | Fourth | Year |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1999: |  |  |  |  |  |
| Net sales | \$47, 815 | \$53, 826 | \$59, 034 | \$63, 027 | \$223, 702 |
| Gross profit | 12,528 | 15,675 | 18,282 | 20,939 | 67,424 |
| Net income | 617 | 2,068 | 3,240 | 4,743 | 10,668 |
| Earnings per share: |  |  |  |  |  |
| Basic | \$ 0.03 | \$ 0.09 | \$ 0.14 | \$ 0.20 | \$ 0.45 |
| Diluted | \$ 0.03 | \$ 0.09 | \$ 0.14 | \$ 0.20 | \$ 0.45 |
| 1998: |  |  |  |  |  |
| Net sales | \$50, 932 | \$61, 307 | \$57,681 | \$52,652 | \$222,572 |
| Gross profit | 19,666 | 23,747 | 21,092 | 16,439 | 80,944 |
| Net income | 6,280 | 5,309 | 5,844 | 3,049 | 20,482 |
| Earnings per share: |  |  |  |  |  |
| Basic | \$ 0.26 | \$ 0.22 | \$ 0.24 | \$ 0.13 | \$ 0.84 |
| Diluted | \$ 0.25 | \$ 0.22 | \$ 0.24 | \$ 0.13 | \$ 0.84 |

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

There were no disagreements on any accounting and financial disclosure matters between the Company and its independent certified public accountants for which a Form 8-K was required to be filed during the 24 months ended October 31, 1999 or for the period from October 31, 1999 to the date hereof.

## PART III

## ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT

The information as to Directors required by Item 401 and 405 of Regulation S-K is set forth in the Company's definitive proxy statement (the "Definitive Proxy Statement") which will be filed with the Securities and Exchange Commission pursuant to Regulation 14A within 120 days after the end of the fiscal year covered by this Form $10-\mathrm{K}$ under the caption "ELECTION OF DIRECTORS" and is incorporated herein by reference. The information as to Executive Officers is included in Part I, Item 1a of this report under the caption "Executive Officers."

## ITEM 11. EXECUTIVE COMPENSATION

The information required by Item 402 of Regulation S-K is set forth in the Definitive Proxy Statement under the captions "EXECUTIVE COMPENSATION" and "DIRECTORS' COMPENSATION" and is incorporated herein by reference.

The information required by Item 403 of Regulation S-K is set forth in the Definitive Proxy Statement under the caption "OWNERSHIP OF COMMON STOCK BY DIRECTORS, NOMINEES, OFFICERS AND CERTAIN BENEFICIAL OWNERS" and is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS
The information required by Item 404 of Regulation S-K is set forth in the Definitive Proxy Statement under the caption "CERTAIN TRANSACTIONS" and is incorporated herein by reference.

## PART IV

ITEM 14. EXHIBITS, FINANCIAL STATEMENT SCHEDULES, AND REPORTS ON FORM 8-K
(A) The following documents are filed as part of this report:

1) Financial Statements

Independent Auditors' Report
Consolidated Balance Sheet at October 31, 1999 and November 1, 1998

Consolidated Statement of Earnings for the years ended October 31, 1999, November 1, 1998 and November 2, 1997

Consolidated Statement of Shareholders' Equity for the years ended October 31, 1999, November 1, 1998 and November 2, 1997

Consolidated Statement of Cash Flows for the years ended October 31, 1999, November 1, 1998 and November 2, 1997

Notes to Consolidated Financial Statements
2) Financial Statement Schedules

Schedules for which provision is made in Regulation
$\mathrm{S}-\mathrm{X}$ of the Securities and Exchange Commission are not required under the related instructions or are inapplicable and, therefore, have been omitted.
3) Exhibits: See Exhibits Index.
(B) Reports on Form 8-K

A report on Form 8-K was filed by the Company on September 24, 1999.
The Form 8-K disclosed under Item 5 that the Company entered into an Agreement and Plan of Merger dated September 15, 1999 with Align-Rite International, Inc. and AL Acquisition Corp., a wholly owned subsidiary of the Company, pursuant to which the Company would acquire Align-Rite in a Merger transaction. No financial statements were filed with the Form 8-K.

Pursuant to the requirements of Section 13 or $15(\mathrm{~d})$ 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 JAMES R. NORTHUP | January 20, 2000 |
| :--- | :--- |
| James R. Northup |  |
| President |  |

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 CONSTANTINE S. MACRICOSTAS
January 20, 2000
Constantine S. Macricostas
Chairman of the Board
and Director

By MICHAEL J. YOMAZZO January 20, 2000
Michael J. Yomazzo
Vice Chairman and Director

By JAMES R. NORTHUP January 20, 2000
James R. Northup
President

By JEFFREY P. MOONAN January 20, 2000
Jeffrey P. Moonan
Executive Vice President

By ROBERT J. BOLLO January 20, 2000
Robert J. Bollo
Vice President/Finance
Chief Financial Officer

By WALTER M. FIEDEROWICZ January 20, 2000
Walter M. Fiederowicz
Director
By JOSEPH A. FIORITA, JR. January 20, 2000

Joseph A. Fiorita, Jr.
Director

| Exhibit |  |
| :---: | :---: |
| Number | Description |
| 2.1 | Agreement and Plan of Merger dated as of September 15, 1999 among Photronics, Inc., AL Acquisition Corp. and Align-Rite International, Inc. was filed as Exhibit 2.1. to the Form 8-K dated September 24, 1999 filed by Photronics, Inc. and is incorporated herein by reference. |
| 2.2 | Amendment No. 1 to Agreement and Plan of Merger dated January 10, 2000 among Photronics, Inc., AL Acquisition Corp. and AlignRite International, Inc. was filed as Exhibit 2.1 to the Form 8-K dated January 14, 2000 filed by Photronics, Inc. and is incorporated herein by reference. |
| 3.1 | Certificate of Incorporation. (1) |
| 3.2 | By-Laws, as amended. (1) |
| 3.3 | Amendment to Certificate of Incorporation, dated March 16, 1990. (3) |
| 3.4 | Amendment to Certificate of Incorporation, dated March 16, 1995. (10) |
| 3.5 | Amendment to Certificate of Incorporation, dated November 13, 1997. (13) |
| 4.1 | Form of Stock Certificate. (1) |
| 10.1 | Voting Agreement dated as of September 15, 1999 among Photronics, Inc. and certain shareholders of Align-Rite International, Inc. was filed as Exhibit 10.1 to the Form 8-K dated September 24, 1999 filed by Photronics, Inc. and is incorporated herein by reference. |
| 10.2 | Reaffirmation of Voting Agreement dated January 10, 2000 among Photronics, Inc. and certain shareholders of Align-Rite International, Inc. was filed as Exhibit 10.1 to the Form 8-K dated January 14, 2000 filed by Photronics, Inc. and is incorporated herein by reference. |
| 10.3 | Loan Agreement, dated August 10, 1984, among the Company, Fairfield Associates, and the Connecticut Development Authority. (1) |
| 10.4 | Indenture of Trust, dated August 10, 1984, between the Connecticut Development Authority and Citytrust. (1) |
| 10.5 | Security Agreement, dated August 10, 1984, between the Company and the Connecticut Development Authority, with assignment to Citytrust, as Trustee. (1) |
| 10.6 | Lease Agreement, dated August 10, 1984, between the Company and Fairfield Associates. (1) |


| 10.7 | Guaranty Agreement, dated August 10, 1984, by the Company and Constantine Macricostas to Citytrust, as Trustee. (1) |
| :---: | :---: |
| 10.8 | Assumption Agreement between the Company, MC2 and the Connecticut Development Authority, dated October 15, 1992, and related Note, Mortgage and Collateral Assignment of Leases and amendments thereto. (6) |
| 10.9 | Assumption Agreement, Third Amendment to Loan Agreement and Amendment to Guaranty Photronic Labs Incorporated Project - 1984 Series, dated August 28, 1992, by and among Photronics California, Inc., Photronics Financial Services, Inc., Photronics Investment Services, Inc., Photronics Texas, Inc., the Company, Constantine Macricostas, the Connecticut Development Authority, The Chase Manhattan Bank of Connecticut, N.A. and Fairfield Associates. (6) |
| 10.10 | The Company's 1986 Non-Qualified Stock Option Plan, as amended. (2) + |
| 10.11 | The Company's 1988 Non-Qualified Stock Option Plan. (8) + |
| 10.12 | Amendment \#1 to the Company's 1988 Non-Qualified Stock Option Plan. (3) + |
| 10.13 | Amendment to Security Agreements, dated October 31, 1988, by and among the Company, Citytrust, Constantine S. Macricostas and Mayo Associates. |
| 10.14 | Amendment to Loan Agreements between the Company and the Connecticut Development Authority, dated as of June 8, 1990. (3) |
| 10.15 | Second Amendment to Loan Agreement dated as of December 20, 1991 by and among the Company, the Connecticut Development Authority and The Chase Manhattan Bank of Connecticut, N.A. (4) |
| 10.16 | Form of severance agreement between the Company and each of Messrs. Macricostas, Northup and Moonan. (8) + |
| 10.17 | Lease dated as of November 1, 1989 between the Company, MC3, Inc. and Alpha-Omega Associates. (8) |
| 10.18 | Consulting Agreement, dated June 1, 1992, between Joseph Fiorita and the Company. (6) |
| 10.19 | The Company's 1992 Stock Option Plan. (5) + |
| 10.20 | The Company's 1992 Employee Stock Purchase Plan. (5) |
| 10.21 | The Company's 1994 Employee Stock Option Plan. (7) + |
| 10.22 | Form of Agreement regarding Life Insurance between the Company and each of Messrs. Macricostas, Yomazzo, Northup and Moonan. (9) $+$ |


| 10.23 | Credit Agreement between the Company and various lenders, dated November 19, 1998 was filed as Exhibit 10.21 to the Form 10-K of the Company for the fiscal year ended November 1, 1998 and is incorporated herein by reference. |
| :---: | :---: |
| 10.24 | First Amendment Agreement to Credit Agreement dated as of September 13, 1999 among the Company and various lenders. |
| 10.25 | The Company's 1996 Stock Option Plan. (11) + |
| 10.26 | Letter Agreement between the Company and Michael J. Yomazzo, dated October 10, 1997. (13) + |
| 10.27 | Consulting Agreement between the Company and Michael J. Yomazzo, dated October 10, 1997. (13) + |
| 10.28 | Consulting Agreement between the Company and Constantine S. Macricostas, dated October 10, 1997. (13) + |
| 10.29 | Form of Indenture between The Chase Manhattan Bank, as Trustee, and the Company relating to the 6\% Convertible Subordinated Notes due June 1, 2004. (12) |
| 10.30 | The Company's 1998 Stock Option Plan. (18) + |
| 21 | List of Subsidiaries. * |
| 23 | Consent of Deloitte \& Touche LLP. * |
| 27 | Financial Data Schedule * |

Filed herewith.
Represents a management contract or compensatory plan or arrangement required to be filed as an exhibit to this form pursuant to item 14(c) of this report.
(1) Filed as an exhibit 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, and incorporated herein by reference.
(2) Filed as an exhibit to the Company's Registration Statement on Form S-8, File Number 33-17530, which was declared effective on October 19, 1987, and incorporated herein by reference.
(3) Filed as an exhibit to the Company's Registration Statement on Form S-2, File Number 33-34772 which was declared effective by the Commission on June 22, 1990, and incorporated herein by reference.
(4) Filed as an exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended October 31, 1991 and incorporated herein by reference.
(5) Filed as an exhibit to the Company's Registration Statement on Form S-8, File Number 33-47446, which was filed on April 24, 1992, and incorporated herein by reference.
(6) Filed as an exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended October 31, 1992, and incorporated herein by reference.
(7) Filed as an exhibit to the Company's Registration Statement on Form S-8, File Number 33-78102, which was filed on April 22, 1994, and incorporated herein by reference.

Filed as an exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended October 31, 1993, and incorporated herein by reference.
(9) Filed as an exhibit to the Company's Quarterly Report on Form 10-Q for the quarter ended July 31, 1995, and incorporated herein by reference.

Filed as an exhibit to the Company's Current Report on Form 8-K, dated March 24, 1995, and incorporated herein by reference.

Filed as an exhibit to the Company's Registration Statement on Form S-8, File Number 333-02245, which was filed on April 4, 1996, and incorporated herein by reference.

Filed as an exhibit to the Company's Registration Statement on Form S-3, File Number 333-26009, which was declared effective by the Commission on May 22, 1997, and incorporated herein by reference.

Filed as an exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended November 2, 1997, and incorporated herein by reference.

Filed as an exhibit to the Company's Registration Statement on Form S-8, File Number 333-50809, which was filed on April 23, 1998, and incorporated herein by reference.

# FIRST AMENDMENT AGREEMENT 

Dated as of September 13, 1999

among
PHOTRONICS, INC.
The Lenders Party Hereto
THE CHASE MANHATTAN BANK, as Administrative Agent
and
THE BANK OF NEW YORK, as Documentation Agent

FIRST AMENDMENT AGREEMENT, dated as of September 13, 1999, among PHOTRONICS, INC., a Connecticut corporation (the "Company"), the LENDERS party hereto, THE CHASE MANHATTAN BANK, as Administrative Agent, and THE BANK OF NEW YORK, as Documentation Agent.

WHEREAS, the Company, the Borrowing Subsidiaries, the Lenders, the Administrative Agent and the Documentation Agent have entered into that certain Credit Agreement dated as of November 19, 1998 (as in effect prior to the effectiveness of this Agreement, the "Existing Credit Agreement," and, as amended by this Agreement, the "Amended Credit Agreement"), pursuant to which the Lenders have agreed, subject to the terms and conditions therein set forth, to make or participate in Loans to, and to issue or participate in Letters of Credit for the account of, the Borrowers;

WHEREAS, the Company, the Lenders, the Administrative Agent and the Documentation Agent have agreed to enter into this Agreement to provide for, among other things, the modification of certain covenants and the waivers of certain Defaults and Events of Default; and

WHEREAS, the Loan Documents (including, without limitation, this Agreement and the Amended Credit Agreement), as amended and supplemented by this Agreement and as each may be amended or supplemented from time to time, are referred to herein as the "Amended Loan Documents".

NOW THEREFORE, for valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

## ARTICLE I

Amendments to Existing Credit Agreement.
Each of the Company and, subject to the satisfaction of the conditions set forth in Article III, the Lenders hereby consents and agrees to the amendments to the Existing Credit Agreement set forth below:

Section 1.01 of the Existing Credit Agreement is hereby amended and restated to read as follows:
"Capital Expenditure Ratio" means, on any date, the ratio of (a) Consolidated Capital Expenditures (exclusive of amounts expended in connection with Permitted Business Acquisitions) for the period of four consecutive fiscal quarters of the Company most recently ended as of such date to (b) (i) Consolidated EBITDA for the period of four consecutive fiscal quarters of the Company most recently ended as of such date, plus (ii) solely for the purpose of determining the Capital Expenditure Ratio for the fiscal quarter of the Company ending on January 30, 2000, \$10, 000, 000 .

SECTION 6.13. Interest Coverage Ratio. The Company will not permit the Interest Coverage Ratio as determined as of the end of each fiscal quarter of the Company to be less than (a) if such fiscal quarter ends on October 31, 1999, 3.00 to 1.00 or (b) if such fiscal quarter ends thereafter, 4.00 to 1.00.
(c) Section 6.14 of the Existing Credit Agreement is hereby amended and restated to read as follows:

SECTION 6.14. Fixed Charge Coverage Ratio. The Company will not permit the Fixed Charge Coverage Ratio as determined as of the end of each fiscal quarter of the Company ending on or after July 30, 2000 to be less than (a) if such fiscal quarter ends on July 30, 2000, 1.25 to 1.00 or (b) if such fiscal quarter ends thereafter, 2.00 to 1.00 .
(d) Section 6.16 of the Existing Credit Agreement is hereby amended and restated to read as follows:

SECTION 6.16. Capital Expenditure Ratio. The Company will not permit the Capital Expenditure Ratio as determined as of the end of each fiscal quarter of the Company to exceed (a) if such fiscal quarter ends on October 31, 1999, 1.25 to 1.00, (b) if such fiscal quarter ends on January 30, 2000 or on April 30, 2000, 1.00 to 1.00 or (c) if such fiscal quarter ends after April 30, 2000, 1.25 to 1.00 .

ARTICLE II
Representations and Warranties
The Company hereby represents and warrants that as of the Effective Date:

Section 2.01 Existing Representations and Warranties. Each of the representations and warranties contained in Article III of the Existing Credit Agreement and in each of the other Loan Documents is true and correct, except that any representation or warranty limited by its terms to a specific date shall be true and correct as of such specific date.

Section 2.02 No Defaults. After giving effect to the waivers granted under Article IV, no event has occurred and no condition exists which would constitute a Default or an Event of Default as defined in the Existing Credit Agreement, and no event has occurred and no condition exists which would constitute a Default or an Event of Default as defined in the Amended Credit Agreement.

Section 2.03 Power and Authority; No Conflicts. The execution, delivery and performance by each of the Loan Parties of the Amended Loan Documents to which it is a party are within such Loan Party's corporate, partnership or limited liability company powers and have been duly authorized by all necessary corporate, partnership or limited liability company and, if required, stockholder, partner or member action. Each Amended Loan Document to which any Loan Party is a party has been duly executed and delivered by such Loan Party and constitutes a legal, valid and binding obligation of such Loan Party, enforceable in accordance with its terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium or other laws affecting creditors' rights generally and subject to general principles of equity, regardless of whether considered in a proceeding in equity or at law.

Section 2.04 Governmental Approvals; No Conflicts. The execution, delivery and performance by each of the Loan Parties of the Amended Loan Documents to which it is a party (a) do not require the Company or any Subsidiary to obtain or make any consent or approval of, registration or filing with, or other action by, any Governmental Authority, except such as have been obtained or made and are in full force and effect or that could not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Effect, (b) will not violate any law or regulation applicable to the Company or any Subsidiary, or the charter, by-laws or other organizational documents of the Company or any Subsidiary, or any order of any Governmental Authority applicable to the Company or any Subsidiary, except as to any law, regulation or order the violation of which could not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Effect, (c) will not violate or result in a default under any indenture, agreement or other instrument binding upon the Company or any Subsidiary or their respective assets, or give rise to a right thereunder to require any payment to be made by the Company or any of its Subsidiaries, except for any such violations, defaults or rights to require payment that could not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Effect, and (d) will not result in the creation or imposition of any Lien on any asset of the Company or any of its Subsidiaries.

Section 2.05 Financial Condition; No Material Adverse Change. (a) The Company has heretofore furnished to the Lenders the consolidated and consolidating balance sheets of the Company and its consolidated Subsidiaries and the related statements of income, stockholders equity and cash flows (i) as of and for the fiscal years ended October 31, 1996, November 2, 1997 and November 1, 1998, such consolidated financial statements being reported on by Deloitte \& Touche LLP, independent public accountants, and (ii) as of and for the fiscal quarter and the portion of the fiscal year ended August 1, 1999. Such financial statements present fairly, in all material respects, the financial condition and results of operations and cash flows of the Company and its consolidated Subsidiaries as of such dates and for such periods in accordance with GAAP, subject to year-end audit adjustments and the absence of footnotes in the case of the statements referred to in clause (ii) above.
(b) Since August 1, 1999, there has been no material adverse change in the business, assets, operations, prospects or condition, financial or otherwise, of the Company and the Subsidiaries, taken as a whole.

ARTICLE III

## Conditions Precedent

The effectiveness of this Agreement is subject to the condition precedent that the Administrative Agent, the Documentation Agent and the Lenders shall have received on or before September 13, 1999 (the "Effective Date") each of the following, in form and substance satisfactory to the Administrative Agent, the Documentation Agent and the Required Lenders:
(a) counterparts of this Agreement executed by each of the Company, the Required Lenders, the Administrative Agent and the Documentation Agent;
(b) certified complete and correct copies of each of the financial statements referred to in Section 2.05; and
(c) an amendment fee for the account of each Lender equal to .04\% of such Lender's Commitment together with all fees and disbursements required to be paid pursuant to Section 5.04.

ARTICLE IV

## Waivers

Subject to the satisfaction of the conditions set forth in Article III, each of the Lenders hereby waives any Default or Event of Default arising from noncompliance by the Company with Section 6.13 of the Existing Credit Agreement for the fiscal quarter of the Company ended August 1, 1999 so long as the Interest Coverage Ratio as determined for such fiscal quarter is not less than 3.00 to 1.00 .

## ARTICLE V

Miscellaneous
Section 5.01 Defined Terms. The terms used herein and not defined herein shall have the meanings assigned to such terms in the Existing Credit Agreement.

Section 5.02 Nonwaiver. Except as set forth in Article IV, the terms of this Agreement shall not operate as a waiver by the Administrative Agent, the Issuing Bank or any Lender or otherwise prejudice the rights, remedies or powers of the Administrative Agent, the Issuing Bank or any Lender under the Amended Credit Agreement, under any other Amended Loan Document or under applicable law. Except as set forth in Article I: (x) no terms and provisions of the Loan Documents are modified or changed by this Agreement; and (y) the terms and provisions of the Loan Documents shall continue in full force and effect.

Section 5.03 Waivers; Amendments. Any provision of this Agreement may be amended or modified only by an agreement or agreements in writing signed by the Company and the Required Lenders, or by the Company and the Administrative Agent acting with the consent of the Required Lenders.

Section 5.04 Expenses. The Company shall pay all reasonable out-of-pocket expenses incurred by the Administrative Agent and its Affiliates, including the reasonable fees, charges and disbursements of counsel for the Administrative Agent, in connection with the preparation and administration of this Agreement, the other Amended Loan Documents or any amendments, modifications or waivers of the provisions hereof or thereof (whether or not the transactions contemplated hereby or thereby shall be consummated).

Section 5.05 Notices. All notices and other communications provided for herein shall be in writing and shall be delivered by hand or overnight courier service, mailed by certified or registered mail or sent by telecopy in accordance with the terms of the Amended Credit Agreement.

Section 5.06 Headings. Article and Section headings and the Table of Contents used herein are for convenience of reference only, are not part of this Agreement and shall not affect the construction of, or be taken into consideration in interpreting, this Agreement.

Section 5.07 Severability. Any provision of this Agreement held to be invalid, illegal or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such invalidity, illegality or unenforceability without affecting the validity, legality and enforceability of the remaining provisions hereof; and the invalidity of a particular provision in a particular jurisdiction shall not invalidate such provision in any other jurisdiction.

Section 5.08 Counterparts; Integration; Effectiveness. This
Agreement may be executed in counterparts (and by different parties hereto on different counterparts), each of which shall constitute an original,
but all of which when taken together shall constitute a single contract. The Amended Loan Documents and the separate letter agreements with respect to fees payable to the Administrative Agent and the Documentation Agent constitute the entire contract among the parties relating to the subject matter thereof and supersede any and all previous agreements and understandings, oral or written, relating to the subject matter hereof. Subject to the satisfaction of the conditions set forth in Article III, this Agreement shall become effective when it shall have been executed by the Administrative Agent and when the Administrative Agent shall have received counterparts hereof which, when taken together, bear the signatures of each of the other parties hereto, and thereafter shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns. Delivery of an executed counterpart of a signature page of this Agreement by telecopy shall be effective as delivery of a manually executed counterpart of this Agreement.

Section 5.09 Governing Law. This Agreement shall be construed in accordance with and governed by the law of the State of New York.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the day and year first above written.

PHOTRONICS, INC., a Connecticut corporation

By
Name:
Title:

THE CHASE MANHATTAN BANK, individually and as Administrative Agent

By
Name:
Title:

THE BANK OF NEW YORK, individually and as Documentation Agent

By $\begin{aligned} & \text { Name: } \\ & \text { Title: }\end{aligned}$

FIRST UNION NATIONAL BANK

By
Name:
Title:

FLEET NATIONAL BANK

By

## Name:

Title:

By
Name:
Title:

PEOPLE'S BANK

By
Name:
Title:

STATE STREET BANK AND TRUST COMPANY

By
Name: Title:

| Name | State or Jurisdiction of Incorporation |
| :---: | :---: |
| Photronics International | Virgin Islands |
| Photronics California, Inc. | California |
| Photronics Texas, Inc. | Texas |
| Photronics Financial Services, Inc. | Florida |
| Photronics Investment Services, Inc. | Nevada |
| Photronics-Toppan Texas, Inc. | Texas |
| Beta Squared, Inc. | Connecticut |
| PLI Management Corp. | Florida |
| Photronics Singapore Pte Ltd. | Singapore |
| Photronics (UK) Limited | England |
| Photronics Connecticut, Inc. | Connecticut |
| Photronics Colorado, Inc. | Colorado |
| Photronics, S.A. | Switzerland |
| Chip Canal Associates, Ltd. | England |
| Photronics Germany GmbH \& Co. KG | Germany |
| Photronics MZD Verwaltungs GmbH | Germany |
| Photronics MZD GmbH | Germany |
| Photronics Arizona, Inc. | Arizona |
| Photronics Oregon, Inc. | Oregon |
| Photronics Texas I, L.P. | Texas |
| Photronics Texas II, L.P. | Texas |
| Beta Squared I, L.P. | Texas |
| Photronics Texas I, LLC | Delaware |
| Photronics Texas II, LLC | Delaware |
| Beta Squared I, LLC | Delaware |

## INDEPENDENT AUDITORS' CONSENT

Board of Directors and Shareholders
Photronics, Inc.
Jupiter, Florida

We consent to the incorporation by reference in Registration Statements Nos. 333-02245, 333-50809, 33-17530, 33-28118, 33-47446 and 33-78102 of Photronics, Inc. on Form S-8 of our report dated December 6, 1999, except as to Footnote 15, as to which the date is January 10, 2000, appearing in this Annual Report on Form 10-K of Photronics, Inc. for the year ended October 31, 1999.

DELOITTE \& TOUCHE LLP
Hartford, Connecticut
January 20, 2000

This schedule contains summary financial information extracted from the Condensed Consolidated Statement of Earnings and the Consolidated Balance Sheet and is qualified in its entirety by reference to such financial statements.

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OCT-31-1999
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