PHOTRONICS INC
Form 10-Q
September 06, 2018

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

FORM 10-Q

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended July 29, 2018
OR
TRANSITION REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from ___ to ___

Commission file number 0-15451

PHOTRONICS, INC.
(Exact name of registrant as specified in its charter)

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

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

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

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 periods that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.
Yes No

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of “large accelerated filer,” “accelerated filer”, “smaller reporting company”, and “emerging growth company” in Rule 12b-2 of the Exchange Act. (Check one):

Large Accelerated Filer		Accelerated Filer
Non-Accelerated Filer	(Do not check if a smaller reporting company)	Smaller Reporting Company
		Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

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

The registrant had 68,388,301 shares of common stock outstanding as of August 31, 2018.

Forward-Looking Statements

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

PHOTRONICS, INC.

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PART I. FINANCIAL INFORMATION

Item 1. CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

PHOTRONICS, INC.
Condensed Consolidated Balance Sheets
(in thousands, except per share amounts)
(unaudited)

	July 29, 2018	October 29, 2017
ASSETS		
Current assets:		
Cash and cash equivalents	$332,739	$308,021
Accounts receivable, net of allowance of $1,968 in 2018 and $2,319 in 2017	118,727	105,320
Inventories	31,756	23,703
Prepaid expenses	9,100	3,162
Other current assets	12,598	8,918
Total current assets	504,920	449,124
Property, plant and equipment, net	546,688	535,197
Intangible assets, net	13,507	17,122
Deferred income taxes	18,585	15,481
Other assets	4,312	3,870
Total assets	$1,088,012	$1,020,794
LIABILITIES AND EQUITY		
Current liabilities:		
Current portion of long-term debt	$57,893	$4,639
Accounts payable	62,110	50,834
Accrued liabilities	38,839	26,303
Total current liabilities	158,842	81,776
Long-term debt	-	57,337
Other liabilities	15,657	16,386
Total liabilities	174,499	155,499
Commitments and contingencies		
Equity:		
Preferred stock, $0.01 par value, 2,000 shares authorized, none issued and outstanding	-	-
Common stock, $0.01 par value, 150,000 shares authorized, 69,505 shares issued and 68,727 outstanding at July 29, 2018 and 68,666 shares issued and outstanding at October 29, 2017	695	687
Additional paid-in capital	553,922	547,596
Retained earnings	218,958	189,390
Treasury stock, 778 shares at July 29, 2018	(6,787)	-
Accumulated other comprehensive income	4,022	6,891

Total Photronics, Inc. shareholders’ equity	770,810	744,564
Noncontrolling interests	142,703	120,731
Total equity	913,513	865,295
Total liabilities and equity	$ 1,088,012	$ 1,020,794

See accompanying notes to condensed consolidated financial statements.

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

	Three Months Ended		Nine Months Ended	
	July 29, 2018	July 30, 2017	July 29, 2018	July 30, 2017
Revenue	$136,391	$111,579	$390,616	$329,707
Cost of goods sold	(100,794)	(89,862)	(294,538)	(264,835)
Gross profit	35,597	21,717	96,078	64,872
Operating expenses:				
Selling, general and administrative	(12,504)	(11,639)	(37,891)	(33,403)
Research and development	(2,653)	(4,812)	(10,574)	(12,023)
Total operating expenses	(15,157)	(16,451)	(48,465)	(45,426)
Operating income	20,440	5,266	47,613	19,446
Other income (expense):				
Interest income and other income (expense), net	1,968	415	2,319	(4,182)
Interest expense	(557)	(549)	(1,682)	(1,657)
Income before income taxes	21,851	5,132	48,250	13,607
Income tax provision	(2,054)	(333)	(3,783)	(2,814)
Net income	19,797	4,799	44,467	10,793
Net income attributable to noncontrolling interests	(6,792)	(798)	(14,899)	(3,048)
Net income attributable to Photronics, Inc. shareholders	$13,005	$4,001	$29,568	$7,745
Earnings per share:				
Basic	$0.19	$0.06	$0.43	$0.11
Diluted	$0.18	$0.06	$0.41	$0.11
Weighted-average number of common shares outstanding:				

Basic	69,374	68,525	69,141	68,376
Diluted	75,258	69,380	75,121	69,311

See accompanying notes to condensed consolidated financial statements

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PHOTRONICS, INC.
Condensed Consolidated Statements of Comprehensive Income
(in thousands)
(unaudited)

	Three Months Ended		Nine Months Ended	
	July 29, 2018	July 30, 2017	July 29, 2018	July 30, 2017
Net income	$ 19,797	$ 4,799	$ 44,467	$ 10,793
Other comprehensive income (loss), net of tax of $0:				
Foreign currency translation adjustments	(24,572)	4,438	(5,583)	22,205
Amortization of cash flow hedge	-	32	48	96
Other	65	4	86	(89)
Net other comprehensive income (loss)	(24,507)	4,474	(5,449)	22,212
Comprehensive income (loss)	(4,710)	9,273	39,018	33,005
Less: comprehensive income attributable to noncontrolling interests	2,019	594	12,319	8,740
Comprehensive income (loss) attributable to Photronics, Inc. shareholders	$ (6,729)	$ 8,679	$ 26,699	$ 24,265

See accompanying notes to condensed consolidated financial statements.

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PHOTRONICS, INC.
Condensed Consolidated Statements of Cash Flows
(in thousands)
(unaudited)

	Nine Months Ended	
	July 29, 2018	July 30, 2017
Cash flows from operating activities:		
Net income	$44,467	$10,793
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	64,485	64,081
Changes in assets and liabilities:		
Accounts receivable	(15,097)	4,031
Inventories	(8,386)	(2,475)
Other current assets	(9,330)	2,650
Accounts payable, accrued liabilities, and other	10,818	(5,291)
Net cash provided by operating activities	86,957	73,789
Cash flows from investing activities:		
Purchases of property, plant and equipment	(64,372)	(38,759)
Acquisition of business	-	(5,400)
Proceeds from sale of investment	-	167
Other	453	(458)
Net cash used in investing activities	(63,919)	(44,450)
Cash flows from financing activities:		
Dividend paid to noncontrolling interest	(8,166)	(8,298)
Repayments of long-term borrowings	(4,170)	(4,057)
Purchase of treasury stock	(6,787)	-
Contribution from noncontrolling interest	17,997	-
Proceeds from share-based arrangements	4,028	2,529
Other	(274)	(33)
Net cash provided by (used in) financing activities	2,628	(9,859)
Effect of exchange rate changes on cash and cash equivalents	(948)	7,018
Net increase in cash and cash equivalents	24,718	26,498
Cash and cash equivalents at beginning of period	308,021	314,074
Cash and cash equivalents at end of period	$332,739	$340,572
Supplemental disclosure information:		
Accrual for property, plant and equipment purchased during the period	$6,958	$2,572

See accompanying notes to condensed consolidated financial statements.

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PHOTRONICS, INC.
Notes to Condensed Consolidated Financial Statements
Three Months and Nine Months Ended July 29, 2018 and July 30, 2017
(unaudited)
(in thousands, except share amounts and per share data)

NOTE 1 - BASIS OF FINANCIAL STATEMENT PRESENTATION

Photronics, Inc. ("Photronics", "the Company", "we", “our”, or "us") is one of the world's leading manufacturers of photomasks, which are high precision photographic quartz or glass plates containing microscopic images of electronic circuits. Photomasks are a key element in the manufacture of semiconductors and flat panel displays ("FPDs"), and are used as masters to transfer circuit patterns onto semiconductor wafers and flat panel display substrates during the fabrication of integrated circuits ("ICs" or “semiconductors”) and a variety of FPDs and, to a lesser extent, other types of electrical and optical components. We currently operate principally from nine manufacturing facilities, two of which are located in Europe, three in Taiwan, one in Korea, and three in the United States. We have commenced construction of two manufacturing facilities in China.

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America for interim financial information and with the instructions to Form 10-Q and Article 10 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by accounting principles generally accepted in the United States of America for annual financial statements. In the opinion of management, adjustments, all of which are of a normal recurring nature, considered necessary for a fair presentation have been included. Our business is typically impacted during the first, and sometimes the second, quarter of our fiscal year by the North American, European, and Asian holiday periods, as some customers reduce their development and buying activities during those periods. Operating results for the interim period are not necessarily indicative of the results that may be expected for the fiscal year ending October 31, 2018. For further information, refer to the consolidated financial statements and notes thereto included in our Annual Report on Form 10-K for the year ended October 29, 2017.

NOTE 2 - CHANGES IN EQUITY

The following tables set forth our consolidated changes in equity for the three and nine month periods ended July 29, 2018 and July 30, 2017:

	Three Months Ended July 29, 2018							
	Photronics, Inc. Shareholders							
	Common Stock		Additional Paid-in Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income	Non-controlling Interests	Total Equity
	Shares	Amount						
Balance at April 30, 2018	69,443	$ 694	$ 552,977	$ 205,953	$ -	$ 23,756	$ 134,686	$ 918,066
Net income	-	-	-	13,005	-	-	6,792	19,797
Other comprehensive loss	-	-	-	-	-	(19,734)	(4,773)	(24,507)
Sale of common stock through employee stock option and purchase plans	39	1	162	-	-	-	-	163
	23	-	449	-	-	-	-	449

Restricted stock awards vesting and expense								
Share-based compensation expense	-	-	334	-	-	-	-	334
Contribution from noncontrolling interest	-	-	-	-	-	-	5,998	5,998
Purchase of treasury stock	-	-	-	-	(6,787)	-	-	(6,787)
Balance at July 29, 2018	69,505	$ 695	$ 553,922	$ 218,958	$ (6,787)	$ 4,022	$ 142,703	$ 913,513

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Three Months Ended July 30, 2017
Photronics, Inc. Shareholders

	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Income	Non-controlling Interests	Total Equity
Balance at May 1, 2017	68,496	$ 685	$ 545,019	$ 180,004	$ 4,171	$ 114,875	$ 844,754
Net income	-	-	-	4,001	-	798	4,799
Other comprehensive income (loss)	-	-	-	-	4,678	(204)	4,474
Sale of common stock through employee stock option and purchase plans	32	-	118	-	-	-	118
Restricted stock awards vesting and expense	19	-	409	-	-	-	409
Share-based compensation expense	-	-	574	-	-	-	574
Other	-	-	(377)	-	-	377	-
Balance at July 30, 2017	68,547	$ 685	$ 545,743	$ 184,005	$ 8,849	$ 115,846	$ 855,128

Nine Months Ended July 29, 2018
Photronics, Inc. Shareholders

	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income	Non-controlling Interests	Total Equity
Balance at October 30, 2017	68,666	$ 687	$ 547,596	$ 189,390	$ -	$ 6,891	$ 120,731	$ 865,295
Net income	-	-	-	29,568	-	-	14,899	44,467
Other comprehensive loss	-	-	-	-	-	(2,869)	(2,580)	(5,449)
Sale of common stock through employee stock option and purchase plans	702	7	3,755	-	-	-	-	3,762
Restricted stock awards vesting and expense	137	1	1,291	-	-	-	-	1,292
Share-based compensation expense	-	-	1,132	-	-	-	-	1,132
Contribution from noncontrolling interest	-	-	148	-	-	-	17,849	17,997
Subsidiary dividend	-	-	-	-	-	-	(8,196)	(8,196)
Purchase of treasury stock	-	-	-	-	(6,787)	-	-	(6,787)
Balance at July 29, 2018	69,505	$ 695	$ 553,922	$ 218,958	$ (6,787)	$ 4,022	$ 142,703	$ 913,513

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	Nine Months Ended July 30, 2017						
	Photronics, Inc. Shareholders						
	Common Stock		Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Non-controlling Interests	Total Equity
	Shares	Amount					
Balance at October 31, 2016	68,080	$ 681	$ 541,093	$ 176,260	$ (7,671)	$ 115,111	$ 825,474
Net income	-	-	-	7,745	-	3,048	10,793
Other comprehensive income	-	-	-	-	16,520	5,692	22,212
Sale of common stock through employee stock option and purchase plans	355	3	2,187	-	-	-	2,190
Restricted stock awards vesting and expense	112	1	1,137	-	-	-	1,138
Share-based compensation expense	-	-	1,703	-	-	-	1,703
Subsidiary dividend	-	-	-	-	-	(8,382)	(8,382)
Other	-	-	(377)	-	-	377	-
Balance at July 30, 2017	68,547	$ 685	$ 545,743	$ 184,005	$ 8,849	$ 115,846	$ 855,128

Share Repurchase Program

In July 2018, the Company's Board of Directors authorized the repurchase of up to $20 million of its common stock, to be effectuated in open-market transactions or in accordance with a repurchase plan under rule 10b5-1 of the Securities Act of 1933 (as amended). The share repurchase program commenced on July 10, 2018 and, as of July 29, 2018, we had repurchased 0.8 million shares at a cost of $6.8 million (an average price of $8.72 per share), $0.9 million of which was pending settlement at that date. The number of shares we repurchase is determined by market conditions and our continual evaluation of the optimal use of cash.

We record treasury stock purchases under the cost method, and would employ the average cost method (with average cost being determined separately for each share repurchase program), in the event we subsequently reissue shares.

NOTE 3 - INVENTORIES

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

	July 29, 2018	October 29, 2017
Finished goods	$ 3,040	$ 664
Work in process	5,448	2,957
Raw materials	23,268	20,082
	$ 31,756	$ 23,703

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NOTE 4 - PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment consists of the following:

	July 29, 2018	October 29, 2017
Land	$11,305	$9,959
Buildings and improvements	125,281	125,290
Machinery and equipment	1,570,256	1,547,870
Leasehold improvements	19,831	20,050
Furniture, fixtures and office equipment	13,525	12,989
Construction in progress	94,530	72,045
	1,834,728	1,788,203
Accumulated depreciation and amortization	(1,288,040)	(1,253,006)
	$546,688	$535,197

Equipment under capital leases is included in the property, plant and equipment amount, above, as follows:

	July 29, 2018	October 29, 2017
Machinery and equipment	$34,917	$ 34,917
Accumulated amortization	(16,463)	(13,843)
	$18,454	$ 21,074

Depreciation and amortization expense for property, plant and equipment was $18.9 million and $60.8 million for the three and nine month periods ended July 29, 2018, respectively, and $20.6 million and $60.5 million for the three and nine month periods ended July 30, 2017, respectively.

During the three month period ended January 29, 2017, we entered into noncash transactions with a customer for the acquisition of equipment, under which we acquired equipment with fair value of $6.7 million in the nine month period ended July 29, 2018, and $0.1 million and $5.1 million in the three and nine month periods ended July 30, 2017, respectively. We did not acquire any equipment under this agreement during the three month period ended July 29, 2018.

NOTE 5 - PDMCX JOINT VENTURE

In January 2018, Photronics, through its wholly-owned Singapore subsidiary (hereinafter, within this Note “we”, or “Photronics”), and Dai Nippon Printing Co., Ltd., through its wholly owned subsidiary “DNP Asia Pacific PTE, Ltd.” (hereinafter, within this Note “DNP”) entered into a joint venture under which DNP obtained a 49.99% interest in our recently established IC business in Xiamen, China, which includes the facility currently under construction. The joint venture, known as “Photronics DNP Mask Corporation Xiamen” (hereinafter, “PDMCX”), was established to develop and manufacture photomasks for leading edge and advanced generation semiconductors. We entered into this joint venture to enable us to compete more effectively for the merchant photomask business in China and to benefit from the additional resources and investment that DNP will provide to enable us to offer advanced process technology to our customers. No gain or loss was recorded upon the formation of the joint venture.

As of July 29, 2018, Photronics and DNP have each contributed cash of approximately $18.0 million to the joint venture, including contributions of $6.0 million each during the three month period ended July 29, 2018. We estimate that, over the next several years and per the PDMCX joint venture operating agreement (“the Agreement”), DNP and Photronics will each contribute additional cash and capital of $62 million, including any additional amounts which may be obtained through local borrowings to satisfy the terms of the Xiamen investment agreement (referenced below).

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Under the Agreement, DNP is afforded, under certain circumstances, the right to put its interest in PDMCX to Photronics. These circumstances include disputes regarding the strategic direction of PDMCX that arise after the initial two year term of the Agreement and cannot be resolved between the two parties. In addition, both Photronics and DNP have the option to purchase, or put, their interest from, or to, the other party, should their ownership interest fall below 20% for a period of more than six consecutive months. Under all such circumstances, the sales of ownership interests would be at the exiting party's ownership percentage of the joint venture's net book value, with closing to take place within three business days of obtaining required approvals and clearance.

We recorded net losses from the operations of the PDMCX joint venture of approximately $0.2 million, and $0.9 million in the three and nine month periods ended July 29, 2018, respectively. General creditors of PDMCX do not have recourse to the assets of Photronics, Inc., and the maximum exposure to loss for Photronics from PDMCX at July 29, 2018, was $16.1 million.

As required by the guidance in Topic 810 - "Consolidation" of the Accounting Codification Standards, we evaluated our involvement in PDMCX for the purpose of determining whether we should consolidate its results in our financial statements. The initial step of our evaluation was to determine whether PDMCX was a variable interest entity ("VIE"). Due to its lack of sufficient equity at risk to finance its activities without additional subordinated financial support, we determined that it is a VIE. Having made this determination, we then assessed whether we were the primary beneficiary of the VIE, and concluded that we were the primary beneficiary during the current reporting period; thus, as required, the PDMCX financial results should be consolidated with Photronics, Inc. Our conclusion was based on the fact that we held a controlling financial interest in PDMCX, which resulted from our having the power to direct the activities that most significantly impacted its economic performance, the obligation to absorb losses, and the right to receive benefits that could potentially be significant to PDMCX. Our conclusion that we had the power to direct the activities that most significantly affected the economic performance of PDMCX during the current period was based on our right to appoint the majority of its board of directors, which has, among others, the powers to manage the business (through its rights to appoint and evaluate PDMCX's management), incur indebtedness, enter into agreements and commitments, and acquire and dispose of PDMCX's assets. In addition, as a result of the 50.01% variable interest we held during the current period, we had the obligation to absorb losses and the right to receive benefits that could potentially be significant to PDMCX.

The carrying amounts of PDMCX assets and liabilities included in our condensed consolidated balance sheet as of July 29, 2018, are presented in the following table, together with the maximum exposure to loss of Photronics due to its interests in the net assets of this joint venture.

Classification	Carrying Amount	Photronics Interest
Current assets	$ 14,943	$ 7,472
Non-current assets	21,500	10,750
Total assets	36,443	18,222
Current liabilities	4,144	2,072
Non-current liabilities	15	8
Total liabilities	4,159	2,080
Net assets	$ 32,284	$ 16,142

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NOTE 6 - LONG-TERM DEBT

Long-term debt consist of the following:

	July 29, 2018	October 29, 2017
3.25% convertible senior notes due in April 2019	$57,424	$ 57,337
2.77% capital lease obligation payable through July 2018	469	4,639
	57,893	61,976
Current portion	(57,893)	(4,639)
	$-	$ 57,337

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

Our credit facility, which expires in December 2018, has a $50 million limit with an expansion capacity to $75 million, and is secured by substantially all of our assets located in the United States and common stock we own in certain of our foreign subsidiaries. The credit facility stipulates that we may not pay cash dividends on Photronics, Inc. stock, and contains the following financial covenants: minimum interest coverage ratio, total leverage ratio and minimum unrestricted cash balance, all of which we were in compliance with at July 29, 2018. We had no outstanding borrowings against the credit facility at July 29, 2018, and $50 million was available for borrowing. The interest rate on the credit facility (3.59% at July 29, 2018) is based on our total leverage ratio at LIBOR plus a spread, as defined in the credit facility. In April 2018, our credit facility was amended to change the definition of "Specified Capital Expenditures", which is used to calculate the interest coverage ratio, and in August 2018 the credit facility was amended to allow the Company to sell, transfer, lease or otherwise dispose of its assets to a Subsidiary Guarantor.

In August 2013, we entered into a $26.4 million principal amount, five year capital lease to fund the purchase of a high-end lithography tool. Payments under the capital lease, which bears interest at 2.77%, are $0.5 million per month through July 2018. The lease is subject to a cross default with cross acceleration provision related to certain nonfinancial covenants in our credit facility. As of July 29, 2018, the total amount payable was $0.5 million, substantially all of which represented principal.

NOTE 7 - SHARE-BASED COMPENSATION

In March 2016, shareholders approved a new equity incentive compensation plan (the "Plan"), under which incentive stock options, non-qualified stock options, stock grants, stock-based awards, restricted stock, restricted stock units, stock appreciation rights, performance units, performance stock, and other stock or cash awards may be granted. Shares to be issued under the Plan may be authorized and unissued shares, issued shares that have been reacquired by us (in the open-market or in private transactions), shares that are being held in the treasury, or a combination thereof. The maximum number of shares of common stock approved that may be issued under the Plan is four million shares. Awards may be granted to officers, employees, directors, consultants, advisors, and independent contractors of Photronics. In the event of a change in control (as defined in the Plan), the vesting of awards may be accelerated. The Plan, aspects of which are more fully described below, prohibits further awards from being issued under prior plans. Total share-based compensation costs for the three and nine month periods ended July 29, 2018, were $0.8 million and $2.4 million, respectively, and $1.0 million and $2.8 million for the three and nine month periods ended July 30, 2017, respectively. The Company received cash from option exercises of $0.2 million and $3.8 million for the three and nine month periods ended July 29, 2018, respectively, and $0.1 million and $2.2 million for the three and nine month periods ended July 30, 2017, respectively. No share-based compensation cost was capitalized as part of an asset and no related income tax benefits were recorded during the periods presented.

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Stock Options

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

There were 12,000 options granted during the three month period ended July 29, 2018, with a weighted-average grant date fair value of $2.84 per share, and there were no options granted during the three month period ended July 30, 2017. There were 264,000 share options granted during the nine month period ended July 29, 2018, with a weighted-average grant date fair value of $2.74 per share, and 348,750 share options granted during the nine month period ended July 30, 2017, with a weighted-average grant date fair value of $3.59 per share. As of July 29, 2018, the total unrecognized compensation cost related to unvested option awards was approximately $1.8 million. That cost is expected to be recognized over a weighted-average amortization period of 2.0 years.

The weighted-average inputs and risk-free rate of return ranges used to calculate the grant date fair value of options issued during the three and nine month periods ended July 29, 2018 and July 30, 2017, are presented in the following table.

	Three Months Ended		Nine Months Ended	
	July 29, 2018	July 30, 2017	July 29, 2018	July 30, 2017
Volatility	32.3 %	N/A	31.7 %	32.2 %
Risk free rate of return	2.8 %	N/A	2.2-2.8 %	1.9-2.0 %
Dividend yield	0.0 %	N/A	0.0 %	0.0 %
Expected term	5.1 years	N/A	5.0 years	5.0 years

Information on outstanding and exercisable option awards as of July 29, 2018, is presented below.

Options	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life	Aggregate Intrinsic Value
Outstanding at July 29, 2018	2,556,645	$ 8.50	6.0 years	$ 2,789
Exercisable at July 29, 2018	1,730,655	$ 7.71	4.9 years	$ 2,716

Restricted Stock

We periodically grant restricted stock awards, the restrictions on which typically lapse over a service period of one-to-four years. The fair value of the awards is determined on the date of grant, based on the closing price of our common stock. There were no restricted stock awards granted during the three month period ended July 29, 2018 and there were 290,000 restricted stock awards granted during the nine month period ended July 29, 2018, with a weighted-average grant date fair value of $8.62 per share. There were 5,000 restricted stock awards granted during the three month period ended July 30, 2017, with a grant date fair value of $10.15, and 290,000 restricted stock awards granted during the nine month period ended July 30, 2017, with a weighted-average grant date fair value of $11.28 per share. As of July 29, 2018, the total compensation cost not yet recognized related to unvested restricted stock awards was approximately $3.3 million. That cost is expected to be recognized over a weighted-average amortization period of 2.7 years. As of July 29, 2018, there were 449,173 shares of restricted stock outstanding.

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NOTE 8 - INCOME TAXES

The effective tax rate of 9.4% and 7.8% for the three and nine month periods ended July 29, 2018, respectively, differ from the post U.S. Tax Reform blended statutory rate of 23.4%, primarily due to the benefit from U.S. Tax Reform (as discussed below), earnings being taxed at lower statutory rates in foreign jurisdictions, the benefit of various investment credits in a foreign jurisdiction, a tax holiday in Taiwan and the change in unrecognized tax benefits related to an audit settlement and an assessment statute expiration.

On December 22, 2017, the U.S. Tax Cuts and Jobs Act (the “Act”), was signed into law, enacting significant changes to the United States Internal Revenue Code of 1986, as amended, that we expect to have a positive impact on our future after-tax earnings. Under ASC Topic 740 – “Income Taxes” (“ASC 740”), the effects of the new legislation are recognized in the interim and annual accounting periods that include the enactment date, which falls within our nine month period ended July 29, 2018. In December 2017, the Securities and Exchange Commission released Staff Accounting Bulletin No. 118 (“SAB 118”) to address situations in which the accounting under ASC 740 is incomplete for certain income tax effects of the Act. We adopted SAB 118 in our first quarter of fiscal year 2018.

SAB 118 summarizes a three-step process to be applied at each reporting period to account for and qualitatively disclose: (1) the effects of the change in tax law for which accounting is complete; (2) provisional amounts (or adjustments to provisional amounts) for the effects of the tax law where accounting is not complete, but that a reasonable estimate has been determined; and (3) a reasonable estimate cannot yet be made and, therefore, taxes are reflected in accordance with law prior to the enactment of the Act.

We continue to analyze the provisions of the Act addressing the net deferred tax asset revaluation and its calculations, the deemed earnings repatriation, including the determination of undistributed non-U.S. earnings, and evaluate potential actions we may consider in light of the Act that could affect our fiscal year 2018 U.S. taxable income. As such, our accounting for certain elements within the Act is preliminary, and subject to further clarification of the Act by the Internal Revenue Service. The following is a discussion of the major provisions of the Act that affect our financial statements, and our preliminary assessment of the impact of such provisions on our financial statements.

- The Act repeals the corporate alternative minimum tax (“AMT”) for tax years beginning after December 31, 2017, and provides that existing AMT credit carryforwards are fully refundable over a four year period, starting with the tax year beginning after December 31, 2017. We have approximately $3.9 million of AMT credit carryforwards that we previously determined were not more likely than not going to be realized and, as such, established a valuation allowance for these carryforwards. The Act has changed our determination regarding the realization of the benefit of the carryforwards; accordingly, the related valuation allowance has been reversed, and a $3.7 million, net of sequestration, tax benefit has been recorded as of July 29, 2018.
- As of January 1, 2018, the Act reduces the corporate income tax rate from a maximum 35% to a flat 21%. Our fiscal year 2018 blended statutory tax rate is approximately 23.4%, the weighted daily average rate between the pre-enactment U.S. federal statutory tax rate of 35% applicable to our 2018 fiscal year prior to the rate change effective January 1, 2018, and the post-enactment U.S. federal statutory tax rate of 21% applicable to the balance of our 2018 fiscal year. The 21% rate will be applicable to fiscal year 2019 and beyond. Under generally accepted accounting principles, we are required to revalue our deferred tax assets and liabilities utilizing the rate applicable to the period when a temporary difference will reverse. Our preliminary analysis of the two-stepped revaluation indicates that our fiscal 2018 yearend net deferred tax asset will be increased by $2.5 million, with an offsetting change in the related valuation allowance, resulting in a provisional net zero impact for the period.
- The Act imposes a transition tax for a one-time deemed repatriation of the accumulated earnings of foreign subsidiaries. The transition tax effective rates are 15.5% on accumulated earnings held in cash (as defined by the Act), and 8% on any remaining balance. Our preliminary analysis indicates an estimated deemed repatriation transition tax of $28.4 million, the entire amount of which will be fully offset by tax credits and/or available loss carryforwards and will result in a provisional net zero impact in the period, due in part to an offsetting change in the

related valuation allowance. We anticipate that future earnings of foreign subsidiaries will not be subject to U.S. federal income tax. Notwithstanding the deemed repatriation rules under the Act, we anticipate that foreign earnings will remain unremitted for purposes of continuing to fund reinvestment in foreign operations.

- Our preliminary analysis of other provisions of the Act including, but not limited to, 100 percent bonus depreciation and changes to the limitations on the deductibility of meals and entertainment expenses, indicates that, under our current tax profile, there should be limited or no provisional impact on our 2018 yearend financial statements.

- Based on the effective date of certain provisions, we will be subject to additional requirements of tax reform beginning in fiscal year 2019. Those provisions include a tax on global intangible low-taxed income (GILTI), a tax determined by base erosion tax benefits (BEAT) from certain payments between a U.S. corporation and foreign subsidiaries, a limitation of certain executive compensation, a deduction for foreign derived intangible income (FDII), and interest expense limitations. We have not completed our analysis of those provisions and their estimated impacts.

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On January 18, 2018, the Taiwan Legislature Yuan approved amendments to the Income Tax Act, enacting an increase in the corporate tax rate from 17% to 20%. Under generally accepted accounting principles, we are required to revalue our deferred tax assets and liabilities utilizing the rate applicable to the period when a temporary difference will reverse. Our analysis indicates that our Taiwan deferred tax asset will be increased and, accordingly, a net benefit of $0.2 million was reflected in our January 28, 2018 tax provision.

The 6.5% and 20.7% effective tax rates for the respective three and nine month periods ended July 30, 2017, differ from the U.S. statutory rate of 35%, primarily due to earnings being taxed at lower statutory rates in foreign jurisdictions, combined with the benefit of various investment credits in a foreign jurisdiction. Valuation allowances in jurisdictions with historic losses eliminate the tax benefit that would be recognized in these jurisdictions. We have two five-year tax holidays in Taiwan, one that expired in 2017 and the other that expires in 2019. The latter tax holiday reduced foreign taxes by $1.1 million and $1.8 million in the three and nine month periods ended July 29, 2018, respectively, and had $0.1 and $0.2 effect on earnings per share, respectively, in each period. For the three and nine month periods ended July 30, 2017, the company realized benefits from the tax holidays of $0.1 million and $0.2 million, respectively, with de minimis per share effects for these periods.

There were unrecognized tax benefits related to uncertain tax positions of $1.5 million at July 29, 2018, and $3.4 million at October 29, 2017, all of which, if recognized, would favorably impact the Company's effective tax rate. Accrued interest and penalties related to unrecognized tax benefits were $0.1 million at July 29, 2018 and October 29, 2017. The decrease in unrecognized tax benefits during the nine month period ended July 29, 2018, resulted from the expiration of a statute of limitation and an audit settlement. Although the timing of the expirations of statutes of limitations may be uncertain, as they can be dependent upon the settlement of tax audits, we believe that it is reasonably possible that up to $0.6 million of our uncertain tax positions (including accrued interest and penalties, and net of tax benefits) may be resolved over the next twelve months. Resolution of these uncertain tax positions may result from either or both the lapses of statutes of limitations and tax settlements.

NOTE 9 - EARNINGS PER SHARE

The calculations of basic and diluted earnings per share is presented below.

	Three Months Ended		Nine Months Ended	
	July 29, 2018	July 30, 2017	July 29 2018	July 30 2017
Net income attributable to Photronics, Inc. shareholders	$ 13,005	$ 4,001	$ 29,568	$ 7,745
Effect of dilutive securities:				
Interest expense on convertible notes, net of tax	496	-	1,488	-
Earnings used for diluted earnings per share	$ 13,501	$ 4,001	$ 31,056	$ 7,745
Weighted-average common shares computations:				
Weighted-average common shares used for basic earnings per share	69,374	68,525	69,141	68,376
Effect of dilutive securities:				
Convertible notes	5,542	-	5,542	-
Share-based payment awards	342	855	438	935
Potentially dilutive common shares	5,884	855	5,980	935
Weighted-average common shares used for diluted earnings per share	75,258	69,380	75,121	69,311

Basic earnings per share	$ 0.19	$ 0.06	$ 0.43	$ 0.11
Diluted earnings per share	$ 0.18	$ 0.06	$ 0.41	$ 0.11

The table below shows the outstanding weighted-average share-based payment awards that were excluded from the calculation of diluted earnings per share because their exercise prices exceeded the average market value of the common shares for the period or, under application of the treasury stock method, they were otherwise determined to be anti-dilutive. The table also shows convertible notes that, if converted, would have been anti-dilutive, at July 30, 2017.

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	Three Months Ended		Nine Months Ended	
	July 29, 2018	July 30, 2017	July 29, 2018	July 30, 2017
Share-based payment awards	1,873	1,087	1,826	1,054
Convertible notes	-	5,542	-	5,542
Total potentially dilutive shares excluded	1,873	6,629	1,826	6,596

NOTE 10 - CHANGES IN ACCUMULATED OTHER COMPREHENSIVE INCOME BY COMPONENT

The following tables set forth the changes in our accumulated other comprehensive income by component (net of tax of $0) for the three and nine month periods ended July 29, 2018 and July 30, 2017.

	Three Months Ended July 29, 2018		
	Foreign Currency Translation Adjustments	Other	Total
Balance at April 30, 2018	$ 24,433	$ (677)	$ 23,756
Other comprehensive income (loss)	(24,572)	65	(24,507)
Less: other comprehensive (income) loss attributable to noncontrolling interests	4,806	(33)	4,773
Balance at July 29, 2018	$ 4,667	$ (645)	$ 4,022

	Three Months Ended July 30, 2017			
	Foreign Currency Translation Adjustments	Amortization of Cash Flow Hedge	Other	Total
Balance at May 1, 2017	$ 5,258	$ (113)	$ (974)	$ 4,171
Other comprehensive income before reclassifications	4,438	-	4	4,442
Amounts reclassified from accumulated other comprehensive income	-	32	-	32
Net current period other comprehensive income	4,438	32	4	4,474
Less: other comprehensive (income) loss attributable to noncontrolling interests	206	-	(2)	204
Balance at July 30, 2017	$ 9,902	$ (81)	$ (972)	$ 8,849

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	Nine Months Ended July 29, 2018			
	Foreign Currency Translation Adjustments	Amortization of Cash Flow Hedge	Other	Total
Balance at October 30, 2017	$7,627	$ (48)	$(688)	$6,891
Other comprehensive income (loss) before reclassifications	(5,583)	-	86	(5,497)
Amounts reclassified from accumulated other comprehensive income	-	48	-	48
Net current period other comprehensive income (loss)	(5,583)	48	86	(5,449)
Less: other comprehensive (income) loss attributable to noncontrolling interests	2,623	-	(43)	2,580
Balance at July 29, 2018	$4,667	$ -	$(645)	$4,022

	Nine Months Ended July 30, 2017			
	Foreign Currency Translation Adjustments	Amortization of Cash Flow Hedge	Other	Total
Balance at October 31, 2016	$(6,567)	$ (177)	$(927)	$(7,671)
Other comprehensive income (loss) before reclassifications	22,205	-	(89)	22,116
Amounts reclassified from accumulated other comprehensive income	-	96	-	96
Net current period other comprehensive income (loss)	22,205	96	(89)	22,212
Less: other comprehensive (income)loss attributable to noncontrolling interests	(5,736)	-	44	(5,692)
Balance at July 30, 2017	$9,902	$ (81)	$(972)	$8,849

The amortization of the cash flow hedge is included in Cost of goods sold in the condensed consolidated statements of income in all applicable periods presented.

NOTE 11 - FAIR VALUE MEASUREMENTS

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

The fair values of our cash and cash equivalents (Level 1 measurements), accounts receivable, accounts payable, and certain other current assets and current liabilities (Level 2 measurements) approximate their carrying value due to their short-term maturities. We did not have any other assets or liabilities measured at fair value, on a recurring or a nonrecurring basis, at July 29, 2018 or October 29, 2017.

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Fair Value of Financial Instruments Not Measured at Fair Value

The fair value of our convertible senior notes is a Level 2 measurement, as it is determined using inputs that were either observable market data, or could be derived from or corroborated with observable market data. These inputs included our stock price and interest rates offered on debt issued by entities with credit ratings similar to ours. The table below presents the fair and carrying values of our convertible senior notes at July 29, 2018 and October 29, 2017.

	July 29, 2018		October 29, 2017	
	Fair Value	Carrying Value	Fair Value	Carrying Value
3.25% convertible senior notes due 2019	$60,260	$ 57,424	$67,396	$ 57,337

NOTE 12 - COMMITMENTS AND CONTINGENCIES

As of July 29, 2018, we had commitments outstanding for capital expenditures of approximately $181 million, nearly all of which related to the building and equipping of our China facilities.

We are subject to various claims that arise in the ordinary course of business. We believe that such claims, individually or in the aggregate, will not have a material effect on the condensed consolidated financial statements.

NOTE 13 - RECENT ACCOUNTING PRONOUNCEMENTS

In December 2017, the Securities and Exchange Commission released Staff Accounting Bulletin No. 118 (“SAB 118”) to address situations where the accounting under ASC Topic 740 – “Income Taxes” is incomplete for certain income tax effects of the Tax Cuts and Jobs Act, which was signed into law on December 22, 2017, and changed existing U.S. tax law. We adopted this guidance in our first quarter of fiscal year 2018. Please see Note 8 for a discussion of the effects of adopting this guidance.

In November 2016, the FASB issued ASU 2016-18 “Restricted Cash”, which requires that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Therefore, amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. ASU 2016-18 is effective for Photronics, Inc. in its first quarter of fiscal year 2019 and should be applied on a retrospective transition basis. Early adoption is permitted, including adoption in an interim period. We are currently evaluating the effect that this ASU will have on our consolidated financial statements.

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

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

In March 2016, the FASB issued ASU 2016 – 09 “Improvements to Employee Share-Based Payment Accounting”, which simplifies the accounting for share-based payment transactions including their income tax consequences, classification as either equity or liability awards, classification on the statement of cash flows, and other areas. The method of adoption varies with the different aspects of the Update. Adoption of this guidance in the first quarter of our fiscal year 2018 did not have a material impact on our financial statements.

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In February 2016, the FASB issued ASU 2016-02 “Leases (Topic 842)”, which requires lessees to recognize right-of-use assets and corresponding liabilities for all leases with an initial term in excess of twelve months. ASU 2016-02 was required to be adopted using a modified retrospective approach, which includes a number of practical expedients, that requires leases to be measured and recognized under the new guidance at the beginning of the earliest period presented. In July 2018, the FASB issued ASU 2018-11 “Targeted Improvements”, which allows the new leases standard to be initially applied at the adoption date through a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. These ASUs are effective for Photronics, Inc. in the first quarter of fiscal year 2020, with early application permitted. We are currently evaluating the effect that these ASUs will have on our consolidated financial statements.

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

We will adopt the new revenue and related guidance using the modified retrospective approach, and anticipate that the adoption of this ASU will result in the accelerated recognition of certain revenue streams as, upon adoption of this Update, substantially all of our work-in process and finished goods inventory will be considered to represent promised goods transferred to our customers, requiring us to recognize consideration for those transferred goods in amounts we expect to be entitled to receive in exchange for them. We do not expect the acceleration of revenue will have a material effect on our consolidated financial statements.

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Item 2. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Overview

Management’s discussion and analysis (“MD&A”) of the Company’s financial condition, results of operations and outlook should be read in conjunction with its condensed consolidated financial statements and related notes. Various segments of this MD&A contain forward-looking statements, all of which are presented based on current expectations, which may be adversely affected by uncertainties and risk factors (presented throughout this filing and in the Company’s Annual Report on Form 10-K for the fiscal 2017 year), that may cause actual results to materially differ from these expectations.

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

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

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

In the third quarter of fiscal 2018, the Company’s Board of Directors authorized the repurchase of up to $20 million of its common stock, to be effectuated in open-market transactions or in accordance with a repurchase plan under rule 10b5-1 of the Securities Act of 1933 (as amended). The share repurchase program commenced on July 10, 2018, and will expire no later than July 7, 2019. As of July 29, 2018, we had repurchased 0.8 million shares at a cost of $6.8 million (an average price of $8.72 per share), $0.9 million of which was pending settlement at that date. The volume of shares repurchased are subject to market conditions and our continual evaluation of the optimal use of cash.

In the first quarter of fiscal 2018, we announced the successful closing of the China joint venture agreement with Dai Nippon Printing Co., Ltd. (“DNP”), which we had agreed to enter into and announced in the third quarter of fiscal 2017. Under the agreement, our wholly-owned Singapore subsidiary owns 50.01% of the joint venture, which is named Photronics DNP Mask Corporation Xiamen (PDMCX), and a subsidiary of DNP owns the remaining 49.99%. The financial results of the joint venture are included in the Photronics, Inc. consolidated financial statements. See Note 5 of the condensed consolidated financial statements for additional information on the joint venture.

In the fourth quarter of fiscal 2017, we announced that Photronics UK, Ltd., our wholly owned subsidiary, signed an investment agreement with the Hefei State Hi-tech Industry Development Zone to establish a manufacturing facility in Hefei, China. Under the terms of the agreement, through our subsidiary, we will invest a minimum of $160 million, a portion of which may be funded with local borrowings, to build and operate a research and development and manufacturing facility for high-end and mainstream FPD photomasks. The Hefei State Hi-tech Industry Development Zone will provide certain investment incentives and support for this facility, which will have initial capability to produce up to G10.5+ large area masks and AMOLED products. Construction began in late 2017 and production is anticipated to commence during the first half of 2019.

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In the fourth quarter of fiscal 2016, Photronics Singapore Pte, Ltd., a wholly owned subsidiary, signed an investment agreement with the Administrative Committee of Xiamen Torch Hi-Tech Industrial Development Zone (Xiamen Torch) to establish an IC manufacturing facility in Xiamen, China. Under the terms of the agreement, we will build and operate an IC facility to engage in research and development, manufacture and sale of photomasks, in return for which Xiamen Torch will provide certain investment incentives and support. This expansion is also substantially supported by customer commitments for its output. As discussed above, in the first quarter of fiscal 2018, we entered into a joint venture agreement with DNP, under which they obtained a 49.99% ownership interest in this facility. The total investment, per the agreement, is $160 million to be funded over the next several years with cash and local borrowings. Construction began in 2017 and production is anticipated to start during the first half of 2019.

Material Changes in Results of Operations
Three and Nine Months ended July 29, 2018 and July 30, 2017

The following table presents selected operating information expressed as a percentage of revenue.

	Three Months Ended			Nine Months Ended	
	July 29, 2018	April 29, 2018	July 30, 2017	July 29, 2018	July 30, 2017
Revenue	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %
Cost of goods sold	(73.9)	(74.9)	(80.5)	(75.4)	(80.3)
Gross profit	26.1	25.1	19.5	24.6	19.7
Selling, general and administrative expenses	(9.2)	(10.4)	(10.4)	(9.7)	(10.1)
Research and development expenses	(1.9)	(2.9)	(4.4)	(2.7)	(3.7)
Operating income	15.0	11.8	4.7	12.2	5.9
Other income (expense), net	1.0	2.5	(0.1)	0.2	(1.8)
Income before income taxes	16.0	14.3	4.6	12.4	4.1
Income tax provision	(1.5)	(2.7)	(0.3)	(1.0)	(0.8)
Net income	14.5	11.6	4.3	11.4	3.3
Net (income) loss attributable to noncontrolling interests	(5.0)	(3.4)	(0.7)	(3.8)	(1.0)
Net income attributable to Photronics, Inc. shareholders	9.5 %	8.2 %	3.6 %	7.6 %	2.3 %

Note: All of the following tabular comparisons, unless otherwise indicated, are for the three months ended July 29, 2018 (Q3 FY18), April 29, 2018 (Q2 FY18) and July 30, 2017 (Q3 FY17) and for the nine months ended July 29, 2018 (YTD FY18) and July 30, 2017 (YTD FY17), in millions of dollars.

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Revenue

The following tables present revenue changes by product type and technology level:

	Q3 FY18 Compared with Q2 FY18			Q3 FY18 Compared with Q3 FY17		YTD FY18 Compared with YTD FY17		
	Revenue in Q3 FY18	Percent Change	Increase (Decrease)	Percent Change	Increase (Decrease)	Revenue in YTD FY18	Percent Change	Increase (Decrease)
IC								
High-end	$ 46.1	11.2 %	$ 4.6	94.2 %	$ 22.4	$ 120.9	76.3 %	$ 52.3
Mainstream	61.2	0.6 %	0.4	(0.4)%	(0.3)	184.3	(0.7)%	(1.3)
Total IC	$ 107.3	4.9 %	$ 5.0	25.9 %	$ 22.1	$ 305.2	20.1 %	$ 51.0
FPD								
High-end	$ 17.0	(6.4)%	$ (1.2)	1.8 %	$ 0.3	$ 54.1	6.5 %	$ 3.3
Mainstream	12.1	17.4 %	1.8	24.9 %	2.4	31.3	26.7 %	6.6
Total FPD	$ 29.1	2.2 %	$ 0.6	10.3 %	$ 2.7	$ 85.4	13.1 %	$ 9.9
Total Revenue	$ 136.4	4.3 %	$ 5.6	22.2 %	$ 24.8	$ 390.6	18.5 %	$ 60.9

In the first quarter of fiscal 2018, we changed the threshold for the definition of high-end IC, from 45 nanometer or smaller to 28 nanometer or smaller, to reflect the overall advancement of technology in the semiconductor industry. All comparisons to prior period results in this MD&A reflect this modification. Our definition of high-end FPD products remains as G8 and above and active matrix organic light-emitting diode (AMOLED) display screens. High-end photomasks typically have higher ASPs ("average selling prices") than mainstream products.

Our quarterly revenues can be affected by the seasonal purchasing tendencies of our customers. As a result, demand for our products is typically negatively impacted during the first, and sometimes the second, quarters of our fiscal year by the North American, European, and Asian holiday periods, as some of our customers reduce their development and/or their buying activities during those periods.

The following tables compare revenue in Q3 FY18 with revenue in Q2 FY18 and Q2 FY17, and revenue YTD FY18 with YTD FY17 by geographic area:

	Q3 FY18 with Q2 FY18			Q3 FY18 with Q3 FY17		YTD FY18 with YTD FY17		
	Revenue in Q3 FY18	Percent Change	Increase (Decrease)	Percent Change	Increase (Decrease)	Revenue in YTD FY18	Percent Change	Increase (Decrease)
Taiwan	$ 62.1	10.8 %	$ 6.0	41.1 %	$ 18.1	$ 174.7	31.6 %	$ 42.0
Korea	37.2	3.1 %	1.1	16.3 %	5.2	106.3	14.1 %	13.1
United States	27.7	(5.0)%	(1.5)	6.6 %	1.7	81.9	8.4 %	6.4
Europe	8.6	(2.4)%	(0.1)	(4.2)%	(0.4)	25.8	(2.2)%	(0.6)
Other	0.8	18.5 %	0.1	20.4 %	0.2	1.9	0.8 %	-

$ 136.4	4.3	%	$ 5.6	22.2	%	$ 24.8	$ 390.6	18.5	%	$ 60.9

Revenue increased 4.3% in Q3 FY18 compared with Q2 FY18, as a result of high-end IC and mainstream FPD growth. High-end IC revenue increased 11.2% from Q2 FY18, due to growth in both logic and memory from healthy foundry and captive demand across Asia. We believe this trend will continue into Q4, and demand will keep revenues at least at current levels. FPD revenue increased 2.2% from Q2 FY18 due to increased demand from masks used for displays on mobile applications, specifically LTPS and AMOLED displays. We classify LTPS as mainstream due to the mask size, even though the circuit geometries are similar to AMOLED. Our LTPS revenues are on the rise because of recent widespread adoption of LTPS by smart phone manufacturers. LTPS currently offers most of the performance at one third the price of AMOLED, and as a result has gained significant market share. We believe that as the price gap between LTPS LCD and AMOLED narrows, LTPS equipped phones will eventually transition to AMOLED. Meanwhile, AMOLED for mobile also increased as that market grew and we began to ship product from our new P-800 mask writer in Korea, fortifying our technology leadership in this sector. Despite improved AMOLED revenue, high-end was down sequentially as we pivot away from G8.5 panels used for large-format TVs.

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Revenue increased 22.2% in Q3 FY18 compared with Q3 FY17, primarily as a result of high-end IC growth nearly doubling from the prior year's quarter, as well as a significant increase in revenue from mainstream FPD products. Total IC revenue increased 25.9% from Q3 FY17, due to growth in both logic and memory, from the healthy foundry and captive demand across Asia. IC mainstream decreased 0.4%, as demand was slightly softer. FPD revenue increased 10.3% from Q3 FY17 due to better demand across our products and markets, particularly mobile displays.

Revenue increased 18.5% in YTD Q3 2018 compared with YTD Q3 2017, primarily as a result of high-end IC growth. High-end IC revenue increased 76.3% from YTD 2017, due to growth in both logic and memory from the healthy foundry and captive demand across Asia. IC mainstream decreased 0.7%, as demand was slightly softer. FPD revenue increased 13.1% due to better demand across our products and markets.

We believe there is potential for the favorable demand trend we have experienced throughout 2018 to continue through the fourth quarter, as we expect growth to continue across most of our high-end IC and mainstream markets. Our two China facilities are expected to begin production in the first half of 2019, and we anticipate that our sales and revenue will increase when they come online

Gross Profit

	Three Months Ended					Nine Months Ended		
	Q3 FY18	Q2 FY18	Percent Change	Q3 FY17	Percent Change	YTD FY18	YTD FY17	Percent Change
Gross profit	$35.6	$ 32.8	8.5 %	$ 21.7	63.9 %	$96.1	$ 64.9	48.1 %
Gross margin	26.1%	25.1 %		19.5 %		24.6%	19.7 %	

The increases in gross profit and gross margin in Q3 FY18 from Q2 FY18 were predominantly the result of increased revenue. A modest (2.9%) increase in cost of goods sold was primarily the result of increased material costs (including costs incurred from contracted manufacturers) associated with the increase in revenue.

Unit sales increases of high-end and mainstream IC and FPD products in Q3 FY18 increased gross profit and gross margin from the prior year's quarter, with increased volume of high-end IC products being the greatest contributor to the increase. Cost of goods sold increased 12.2%, primarily as a result of increased material costs (including costs incurred from contracted manufacturers) and increased compensation expenses that were the result of the increased sales volume.

Unit sales increases of high-end and mainstream IC products YTD FY18 increased gross profit and gross margin from YTD FY17. Cost of goods sold increased 11.2%, primarily as a result of increased material costs (including costs incurred from contracted manufacturers) and increased compensation expenses associated with the increased sales volume. As we operate in a high fixed cost environment, increases or decreases in our revenues and utilization generally positively or negatively impact our gross profit and gross margin.

Selling, General and Administrative Expenses

Selling, general and administrative expenses decreased by $1.1 million, or 8.3%, to $12.5 million in Q3 FY18, from $13.6 million in Q2 FY18, primarily due to performance-related compensation expenses incurred in Q2 FY18 and decreased selling expenses. Selling, general and administrative expenses increased in Q3 FY18 by $0.9 million, or 7.4%, from $11.6 million in Q3 FY17, primarily as a result of increased freight expenses and increased travel expenses which primarily resulted from activities related to our expansion into China. On a year-to-date basis, selling, general and administrative expenses increased $4.5 million, or 13.4%, to $37.9 million from $33.4 million. This increase was primarily the result of: increased performance-related compensation costs, freight expenses, professional services fees, and travel expenses, most of which increased as a result of activities related to our expansion into China.

Research and Development

In the U.S., research and development expenses consist of development efforts related to high-end process technologies for 28nm and smaller IC nodes. In Asia, in addition to the focus on high-end IC technology nodes, G8 and above FPD and AMOLED applications are also under development.

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Research and development expense decreased $1.2 million, or 30.5%, from Q2 FY18, primarily as a result of decreased expenditures and related activities in both the U.S. and Asia. Research and development decreased $2.2 million, or 44.9% from Q3 FY17, primarily driven by decreased expenditures in the U.S., which was somewhat offset by increased expenditures in Korea, with the increase primarily relating to FPD products. On a year-to-date basis, research and development expense decreased $1.4 million, or 12.0%, as increased expenditures in Korea somewhat offset decreased spending in the U.S. and Taiwan.

Other Income (Expense), net

	Three Months Ended			Nine Months Ended	
	Q3 FY18	Q2 FY18	Q3 FY17	YTD FY18	YTD FY17
Interest income and other income (expense), net	$2.0	$ 3.9	$ 0.4	$ 2.3	$ (4.2)
Interest expense	(0.6)	(0.6)	(0.5)	(1.7)	(1.6)
Other income (expense), net	$1.4	$ 3.3	$ (0.1)	$ 0.6	$ (5.8)

Interest income and other income (expense), net decreased from Q2 FY18 by $1.9 million primarily due to less favorable foreign currency exchange gains in Q3 FY18, in addition to gains of $0.6 million recognized on the sale of certain assets in Q2 FY18. Foreign currency exchange gains in Q3 FY18 also contrasted with losses experienced in the prior year quarter, with a favorable net effect of $1.3 million on this element.

On a year-to-date basis, interest income and other income (expense), net increased as a result of $4.4 million of more favorable foreign currency exchange effect, Q3 FY18 gains on the sale of certain assets, and incentives of $0.3 million we received related to construction of our new FPD facility in China.

Income Tax Provision

	Three Months Ended			Nine Months Ended	
	Q3 FY18	Q2 FY18	Q3 FY17	YTD FY18	YTD FY17
Income tax provision	$2.1	$ 3.5	$ 0.3	$ 3.8	$ 2.8
Effective income tax rate	9.4 %	18.8 %	6.5 %	7.8 %	20.7 %

The effective income tax rate is sensitive to the jurisdictional mix of earnings, due, in part, to non-recognition of tax benefits on losses in jurisdictions with valuation allowances.

The effective income tax rate in Q3 FY18, compared with Q2 FY18, decreased primarily due to the Q3 FY18 nonrecurring tax benefits ($0.9 million) related to a settlement with the tax authority in a non-U.S. jurisdiction and the expiration of the statute of limitations ($1.1 million) in the same jurisdiction, and an increased benefit ($1.1 million) from the tax holiday in Taiwan. The effective income tax rate increased in Q3 FY18, compared with Q3 FY17, primarily due to a lower percentage of income before taxes generated in jurisdictions where the Company incurs losses for tax purposes that, due to offsetting valuation allowances, did not result in the recognition of tax benefits. The increase was partially offset by the previously noted Q3 FY18 nonrecurring tax benefits related to the settlement with the tax authority, statute of limitations expiration, and increased tax holiday.

The effective income tax rate decreased in YTD FY18, compared with YTD FY17, primarily due to nonrecurring tax benefits ($4.2 million) related to tax reform in the U.S. and Taiwan, increased nonrecurring tax benefits ($0.5 million) related to a settlement with the tax authority in a non-U.S. jurisdiction and the expiration of the statute of limitations ($0.3 million) in the same jurisdiction, and an increased benefit ($1.6 million) from the previously mentioned tax holiday in Taiwan, which were partially offset by a lower percentage of income before taxes generated in jurisdictions where the Company incurs losses for tax purposes that, due to valuation allowances, did not result in the recognition of tax benefits.

Net (Income) Loss Attributable to Noncontrolling Interests

Net income attributable to noncontrolling interests was $6.8 million in Q3 FY18, an increase of $2.3 million and an increase of $6.0 million from Q2 FY18 and Q3 FY17, respectively. Year-to-date, noncontrolling interests' share increased $11.9 million from YTD FY17. The changes from all comparative periods were due to changes in net income at our IC manufacturing facility in Taiwan, in which we hold a 50.01% ownership interest.

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Liquidity and Capital Resources

Our working capital at the end of Q3 FY18 was $346.1 million, compared with $367.3 million at the end of fiscal year 2017. The decrease is primarily attributable to the reclassification of our $57.5 million principal amount senior convertible notes as current status, which was somewhat offset by increased accounts receivable and inventory balances, reflecting the increased operations activity from the end of fiscal year 2017. Cash and cash equivalents increased in fiscal year 2018 by $24.7 million from $308.0 million at October 29, 2017. Net cash provided by operating activities was $87.0 million in YTD FY18, compared with $73.8 million in YTD FY17. Increased net income exceeded decreases resulting from changes in operating accounts. Increased accounts receivable balance resulting from increased revenue in fiscal year 2018 was the most significant contributor to the change. Noncash expenses did not change significantly from the prior year. Net cash used in investing activities was $63.9 million in YTD FY18, an increase of $19.5 million from the $44.5 million used in YTD FY17. The increase was primarily attributable to increased capital expenditures of $25.6 million principally related to our expansion into China; the increase attributable to higher capital expenditures was partially offset by cash of $5.4 million used to acquire a business in YTD FY17 that was not repeated in YTD FY18. Net cash flows from financing activities increased from funds used of $9.9 million in YTD FY17 to $2.7 million provided in YTD FY18, primarily due to the receipt of $18.0 million from a noncontrolling interest for their investment in our recently established joint venture in China and increased proceeds received from share-based arrangements, partially offset by the payment of a dividend to the noncontrolling interest of our IC facility in Taiwan of $8.2 million and $6.8 million used to acquire our common stock under a share repurchase program.

As of July 29, 2018 and October 29, 2017, total cash and cash equivalents included $204 million and $190.0 million, respectively, held by our foreign subsidiaries.

Our credit facility, which expires in December 2018, has a $50 million limit with an expansion capacity to $75 million, and is secured by substantially all of our assets located in the United States and common stock we own in certain of our foreign subsidiaries. The credit facility stipulates that we may not pay cash dividends on Photronics, Inc. stock, and contains the following financial covenants: minimum interest coverage ratio, total leverage ratio and minimum unrestricted cash balance, all of which we were in compliance with at July 29, 2018. We had no outstanding borrowings against the credit facility at July 29, 2018, and $50 million was available for borrowing. The interest rate on the credit facility (3.59% at July 29, 2018) is based on our total leverage ratio at LIBOR plus a spread, as defined in the credit facility. In April 2018, our credit facility was amended to change the definition of “Specified Capital Expenditures”, which is used to calculate the interest coverage ratio, and in August 2018 the credit facility was amended to allow the Company to sell, transfer, lease or otherwise dispose of its assets to a Subsidiary Guarantor.

As of July 29, 2018, we had capital commitments outstanding of approximately $181 million, nearly all of which related to building and equipping of our China facilities (discussed below). We intend to finance our capital expenditures with our working capital, cash generated from operations, and, if necessary, additional borrowings. We have entered into a joint venture that is constructing an IC facility in China with an estimated total investment of $160 million. Our remaining funding commitment for the joint venture is approximately $62 million which we will fulfill over the next several quarters. We have also commenced construction of an FPD facility in China, in which, to date, we have invested $26 million, and will invest an additional $134 million over the next several years. We believe that our cash on hand, cash generated from operations and amounts available to borrow will be sufficient to meet our cash requirements for the next twelve months. We regularly review the availability and terms at which we might issue additional equity or debt securities in the public or private markets. However, we cannot assure that additional sources of financing would be available to us on commercially favorable terms, should our capital requirements exceed our existing cash, cash generated by operations, and cash available under our credit facility.

Our liquidity, as we operate in a high fixed cost environment, is highly dependent on our revenue, cash conversion cycle, and the timing of our capital expenditures (which can vary significantly from period to period). Depending on conditions in the semiconductor and FPD markets, our cash flows from operations and current holdings of cash may not be adequate to meet our current and long-term needs for capital expenditures, operations and debt repayments. Historically, in certain years, we have used external financing to fund these needs. Due to conditions in the credit markets and covenant restrictions on our existing debt, some financing instruments we have used in the past may not be available to us when required. Consequently, we cannot assure that additional sources of financing would be available to us on commercially favorable terms, should our long-term cash requirements exceed our existing cash and cash available under our credit facility.

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Off-Balance Sheet Arrangements

In January 2018, Photronics, through its wholly-owned Singapore subsidiary, and DNP, through its wholly-owned subsidiary, "DNP Asia Pacific PTE, Ltd." entered into a joint venture under which DNP obtained a 49.99% interest in our IC business in Xiamen, China. The joint venture, known as "Photronics DNP Mask Corporation Xiamen" ("PDMCX"), was established to develop and manufacture photomasks for leading edge and advanced generation semiconductors. Under the Joint Venture Operating Agreement of Photronics DNP Mask Corporation Xiamen ("the Agreement"), DNP is afforded, under certain circumstances, the right to put its interest in PDMCX to Photronics. These circumstances include disputes regarding the strategic direction of PDMCX that arise after the initial two year term of the Agreement that cannot be resolved between the two parties. In addition, both Photronics and DNP have the option to purchase, or put, their interest from, or to, the other party, should their ownership interest fall below 20% for a period of more than six consecutive months. Under all such circumstances, the sales of ownership interests would be at the exiting party's ownership percentage of the joint venture's net book value, with closing to take place within three business days of obtaining required approvals and clearance. Should DNP exercise an option to put their, or purchase our, interest in PDMCX we may, depending on the relationship of the fair and book value of the net assets of PDMCX, incur a loss. As of July 29, 2018, Photronics and DNP each had net investments in PDMCX of $16.1 million.

We lease certain office facilities and equipment under operating leases that may require us to pay taxes, insurance and maintenance expenses related to the properties. Certain of these leases contain renewal or purchase options exercisable at the end of the lease terms.

Business Outlook

A majority of our revenue growth is expected to continue to come from the Asian region, predominantly in China. In response to this expectation, we have entered into a joint venture that will complete the construction of an IC research and development and manufacturing facility in Xiamen, China, in late 2018. Production is anticipated to begin at this facility during the first half of 2019. In addition, in August 2017, we entered into an investment agreement to construct an FPD manufacturing facility in Hefei, China. Construction of this facility commenced in Q1 FY18, and production there is anticipated to begin during the first half of 2019.

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

Our future results of operations and the other forward-looking statements contained in this filing involve a number of risks and uncertainties. While various risks and uncertainties were discussed in Part 1, Item 1A in our Annual Report on Form 10-K for the year ended October 29, 2017, a number of other unforeseen factors could cause actual results to differ materially from our expectations.

Effect of Recent Accounting Pronouncements

See "Item 1. Condensed Consolidated Financial Statements – Notes to Condensed Consolidated Financial Statements – Note 13 – Recent Accounting Pronouncements" for recent accounting pronouncements that may affect the Company's financial reporting.

Item 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign Currency Exchange Rate Risk

We conduct business in several major international currencies throughout our worldwide operations, and our financial performance may be affected by fluctuations in the exchange rates of these currencies. Changes in exchange rates can positively or negatively affect our reported revenue, operating income, assets, liabilities, and equity. The functional currencies of our Asian subsidiaries are the South Korean won, the New Taiwan dollar, the Chinese renminbi and the Singapore dollar. The functional currencies of our European subsidiaries are the British pound and the euro. In addition, we have transactions and balances in Japanese yen.

We attempt to minimize our risk of foreign currency transaction losses by producing products in the same country in which the products are sold (thereby generating revenues and incurring expenses in the same currency), and by managing our working capital. However, in some instances, we sell and collect for products in a currency other than the functional currency of the country where the products are produced, or purchase products in a currency that differs from the functional currency of the purchasing entity. For example, we are currently shipping a significant quantity of photomasks into China, while our China facilities are under construction. There can be no assurance that this approach will protect us from the need to recognize significant foreign currency transaction gains and losses, especially in the event of a significant adverse movement in the value of any foreign currency in which we conduct business against any of our functional currencies, including the U.S. dollar.

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As of July 29, 2018, a 10% adverse movement in the value of currencies different than the functional currencies of our subsidiaries would have resulted in a net unrealized pre-tax loss of $6.0 million, which represents a decrease of $1.1 million from April 29, 2018. The decrease is primarily the result of decreased exposures of the U.S. dollar to the New Taiwan dollar, which was somewhat offset by increased exposures of the U.S. dollar to the South Korean won. As of July 29, 2018, the same adverse movement would represent a decrease of $6.9 million from October 29, 2017, which is primarily the result of decreased U.S. dollar and Japanese yen denominated exposures in Taiwan, and decreased exposure to U.S. dollar denominated exposures in China.

Interest Rate Risk

At July 29, 2018, we did not have any variable rate borrowings. A 10% change in interest rates would not have had a material effect on our consolidated financial position, results of operations, or cash flows in the three month or nine month periods ended July 29, 2018.

Item 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

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

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

Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting during the third quarter of fiscal year 2018 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

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PART II. OTHER INFORMATION

Item 1A. RISK FACTORS

The General Data Protection Regulation (GDPR), which went into effect in the European Union (EU) on May 25, 2018, applies to the collection, use, retention, security, processing, and transfer of personally identifiable information of residents of EU countries. The GDPR created a range of new compliance obligations, and imposes significant fines and sanctions for violations. It is possible that the GDPR may be interpreted or applied in a manner that is adverse to us, unforeseen by us, or otherwise inconsistent with our practices; or that we may otherwise fail to construe its requirements in ways that are satisfactory to the EU authorities.

Any failure or perceived failure by us to comply with the GDPR, or with any applicable regulatory requirements or orders, including but not limited to privacy, data protection, information security, or consumer protection-related privacy laws and regulations, in one or more jurisdictions within the EU or elsewhere, could: result in proceedings or actions against us by governmental entities or individuals; subject us to significant fines, penalties, and/or judgments; require us to change our business practices; limit access to our products and services in certain countries, or otherwise adversely affect our business, as we would be at risk to lose both customers and revenue, and incur substantial costs.

There have been no other material changes to risks relating to our business as disclosed in Part 1, Item 1A of our Form 10-K for the year ended October 29, 2017.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

Issuer Purchases of Equity Securities

In July 2018, the Company's Board of Directors authorized the repurchase of up to $20 million of its common stock, to be effectuated in open-market transactions or in accordance with a repurchase plan under rule 10b5-1 of the Securities Act of 1933 (as amended). The share repurchase program commenced on July 10, 2018, and will expire no later than July 7, 2019. As of July 29, 2018, we had repurchased 0.8 million shares at a cost of $6.8 million (or $8.72 per share), $0.9 million of which was pending settlement at that date. The table below presents activity under this share repurchase program.

Period	Total Number of Shares Purchased (in millions)	Average Price Paid Per share	Total Number of Shares Purchased as Part of Publicly Announced Program	Dollar Value of Shares That May Yet Be Purchased (in millions)
July 10, 2018 – July 29, 2018	0.8	$ 8.72	0.8	$ 13.2

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Item 6. EXHIBITS

(a) Exhibits

Exhibit Number	Description
10.37	Amendment No.4 dated as of August 17, 2018 to the Third Amended and Restated Credit Agreement dated as of December 5, 2013.
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document
101.SCH	