

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 August 1, 2021

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

OR
For the transition period from ___ to ___

Commission file number 0-15451



PHOTRONICS, INC.

(Exact name of registrant as specified in its charter)

Connecticut

(State or other jurisdiction of incorporation or organization)

06-0854886

(IRS Employer Identification No.)

15 Secor Road, Brookfield, Connecticut

(Address of principal executive offices)

06804

(Zip Code)

Registrant's telephone number, including area code

(203) 775-9000

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
COMMON	PLAB	NASDAQ Global Select Market
PREFERRED STOCK PURCHASE RIGHTS	N/A	N/A

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 every Interactive Data File required to be submitted 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
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

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

Common stock: \$0.01 par value – 61,151,194 shares outstanding as of September 1, 2021.

PHOTRONICS, INC.
QUARTERLY REPORT ON FORM 10-Q
AUGUST 1, 2021

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Glossary of Terms and Acronyms

Definitions of certain terms and acronyms that appear in this report are provided below.

AMOLED	Active-matrix organic light-emitting diode. A technology used in mobile devices.
ASC	Accounting Standards Codification
ASU	Accounting Standards Update
DNP	Dai Nippon Printing Co., Ltd.
EUV	A wafer lithography technology using the industry standard extreme ultraviolet (EUV) wavelength. EUV photomasks function by selectively reflecting or blocking light, in contrast to conventional photomasks which function by selectively transmitting or blocking light.
Exchange Act	The Securities Exchange Act of 1934 (as amended)
FASB	Financial Accounting Standards Board
Form 10-K	Annual Report on Form 10-K
Form 10-Q	Quarterly Report on Form 10-Q
FPDs	Flat-panel displays, or “displays”
High-end (photomasks)	For IC, photomasks that are 28nm or smaller; for FPD, AMOLED, G10.5+, and LTPS photomasks.
ICs	Integrated circuits, or semiconductors
LIBOR	London Inter-Bank Offered Rate
LTPS	Low-Temperature Poly Silicon, a polycrystalline silicon synthesized at relatively low temperatures; polycrystalline silicon in thin-film transistors (TFTs) are used in liquid-crystal displays (LCD) flat panels and to drive organic light-emitting diode (OLED) displays.
MLA	Master Lease Agreement
PDMCX	Xiamen American Japan Photronics Mask Co., Ltd., a joint venture of Photronics and DNP.
RMB	Chinese renminbi
ROU (assets)	Right-of-use asset
SEC	Securities and Exchange Commission
Securities Act	The Securities Act of 1933 (as amended)
Wafer	A wafer, or silicon wafer, is a thin slice of semiconductor material that, in the fabrication of microelectronics, serves as the substrate for microelectronic devices built in and upon the wafer.

Forward-Looking Statements

This Form 10-Q contains forward-looking statements, as defined by the SEC. The Private Securities Litigation Reform Act of 1995 provides a “safe harbor” for forward-looking statements made by us, or on our behalf. Forward-looking statements are statements other than statements of historical fact, including, without limitation, those statements that include such words as “anticipates”, “believes”, “estimates”, “expects”, “intends”, “may”, “plans”, “predicts”, “would”, and similar expressions, and, without limitation, may address our future plans, objectives, goals, strategies, events, or performance, as well as underlying assumptions and other statements that are other than statements of historical facts. On occasion, in other documents filed with the SEC, press releases, conferences, or by other means, we may discuss, publish, disseminate, or otherwise make available, forward-looking statements, including statements contained within Item 2 – “Management’s Discussion & Analysis of Financial Condition and Results of Operations” of this Form 10-Q.

Forward-looking statements involve risks and uncertainties, which could cause actual results or outcomes to differ materially from those expressed. Our expectations, beliefs and projections are expressed in good faith and are believed by us to have a reasonable basis, including, without limitation, management’s examination of historical operating trends, information contained in our records, and information we’ve obtained from other parties. However, we can offer no assurance that our expectations, beliefs, or projections will be realized, accomplished, or achieved.

Forward-looking statements within this Form 10-Q speak only as of the date of its filing, and we undertake no obligation to update any such statements to reflect changes in events or circumstances that may subsequently occur. Users of this Report are cautioned that various factors may cause actual results to differ materially from those contained in any forward-looking statements found within this Form 10-Q and that they should not place undue reliance on any forward-looking statement. In addition, all forward-looking statements, whether written or oral and whether made by us or on our behalf, are expressly qualified by the risk factors provided in Item 1A “Risk Factors” of our Form 10-K, as well as any additional risk factors we may provide in our Quarterly Reports on Form 10-Q.

PART I. FINANCIAL INFORMATION

Item 1. CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

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

	<u>August 1,</u> <u>2021</u>	<u>October 31,</u> <u>2020</u>
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 283,249	\$ 278,665
Accounts receivable, net of allowance for credit losses of \$1,331 in 2021 and \$1,324 in 2020	151,190	134,470
Inventories	53,165	57,269
Other current assets	42,860	29,735
Total current assets	530,464	500,139
Property, plant and equipment, net	699,609	631,475
Intangible assets, net	904	3,437
Deferred income taxes	23,691	22,070
Other assets	27,089	31,061
Total assets	\$ 1,281,757	\$ 1,188,182
LIABILITIES AND EQUITY		
Current liabilities:		
Short-term debt	\$ -	\$ 4,708
Current portion of long-term debt	25,163	8,970
Accounts payable	75,640	75,378
Accrued liabilities	66,814	53,883
Total current liabilities	167,617	142,939
Long-term debt	92,740	54,980
Other liabilities	26,939	27,997
Total liabilities	287,296	225,916
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, 60,758 shares issued and outstanding at August 1, 2021, and 63,138 shares issued and outstanding at October 31, 2020	608	631
Additional paid-in capital	489,431	507,336
Retained earnings	302,971	279,037
Accumulated other comprehensive income	24,882	17,958
Total Photronics, Inc. shareholders' equity	817,892	804,962
Noncontrolling interests	176,569	157,304
Total equity	994,461	962,266
Total liabilities and equity	\$ 1,281,757	\$ 1,188,182

See accompanying notes to condensed consolidated financial statements.

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

	Three Months Ended		Nine Months Ended	
	August 1, 2021	August 2, 2020	August 1, 2021	August 2, 2020
Revenue	\$ 170,643	\$ 157,895	\$ 482,473	\$ 460,405
Cost of goods sold	<u>125,318</u>	<u>120,161</u>	<u>367,370</u>	<u>357,636</u>
Gross profit	45,325	37,734	115,103	102,769
Operating expenses:				
Selling, general and administrative	15,083	13,306	43,203	40,792
Research and development	<u>5,305</u>	<u>4,492</u>	<u>14,390</u>	<u>13,034</u>
Total operating expenses	20,388	17,798	57,593	53,826
Other operating income, net	<u>3,525</u>	-	<u>3,525</u>	-
Operating income	28,462	19,936	61,035	48,943
Other non-operating income (expense):				
Foreign currency transactions impact, net	4,301	(1,565)	3,627	1,739
Interest expense, net	(1,060)	(586)	(637)	(1,609)
Interest income and other income (expense), net	<u>494</u>	<u>16</u>	<u>653</u>	<u>480</u>
Income before income tax provision	32,197	17,801	64,678	49,553
Income tax provision	<u>7,842</u>	<u>4,937</u>	<u>14,493</u>	<u>17,789</u>
Net income	24,355	12,864	50,185	31,764
Net income attributable to noncontrolling interests	<u>7,279</u>	<u>2,088</u>	<u>14,547</u>	<u>4,404</u>
Net income attributable to Photronics, Inc. shareholders	<u>\$ 17,076</u>	<u>\$ 10,776</u>	<u>\$ 35,638</u>	<u>\$ 27,360</u>
Earnings per share:				
Basic	<u>\$ 0.28</u>	<u>\$ 0.17</u>	<u>\$ 0.58</u>	<u>\$ 0.42</u>
Diluted	<u>\$ 0.28</u>	<u>\$ 0.17</u>	<u>\$ 0.57</u>	<u>\$ 0.42</u>
Weighted-average number of common shares outstanding:				
Basic	<u>60,884</u>	<u>64,780</u>	<u>61,804</u>	<u>65,090</u>
Diluted	<u>61,515</u>	<u>65,247</u>	<u>62,362</u>	<u>65,704</u>

See accompanying notes to condensed consolidated financial statements.

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

	<u>Three Months Ended</u>		<u>Nine Months Ended</u>	
	<u>August 1, 2021</u>	<u>August 2, 2020</u>	<u>August 1, 2021</u>	<u>August 2, 2020</u>
Net income	\$ 24,355	\$ 12,864	\$ 50,185	\$ 31,764
Other comprehensive (loss) income, net of tax of \$0:				
Foreign currency translation adjustments	(10,482)	10,659	11,584	6,689
Other	37	4	58	23
Net other comprehensive (loss) income	(10,445)	10,663	11,642	6,712
Comprehensive income	13,910	23,527	61,827	38,476
Less: comprehensive income attributable to noncontrolling interests	7,144	3,979	19,265	8,539
Comprehensive income attributable to Photonics, Inc. shareholders	<u>\$ 6,766</u>	<u>\$ 19,548</u>	<u>\$ 42,562</u>	<u>\$ 29,937</u>

See accompanying notes to condensed consolidated financial statements.

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

Three Months Ended August 1, 2021

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 May 2, 2021	63,606	\$ 636	\$ 511,215	\$ 297,599	\$ (23,250)	\$ 35,192	\$ 169,425		\$ 990,817
Net income	-	-	-	17,076	-	-	7,279		24,355
Other comprehensive loss	-	-	-	-	-	(10,310)	(135)		(10,445)
Shares issued under equity plans	135	2	921	-	-	-	-		923
Share-based compensation expense	-	-	1,311	-	-	-	-		1,311
Purchase of treasury stock	-	-	-	-	(12,500)	-	-		(12,500)
Retirement of treasury stock	(2,983)	(30)	(24,016)	(11,704)	35,750	-	-		-
Balance at August 1, 2021	<u>60,758</u>	<u>\$ 608</u>	<u>\$ 489,431</u>	<u>\$ 302,971</u>	<u>\$ -</u>	<u>\$ 24,882</u>	<u>\$ 176,569</u>		<u>\$ 994,461</u>

Three Months Ended August 2, 2020

Photronics, Inc. Shareholders									
	Common Stock		Additional Paid-in Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Loss	Non- controlling Interests		Total Equity
	Shares	Amount							
Balance at May 3, 2020	66,215	\$ 662	\$ 530,117	\$ 270,506	\$ (16,894)	\$ (15,200)	\$ 152,467		\$ 921,658
Net income	-	-	-	10,776	-	-	2,088		12,864
Other comprehensive income	-	-	-	-	-	8,772	1,891		10,663
Shares issued under equity plans	61	1	306	-	-	-	-		307
Share-based compensation expense	-	-	1,196	-	-	-	-		1,196
Contribution from noncontrolling interest	-	-	-	-	-	-	9,997		9,997
Balance at August 2, 2020	<u>66,276</u>	<u>\$ 663</u>	<u>\$ 531,619</u>	<u>\$ 281,282</u>	<u>\$ (16,894)</u>	<u>\$ (6,428)</u>	<u>\$ 166,443</u>		<u>\$ 956,685</u>

See accompanying notes to condensed consolidated financial statements.

Nine Months Ended August 1, 2021

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 October 31, 2020	63,138	\$ 631	\$ 507,336	\$ 279,037	\$ -	\$ 17,958	\$ 157,304		\$ 962,266
Net income	-	-	-	35,638	-	-	14,547		50,185
Other comprehensive income	-	-	-	-	-	6,924	4,718		11,642
Shares issued under equity plans	603	7	2,077	-	-	-	-		2,084
Share-based compensation expense	-	-	4,034	-	-	-	-		4,034
Purchase of treasury stock	-	-	-	-	(35,750)	-	-		(35,750)
Retirement of treasury stock	(2,983)	(30)	(24,016)	(11,704)	35,750	-	-		-
Balance at August 1, 2021	<u>60,758</u>	<u>\$ 608</u>	<u>\$ 489,431</u>	<u>\$ 302,971</u>	<u>\$ -</u>	<u>\$ 24,882</u>	<u>\$ 176,569</u>		<u>\$ 994,461</u>

Nine Months Ended August 2, 2020

Photronics, Inc. Shareholders									
	Common Stock		Additional Paid-in Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Loss	Non- controlling Interests		Total Equity
	Shares	Amount							
Balance at October 31, 2019	65,595	\$ 656	\$ 524,319	\$ 253,922	\$ -	\$ (9,005)	\$ 141,200		\$ 911,092
Net income	-	-	-	27,360	-	-	4,404		31,764
Other comprehensive income	-	-	-	-	-	2,577	4,135		6,712
Shares issued under equity plans	681	7	3,272	-	-	-	-		3,279
Share-based compensation expense	-	-	3,773	-	-	-	-		3,773
Purchase of treasury stock	-	-	-	-	(16,894)	-	-		(16,894)
Contribution from noncontrolling interest	-	-	-	-	-	-	17,596		17,596
Repurchase of common stock of subsidiary	-	-	255	-	-	-	(892)		(637)
Balance at August 2, 2020	<u>66,276</u>	<u>\$ 663</u>	<u>\$ 531,619</u>	<u>\$ 281,282</u>	<u>\$ (16,894)</u>	<u>\$ (6,428)</u>	<u>\$ 166,443</u>		<u>\$ 956,685</u>

See accompanying notes to condensed consolidated financial statements.

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

	Nine Months Ended	
	August 1, 2021	August 2, 2020
Cash flows from operating activities:		
Net income	\$ 50,185	\$ 31,764
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	69,305	71,120
Share-based compensation	4,034	3,773
Changes in assets and liabilities:		
Accounts receivable	(13,854)	(9,476)
Inventories	5,073	(6,155)
Other current assets	(12,280)	(12,381)
Accounts payable, accrued liabilities, and other	10,633	(381)
Net cash provided by operating activities	113,096	78,264
Cash flows from investing activities:		
Purchases of property, plant and equipment	(92,301)	(36,693)
Government incentives	5,775	5,263
Purchases of intangible assets	(170)	(139)
Net cash used in investing activities	(86,696)	(31,569)
Cash flows from financing activities:		
Proceeds from debt	20,858	5,699
Purchases of treasury stock	(35,750)	(16,894)
Repayments of debt	(13,311)	(5,929)
Contribution from noncontrolling interest	-	17,596
Proceeds from share-based arrangements	2,251	3,869
Net settlements of restricted stock awards	(403)	(248)
Net cash (used in) provided by financing activities	(26,355)	4,093
Effects of exchange rate changes on cash, cash equivalents, and restricted cash	4,602	3,486
Net increase in cash, cash equivalents, and restricted cash	4,647	54,274
Cash, cash equivalents, and restricted cash at beginning of period	281,602	209,291
Cash, cash equivalents, and restricted cash at end of period	\$ 286,249	\$ 263,565
Supplemental disclosures of non-cash information:		
Accruals for property, plant and equipment purchased during the period	\$ 7,367	\$ 34,356

See accompanying notes to condensed consolidated financial statements.

PHOTRONICS, INC.
Notes to Condensed Consolidated Financial Statements
(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 ICs and FPDs, and are used as masters to transfer circuit patterns onto semiconductor wafers and FPD substrates during the fabrication of integrated circuits, a variety of FPDs and, to a lesser extent, other types of electrical and optical components. We currently have eleven manufacturing facilities, which are located in Taiwan (3), Korea, the United States (3), Europe (2), and China (2). Our FPD facility in Hefei, China, commenced production in the second quarter of fiscal 2019, and our IC facility in Xiamen, China, commenced production in the third quarter of fiscal 2019.

The accompanying unaudited condensed consolidated financial statements (“the 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. The financial statements include the accounts of Photronics, its wholly owned subsidiaries, and the majority-owned subsidiaries that it controls. All intercompany balances and transactions have been eliminated in consolidation.

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires us to make estimates and assumptions that affect amounts reported in them. Estimates are based on historical experience and on various assumptions that are believed to be reasonable under the circumstances. Our estimates are based on the facts and circumstances available at the time they are made. Subsequent actual results may differ from such estimates. We review these estimates periodically and reflect any effects of revisions in the period in which they are determined.

In fiscal year 2021, we segregated share-based compensation activity into the two categories of *Shares issued under equity plans* and *Share-based compensation expense* in the condensed consolidated statements of equity; in previous reports, we segregated this activity into three categories. Reclassified prior period amounts have been conformed to the current period presentation.

Our business is typically impacted during the first 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; consequently, operating results for interim periods are not necessarily indicative of the results that may be expected for the fiscal year ending October 31, 2021. For further information, refer to the consolidated financial statements, and notes thereto, included in our Form 10-K for the year ended October 31, 2020.

NOTE 2 - CASH, CASH EQUIVALENTS AND RESTRICTED CASH

Cash and cash equivalents include cash and highly liquid investments with an original maturity of three months or less, readily convertible to known amounts of cash, and so near to their maturity that they present insignificant risk of changes in value because of changes in interest rates. The carrying values of cash equivalents approximate their fair values, due to the short-term maturities of these instruments.

Restricted cash is included in *Other assets* in our August 1, 2021 and October 31, 2020, condensed consolidated balance sheets, respectively. The restrictions on these amounts are primarily related to land lease agreements and customs requirements.

The following table presents cash and cash equivalents as reported in our condensed consolidated balance sheets, as well as the sum of cash, cash equivalents and restricted cash, as reported in our condensed consolidated statements of cash flows.

	<u>August 1, 2021</u>	<u>October 31, 2020</u>
Cash and cash equivalents	\$ 283,249	\$ 278,665
Restricted Cash	3,000	2,937
	<u>\$ 286,249</u>	<u>\$ 281,602</u>

NOTE 3 - INVENTORIES

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

	<u>August 1, 2021</u>	<u>October 31, 2020</u>
Raw materials	\$ 51,713	\$ 56,389
Work in process	1,223	767
Finished goods	229	113
	<u>\$ 53,165</u>	<u>\$ 57,269</u>

NOTE 4 - PROPERTY, PLANT AND EQUIPMENT, NET

Property, plant and equipment, net consists of the following:

	<u>August 1, 2021</u>	<u>October 31, 2020</u>
Land	\$ 12,518	\$ 12,422
Buildings and improvements	181,842	179,162
Machinery and equipment	1,966,038	1,812,791
Leasehold improvements	21,672	21,157
Furniture, fixtures and office equipment	15,811	15,665
Construction in progress	31,839	70,915
	2,229,720	2,112,112
Accumulated depreciation and amortization	<u>(1,530,111)</u>	<u>(1,480,637)</u>
	<u>\$ 699,609</u>	<u>\$ 631,475</u>

ROU assets resulting from finance leases are included in the table above as follows:

	<u>August 1, 2021</u>	<u>October 31, 2020</u>
Machinery and equipment	\$ 42,760	\$ -
Accumulated amortization	(1,223)	-
	<u>\$ 41,537</u>	<u>\$ -</u>

Depreciation and amortization expense for property, plant and equipment (including amortization expense for ROU assets) was \$21.7 million and \$66.6 million for the three and nine-month periods ended August 1, 2021, respectively, and \$22.1 million and \$67.6 million for the three and nine-month periods ended August 2, 2020, respectively.

In the third quarter of fiscal 2021, we recorded a \$3.5 million gain on the trade-in of a lithography tool with a tool vendor as partial compensation for a more advanced tool.

NOTE 5 - PDMCX JOINT VENTURE

In January 2018, Photronics, Inc. through its wholly owned Singapore subsidiary (hereinafter, within this Note “we”, “Photronics”, “us”, or “our”), 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, which we refer to as “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 provides to enable us to offer advanced-process technology to our customers. No gain or loss was recorded upon the formation of this joint venture.

The minimum combined investment per the PDMCX operating agreement (the “Agreement”), was \$160 million. As of August 1, 2021, Photronics and DNP had each contributed cash of approximately \$65 million, and PDMCX had obtained local financing of approximately \$50 million. As discussed in Note 6, liens were granted to the local financing entity on assets with an August 1, 2021, total carrying value of \$91.3 million, as collateral for the loans.

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 may arise after the initial two-year term of the Agreement and cannot be resolved between the two parties. As of the date of issuance of these financial statements, DNP had not indicated its intention to exercise this right. 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 twenty percent 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 income from the operations of PDMCX of \$1.8 million, and \$4.0 million during the three and nine-month periods ended August 1, 2021, respectively, and losses of \$0.8 million and \$4.8 million during the three and nine-month periods ended August 2, 2020, respectively. General creditors of PDMCX do not have recourse to the assets of Photronics (other than the net assets of PDMCX), and our maximum exposure to loss from PDMCX at August 1, 2021, was \$60.9 million.

As required by the guidance in Topic 810 - “Consolidation” of the ASC, 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 was 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 and prior year reporting periods; thus, as required, the PDMCX financial results have been consolidated with Photronics. Our conclusion was based on the facts 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) and had the obligation to absorb losses and the right to receive benefits that could potentially be significant to PDMCX. Our conclusions that we had the power to direct the activities that most significantly affected the economic performance of PDMCX during the current and prior year reporting periods were 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 and prior-year periods, 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 sheets are presented in the following table, together with our exposure to loss related to these assets and liabilities.

Classification	August 1, 2021		October 31, 2020	
	Carrying Amount	Photronics Interest	Carrying Amount	Photronics Interest
Current assets	\$ 56,060	\$ 28,036	\$ 56,095	\$ 28,053
Non-current assets	138,072	69,050	141,097	70,562
Total assets	194,132	97,086	197,192	98,615
Current liabilities	30,233	15,119	31,922	15,964
Non-current liabilities	42,080	21,044	55,676	27,844
Total liabilities	72,313	36,163	87,598	43,808
Net assets	\$ 121,819	\$ 60,923	\$ 109,594	\$ 54,807

NOTE 6 - DEBT

Short-term debt was \$0.0 million, and \$4.7 million as of August 1, 2021 and October 31, 2020, respectively. The 2020 amount represents an advance payment under an MLA to fund equipment purchased or leased in the U.S., and short duration borrowings in Xiamen, China, to fund operations. See below for further information. The weighted-average interest rate on our short-term debt as of October 31, 2020 was 2.02%.

The tables below provide information on our long-term debt.

<u>As of August 1, 2021</u>	<u>Xiamen Project Loans</u>	<u>Xiamen Working Capital Loans</u>	<u>Hefei Equipment Loan</u>	<u>Finance Leases</u>	<u>Total</u>
Principal due:					
Next 12 months	\$ 7,615	\$ 8,108	\$ 2,321	\$ 7,119	\$ 25,163
Months 13 – 24	\$ 9,961	\$ 3,961	\$ 4,642	\$ 6,487	\$ 25,051
Months 25 – 36	10,165	-	4,642	6,585	21,392
Months 37 – 48	9,794	-	7,736	19,623	37,153
Months 49 – 60	7,489	-	1,655	-	9,144
Long-term debt	<u>\$ 37,409</u>	<u>\$ 3,961</u>	<u>\$ 18,675</u>	<u>\$ 32,695</u>	<u>\$ 92,740</u>
Interest rate at balance sheet date	4.65%	4.53% - 4.61%	4.20%	(3)	
Basis spread on interest rates	0.00	67.75 - 76.00	(45.00)	N/A	
Interest rate reset	Quarterly	Monthly/Annually	Annually	N/A	
Maturity date	December 2025	July 2023	September 2026	(3)	
Periodic payment amount	Increases as loans mature	Increases as loans mature	Varies (1)	(3)	
Periodic payment frequency	Semiannual, on individual loans	Semiannual, on individual loans	Semiannual(2)	Monthly	
Loan collateral (carrying amount)	\$ 91,277	N/A	\$ 86,892	\$ 41,537(4)	

(1) First five loan repayments will each be for 7.5 percent of the approved 200 million RMB loan principal; last five installments will each be for 12.5 percent of the original approved loan amount.

(2) Semiannual repayments commence in March 2022.

(3) See Note 8 for interest rates on lease liabilities, maturity dates, and periodic payment amounts.

(4) Represents the carrying amount at the balance sheet date of the related right-of-use assets, in which the lessors have secured interests.

<u>As of October 31, 2020</u>	<u>Xiamen Project Loans</u>	<u>Xiamen Working Capital Loans</u>	<u>Total</u>
Principal due:			
Next 12 months	\$ 6,705	\$ 2,265	\$ 8,970
Months 13 – 24	\$ 7,334	\$ 7,808	\$ 15,142
Months 25 – 36	9,592	3,814	13,406
Months 37 – 48	9,789	-	9,789
Months 49 – 60	9,432	-	9,432
Thereafter	7,211	-	7,211
Long-term debt	<u>\$ 43,358</u>	<u>\$ 11,622</u>	<u>\$ 54,980</u>
Interest rate at balance sheet date	4.90%	4.53% - 4.61%	
Basis spread on interest rates	25.00	40.00 - 76.00	
Loan collateral (carrying amount)	\$ 94,459	N/A	

Xiamen Project Loans

In November 2018, PDMCX obtained approval to borrow 345.0 million RMB from the Industrial and Commercial Bank of China. From November 2018 through July 2020, PDMCX entered into separate loan agreements (the “Project Loans”) for the entire approved amount and, as of August 1, 2021, 291.0 million RMB (\$45.0 million) remained outstanding. The Project Loans were used to finance certain capital expenditures at the PDMCX facility and are collateralized by liens granted on the land use right, building, and certain equipment located at the facility. The interest rates on the Project Loans are variable (based on the RMB Loan Prime Rate of the National Interbank Funding Center), and interest incurred on the loans is eligible for reimbursement through incentives provided by the Xiamen Torch Hi-Tech Industrial Development Zone, which provide for such reimbursements up to a prescribed limit and duration. The Project Loans are subject to covenants and provisions, certain of which relate to the assets pledged as security for the loans, all of which we were in compliance with at August 1, 2021.

Xiamen Working Capital Loans

In November 2018, PDMCX obtained approval for revolving, unsecured credit of the equivalent of \$25.0 million, pursuant to which PDMCX may enter into separate loan agreements with varying terms to maturity. This facility is subject to annual reviews and extension. Unless extended, this facility will expire in October 2021. As of August 1, 2021, PDMCX had 78.0 million RMB (\$12.1 million) outstanding against the approval. The interest rates are variable, based on the RMB Loan Prime Rate of the National Interbank Funding Center. Interest incurred on the loans are eligible for reimbursement through incentives provided by the Xiamen Torch Hi-Tech Industrial Development Zone, which provide for such reimbursements up to a prescribed limit and duration.

Hefei Equipment Loan

In October 2020, our Hefei, China, facility was approved to borrow 200 million RMB (approximately \$30.9 million, at the balance sheet date) from the China Construction Bank Corporation. This credit facility is subject to annual reviews and extension, with the most recent extension set to expire in August 2022. The loan proceeds were used to fund purchases of two lithography tools at the Hefei facility. As of August 1, 2021, we had borrowed 135.7 million RMB (\$21.0 million) against this approval (all of which was then outstanding), and 62.5 million RMB (\$9.9 million) remained available to borrow. The interest rate on the loan is variable and based on the RMB Loan Prime Rate of the National Interbank Funding Center. The borrowings are secured by the Hefei facility, its related land use right, and certain manufacturing equipment. The Hefei Equipment Loan is subject to covenants and provisions, certain of which relate to the assets pledged as security for the loan, including covenants for the ratio of total liabilities to total assets and the ratio of current assets to current liabilities, all of which we were in compliance with at August 1, 2021.

Finance Leases

In February 2021, we entered into a five-year \$7.2 million finance lease for a high-end inspection tool and, in December 2020, under an MLA which we entered into effective July 2019, we entered into a \$35.5 million lease for a high-end lithography tool. Upon entering into the latter lease, our prior \$3.5 million short-term obligation to the lessor became a portion of the lease liability. See Note 8 for additional information on these leases.

Corporate Credit Agreement

In September 2018, we entered into a five-year amended and restated credit agreement (the “Credit Agreement”), which has a \$50 million borrowing limit, with an expansion capacity to \$100 million. The Credit Agreement is secured by substantially all of our assets located in the United States and common stock we own in certain subsidiaries. The Credit Agreement includes covenants around minimum interest coverage ratio, total leverage ratio, and minimum unrestricted cash balance (all of which we were in compliance with at August 1, 2021), and limits the amount of cash dividends, distributions, and redemptions we can pay on our common stock to an aggregate annual amount of \$50 million. We had no outstanding borrowings against the Credit Agreement at August 1, 2021. The interest rate on the Credit Agreement (1.09% at August 1, 2021) is based on our total leverage ratio at LIBOR plus a spread, as defined in the Credit Agreement.

NOTE 7 - REVENUE

We recognize revenue when, or as, control of a good or service transfers to a customer, in an amount that reflects the consideration to which we expect to be entitled in exchange for transferring those goods or services. We account for an arrangement as a revenue contract when each party has approved and is committed to perform under the contract, the rights of the contracting parties regarding the goods or services to be transferred and the payment terms are identifiable, the arrangement has commercial substance, and collection of consideration is probable. Substantially all of our revenue comes from the sales of photomasks. We typically contract with our customers to sell sets of photomasks, which are comprised of multiple layers, the predominance of which we invoice as they ship to customers. As the photomasks are manufactured to customer specifications, they have no alternative use to us and, as our contracts generally provide us with the right to payment for work completed to date, we recognize revenue as we perform, or “over time”, on most of our contracts. We measure our performance to date using an input method, which is based on our estimated costs to complete the various manufacturing phases of a photomask. At the end of a reporting period, there will be a number of uncompleted revenue contracts on which we have performed; for any such contracts under which we are entitled to be compensated for our costs incurred plus a reasonable profit, we recognize revenue and a corresponding contract asset for such performance. We account for shipping and handling activities that we perform after a customer obtains control of a good as being activities to fulfill our promise to transfer the good to the customer, rather than as promised services, or performance obligations, under the contract. We report our revenue net of any sales or similar taxes we collect on behalf of government entities.

As stated above, photomasks are manufactured to customer specifications in accordance with their proprietary designs; thus, they are individually unique. Due to their uniqueness and other factors, their transaction prices are individually established through negotiations with customers; consequently, our photomasks do not have standard or “list” prices. The transaction prices of the vast majority of our revenue contracts include only fixed amounts of consideration. In certain instances, such as when we offer a customer an early payment discount, an estimate of variable consideration would be included in the transaction price, but only to the extent that a significant reversal of revenue would not occur when the uncertainty related to the variability was resolved.

Contract Assets, Contract Liabilities, and Accounts Receivable

We recognize a contract asset when our performance under a contract precedes our receipt of consideration from a customer, or before payment is due, and our receipt of consideration is conditional upon factors other than the passage of time. Contract assets reflect our transfer of control of photomasks that are in process or completed but not yet shipped to customers. A receivable is recognized when we have an unconditional right to payment for our performance, which generally occurs when we ship the photomasks. Our contract assets primarily consist of a significant amount of our in-process production orders and fully manufactured photomasks which have not yet shipped, for which we have an enforceable right to collect consideration (including a reasonable profit) in the event the in-process orders are cancelled by customers. On an individual contract basis, we net contract assets with contract liabilities (deferred revenue) for financial reporting purposes. Contract assets of \$8.9 million are included in Other current assets, and contract liabilities of \$15.4 million and \$5.2 million are included in Accrued liabilities and Other liabilities, respectively, in our August 1, 2021, condensed consolidated balance sheet. Our October 31, 2020 condensed consolidated balance sheet includes contract assets of \$6.3 million, included in Other current assets, and contract liabilities of \$8.0 million and \$5.2 million are included in Accrued liabilities and *Other liabilities*, respectively. We did not impair any contract assets during the three or nine-month periods ended August 1, 2021 or August 2, 2020. We recognized \$1.7 million and \$5.0 million of revenue from the settlement of contract liabilities that existed at the beginning of the three and nine-month periods ended August 1, 2021, and recognized \$1.9 million and \$2.3 million of revenue in the respective prior year periods, that related to the settlement of contract liabilities that existed at the beginning of those periods.

We generally record our accounts receivable at their billed amounts. All outstanding past due customer invoices are reviewed for collectibility during, and at the end of, every reporting period. To the extent we believe a loss on the collection of a customer invoice is probable, we record the loss and credit the allowance for credit losses. In the event that an amount is determined to be uncollectible, we charge the allowance for credit losses and derecognize the related receivable. We did not incur any credit losses on our accounts receivable during the nine-month period ended August 1, 2021, and credit losses on our accounts receivable were immaterial during the three and nine-month periods ended August 2, 2020.

Our invoice terms generally range from net thirty to ninety days, depending on both the geographic market in which the transaction occurs and our payment agreements with specific customers. In the event that our evaluation of a customer’s business prospects and financial condition indicate that the customer presents a collectibility risk, we modify terms of sale, which may require payment in advance of performance. At the time of adoption, we elected the practical expedient allowed under ASC Topic 606 “Revenue from Contracts with Customers” (“Topic 606”) that permits us not to adjust a contract’s promised amount of consideration to reflect a financing component when the period between when we transfer control of goods or services to customers and when we are paid is one year or less.

In instances when we are paid in advance of our performance, we record a contract liability and, as allowed under the practical expedient in Topic 606, recognize interest expense only if the period between when we receive payment from the customer and the date when we expect to be entitled to the payment is greater than one year. Historically, advance payments we have received from customers have generally not preceded the completion of our performance obligations by more than one year.

Disaggregation of Revenue

The following tables present our revenue for the three and nine-month periods ended August 1, 2021 and August 2, 2020, disaggregated by product type, geographic origin, and timing of recognition.

	Three Months Ended		Nine Months Ended	
	August 1, 2021	August 2, 2020	August 1, 2021	August 2, 2020
Revenue by Product Type				
IC				
High-end	\$ 42,351	\$ 38,665	\$ 120,390	\$ 117,974
Mainstream	75,423	70,001	214,332	194,517
Total IC	\$ 117,774	\$ 108,666	\$ 334,722	\$ 312,491

FPD				
High-end	\$ 40,640	\$ 36,670	\$ 114,685	\$ 108,248
Mainstream	12,229	12,559	33,066	39,666
Total FPD	\$ 52,869	\$ 49,229	\$ 147,751	\$ 147,914
	\$ 170,643	\$ 157,895	\$ 482,473	\$ 460,405

	Three Months Ended		Nine Months Ended	
	August 1, 2021	August 2, 2020	August 1, 2021	August 2, 2020
Revenue by Geography *				
Taiwan	\$ 63,849	\$ 60,836	\$ 179,441	\$ 182,463
Korea	39,575	39,488	118,597	116,485
United States	24,693	28,351	78,447	78,276
China	32,664	20,988	77,391	58,374
Europe	9,437	7,688	27,269	23,562
Other	425	544	1,328	1,245
	\$ 170,643	\$ 157,895	\$ 482,473	\$ 460,405

* This table disaggregates revenue by the location in which it was earned.

	Three Months Ended		Nine Months Ended	
	August 1, 2021	August 2, 2020	August 1, 2021	August 2, 2020
Revenue by Timing of Recognition				
Over time	\$ 157,941	\$ 137,442	\$ 443,923	\$ 401,347
At a point in time	12,702	20,453	38,550	59,058
	\$ 170,643	\$ 157,895	\$ 482,473	\$ 460,405

Contract Costs

We pay commissions to third-party sales agents for certain sales they procure on our behalf. However, the bases of the commissions are the transaction prices of the sales, which are completed in less than one year; thus, no relationship is established with a customer that will result in future business. Therefore, we do not recognize any portion of these sales commissions as costs of obtaining a contract, nor do we currently foresee other circumstances under which we would recognize contract obtainment costs as assets.

Remaining Performance Obligations

As we are typically required to fulfill customer orders within a short time period, our backlog of orders is generally not in excess of one to two weeks for IC photomasks and two to three weeks for FPD photomasks. As allowed under Topic 606, we have elected not to disclose our remaining performance obligations, which represent the costs associated with the completion of the manufacturing process of in-process photomasks related to contracts that have an original duration of one year or less.

Product Warranties

Our photomasks are sold under warranties that generally range from one to twenty-four months. We warrant that our photomasks conform to customer specifications, and will typically repair, replace, or issue a refund for any photomasks that fail to do so. The warranties do not represent separate performance obligations in our revenue contracts. Historically, customer claims under warranties have been immaterial.

NOTE 8 - LEASES

Our involvement in lease arrangements has typically been as a lessee. We determine if an agreement is or contains a lease on the earlier of the date of the agreement or the date on which we commit to entering the agreement. Our evaluation considers whether the agreement includes an identified asset and whether it affords us the right to control the asset. Our having the right to control the identified asset is determined by whether we are entitled to substantially all of its economic benefits and can direct its use.

We recognize leases on our consolidated balance sheet when a lessor makes an asset underlying a lease having a term in excess of twelve months available for our use. As allowed under ASC Topic 842 – “Leases” (“Topic 842”), we have elected not to apply the recognition requirements to leases that, at their commencement dates, have lease terms of twelve months or less and do not include options to purchase their underlying assets that we are reasonably certain to exercise. The present value of lease payments over the term of the lease provides the basis for the initial measurement of ROU assets and their related lease liabilities. We measure finance lease liabilities using the rates implicit in the leases; operating lease liabilities are measured using our incremental borrowing rate, for collateralized loans, at the commencement date. Variable lease payments, other than those that are dependent on an index or on a rate, are not included in the measurement of ROU assets and their related lease liabilities. Lease terms include extension periods if the lease agreement includes an option to extend the lease that we are reasonably certain to exercise. As allowed under Topic 842, we have elected, for all classes of assets, the practical expedient to not separate lease components of a contract from nonlease components of a contract.

In February 2021, we entered into a five-year \$7.2 million finance lease for a high-end inspection tool. Monthly payments on the lease, which commenced in February 2021, are \$0.1 million per month. Upon the payment of the fiftieth monthly payment and prior to payment of the fifty-first monthly payment, we may exercise an early buyout option to purchase the tool at 33.684638% of its original cost. If we do not exercise the early buyout option, then at the end of the five-year lease term, the lease shall continue to renew on a month-to-month basis at the same rental; at our option, after the original term or any renewal periods, we may return the tool, elect to extend the lease, or purchase the tool at its fair market value. Since we are reasonably certain that we will exercise the early buyout option, our lease liability reflects such exercise and we have classified the lease as a finance lease. The interest rate implicit in the lease is 1.08%.

In December 2020, we entered into a five-year \$35.5 million finance lease for a high-end lithography tool. Monthly payments on the lease, which commenced in January 2021, increased from \$0.04 million during the first three months to \$0.6 million for the following nine months, followed by forty-eight monthly payments of \$0.5 million. As of the due date of the forty-eighth monthly payment, we may exercise an early buyout option to purchase the tool at 39.84% of the initial lease liability. If we do not exercise the early buyout option, then at the end of the five-year lease term, at our option, we may return the tool, elect to extend the lease term for a period and a lease payment to be agreed with lessor at the time, or purchase the tool for its then-fair market value as determined by the lessor. Since we are reasonably certain that we will exercise the early buyout option, our lease liability reflects such exercise and we have classified the lease as a finance lease. The interest rate implicit in the lease is 1.58%. The lease agreement incorporates the covenants included in our Corporate Credit Agreement, which are detailed in Note 6, and includes a cross-default provision for any agreement or instrument with an outstanding, committed balance greater than \$5.0 million in which we are the indebted party.

The following table provides information on operating and finance leases included in our consolidated balance sheets.

Classification	August 1, 2021	October 31, 2020
ROU Assets – Operating Leases		
Other assets	\$ 6,238	\$ 7,706
ROU Assets – Finance Leases		
Property, plant and equipment, net	\$ 41,537	\$ -
Lease Liabilities – Operating Leases		
Accrued liabilities	\$ 2,258	\$ 2,175
Other liabilities	3,786	5,008
	<u>\$ 6,044</u>	<u>\$ 7,183</u>
Lease Liabilities – Finance Leases		
Current portion of long-term debt	\$ 7,119	\$ -
Long-term debt	32,695	-
	<u>\$ 39,814</u>	<u>\$ -</u>

The following table presents future lease payments under noncancelable operating and finance leases as of August 1, 2021. Imputed interest represents the difference between undiscounted cash flows and discounted cash flows.

	Operating Leases	Finance Leases
Remainder of fiscal year 2021	\$ 585	\$ 2,174
2022	2,338	7,231
2023	1,363	6,938
2024	810	6,938
2025	647	18,013
Thereafter	559	-
Total lease payments	6,302	41,294
Imputed interest	258	1,480
Lease liabilities	<u>\$ 6,044</u>	<u>\$ 39,814</u>

The following table presents lease costs for the three and nine-month periods ended August 1, 2021 and August 2, 2020.

	Three Months Ended		Nine Months Ended	
	August 1, 2021	August 2, 2020	August 1, 2021	August 2, 2020
Operating lease costs	\$ 802	\$ 663	\$ 2,190	\$ 2,459
Short-term lease costs	\$ 80	\$ 43	\$ 166	\$ 255
Variable lease costs	\$ 54	\$ 131	\$ 355	\$ 259
Interest on lease liabilities	\$ 160	\$ -	\$ 361	\$ -
Amortization of ROU assets	\$ 711	\$ -	\$ 1,156	\$ -

The following table presents statistical information related to our operating and finance leases. The information presented is as of the balance sheet dates.

Classification	August 1, 2021		October 31, 2020	
	Weighted-average remaining lease term (in years)	Weighted-average discount rate	Weighted-average remaining lease term (in years)	Weighted-average discount rate
Operating leases	3.6	2.35%	4.1	2.37%
Finance leases	3.7	1.50%	-	-

Supplemental cash flows information

	Three Months Ended		Nine Months Ended	
	August 1, 2021	August 2, 2020	August 1, 2021	August 2, 2020
Operating cash flows used for operating leases	\$ 615	\$ 621	\$ 1,844	\$ 3,008
Operating cash flows used for finance leases	\$ 168	\$ -	\$ 344	\$ -
Financing cash flows used for finance leases	\$ 2,018	\$ -	\$ 2,882	\$ -
ROU assets obtained in exchange for operating lease obligations	\$ 50	\$ 2,098	\$ 417	\$ 2,438
ROU assets obtained in exchange for finance lease obligations	\$ -	\$ -	\$ 42,672	\$ -

NOTE 9 - SHARE-BASED COMPENSATION

In March 2016, shareholders approved an 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), 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 Photonics or its subsidiaries. In the event of a change in control (as defined in the Plan), the vesting of awards may be accelerated. The Plan, aspects of which are more fully described below, prohibits further awards from being issued under prior plans. Total share-based compensation costs for the three and nine-month periods ended August 1, 2021, were \$1.3 million and \$4.0 million, respectively, and \$1.2 million and \$3.8 million for the three and nine-month periods ended August 2, 2020, respectively. No share-based compensation cost was capitalized as part of an asset during the periods presented, and related income tax benefits were \$0.1 million and \$0.2 million, respectively, in the three and nine-month periods ended August 1, 2021, and immaterial in the prior year periods.

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 556,200 restricted stock awards granted during the nine-month period ended August 1, 2021, with a weighted-average grant-date fair value of \$11.17 per share, and there were no restricted stock awards granted during the three-month period ended August 1, 2021. There were 527,000 restricted stock awards granted during the nine-month period ended August 2, 2020, with a grant-date fair value of \$15.21 per share; no restricted stock awards were granted during the three-month period ended August 2, 2020. As of August 1, 2021, the total compensation cost not yet recognized related to unvested restricted stock awards was approximately \$8.5 million. That cost is expected to be recognized over a weighted-average amortization period of 2.7 years. As of August 1, 2021, there were 973,309 shares of restricted stock outstanding.

Stock Options

Option awards generally vest in one to four years, and have a ten-year contractual term. All incentive and non-qualified stock option grants must have an exercise price no less than the market value of the underlying common stock on the date of grant. The grant-date fair values of options are based on closing prices of our common stock on the dates of grant and are calculated 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 an option is based on the U.S. Treasury yield curve in effect at the date of grant.

There were no share options granted during the nine-month periods ended August 1, 2021 or August 2, 2020. The Company received cash from option exercises of \$1.0 million and \$1.9 million for the three and nine-month periods ended August 1, 2021, respectively, and \$0.3 million and \$3.5 million for the three and nine-month periods ended August 2, 2020, respectively. As of August 1, 2021, the total unrecognized compensation cost related to unvested option awards was approximately \$0.2 million. That cost is expected to be recognized over a weighted-average amortization period of 1.2 years.

Information on outstanding and exercisable option awards as of August 1, 2021, is presented below.

Options	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (in years)	Aggregate Intrinsic Value
Outstanding at August 1, 2021	1,345,495	\$ 9.42	4.1	\$ 5,309
Exercisable at August 1, 2021	1,246,806	\$ 9.44	3.9	\$ 4,899

NOTE 10 - INCOME TAXES

We calculate our provision for income taxes at the end of each interim reporting period on the basis of an estimated annual effective tax rate adjusted for tax items that are discrete to each period.

The effective tax rate of 24.4% in the three-month period end August 1, 2021, differs from the U.S. statutory rate of 21.0% primarily due to changes in forecasted jurisdictional earnings.

The effective tax rate of 22.4% in the nine-month period ended August 1, 2021, differs from the U.S. statutory rate of 21.0% primarily due to changes in forecasted jurisdictional earnings, the benefits of investment credits in certain foreign jurisdictions, which were partially offset by the non-recognition of taxes or benefits that, in certain jurisdictions, have been offset by valuation allowances.

The effective tax rate of 27.7% in the three-month period ended August 2, 2020, exceeds the U.S. statutory rate of 21.0% primarily due to the non-recognition of the tax benefit of losses that, in certain jurisdictions, have been offset by valuation allowances, which were partially offset by the benefit of tax holidays and investment credits in certain foreign jurisdictions.

The effective tax rate of 35.9% in the nine-month period ended August 2, 2020, exceeds the U.S. statutory rate of 21.0% primarily due to the non-recognition of the tax benefit of losses that, in certain jurisdictions, have been offset by valuation allowances, and the establishment of a valuation allowance for a loss carryforward in a non-U.S. jurisdiction, which were partially offset by the benefits of tax holidays and investment credits in certain foreign jurisdictions.

Valuation allowances, in jurisdictions with historic losses, eliminate the current tax benefit of losses in these jurisdictions where, based on the weight of information available to us, we determined that it is not more likely than not that the tax benefits will be realized. In the nine-month period ended August 2, 2020, as a result of the reassessment of the aforementioned available information, we established a valuation allowance of \$2.1 million against a non-U.S. based loss-carryforward deferred tax asset that is not more likely than not to be realized.

Unrecognized tax benefits related to uncertain tax positions were \$3.3 million at August 1, 2021, of which \$2.6 million, if recognized, would have a favorable impact on our effective tax rate. Unrecognized tax benefits related to uncertain tax positions were \$2.7 million at October 31, 2020, of which \$2.0 million, if recognized, would have a favorable impact on the Company's effective tax rate. Accrued interest and penalties related to unrecognized tax benefits was \$0.2 million and \$0.1 million at August 1, 2021 and October 31, 2020, respectively. Although the timing of the expirations of statutes of limitations may be uncertain, as they can be dependent upon the settlement of tax audits, the Company believes the amount of uncertain tax positions (including interest and penalties, and net of tax benefits) that may be resolved over the next twelve months is immaterial. Resolution of these uncertain tax positions may result from either or both the lapses of statutes of limitations and tax settlements. The Company is no longer subject to tax authority examinations in the U.S. and major foreign or state jurisdictions for years prior to fiscal year 2015.

NOTE 11 - EARNINGS PER SHARE

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

	Three Months Ended		Nine Months Ended	
	August 1, 2021	August 2, 2020	August 1, 2021	August 2, 2020
Net income attributable to Photronics, Inc. shareholders	\$ 17,076	\$ 10,776	\$ 35,638	\$ 27,360
Effect of dilutive securities	-	-	-	-
Earnings used for diluted earnings per share	<u>\$ 17,076</u>	<u>\$ 10,776</u>	<u>\$ 35,638</u>	<u>\$ 27,360</u>
Weighted-average common shares computations:				
Weighted-average common shares used for basic earnings per share	60,884	64,780	61,804	65,090
Effect of dilutive securities:				
Share-based payment awards	<u>631</u>	<u>467</u>	<u>558</u>	<u>614</u>
Potentially dilutive common shares	<u>631</u>	<u>467</u>	<u>558</u>	<u>614</u>
Weighted-average common shares used for diluted earnings per share	<u>61,515</u>	<u>65,247</u>	<u>62,362</u>	<u>65,704</u>
Basic earnings per share	\$ 0.28	\$ 0.17	\$ 0.58	\$ 0.42
Diluted earnings per share	\$ 0.28	\$ 0.17	\$ 0.57	\$ 0.42

The table below illustrates 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 antidilutive.

	Three Months Ended		Nine Months Ended	
	August 1, 2021	August 2, 2020	August 1, 2021	August 2, 2020
Share-based payment awards	<u>206</u>	<u>985</u>	<u>442</u>	<u>723</u>
Total potentially dilutive shares excluded	<u>206</u>	<u>985</u>	<u>442</u>	<u>723</u>

Subsequent to August 1, 2021, our outstanding common stock was reduced by a net 0.6 million shares, primarily as a result of share repurchases. Please refer to Note 14 for information on our share repurchase programs.

NOTE 12 - 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 August 1, 2021 and August 2, 2020.

	Three Months Ended August 1, 2021		
	Foreign Currency Translation Adjustments	Other	Total
Balance at May 2, 2021	\$ 36,052	\$ (860)	\$ 35,192
Other comprehensive income	(10,482)	37	(10,445)
Less: other comprehensive income attributable to noncontrolling interests	(153)	18	(135)
Balance at August 1, 2021	<u>\$ 25,723</u>	<u>\$ (841)</u>	<u>\$ 24,882</u>

	Three Months Ended August 2, 2020		
	Foreign Currency Translation Adjustments	Other	Total
Balance at May 3, 2020	\$ (14,535)	\$ (665)	\$ (15,200)
Other comprehensive income	10,659	4	10,663
Less: other comprehensive income attributable to noncontrolling interests	1,889	2	1,891
Balance at August 2, 2020	<u>\$ (5,765)</u>	<u>\$ (663)</u>	<u>\$ (6,428)</u>

	Nine Months Ended August 1, 2021		
	Foreign Currency Translation Adjustments	Other	Total
Balance at October 31, 2020	\$ 18,828	\$ (870)	\$ 17,958
Other comprehensive income	11,584	58	11,642
Less: other comprehensive income attributable to noncontrolling interests	4,689	29	4,718
Balance at August 1, 2021	<u>\$ 25,723</u>	<u>\$ (841)</u>	<u>\$ 24,882</u>

	Nine Months Ended August 2, 2020		
	Foreign Currency Translation Adjustments	Other	Total
Balance at October 31, 2019	\$ (8,331)	\$ (674)	\$ (9,005)
Other comprehensive income	6,689	23	6,712
Less: other comprehensive income attributable to noncontrolling interests	4,123	12	4,135
Balance at August 2, 2020	<u>\$ (5,765)</u>	<u>\$ (663)</u>	<u>\$ (6,428)</u>

NOTE 13 - 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 values due to their short-term maturities. The fair values of our variable rate debt instruments are a Level 2 measurement and approximate their carrying values due to the variable nature of the underlying interest rates. We did not have any assets or liabilities measured at fair value, on a recurring or a nonrecurring basis, at August 1, 2021 or October 31, 2020.

NOTE 14 - SHARE REPURCHASE PROGRAMS

In September 2020, the Company's board of directors authorized the repurchase of up to \$100 million of its common stock, pursuant to a repurchase plan under Rule 10b5-1 of the Securities Act. The company commenced repurchasing shares under this authorization on September 16, 2020. All of the shares repurchased under this authorization as of August 1, 2021, have been retired. The table below presents information on this repurchase program.

	Three Months Ended August 1, 2021	Nine Months Ended August 1, 2021	From Inception Date of September 16, 2020
Number of shares repurchased	964	2,983	4,713
Cost of shares repurchased	\$ 12,500	\$ 35,750	\$ 53,250
Average price paid per share	\$ 12.97	\$ 11.98	\$ 11.30

In August 2019, the Company's board of directors authorized the repurchase of up to \$100 million of its common stock, pursuant to a repurchase plan under Rule 10b5-1 of the Securities Act. This repurchase program was terminated in March of 2020. All of the shares repurchased under this authorization have been retired. The table below presents information on this repurchase program.

	Nine Months Ended August 2, 2020	From Inception Date of September 25, 2019
Number of shares repurchased	1,464	2,460
Cost of shares repurchased	\$ 16,894	\$ 27,894
Average price paid per share	\$ 11.54	\$ 11.34

NOTE 15 - COMMITMENTS AND CONTINGENCIES

As of August 1, 2021, the Company had commitments outstanding for capital expenditures of approximately \$56.9 million, primarily for purchases of high-end equipment. See Note 8 for our outstanding lease commitments.

The Company's wholly owned subsidiary in South Korea has been involved in litigation regarding a 2016 informational tax filing for its wholly owned subsidiary's non-South Korean bank accounts that was not timely made under a then recently issued presidential decree. A fine (based solely on the amount in such accounts) in the amount of \$2.2 million was assessed against our subsidiary. Our subsidiary appealed the fine on the grounds that it was not required to make the tax filing, and such appeal was pursued up to the Supreme Court in South Korea. Under South Korean law, the tax authorities were entitled to pursue the matter in both civil and criminal courts simultaneously, with the proviso that any criminal fine imposed would act to dismiss any civil fine. The prosecutor recommended a fine of \$0.03 million, and the civil matter was dismissed. Photronics was notified on March 12, 2020, that the Supreme Court rendered a decision against our subsidiary on the issue of whether our subsidiary was required to make the tax filing and remanded the case to the appellate court for determination of the fine. On August 26, 2021, the appellate court rendered the decision not to impose the \$0.03 million fine.

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

NOTE 16 - RECENT ACCOUNTING PRONOUNCEMENTS

Accounting Standards Updates Adopted

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 replaced the incurred loss impairment methodology, found in previous guidance, 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 was effective for Photronics in its first quarter of fiscal year 2021. We adopted ASU 2016-13 on November 1, 2020; the effect of the adoption was immaterial.

Accounting Standards Updates to Be Adopted

In March 2020, the FASB issued ASU 2020-04, "Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting", which provides optional expedients and exceptions to applying the guidance on contract modifications, hedge accounting, and other transactions, to simplify the accounting for transitioning from LIBOR, and other interbank offered rates expected to be discontinued, to alternative reference rates. The guidance in this Update was effective upon its issuance; if elected, it is to be applied prospectively through December 31, 2022. We are currently evaluating the effect the potential adoption of this ASU may have on our consolidated financial statements.

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 Form 10-K for fiscal 2020), that may cause actual results to materially differ from these expectations.

We sell substantially all of our photomasks to semiconductor designers and manufacturers, and manufacturers of FPDs. Photomask technology is also being applied to the fabrication of other higher-performance electronic products such as photonics, microelectronic mechanical systems and certain nanotechnology applications. Our selling cycle is tightly interwoven with the development and release of new semiconductor and display designs and applications, particularly as they relate to the semiconductor industry's migration to more advanced product innovation, design methodologies, and fabrication processes. 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 display sales does not necessarily result in a corresponding increase in photomask sales. However, the reduced use of customized ICs, reductions in design complexity, other changes in the technology or methods of manufacturing or designing semiconductors, or a slowdown in the introduction of new semiconductor or display designs could reduce demand for photomasks – even if the demand for semiconductors and displays increases. Advances in semiconductor, display, and photomask design and 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 negative trends have been characterized by, among other things, diminished product demand, excess production capacity, and accelerated erosion of selling prices, with a concomitant effect on revenue and profitability.

We are typically required to fulfill customer orders within a short period of time after receipt of an order, sometimes within twenty-four 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 enable us to continually reinvest in our global infrastructure.

Recent Developments

In the second quarter of fiscal 2021, we entered into a five-year \$7.2 million finance lease for a high-end inspection tool. Monthly payments on the lease, which commenced in February 2021, are \$0.1 million per month. Upon the payment of the fiftieth monthly payment and prior to payment of the fifty-first monthly payment, we may exercise an early buyout option to purchase the tool at 33.684638% of its original cost. If we do not exercise the early buyout option, then at the end of the five-year lease term, the lease shall continue to renew on a month-to-month basis at the same rental terms; at our option, after the original term or any renewal periods, we may return the tool, elect to extend the lease, or purchase the tool at its fair market value. Since we are reasonably certain that we will exercise the early buyout option, our lease liability reflects such exercise and we have classified the lease as a finance lease. The interest rate implicit in the lease is 1.08%.

In the first quarter of fiscal 2021, we entered into a five-year \$35.5 million finance lease for a high-end lithography tool. Monthly payments on the lease, which commenced in January 2021, increased from \$0.04 million after the first three months to \$0.6 million for the following nine months, followed by forty-eight monthly payments of \$0.5 million. As of the due date of the forty-eighth monthly payment, we may exercise an early buyout option to purchase the tool at 39.84% of the initial lease liability. If we do not exercise the early buyout option, then at the end of the five-year lease term, at our option, we may return the tool, elect to extend the lease term for a period and a lease payment to be agreed with lessor at the time, or purchase the tool for its then-fair market value as determined by the lessor. Since we are reasonably certain that we will exercise the early buyout option, our lease liability reflects such exercise and we have classified the lease as a finance lease. The interest rate implicit in the lease is 1.58%. The lease agreement incorporates the covenants included in our Corporate Credit Agreement, which are detailed in Note 6, and includes a cross-default provision for any agreement or instrument with an outstanding, committed balance greater than \$5.0 million in which we are the indebted party.

For further information, refer to Item 7 in our Form 10-K for the year ended October 31, 2020.

Results of Operations

Three and Nine Months Ended August 1, 2021

The following table presents selected operating information expressed as a percentage of revenue. The columns may not foot due to rounding.

	Three Months Ended			Nine Months Ended	
	August 1, 2021	May 2, 2021	August 2, 2020	August 1, 2021	August 2, 2020
Revenue	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of goods sold	73.4	75.4	76.1	76.1	77.7
Gross profit	26.6	24.6	23.9	23.9	22.3
Selling, general and administrative expenses	8.8	8.8	8.4	9.0	8.9
Research and development expenses	3.1	2.7	2.9	3.0	2.8
Other operating income, net	2.1	-	-	0.7	-
Operating income	16.7	13.0	12.6	12.7	10.6
Other non-operating income (expense), net	2.2	(0.5)	(1.3)	0.8	0.2
Income before income tax provision	18.9	12.5	11.3	13.4	10.8
Income tax provision	4.6	2.3	3.2	3.0	3.9
Net income	14.3	10.2	8.1	10.4	6.9
Net income attributable to noncontrolling interests	4.3	3.6	1.3	3.0	1.0
Net income attributable to Photronics, Inc. shareholders	10.0%	6.6%	6.8%	7.4%	5.9%

Note: All tabular comparisons included in the following discussions, unless otherwise indicated, are for the three months ended August 1, 2021 (Q3 FY21), May 2, 2021 (Q2 FY21) and August 2, 2020 (Q3 FY20), and for the nine months ended August 1, 2021 (YTD FY21) and August 2, 2020 (YTD FY20), in millions of dollars. The columns may not foot due to rounding.

Revenue

Our quarterly revenues can be affected by the seasonal purchasing practices of our customers. As a result, demand for our products is typically reduced during the first quarter of our fiscal year, by the North American, European, and Asian holiday periods, as some of our customers reduce their development and, consequently, their buying activities during those periods.

The following tables present changes in disaggregated revenue in Q3 FY21 and YTD FY21 from revenue in prior reporting periods.

Changes in Revenue by Product Type

	<u>Q3 FY21 from Q2 FY21</u>			<u>Q3 FY21 from Q3 FY20</u>		<u>YTD FY21 from YTD FY20</u>		
	<u>Revenue in Q3 FY21</u>	<u>Increase (Decrease)</u>	<u>Percent Change</u>	<u>Increase (Decrease)</u>	<u>Percent Change</u>	<u>Revenue in YTD FY21</u>	<u>Increase (Decrease)</u>	<u>Percent Change</u>
IC								
High-end *	\$ 42.4	\$ 1.1	2.6%	\$ 3.7	9.5%	\$ 120.4	\$ 2.4	2.0%
Mainstream	75.4	4.7	6.6%	5.4	7.7%	214.3	19.8	10.2%
Total IC	\$ 117.8	\$ 5.8	5.2%	\$ 9.1	8.4%	\$ 334.7	\$ 22.2	7.1%
FPD								
High-end *	\$ 40.6	\$ 1.2	3.1%	\$ 4.0	10.8%	\$ 114.7	\$ 6.4	5.9%
Mainstream	12.2	3.9	46.1%	(0.3)	(2.6)%	33.1	(6.6)	(16.6)%
Total FPD	\$ 52.9	\$ 5.1	10.7%	\$ 3.6	7.4%	\$ 147.8	\$ (0.2)	(0.1)%
Total Revenue	\$ 170.6	\$ 10.9	6.8%	\$ 12.7	8.1%	\$ 482.5	\$ 22.1	4.8%

* High-end photomasks typically have higher average selling prices (ASPs) than mainstream products.

*Changes in Revenue by Geography ***

	<u>Q3 FY21 from Q2 FY21</u>			<u>Q3 FY21 from Q3 FY20</u>		<u>YTD FY21 from YTD FY20</u>		
	<u>Revenue in Q3 FY21</u>	<u>Increase (Decrease)</u>	<u>Percent Change</u>	<u>Increase (Decrease)</u>	<u>Percent Change</u>	<u>Revenue in YTD FY21</u>	<u>Increase (Decrease)</u>	<u>Percent Change</u>
Taiwan	\$ 63.8	\$ 4.8	8.2%	\$ 3.0	5.0%	\$ 179.4	\$ (3.0)	(1.7)%
Korea	39.6	(0.7)	(1.7)%	0.1	0.2%	118.6	2.1	1.8%
United States	24.7	(2.5)	(9.0)%	(3.7)	(12.9)%	78.4	0.2	0.2%
China	32.7	8.9	37.6%	11.7	55.6%	77.4	19.0	32.6%
Europe	9.4	0.2	2.0%	1.7	22.8%	27.3	3.7	15.7%
Other	0.4	0.0	10.1%	(0.1)	(21.9)%	1.3	0.1	6.7%
Total Revenue	\$ 170.6	\$ 10.9	6.8%	\$ 12.7	8.1%	\$ 482.5	\$ 22.1	4.8%

** This table disaggregates revenue by the location in which it was earned.

Changes in Revenue for Products Shipped to Customers in China

	<u>Q3 FY21 from Q2 FY21</u>			<u>Q3 FY21 from Q3 FY20</u>		<u>YTD FY21 from YTD FY20</u>		
	<u>Revenue in Q3 FY21</u>	<u>Increase (Decrease)</u>	<u>Percent Change</u>	<u>Increase (Decrease)</u>	<u>Percent Change</u>	<u>Revenue in YTD FY21</u>	<u>Increase (Decrease)</u>	<u>Percent Change</u>
IC	\$ 34.5	\$ 3.0	9.5%	\$ 10.9	46.3%	\$ 91.6	\$ 21.4	30.5%
FPD	28.1	2.3	8.8%	0.6	2.0%	77.9	(8.4)	(9.8)%
Total	\$ 62.6	\$ 5.3	9.2%	\$ 11.5	22.5%	\$ 169.4	\$ 13.0	8.3%

Revenue in Q3 FY21 of \$170.6 million represents an increase of 6.8% compared to Q2 FY21 and 8.1% from Q3 FY20; on a year-to-date basis, revenue increased 4.8% to \$482.5 million, due to increased demand in both IC and FPD, as a robust design environment led to growing photomask demand across our markets.

IC revenue increased 5.2% in Q3 FY21, compared with Q2 FY21, 8.4% compared with Q3 FY20, and 7.1% on a year-to-date basis, mainly attributable to continued growth in mainstream on strong demand driven by node migrations, as our customers have looked to take advantage of lower device-lifetime cost and better performance. This positive demand factor has enabled us to realize pricing benefits in Asia on some nodes. High-end revenue growth was driven by strong logic demand, especially in Taiwan and China. In addition, captive photomask operations continue to dedicate more of their capacity to EUV production, resulting in the increased outsourcing of their non-EUV production to merchant photomask suppliers.

FPD revenue increased 10.7% in Q3 FY21, compared with Q2 FY21, driven by increased demand for high-end AMOLED displays used in mobile applications, new designs for G10.5+ panel manufacturing, and mainstream growth as a result of recent capacity expansions. FPD revenue increased 7.4% in Q3 FY21, compared with Q3 FY20, due to increased high-end, driven by growth in AMOLED displays for mobile applications. On a year-to-date basis, FPD revenues were essentially flat when compared to the same period last year, as increased high-end was offset by a decline in mainstream, driven by an increase in AMOLED demand for mobile displays being offset by a weak LCD market.

Gross Margin

	<u>Q3 FY21</u>	<u>Q2 FY21</u>	<u>Percent Change</u>	<u>Q3 FY20</u>	<u>Percent Change</u>	<u>YTD FY21</u>	<u>YTD FY20</u>	<u>Percent Change</u>
Gross profit	\$ 45.3	\$ 39.2	15.5%	\$ 37.7	20.1%	\$ 115.1	\$ 102.8	12.0%
Gross margin	26.6%	24.6%		23.9%		23.9%	22.3%	

Gross margin increased by 2.0 percentage points in Q3 FY21, from Q2 FY21, as a result of the increase in revenue from the prior quarter and higher pricing for certain mainstream IC nodes. Material costs increased 4.3% from the prior quarter, but decreased as a percentage of revenue by 70 basis points. Labor costs increased 3.2% but, as a percentage of revenue, fell 40 basis points. Equipment and other overhead costs increased 4.0%, but decreased 90 basis points as a percentage of revenue, with higher outsourced manufacturing costs most significantly contributing to the cost increase.

Gross margin increased by 2.7 percentage points in Q3 FY21, from Q3 FY20, as a result of the increase in revenue from the prior year quarter and higher pricing for certain mainstream IC nodes. Material costs increased 4.2% from the prior year quarter, with the largest increase occurring at our China-based FPD facility, where the increase was in line with that facility's increased revenue. Globally, material costs, as a percentage of revenue, decreased 110 basis points. Labor costs increased 9.1% from the prior year quarter, but only represented a 10 basis point increase as a percent of revenue, while equipment and other overhead costs rose moderately at 2.8%, but fell 170 basis points as a percentage of revenue. Increased equipment service contract and equipment maintenance costs were the most significant contributor to the rise in equipment and other overhead costs.

Gross margin increased by 1.6 percentage points in YTD FY21, from YTD FY20, primarily as a result of the increase in revenue from the prior year period and higher pricing for certain mainstream IC nodes. Material costs increased 3.5% from the prior year period, with a notable increase occurring at our China-based IC facility, where the increase was in line with that facility's increased revenue. Globally, material costs decreased 40 basis points as a percentage of revenue. Labor costs increased 10.7% from the prior year, but only 70 basis points when compared to revenue. Equipment and other overhead costs decreased by 0.4%, or 180 basis points as a percentage of revenue, with reduced outsourced manufacturing costs most significantly contributing to the decline.

As we operate in a high fixed cost environment, increases or decreases in our revenues and capacity utilization will generally positively or negatively impact our gross margin.

Selling, General and Administrative Expenses

Selling, general and administrative expenses were \$15.1 million in Q3 FY21, an increase of \$1.0 million from Q2 FY21, and an increase of \$1.8 million from Q3 FY20. The increases are primarily the result of increased compensation costs. Selling, general and administrative expenses were \$43.2 million in YTD FY21, as compared with \$40.8 million in YTD FY20, with the increase primarily being the result of increased compensation costs.

Research and Development Expenses

Research and development expenses, which primarily consist of development and qualification efforts related to high-end process technologies for high-end IC and FPD applications, were \$5.3 million in Q3 FY21, compared with \$4.4 million in Q2 FY21 and \$4.5 million in Q3 FY20. Increased development activities in the U.S. was the primary driver of the increases from both comparative periods, with decreased expenses at our China-based FPD facility partially offsetting the increase from the prior year period. On a year-to-date basis, research and development expenses increased \$1.4 million, primarily due to an increase in development activities in the U.S. exceeding a decline in such activities at our China-based FPD facility.

Other Operating Income, Net

In the third quarter of fiscal 2021, we recorded a \$3.5 million gain on the trade-in of a lithography tool with a tool vendor as partial compensation for a more advanced tool.

Other Non-Operating Income (Expense)

	<u>Q3 FY21</u>	<u>Q2 FY21</u>	<u>Q3 FY20</u>	<u>YTD FY21</u>	<u>YTD FY20</u>
Foreign currency transactions impact, net	\$ 4.3	\$ (2.1)	\$ (1.6)	\$ 3.6	\$ 1.7
Interest expense, net	(1.1)	1.2	(0.6)	(0.6)	(1.6)
Interest income and other income (expense), net	<u>0.5</u>	<u>-</u>	<u>-</u>	<u>0.7</u>	<u>0.5</u>
Other income (expense), net	<u>\$ 3.7</u>	<u>\$ (0.8)</u>	<u>\$ (2.1)</u>	<u>\$ 3.6</u>	<u>\$ 0.6</u>

Other income and expense changed favorably from a loss of \$0.8 million in Q2 FY21 to income of \$3.7 million in Q3 FY21, primarily as a result of favorable foreign currency exchange movements in Korea and Taiwan against the U.S. dollar. An unfavorable change in interest expense of \$2.3 million was primarily the result of subsidies (which we recognize at the time of their receipt) we received in China in Q2 FY21, the occurrence which was not repeated in Q3 FY21, which partially offset the \$6.4 million net favorable impact of foreign currency movements. The increase of \$0.5 million in *Interest income and other income (expense), net* is primarily due to the receipt of a \$0.4 million subsidy in China.

Other income and expense, net changed favorably from a loss of \$2.1 million in Q3 FY20 to income of \$3.7 million in Q3 FY21. The \$5.9 million positive impact of foreign currency movements was primarily due to favorable movements against the U.S. dollar in Korea and Taiwan. Increased interest expense of \$0.5 million from the prior year quarter reflects our increased average debt level in Q3 FY21. The increase of \$0.5 million in *Interest income and other income (expense), net* is primarily due to the receipt of a \$0.4 million subsidy in China.

Other income and expense, net changed favorably from net other income of \$0.6 million in YTD FY20 to net other income of \$3.6 million in YTD FY21. The \$1.9 million positive impact of foreign currency movements was primarily caused by favorable movements against the U.S. dollar and the Japanese yen in China, which were partially offset by unfavorable movements against the U.S. dollar in Korea and Taiwan. Interest expense decreased, on a year-to-date basis by \$1.0 million, as result of subsidies we received on our debt in China, which we recognize at the time of their receipt.

Income Tax Provision

	<u>Q3 FY21</u>	<u>Q2 FY21</u>	<u>Q3 FY20</u>	<u>YTD FY21</u>	<u>YTD FY20</u>
Income tax provision	\$ 7.8	\$ 3.7	\$ 4.9	\$ 14.5	\$ 17.8
Effective income tax rate	24.4%	18.5%	27.7%	22.4%	35.9%

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

The effective income tax rate increase in Q3 FY21, compared with Q2 FY21, is primarily due to changes in the period-to-period mix of jurisdictional earnings.

The effective income tax rate decrease in Q3 FY21, compared with Q3 FY20, is primarily due to the benefits of investment credits in certain non-U.S. jurisdictions in Q3 FY21, as well as changes in the jurisdictional mix of earnings.

The effective income tax rate decreased in YTD FY21, compared with YTD FY20, primarily due to the establishment of a valuation allowance for a loss carryforward in a non-U.S. jurisdiction in YTD-FY20, as well as changes in the jurisdictional mix of earnings.

Net Income Attributable to Noncontrolling Interests

Net income attributable to noncontrolling interests was \$7.3 million in Q3 FY21, compared with \$5.8 million in Q2 FY21, and was primarily the result of increased net income at our Taiwan-based IC facility, which partially offset decreased net income at our China-based IC facility. Net income attributable to noncontrolling interests increased \$5.2 million in Q3 FY21 from Q3 FY20, and \$10.1 million, on a year-to-date basis, as a result of increased net income at both our Taiwan-based and China-based IC facilities.

Liquidity and Capital Resources

Cash and cash equivalents totaled \$283.2 million and \$278.7 million as of August 1, 2021 and October 31, 2020 respectively. As of the most recent balance sheet date, total cash and cash equivalents included \$217.2 million held by foreign subsidiaries. Our primary sources of liquidity are our cash on hand, cash we generate from operations, and borrowing capacity we have available from financial institutions. Our corporate credit agreement has a \$50 million borrowing limit, with an expansion capacity to \$100 million. Although we have not accessed funds under our corporate credit facilities since 2011, it continues to afford us financial flexibility. In addition, in China, we currently have approximately \$22.9 million of borrowing capacity to support local operations. See Item 1. Condensed Consolidated Financial Statements - Notes to Condensed Consolidated Financial statements - Note 6 for additional information.

We continually evaluate alternatives for efficiently funding our capital expenditures and ongoing operations. These reviews may result in our engagement in a variety of financing transactions, in the transfer of cash among subsidiaries, and/or the repatriation of cash to the U.S. The transfer of funds among subsidiaries could be subject to foreign withholding taxes; in certain jurisdictions, repatriation of these funds to the U.S. may subject them to U.S. state income taxes and/or local country withholding taxes. We believe that our liquidity, including available financing, is sufficient to meet our requirements through the next twelve months and thereafter for the foreseeable future. Through the utilization of cash we generate from operations, our existing liquidity, and (potentially) our borrowing capacity, we will continue to invest in organic growth for our business, with our investments targeted to align with our customers' technology road maps, and stand ready to invest in mergers, acquisitions, or strategic partnerships should the right opportunity present itself.

We estimate capital expenditures for Q4 FY21 will be approximately \$28 million; these investments will be targeted towards high-end and mainstream point tools that will increase our operating capacity and efficiency, and enable us to support our customers' near-term demands. As of August 1, 2021, we had outstanding capital commitments of approximately \$56.9 million and recognized liabilities related to capital equipment purchases of approximately \$9.2 million. Although payment timing could vary, primarily as a result of the timing of tool installation and testing, we currently estimate that we will fund \$54 million of our total \$66 million committed and recognized obligations for capital expenditures over the next twelve months.

In September 2020, the Company's board of directors authorized the repurchase of up to \$100 million of its common stock, pursuant to a repurchase plan under Rule 10b5-1 of the Securities Act. This authorization does not obligate the Company to repurchase any dollar amount or number of shares of common stock. As of August 1, 2021, our current share repurchase program had approximately \$46.8 million remaining under its authorization. Depending on market conditions, we may utilize some or the entire remaining approved amount to reacquire additional shares.

Cash Flows

	Nine Months Ended	
	August 1, 2021	August 2, 2020
	<u>\$</u>	<u>\$</u>
Net cash provided by operating activities	113.1	78.3
Net cash used in investing activities	(86.7)	(31.6)
Net cash (used in) provided by financing activities	(26.4)	4.1

Operating Activities: Net cash provided by operating activities reflects net income adjusted for certain non-cash items, including depreciation and amortization, share-based compensation, and the effects of changes in operating assets and liabilities. The increase in net cash provided by operating activities for the nine months ended August 1, 2021, compared with the nine months ended August 2, 2020, was primarily due to increased net income and net cash-positive changes in working capital in Asia.

Investing Activities: Net cash flows used for investing activities primarily consists of purchases of property, plant and equipment. For the nine months ended August 1, 2021, purchases of property, plant and equipment were \$92.3 million, compared with \$36.7 million for the nine months ended August 2, 2020, as we increased our tool purchases in the current year, primarily in response to market demands in Asia.

Financing Activities: Net cash flows used in financing activities primarily consist of share repurchases, proceeds from and repayments of debt, and contributions from noncontrolling interests. The increase in net cash used in financing activities during the nine months ended August 2, 2021, compared with the same period ended August 2, 2020, was primarily driven by an \$18.9 million increase in share repurchases, a \$17.6 million decrease in contributions from noncontrolling interests, and a \$7.4 million increase in debt repayments. Increased borrowings of \$15.2 million partially offset the aforementioned cash-negative impacts.

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, which we refer to as PDMCX, was established to develop and manufacture photomasks for leading edge and advanced generation semiconductors. Under the joint venture's operating 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 may arise after the initial two-year term of the operating agreement that cannot be resolved between the two parties. As of the date of issuance of this report, DNP had not indicated its intention to exercise this right. 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 PDMCX's net assets, incur a loss. As of August 1, 2021, Photronics and DNP each had net investments in PDMCX of \$60.9 million.

Business Outlook

When evaluating our views on our outlook, please consider them in the context of our short backlog (which typically does not exceed three weeks), and the significant effect that a variance in high-end orders can have on our results. In addition, government actions to address health concerns, change trade policies, or repatriate manufacturing may also affect our results. Overall, we are encouraged by increased capital spending by both semiconductor and panel makers, as their current investments are a leading indicator of increased demand for photomasks. We believe that the recent favorable trends in IC driving an increase in design activity, including the recovery in high-end logic demand, and continued strength in mainstream demand will continue through the fourth quarter and possibly beyond. In FPD, we expect to see growth from recent capacity expansions, which benefitted us for only a portion of Q3 FY21. We believe this increased capacity will support increased mobile demand, as more smartphones, tablets, and laptops adopt high-value AMOLED technology. We are also encouraged by the emergence of next-generation premium TV technologies (such as Samsung Display Co. LTD's QD-OLED, and LG Display Co. LTD's WOLED) which may provide growth in the future.

Effect of Recent Accounting Pronouncements

See "Item 1. Condensed Consolidated Financial Statements– Notes to Condensed Consolidated Financial Statements – Note 16 – Recent Accounting Pronouncements" for recent accounting pronouncements that may impact our 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 RMB, and the Singapore dollar. The functional currencies of our European subsidiaries are the British pound and the euro. In addition, we engage in transactions in, and have exposures to, the 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 products in a currency other than the functional currency of the country where it was produced, or purchase products in a currency that differs from the functional currency of the purchasing entity. In addition, to the extent practicable, we attempt to reduce our exposure to foreign currency exchange fluctuations by converting cash and cash equivalents into the functional currency of the subsidiary which holds the cash. We may also enter into derivative contracts to mitigate our exposure to foreign currency fluctuations when we have a significant purchase obligation, or a significant receivable denominated in a currency that differs from the functional currency of the transacting subsidiary. We do not enter into derivatives for speculative purposes. 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.

Our primary net foreign currency exposures as of August 1, 2021, included the South Korean won, the Japanese yen, the New Taiwan dollar, the Chinese renminbi, the Singapore dollar, the British pound sterling, and the euro. As of that date, a 10% adverse movement in the value of currencies different from the functional currencies of our subsidiaries would have resulted in a net unrealized pre-tax loss of \$36.0 million, which represents an increase of \$1.5 million and \$4.1 million from our exposures at May 2, 2021 and October 31, 2020, respectively. Our most significant exposures at August 1, 2021, related to the Chinese renminbi, the South Korean won, and the New Taiwan Dollar to the U.S. dollar, which were, respectively, \$12.9 million, \$12.3 million, and \$7.5 million at that date. We do not believe that a 10% change in the exchange rates of non-US dollar currencies, other than the aforementioned currencies and the Japanese yen, would have had a material effect on our August 1, 2021, condensed consolidated financial statements.

Interest Rate Risk

A 10% adverse movement in the interest rates on our variable rate borrowings would not have had a material effect on our August 1, 2021 condensed consolidated financial statements.

Item 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer and chief financial officer, evaluated the effectiveness of our disclosure controls and procedures as of August 1, 2021. 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 Exchange Act, designed to provide reasonable assurance that information required to be disclosed in our reports filed under the Exchange Act, is recorded, processed, summarized and reported within the time periods specified in the SEC'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. Based on an evaluation of our disclosure controls and procedures as of August 1, 2021, our chief executive officer and chief financial officer concluded that, as of such date, our disclosure controls and procedures were not effective due to a material weakness in our internal control over financial reporting as discussed below.

Based on our prior assessment as of October 31, 2020, management concluded that our internal control over financial reporting was not effective due to a material weakness relating to the accuracy and completeness of information used in monitoring compliance with covenants stipulated by the Company's debt agreements. This material weakness has not been remediated as of August 1, 2021.

Notwithstanding this material weakness, our management, including our chief executive officer and chief financial officer, has concluded that our financial statements included in this Form 10-Q present fairly, in all material respects, our financial position, results of operations, and cash flows for the periods presented in accordance with accounting principles generally accepted in the United States of America.

Remediation of Material Weakness

Our management is committed to maintaining a strong internal control environment and implementing measures designed to help ensure that the material weakness is remediated as soon as possible. Management is in the process of designing and implementing a remediation plan to address the material weakness referred to above.

Changes in Internal Control over Financial Reporting

Except for changes made in connection with our implementation of the remediation efforts mentioned above, there have been no other changes in our internal control over financial reporting during the fiscal quarter ended August 1, 2021, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. LEGAL PROCEEDINGS

Please refer to Note 15 within Part I, Item 1 of this report for information on legal proceedings involving the Company.

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

Issuer Purchases of Equity Securities

In September 2020, the Company's board of directors authorized the repurchase of up to \$100 million of its common stock, pursuant to a repurchase plan under Rule 10b5-1 of the Securities Act. The share repurchase program commenced on September 14, 2020, and all 1.7 million shares repurchased under this program during fiscal 2020, were retired in October 2020. The following table presents information on our common stock repurchase activity for the third fiscal quarter of 2021.

Period	Total Number of Shares Purchased (in millions)	Average Price Paid Per share	Total Number of Shares Purchased as Part of Publicly Announced Program (in millions)	Dollar Value of Shares That May Yet Be Purchased (in millions)
May 3, 2021 – May 30, 2021	0.8	\$ 12.86	0.8	\$ 49.3
May 31, 2021 – June 27, 2021	0.2	\$ 13.43	0.2	\$ 46.8
Total	1.0	\$ 12.97	1.0	

Item 6. EXHIBITS

Exhibit Number	Description	Incorporated by Reference			Filed or Furnished Herewith
		Form	File Number	Exhibit Filing Date	
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a)/15d-14(a) of the Exchange Act, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				X
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a)/15d-14(a) of the Exchange Act, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				X
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.				X
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.				X
101.INS	Inline XBRL Instance Document (the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document)				X
101.SCH	Inline XBRL Taxonomy Extension Schema Document				X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document				X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document				X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document				X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document				X
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)				X

SIGNATURES

Pursuant to the requirements of the Exchange Act, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Photronics, Inc.
(Registrant)

By: /s/ JOHN P. JORDAN
 JOHN P. JORDAN
 Executive Vice President,
 Chief Financial Officer
 (Principal Financial Officer)

By: /s/ ERIC RIVERA
 ERIC RIVERA
 Vice President,
 Corporate Controller
 (Principal Accounting Officer)

Date: September 10, 2021

Date: September 10, 2021

EXHIBIT 31.1

I, Peter S. Kirlin, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Photronics, Inc.
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report.
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report.
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ PETER S. KIRLIN

Peter S. Kirlin
Chief Executive Officer
September 10, 2021

EXHIBIT 31.2

I, John P. Jordan, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Photronics, Inc.
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report.
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report.
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ JOHN P. JORDAN

John P. Jordan
Chief Financial Officer
September 10, 2021

EXHIBIT 32.1

Section 1350 Certification of the Chief Executive Officer

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

- (1) The Quarterly Report on Form 10-Q of the Company for the quarter ended August 1, 2021 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

The foregoing certification is being furnished pursuant to 18 U.S.C. § 1350 and will not be deemed "filed" for purposes of Section 18 of the Exchange Act, or otherwise subject to the liability of that section. Such certification will not be deemed to be incorporated by reference into any filing under the Securities Act or the Exchange Act, except to the extent that the registrant specifically incorporates it by reference.

/s/ PETER S. KIRLIN

Peter S. Kirlin
Chief Executive Officer
September 10, 2021

EXHIBIT 32.2

Section 1350 Certification of the Chief Financial Officer

I, John P. Jordan, Chief Financial Officer of Photonics, Inc. (the "Company"), certify, to my knowledge, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350, that:

- (1) The Quarterly Report on Form 10-Q of the Company for the quarter ended August 1, 2021 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

The foregoing certification is being furnished pursuant to 18 U.S.C. § 1350 and will not be deemed "filed" for purposes of Section 18 of the Exchange Act, or otherwise subject to the liability of that section. Such certification will not be deemed to be incorporated by reference into any filing under the Securities Act or the Exchange Act, except to the extent that the registrant specifically incorporates it by reference.

/s/ JOHN P. JORDAN

John P. Jordan
Chief Financial Officer
September 10, 2021
